WORKPLACE STRESS AND COPING STRATEGIES IN THE NURSING PROFESSION

Thesis submitted to Goa University for the award of the degree of

DOCTOR OF PHILOSOPHY

IN

MANAGEMENT STUDIES

By

WILSON NICOLAU FERNANDES

Department of Management Studies

GOA UNIVERSITY – INDIA

2016

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Under the guidance of

DR. NIRMALA RAJANALA
Assistant Professor, Department of Management Studies,

GOA UNIVERSITY – INDIA

2016

DECLARATION

I, Wilson Nicolau Fernandes, do hereby declare that this dissertation entitled **"Workplace Stress and Coping Strategies in the Nursing Profession"** is a record of original research work done by me under the supervision of Dr. Nirmala Rajanala, Assistant Professor, Department of Management Studies, Goa University.

I also declare that this dissertation or any part thereof has not been submitted by me for the award of any Degree, Diploma, Title or Recognition before.

Wilson Nicolau Fernandes

Place: Goa University

Date: 13/06/2016

CERTIFICATE

This is to certify that the Ph. D. thesis titled **"Workplace Stress and Coping Strategies in the Nursing Profession"** is an original work carried out my by **Wilson Nicolau Fernandes** under my guidance, at the Department of Management Studied, Goa University.

This dissertation or any part thereof has not formed the basis for the award of any Degree, Diploma, Title or Recognition before.

Dr. Nirmala Rajanala
Supervisor

Place: Goa University

Date: 13/06/2016

ACKNOWLEDGEMENTS

"Let us be grateful to people who make us happy; they are the charming gardeners who make our souls blossom." — Marcel Proust

I thank with gratitude **God Almighty** for all the blessings he has showered upon me during the course of this study. He gave me the necessary strength and willpower to overcome all my difficulties, without his grace this work would not have been complete.

The completion of my doctoral work has truly been a journey of more than 4 years – a journey filled with triumphs, tribulations and experiences to last more than a lifetime. There were more times than I can count, that I wanted to call it quits but the constant concern, support and encouragement of my guide **Dr. Nirmala Rajanala** kept renewing my will to accomplish this goal. I am extremely thankful to my guide for not only sharing her abundant knowledge, but providing practical and constant guidance throughout the study.

I extend my gratitude to **Prof. Nanadakumar Mekoth, Dr. M.S. Dayanand, Dr. Purva Desai Hedge** and **Dr. Nilesh Borde** , faculty of the Department of Management Studies, Goa University for their valuable suggestions, which have helped me in refining and shaping this research work.

I am indeed thankful to the expert on my FRC committee **Dr. Prita Mallya**, Principal, Damodar College, Margao for her valuable suggestions, guidance and help throughout the study**.**

My deep gratitude is on record to **Dr. Susan French**, Emeritus Professor, McGill University Canada, for helping me to conceptualization of my ideas and for her valuable suggestions which helped me to identify new sub-scales and design the questionnaire items.

I express my heart felt gratitude to all **the experts** who have willingly spared their time and made valuable suggestions while validating the tools of data collection.

I thank all the Government Officials, Hospital Administrators, Human Resource Managers, Matrons, Asst. Matrons and Ward In-charges of all health care settings in this study for permitting and helping me during data collection process. A special thanks is extended to the nurses who have willingly participated in the study.

I am indebted **Dr. Sony Micheal** for his expert advice and guidance in statistical matters related to this study. My heartfelt gratitude is extended to **Mr. Pankaj Kumar, Ms. Raina Pinto** and **Mr. Vilas Waikar** for making this academic journey more fruitful and enlightening through discussions and sharing of their knowledge.

A special thanks to the Goa University personnel and in particular to the staff of the Department of Management Studies for their timely help in processing the necessary formalities need during the study. I also acknowledge and thank **all the staff of Goa University library** for their help. I am thankful to **Mr. Dilip Chari** for helping me in the formatting of this thesis.

I thank personnel from the Public Health Department, Government of Goa for permitting me to pursue my doctoral study. Special thanks to **Mrs. Carol Noronha**, Principal of the Institute of Nursing Education for her encouragement, support and

understanding. I take this opportunity to thank my teachers **Ms. Anna D'Souza Rauto, Ms. Maria Castro** and **Ms. Shashilata Yadav and Mrs. Flossy Menezes e Rodrigues for** their help and support.

My special thanks to **Mrs. Ana Vaz e Branganza** for all her support and help during my study. I also thank my colleagues and friends **Mrs. Sulaksha M. Dessai, Mr. Vithobha Mhalkar, Mrs. Leonny Walker** and **Mrs. Avita Fernandes** for their support.

I appreciate and thank my loving daughter **Wyaneth** and wife **Marilyn** for their understanding, patience and the sacrifices which boosted my perseverance in achieving my goal. My dear Daughter, I will always treasure your sacrifice and hope that my work will inspire you to achieve greater success in your life.

I am greatly indebted to my family and friends for their prayers, support and constant encouragement throughout the study

Wilson Nicolau Fernandes

Workplace Stress and Coping Strategies in the Nursing Profession

By: ***Wilson Nicolau Fernandes***

Supervisor*:* ***Dr. Nirmala Rajanala,*** Assistant Professor, Department of Management Studies, Goa University

ABSTRACT

The present study was undertaken to study workplace stress and coping strategies in the nursing profession. The initial objectives were to identify the dimensions of nursing workplace stress and coping strategies and to develop measurement scales to measure these two constructs. The data was collected from 833 nurses which was further analysed after scale development to find relationships between workplace stress and coping strategies used by nurses. The relationship between selected demographic variables and workplace stress and coping strategies was also tested. Finally, a workplace stress and coping model was developed and tested. The statistical packages SPSS version 22 and AMOS version 21 were used to perform various statistical tests.

Analysis of the data revealed that

(i) Workplace stress dimensions consist of eleven dimensions and coping strategies of four types.

(ii) The developed scales to measure workplace stress and coping strategies were found to be valid and reliable. The measurement scales were named as the Nursing Workplace Stress Scale (NWSS) and Nursing Workplace Stress Coping Strategies Scale (NWSCSS) respectively.

(iii) Positive significant correlation was found between the workplace stress and coping strategies used by the nurses.

(iv) Few selected demographic variables were found to have significant relationship between workplace stress and coping strategies.

(v) Process model of workplace stress and coping was found to be valid using Structural Equation Model (SEM).

The content of the thesis may be summarised as follows:

1) Development and validation of measurement scale "Nursing Workplace Stress Scale (NWSS)".
2) Development and validation of measurement scale "Nursing Workplace Stress Coping Strategies Scale (NWSCSS)".
3) Test of hypothesized relationship between workplace stress and coping strategies
4) Development and validation of workplace stress and coping model using Structural Equation Model (SEM).

KEY WORDS

Nursing, Workplace Stress, Coping Strategies, NWSS, NWSCSS

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ABBREVIATIONS

NWSS	Nursing Workplace Stress Scale
PNS	Problems Faced with Nursing Supervisors
PFPF	Problems Faced with Patients and their Families
LRS	Lack of Resources and Support
LAP	Lack of Autonomy and Power
WD	Workplace Discrimination
EIMD	Ethical Issues and Meeting Demands
UCAC	Uncertainty Concerning Appropriateness of Care
WL	Workload
LPS	Lack of Professional Status
DS	Death and Suffering
PHC	Perceived Self Health Concerns
NWSCSS	Nursing Workplace Stress Coping Strategies Scale
SBSW	Self Blame and Social Withdrawal
PSPL	Problem Solving and Planning
TG	Turning to God
SHSS	Seeking Help and Social Support
SPSS	Statistical Package for Social Sciences
AMOS	Analysis of Sample Movements
CFA	Confirmatory Factor Analysis
SEM	Structural Equation Model
I-CVI	Item Content Validity Index
S-CVI	Scale Content Validity Index
GFI	Goodness of fit index
AGFI	Adjusted Goodness of Fit Index
NFI	Normed Fit Index
RFI	Relative Fit Index
CFI	Comparative Fit Index
IFI	Incremental Fit Index
TLI	Tucker Lewis Index
RMSEA	Root Mean Square Error of Approximation
RMR	Root Mean Square Residual

CHAPTER I

1. INTRODUCTION

"The greatest weapon against stress is our ability to choose one thought over another".

William James

Although the concept of stress was known over the centuries, the term stress has now become widespread in recent times. The various scientific views on stress as a response (Selye 1956, 1983), as a stimulus based response (Homes & Rahe, 1967) and a transaction based response (Lazarus 1966, Lazarus & Folkman 1984) have led to the conceptualization of the words "stress" and "coping", which is used in academic research.

The word **Stress** is widely used today to describe any disturbing or disruptive human experience. The individual's perception of stress experience will depend on the demands being made and capability to meet those demands (Bartlett, 1998). Stress levels of individuals, when increased beyond their threshold, resulting in stressful experiences, because there is a mismatch between demands made and capability to meet those demands (Clancy & Mc Vicar 2002).

Workplace plays a vital role in the life of an individual. Poor workplace, that is deficient in essential work conditions, may fail to facilitate achievements of individual and organizational goals which result in situations causing stress. According to Wagner & Hollenbeck (2005), occupational stress is an emotional state, which is unpleasant and arises from the perceived uncertainty that a person can't meet the demands of the job. Work stress can be viewed as any negative, stressful or difficult

situation of hardship that is encountered in the occupational setting (Jackson, Firtko & Edenborough, 2007). Unsafe, unpleasant and demoralising work conditions can ruin the entire system of an organisation (Jain, 2015).

Prior research of the fundamental stress theory has made it clear that onset of disorders or distress is linked to stressful life events including work stress. Information on stress has been documented in scientific literature since 1930s and in nursing literature from late 1950s.

Every workplace has the potential to cause stress, but the work environment of nurses can be more stressful than other health care professionals. There are manifold factors that have been associated with stress specific to the nursing profession. Staff shortage, death and suffering, workload, time pressures, demands of patients and relatives, exposure to infection etc. are the few stressors which make nurses vulnerable to workplace stress. Today workplace stress has become a long standing concern of the health care industry. Workplace stress does not only cause personal damage to individuals but to the organisation as well. Working in an environment where nurses deal with people is taxing. Managing and providing care to patients with a wide range of illnesses, diseases, injuries with an even more enormous range of interventions needed to save or improve the quality of life of the patients is more stressful. Nursing profession also demands a high level of responsibility in the care of patients. Despite the stressful work environment nurses need to provide altruistic care for their patient, which makes the use of coping strategies mandatory to adapt and cope with the workplace stress.

A coping process is when an individual attempts to minimize the negative feelings arising from a negative event (Lowe & Bennett, 2003). Coping is usually of two

types, emotion focused and problem focused. The problem focused coping is external, in which an individual attempts to manage or change the problem causing the stress. Whereas in emotion-focused activities, coping attempts to alleviate emotional distress which may be internally directed (Lambert & Lambert, 2008). Research on nurses has indicated that workplace stress, often results in mental and physical disorders, spoiling occupational relationships, affecting nursing care quality, causes job dissatisfaction and increases turnover.

1.1 THEORETICAL BACKGROUND

CONCEPT OF STRESS AND COPING

Every individual survives by continually adapting to the demands of an ever-changing environment. From the initial use of the term stress, there has been continuing confusion and difference on the current categorization in this area (Levi, 1998). The work of various researchers has led to conceptualization of words **stress** and **coping**. Erkutlu & Chafra (2006) explains stress as a response of an individual to demands (stressors) placed on him and describes this situation as disequilibrium between a person and his surroundings. This situation occurs due to failure to cope successfully with demands. It is a psychobiological response of an individual to psychological or physical needs that affects the wellbeing of a person (Laposa, Alden, & Fullerton, 2003). Stress is defined as a physical or emotional response when an individual senses the imbalance between demands made on him and available resources (Welbourne, Eggerth, Hartley, Andrew, & Sanchez, 2007).

Even though efforts are made over several decades to define the term stress, no suitable definition of stress exists till today. A range of views are presented on stress as a stimulus, a response and as a transaction response.

I. General Adaptation Syndrome (GAS)

A. Stress as a response

Hans Selye (1956), a pioneer and father of stress research has made a huge contribution in the area of stress. He found that the biological pattern of human body is predictable, when an individual adapts to external stressors, it can aid in maintaining and restoring homeostasis of the individual. The hormonal system is used by the body to maintain or restore homeostasis, which is also termed as the fight or flight response. This response of the body against stress is the main focus of the General Adaptation Syndrome (GAS). Selye also discovered that there is a limit to a person's capacity to adapt, even if the body wants to reduce or control stress. When the body is continuously exposed to stressful environment, this additionally leads to compromise of the body's energy level. Based on observations of adaptive process, Selye (1956) developed three stages of stress response in the General Adaptation Model (GAS). This is a widely accepted model that explains the stress phenomenon from a response perspective.

Three Phases of Stress Response

1. Alarm Stage

In this phase, the body reacts to stress and perceives the stressor as a threat or danger. In order to maintain or restore balance, the body soon activates its fight or flight response system, thus releasing adrenaline, noradrenaline and cortisol the "stress" hormones which enables the individual to perform activities otherwise usually not done by him.

2. Resistance Stage

In the second phase of GAS, following the body's response to the stressor; stress levels may totally disappear or be reduced to some extent. After the fight or flight response body's defences become weaker, thus requiring energy to repair damaged muscle tissue and to control the production of the stress hormones. In this phase of stress the body still remains on guard, especially when stressors persist during which body response is continuously required. However, this response will not be as strong as in the initial phase.

3. Exhaustion Stage

During this phase, there is constant exposure to a stressor for a long period. The body loses its ability to fight against stressors. The harmful impact may be seen as adaptive energy is being drained out. The exhaustion stage acts as a channel to stress overload or burnout, leading to health issues if the stress is not resolved immediately.

B. Stress as a stimulus

The interest was generated among psychologists to apply the concept of stress to experiences of psychological origins in 1960s. The researchers working in the area of stress (Masuda & Holmes, 1967; Holmes & Rahe, 1967) were interested to know what happens when a person faces changes in life and proposed a theory of stress based on stimulus.

It can be noted that this theory explains life changes as a stressor to which individual responds. In this model stress is independent unlike in the response –based theory. The essential proposition is that susceptibility to illness is increased because, over a relatively short period of time the individual has to face too many life stressors.

C. Stress as a Transaction

Lazarus, a social-personality psychologist, was interested in explaining the dynamics of troublesome experiences. A transactional theory of stress and coping (TTSC) was developed and tested by him (Lazarus, 1966; Lazarus & Folkman, 1984). Lazarus (1966) argued that stress is a result of transaction between a person and his environment and per se does not exist in the event. Cognitive appraisal occurs in response to stress and the individual person considers two major factors namely, the tendency of stress which becomes threatening to the individual, and the availability of resources essential to minimize or eradicate the stress experience. In emergency situations primary and secondary appraisals may not occur although it is believed that primary and secondary appraisals occur as result of an encounter with a stressor.

The definition by Lazarus (1999) describes coping in terms of a process that embraces the "constantly changing cognitive and behavioural efforts of a person makes to manage specific external or internal demands that are appraised as taxing or exceeding the resources of the person". He described two types of coping known as problem focused and emotion focused. In the problem focused type of coping, the focus of problem is on managing the encounter and in emotion focused, the focus is on regulating the emotion. With this concept of coping, researchers have been constantly trying to identify and classify ways of coping strategies used in different settings, thus, intensifying the original work of Lazarus and Folkman on stress and coping.

II. Theories of workplace stress

There are many key existing theories in scientific literature that have been useful to know the causal factors and mechanisms that underlie workplace stress. These

theories have been extensively researched and used to direct approaches to workplace stress interventions to prevent or reduce stress. The three theories related to workplace stress are presented below:

a. Person-Environment Fit theory (P-E Fit theory)

P-E Fit theory argues that individuals can experience stress when there is a misfit between the individuals' skills/resources/abilities and the work demands which cannot be fulfilled resulting in workplace stress.

The P-E Fit theory makes it clear that the interaction between the individuals and the environment in determining their response to work situations and events places the importance of the individuals' perception of the environment; and the interaction between them. Reasonably, this lack of fit can take three forms (Edwards, Caplan, & van Harrison, 1998): (a) Person's ability is lower than the demands of the work environment (b) Failure to meet the person's needs frequently by the work environment; and (c) when a mixture of the both situations exists (i.e., where person's needs are not being met while demands are placed on him thereby over-stretching his abilities).

b. Job Demand-Control (Support) Theory

The Job Demand Control (JDC) model has been prevalent in the field of workplace stress research for more than two decades. The JDC model postulates that job control and psychological job demands are two dimensions of work environment which leads to job strain. This model explains the psychological stress a person undergoes to accomplish the workload and decision latitude, where a person develops potential control over the task he has to perform. Traditionally, psychological demands included workload, in the form of time pressure and role conflict. However, in recent

times, contemporary construct of psychological demand is also defined by cognitive and emotional demands and interpersonal conflict dimensions.

Based on these theoretical concepts, the present study conceptualises that workplace stress among nurses occurs as a result of stressful situations faced by them in health care settings. The stress experience of nurses is influenced by the perception of the situation as stressful or not. The coping strategies are efforts made by the individual to reduce, eliminate or minimize the effects of stress on them. The study focuses only on those coping strategies which are being used at the workplace to manage/deal with particular work situations.

1.2 PURPOSE OF THE STUDY

The present study aims to contribute to research in the area of workplace stress and coping by addressing the need for the development of a new measurement scales. The primary purpose of the study was to identify and understand emerging workplace stressors and coping responses of nurses. Hence the study attempted to explore stressful situations among nurses, and thus identify the dimensions of workplace stress and coping. Secondly the study was intended to design, valid and reliable scales to measure workplace stress and coping. Nurses play a vital role in health care delivery system and working in this area of stress will help an organisation to better understand workplace stress and coping in order to design stress-free work settings and plan programs on stress management and adaptive coping.

1.3 RESEARCH PROBLEM

Emerging stressful situations have not been captured with existing scales and there is no coping scale to measure coping strategies used by nurses at the workplace.

This study attempts to identify newer dimensions of nursing workplace stress and coping strategies in the nursing context and to develop valid and reliable scales. Also, there is a need to establish a relationship between levels of stress experienced and coping strategies used by the nurses.

Specifically, the study seeks to answer following research questions

- What are the dimensions of the nursing workplace stress?
- How to measure the workplace stress of nurses?
- How do nurses cope up with workplace stress?
- What is the relationship between the workplace stress and coping strategies?

Based on the research questions, broad objectives have been framed to understand the workplace stress and coping. The study also attempts to contribute to the body of knowledge by developing and testing a process model of workplace stress and coping.

The objectives of the study are:-

- to identify the dimensions of workplace stress.
- to develop a scale to measure workplace stress.
- to identify coping strategies used by nurses at workplace.
- to develop a scale to measure workplace coping.
- to find the relationship between workplace stress and coping strategies used by nurses.
- to identify differences in stress and coping between nurses, based on their demographics (age, gender, professional qualification, marital status, total years of experience, type of hospital)
- to develop and test the process model of workplace stress and coping.

1.4 SIGNIFICANCE OF THE STUDY

Nursing practice is dynamic and is highly influenced by medical and technological developments. However the core of nursing practice "care" has remained the same. Technological developments have refined the quality of care provided but have made the administration of that care far more complex. Aggression is widely reported towards nurses at the workplace by patients and their relatives and even by other team members. Nursing involves tasks and interpersonal relationships which are often stressful.

In recent years work environment is given importance and organisations are keen to know how stress and burnout affect nurses' work, health and life. Efforts had been made to identify the stressful situations affecting nurses and to recognise the early signs of stress and burnout so that adverse health effects and nurse turnover can be avoided. The World Health Organisation (WHO) has estimated nursing shortage in India in 2020.

Review of literature revealed extensive findings of research being carried out on nurses in the area of workplace stress. Nursing is acknowledged to be stressful work, but further investigation is essential to deepen understanding of the nature of that problem and so as to better manage it. The Nursing Stress Scale (NSS) has been developed by Gray-Toft & Anderson (1981). The NSS is widely used in the study of work–related stress among nurses and is well known in the world (French, Lenton, Walters & Eyles, 2000). The NSS was further expanded by French et al., (2000) who identified nine sub-scales of workplace stressors that might have an impact on nurses. The NSS was reported to be valid and reliable in Indian settings by restructuring the items and renaming the scale dimensions and it was named as the Modified Nursing

Stress Scale (MNNS) (Pathak, Chakraborty, and Mukhopadhyay, 2013)**.** The work environment of nurses is dynamic and constantly changing. The stress measurement scale needs to reflect the changing nature of the profession and the workplace and the stresses that come with those changes (French et al, 2000). The scales used to measure coping among nurses are not specific to the nursing even though they are widely used and accepted in general coping research. An attempt is made in this research to develop measurement scales in order to measure workplace stress and coping, taking into consideration the emerging stressors and coping strategies used at the workplace. This study intends to extend research in scale development in order to devise valid and reliable measurement scales and to develop a process model of workplace stress and coping.

1.5 SCOPE OF THE STUDY

This study was conducted in Government and private health care settings in Goa, with registered nurses as the respondents. The overall goal of the study was to identify the dimensions of workplace stress and develop a scale to measure workplace stress among nurses. This study also identified coping strategies used by nurses to cope with stressful workplace situations, using a specific nursing workplace coping scale developed and tested by the researcher. The relationship between workplace stress and coping strategies is tested using different statistical tools including factor analysis, structural equation modelling, etc. The current study will be useful to a wide range of nurses, nurse administrators, human resource managers, policy makers and hospital authorities in understanding the workplace situations causing stress and the coping strategies used by nurses. This study contributes to expanding the current knowledge in the area of stress management, especially in the health care system. The findings of

the study can also be used to outline strategies to overcome workplace stress and create a healthy work environment for the benefit of organizations and public at large.

1.6 OVERVIEW OF THE THESIS

The thesis is organized into seven chapters. A brief outline of each of them is given below:

Chapter I: The Introduction

This chapter includes the introduction, statement of the problem, significance of the study, objectives, scope and significance of the study.

Chapter II: Review of Literature

This chapter focuses on the review of relevant literature in this area carried out by various researchers from India and in the Global context.

Chapter III: Research Methodology

This chapter provides a detailed discussion of the research methodology adopted by the researcher for the effective conduct of the study. It contains information on the research design, data collection and analysis techniques.

Chapter IV: Scale Development

This chapter deals with the development of The Nursing Workplace Stress Scale (NWSS) and the Nursing Workplace Stress Coping Scale (NWSCS).

Chapter V: Formulation of Hypotheses

This chapter deals with the formulation of hypotheses to test the relationships between the variables identified.

Chapter VI: Analysis and Discussion

This chapter deals with the data analysis and discussion of the study findings.

Chapter VII: Conclusions

This chapter covers the theoretical contributions, implications of the study, and areas of future research, limitations and conclusions of the study.

CHAPTER II

2. REVIEW OF LITERATURE

Literature was reviewed to understand concepts of stress and coping and to identify significant findings derived by other researchers who worked in the area of workplace stress and coping. Another objective was to expand on previous studies conducted in India and around the world on nursing workplace stress and coping strategies. Literature based on conceptual understanding and empirical studies, etc., were referred to. Sources of information include books, journals, dissertations, thesis and online databases.

Best & Kahn (1992), states that review of literature helps the researcher in many ways. It assists to assess what is already known, find out what is still unknown and untested, justify the need for replication, throw some light in the feasibility of the study and problems that may be encountered in future research. It also helps to uncover promising methodological tools. which will shed light on ways to improve the effectiveness of data collection and obtain useful information on how to increase the effectiveness of data analysis.

In this study the terms workplace stress, job stress, work-related stress, occupational stress, and organizational stress are used interchangeably because jobs, work, occupations and organizations are indistinguishable concepts. The related literature is reviewed and organized under the following headings.

2.1 Stress and coping studies around the world

2.2 Stress and coping studies in India

2.3 Instruments used to measure stress

2.1 STRESS AND COPING STUDIES AROUND THE WORLD

Today nurses and nursing practice is facing various challenges in their work settings due to changing work environment. There are emerging stressors, which nurses need to face in their work settings. The following section reviews the various studies related to stress and coping amongst nurses and across the different types of units/wards.

The study conducted by Tofta & Anderson (1981), reported inadequate preparation to meet emotional care of patients and their families, work load, and death and dying as main stressor for nurses. The work in this area was continued by Tofta & Anderson (1986), who further reported that physical characteristics of the unit and the staffing policies result in conflict and feelings of unfriendliness from other hospital personnel. When hospital administrators and physicians do not support patient being admitted can also result in stress experience

Janman, Payneand & Rick (1987) stated that nurses report higher level of stress than other employed people. The study conducted on hospice nurses revealed that death and dying situations and feelings of not having enough preparation to deal with emotional needs of patient's families' results in workplace stress. Whereas workload and nursing work environment was reported as a cause of stress for nurses caring for the mentally handicapped (Power & Sharp, 1988). The study of Cohen-Mansfield (1989) found that negative patient events are tapered by nurses focusing on positive patients events in order to avoid stress experience.

In a study conducted by Foxall, Standley & Captain (1990), it was found that different stressors are experienced by nurses working in intensive care units and medical surgical wards. Workload or staffing problems were common to medical and surgical nurses, whereas death and dying situations were reported to be most stressful to ICU and hospice nurses.

Klonoff & Ewers (1990) found many factors responsible for the increase in levels of stress among nurses. There are general concerns about providing care to patients with HIV and the social or personal implications of caring for such patients. Crisis situations also increased stress levels. Workplace stressors may depend on the place or speciality units where nurses work. Death and dying situations are commonly experienced by nurses working in ICUs and caring for the terminally ill patients. "Work overload" or "lack of staff stressor" was found to be faced more often by the medical surgical nurses (Foxall, Zimmerman, Standley & Bene Captain, 1990).

Another study conducted by Emery and Emery (1993) examined the perceived stressors among paediatric oncology nurses. Data was collected using State Trait Anxiety Inventory and researcher developed Paediatric Oncology Nurse Stressor Questionnaire (PONSQ). It was found that major source of stress for nurses was death and dying concerns and caring and working with families was the greatest source of satisfaction for nurses. In this study more than 68% of nurses were found to be severely to extremely stressful. This study also established that working with children is stressful, but at the same time providing care to these patients and their families is very satisfying for nurses.

Another study was conducted among Paediatric Oncology Nurses by Bond & Carlson (1994) to measure work-related stressors using Stressor Scale for Paediatric Oncology

Nurses (SSPON). Two hundred and five nurses were randomly selected caring for out of which 95 were qualified to be included in the study. The findings revealed that cognitively appraised experiences or events linked to the work of nurses as highly stressful. The findings made known that paediatric oncology nursing is a stressful speciality, in particular to those nurses providing care to children suffering and dying.

Elliott (1996) found that higher burnout scores were significantly associated with the emotion-focused coping. Some coping efforts itself could be construed as symptoms of burnout such as confronting a supervisor or taking time off from work.

In order to capture the emerging stressors among nurses in their workplace French et al. (2000) further expanded the widely used Nursing Stress Scale (NSS) and identified additional sub-scales of workplace stressors which may cause stress among nurses. Even though emerging stressors were identified by the researchers, the stressors identified by NSS still continue to be of importance to nursing workplaces. Nurses come in contact with patient's families more often than any other health team members. It is found that dealing with the patients' families was a frequently reported workplace stressor for nurses. (Bratt, Broome, Kelber & Lostocco 2000). In another study by Edwards, Burnard, Coyle, Fothergill & Hannigan (2000), identified some stressors specific to the community mental health nurses such as increase in workload and administration, problem in managing time, issues related to safety and inappropriate referrals. It was also found that role conflict and role ambiguity led to stress. They felt lack of safety and supervision in community which resulted in stress experience.

Some researchers attempted to find newer workplace stressors among nurses. Seth, Gueritault-Chalvin & Demi (2000) found that nurses experience eight specific sub clusters of stressors such as death, personnel, institutions, biohazards, informing patients, challenging patients and families and treatment dilemmas. It was found thet nurses experiencing stress from their workplace use avoidance, planful problem solving, and wishful thinking as coping strategies, whereas stress originating from patient care was dealt with by using positive appraisal and acceptance coping strategies.

Coffey & Coleman (2001) reported that the stress experience can be reduced if required support from managers and colleagues is readily available during stress phase and can be one of the important factors to prevent adverse effects of stress. It was also found that palliative behaviour such as use of alcohol is used when individual experiences high levels of stress. The study of Stordeur, D'Hoore & Vandenberghe (2001) identified that the occurrence of stress among nurses was due to physical and social environment and role ambiguity.

McVicar (2003) reviewed literature on workplace stress among nurses and found that workload; emotional costs of caring and professional conflicts are the most reported stressors among nurses. He concluded that there is lack of the understanding of relationship between practice area of nurses and sources of stress.

Abu Al Rub (2004), concluded based on his study findings that the level of job stress can be reduced when perceived social support from coworkers is high. The intensity and frequency of events that results in feelings of perceived job stress can further cause or lead to depression among nurses and may lower their job performance (Motowidlo, Packard, & Manning, 2007).

Similarly, Hall (2007) found that there are less negative and more positive outcomes including less occupational stress when nurses perceived greater levels of supervisor's support. Shaha & Rabenschlag (2007) stated that when addressing the nursing stressful situations, team actions play an important role. Mojoyinola (2008) found that workplace stress has a significant impact on physical and mental health of nurses. The impact of stress can be observed in terms of difference in personal and work behaviours among highly stressed and less stressed nurses. Rodrigues & Chaves (2008) reported emergency situations, death of patient, relationship issues with peers as the main stressors experienced by the oncology nurses and a positive appraisal coping strategy used to deal with these stressors.

Rosnah & Azmi (2008) conducted a study to determine the occupational stress and personality characteristics of nurses. The study samples consisted of 158 nurses working in the maternal and child health services in a government hospital. The findings revealed low prevalence rate of occupational stress. No significant association was found between the occupational stress and personality type, however the study confirmed that there is a significant association between perceived stress and presence of stress.

Lambert & Lambert (2008), reviewed cross-cultural studies conducted in various parts of world to find the causes of stress among nurses and to know whether they cope up in similar ways. The study revealed that many stressors and the way nurses cope are similar in nature and stressors originating from relationship among health professional and patients' unrelieved suffering and their sadness were the most mentioned work-related stressors. Positive reappraisal, planful problem-solving, self-

control, and seeking social support were found to be the most preferred coping strategies among nurses.

Wu, Chi, Chen, Lie Wang & Jin (2009), explored factors associated with occupational stress among female nurses in China. The sample consisted of 2613 nurses from 20 different hospitals. The occupational stress inventory revised (OSI-R) was used to collect data. The study revealed that Chinese nurses are at a higher risk of developing occupational stress. It is also found that working situations, demographic variables and personal resources were associated with occupational stress. Role boundary and role insufficiency were the strongest indicators of occupational stress. The nurse–patient relationship was the most important factor associated with occupational stress in working situations.

Golubic, Milosevic, Knezevic & Mustajbegovic (2009), studied workplace stressors among 2364 staff nurses and compared occupational stress among two groups of nurses with different educational background to predict their work ability. Data was collected using Occupational Stress Assessment Questionnaire (OSAQ) developed by researcher and Work Ability Index Questionnaire. The difference in perception among the two educational groups was found in items related to shift work and hazards at the workplace. It was also found that lack of co-staff was very stressful and affected the work ability of nurses.

Shirey (2010), studied the perception of nurse managers related to work stress and found that the performance expectation, people and resources, workload tasks affected the perception of work stress. It was also found that more effective strategies such as problem focused coping was used by more experienced nurse managers,

compared to those with less experience. Experienced managers were found to have less adverse effects on their health.

Laal & Aliramaie (2010), conducted a study to find out how nurses cope up with the stressful situations and analysed the relationship with nurses' health outcomes. The coping strategies were grouped as positive and negative coping based on the Adolescent Coping Orientation for Problem Experiences questionnaire. 100 nurses were selected from two different health settings. It was found that most of nurses had high negative response to stress experience. Significant relation was found between coping and age, tenure and place of work.

McCloskey & Taggart (2010) explored the experience of stress from perspective of nurses providing palliative care for young adults, using a qualitative approach. Support and roles, maintaining control, relationships and demands were four key themes identified. Some of the stressors were unique to specific roles whereas three stressors were common to areas of practice. Most of the stressors identified were found to be within the nurse's role.

Qiao, Li & Hu (2011), examined stress, coping and psychological well-being considering transition as a stressful experience for new nurses. Nursing Stress Scale and the Brief Cope Questionnaire were used. Death and dying, inadequate preparation and workload were the most common stressors faced by nurses. Planning, acceptance, and positive reframing were the most frequently used coping strategies. Significant positive correlation was found between few workplace stressors and coping strategies. It also revealed that stress experience was positively impacted by education. The study highlighted need to provide effective orientation and mentoring programs for novice nurses.

Gholamzadeh, Sharif & Rad (2011), found that stress among nurses was caused by the problems related to physical environment, dealing with patients or their relatives, work load and handling their anger, being exposed to health and safety hazards, absence of the doctor in the emergency room, lack of support by nursing administrators and lack of equipment. Main coping strategies used by nurses to cope with stress was positive reappraisal and self-control. Accepting the responsibility was the least used coping strategy. An emotion focused coping was used by the large proportion of nurses while Problem-focused approaches were generally less used.

Beh (2012) investigated job stress and coping mechanism among nurses working in public health services. The main cause of job stress was the job itself, i.e., heavy workload, poor working environment and repetitive work. The problems among nurses were identified as unfair matron/superior, peer conflicts and lack of recognition. Social support was found to be good buffer to prevent negative consequences of work stress. Different types of coping mechanisms were used to cope with the stressors such as seeking support and building relationship with colleagues and superiors.

Kath, Stichler & Ehrhart (2012), reported high level of stress among nurse managers which was found to decrease with age. The most effective buffer for stress experience was autonomy, social support and predictability. In another study by Schreuder & Roelen (2012), revealed that nurses experiencing a high level of stress had no adverse effects on their health as long as nurses have good coping abilities. The different coping strategies were associated with health and work environment. Active problem-solving coping was linked with health and work environment. Whereas passive

coping such as avoiding problems or waiting to see outcome of the situation was associated with poor general and mental health.

Vijay & Vazirani (2012), found three major stressors that affect nurses working in private and public hospitals. Low pay, behaviors of the patients and their families and interpersonal relation were resulted in workplace stress for nurses in private hospitals. Number of patient being taken care of everyday, working hours and poor quality of infrastructure were major stressors in public hospitals.

Safaeian & Esmaeilinasab (2014) compared spiritual intelligence, job stress and coping styles of 232 nurses and doctors coping with critical stress conditions using King Spiritual Intelligence Questionnaire and Hospital Occupational Stress Questionnaire. The findings revealed significant difference in spiritual intelligence and job stress among nurses and doctors. Nurses had higher spiritual intelligence and highest job stress than doctors. Problem focused coping strategy was found to be used more by the nurses than doctors and avoidance coping was frequently used by the doctors.

Arslan (2015) conducted a study to determine stress level of 49 nurses working in emergency care services. The nature of job and organisational factors such as work load, information load and time limitation roles were found to be the main causes of stress among emergency care nurses.

Zyga, Mitrousi, Alikari, Sachlas, Stathoulis, Fradelos, Panoutsopoulos & Maria (2016), investigated stress coping strategies among nurses using Ways of Coping Questionnaire (WCQ). The impact of gender, educational qualification, position held, area of working, type of shift duties was found to affect ways of coping. All types of

coping strategies were found to be used frequently by nurses except avoidance coping strategy. The study revealed that nurses with more years of experience make use of "avoidance/escape" coping strategies, which could be sign of high burnout among senior nursing staff.

Sheta, Elwan & Niazy (2016), examined the intensive care stressors using risk assessment matrix in Intensive Care Units (ICU). The highest risk was found in workload and nurse patient ratio followed by dealing with patients sufferings. It was also reported that imbalance between work and home responsibilities was a stressor. Married female nurses with less than 35 years of age showed higher stress levels and nurses with lesser experience perceived higher workload than more experienced nurses. The nurses working in ICU's showed mal-adaptive coping as the preferred choice of coping strategies. The study concluded that the workplace stress is precipitated due to the factors present within the work place situations.

2.2 STRESS AND COPING STUDIES IN INDIA

Very few studies have been documented in India regarding the workplace stress and coping strategies used by nurses. Stress and coping has been extensively researched internationally; however the findings may not be very relevant to India settings. Owing to the fact such as the standards, services offered at the international hospital settings and the provision of health services are different to those in India, it might not be appropriate to use the results of previous international studies to explain stress and coping among Indian nurses. The following studies are reviewed from Indian context.

Gupta & Adhikari (2008), measured role stress among 89 nurses working in a civil hospital in West Bengal, India. Data was collected using Organizational Role Stress (ORS). Inter-role distance, role expectation conflict and role overload were found to be the highest factors resulting in stress experience among nurses. The respondents in the study reported that they were either highly stressed or moderately stressed and the impact of stress was seen on their psychological and physiological functioning.

Bhatia, Kishore, Anand & Jiloha (2010), conducted a cross- sectional study among 87 nurses working in two of the tertiary care teaching hospitals of Central Delhi. Occupational Stress Questionnaire was pre-tested and used for data collection which was modified to suit Indian settings and population. It was found that majority (87.4%) of nurses reported that their job as stressful. Severe or extreme job stress was reported by 32.2% nurses. The most important source of stress was time pressure and the least was discrimination. Most of nurses resorted to positive coping strategies. Talking to people was reported as the most effective coping strategy at the workplace. No negative coping strategies such as smoking or drinking were reported by the nurses in handling stress. No significant difference was found in job stress level among married and unmarried nurses but married nurses showed a tendency towards being more stressed than those who were unmarried. The workplace stress resulted in inability of nurses to efficiently handle stressful events in their personal lives.

Sudhaker & Gomes (2010) conducted a study among 60 nurses working in a multispecialty hospital in Mangalore, using convenient sampling technique. The objective of the study was to determine the occupational stress and coping strategies used by nurses to overcome workplace stress. The tools used were Job Stress Index and Coping Checklist. Different coping strategies were used by the nurses such as

discussion with spouse, problem solving and engaging themselves in hobbies like reading, music etc. The results showed a strong negative correlation between job stress and use of coping strategies by nurses.

Eswari & Saravanan (2011), investigated stress level among women nurses working in various nursing homes in Coimbatore city, Tamil Nadu. The study findings revealed that 52% of respondents had moderate stress in the area of conflict with supervisor and torture by higher authorities. It was found that 48.2% had moderate stress related to lack of recognition, insufficient equipment and work overload. Moderate stress was reported by 40.6% of respondents towards fear of making mistakes and unpredictable scheduling. The study also found other areas of stress for women nurses. Sixteen problems were identified among which "conflict with team members" ranked first followed by others such as "insufficient training shift duties", "problems and lack of security at workplace". The study concluded that insufficient equipment and frequent change of work pattern do not affect women nurses to a great deal.

Devi, Kanjana, Kavitha & Devi (2012), conducted a study among nurses in various states of India such as Karnataka, Kerala, Tamil Nadu and Maharashtra. Multi-centric purposive technique was used with sample size of 100 nurses. The questionnaire for data collection consisted of self explanatory questions related to workplace aspects and interaction with relatives causing stress.

Vijay & Vazirani (2012) conducted a comparative study to assess stress and stress busters among nurses using a questionnaire developed by the researcher. It was found that low salary, job security, interpersonal skills and improper behaviour of relatives and friends were the main stressors for the nurses working in private hospitals. The

government hospital nurses encountered stressors such as number of working hours, frequent change in shifts; poor quality of infrastructure, the number of patient handled everyday and dealing with patients with contagious disease. Spending time with the family was found to be main stress buster for nurses.

Roopalekha- Jathanna, Latha & Prabhu (2012), examined stress and coping abilities of 329 nurses working in a super-speciality hospital in Kerala, India. Descriptive survey design was used in this study. The data was collected using Expanded Nursing Stress Scale (ENSS) and Brief Cope (Carver 1997). The most frequently stressful areas rated by respondents were 'patients and their family' and 'workload', whereas 'inadequate emotional preparation' and 'discrimination' were rated as least stressful situations. Further analysis revealed that nurses working in operation theatres and emergency units experienced high level of stress in the area of conflicts with other health care professionals. Nurses working in ICU's experience high level of stress in area of feeling inadequately prepared to help with the emotional needs of a patient or patient's family. The results indicate the use of adaptive positive appraisal strategies being frequently among nurses.

Katyal (2013), investigated burnout among 50 nurses working in government and 50 nurses from private hospitals in Chandigarh and Punjab, India. Four hospitals were randomly selected using lottery method out of which two were government and two were private hospitals. Maslach Burnout Inventory-Human Services Survey (MBI-HSS) was used to assess burnout among nurses. It was found that majority (52%) of nurses working in government hospitals experienced high level of emotional exhaustion, 44% of them experience moderate level of depersonalization and 62% of them experience low level of personal accomplishment. The study findings revealed

that nurses working in government hospitals experienced a higher level of burnout than the nurses working in the private hospitals. The researcher had attributed higher level of burnout among nurses in government hospitals to possible factors such as heavy workload, poor work environment, frequent night shifts and poor support from the administration and superiors.

Jose & Bhat (2013) carried out a study to determined level of stress and coping among 104 nurses in Udupi and Mangalore district, Karnataka. The setting of the study was selected Medical colleges and government hospitals. Nursing Stress Scale (NSS) and Ways of Coping Questionnaire was used to measure stress and coping respectively. The results revealed that the majority of respondents experienced low stress followed by moderate and high stress. Sub areas of stress were death and dying and workload, whereas lack of staff support was found to be least stressful. Positive reappraisal followed by seeking social support was found to be the most frequently used coping strategy and accepting responsibility was found the least used. It was found that nurses with diploma qualification, married and working in intensive care units experienced higher stress.

Joy, Ravindranath & Thomas (2013), explored the relationship between demographics and stress coping skill among 499 nurses using coping strategies inventory. Findings revealed that stress coping skills do not differ on basis of gender, age and marital status. It was found that the use of stress coping skills was higher among government nurses having experience of more than 15 years.

Kakade, Kakade, and Devi (2014), examined the factors responsible for workplace stress and the coping abilities of nurses caring for the patients in intensive care units. A descriptive exploratory survey design was used with a sample size of 100 using

non-probability purposive sampling method. The sample consisted of nurses working in two hospitals under a private trust in Maharashtra, India. The tools used for data collection were Stress rating scale and coping questionnaire. The study showed that majority (59 %) had good coping abilities and 41 % of nurses had average coping abilities. There was no impact of demographic variables of nurses on their stress or coping abilities. The study revealed that there was no significant association between the level of stress and coping abilities.

A study conducted by Divinakumar, Pookala & Das (2014), investigated perceived stress among 298 female nurses working in 30 different government hospitals in central India. Data was collected using Perceived Stress Scale (PSS-10). It was found that 48.32% of the sample scored above 17 score using PSS-10 which indicated a high stress level. No significant difference was found between PSS-10 score and marital status and professional qualification. But significant difference was found between PSS-10 score and day and night duty nurses at the time of study. It can be concluded from this study that nurses were highly stressed and shift duties play a role in the experience of stress.

Pawar (2014) examined the level of stress among nurses working in the intensive care units of hospitals in Navi -Mumbai, Maharashtra, India. A descriptive survey design was adopted for the study in order to identify level of stress and its association to selected demographics. The stress level was identified using a modified version of Expanded Nursing Stress Scale. The results of the study showed that 42% of nurses were severely stressed, 34% had moderate stress, 14% had mild stress and 10% had very severe stress. Very severe stress level was the highest (30%) in the area of patient and families was identified followed by problems related to supervisors (22%).

A significant relationship was found between the level of stress and demographic variables such as age, years of experience and educational qualification.

Mohite, Shinde & Gulavani (2014), assessed job stress among nurses working at a tertiary care hospital in Karad city, Maharashtra. The hundred nurses were selected for the study using convenient sampling technique. The Expanded Nurses Stress Scale (ENSS), an expanded version of the Nursing Stress Scale (NSS) which is a widely used measurement scale in nursing research across the globe was used for the study. It was found that age, sex, years of experience and professional education had no association to stress. The study findings revealed the frequent cause of stress among nurses was workload situations and supervisors. The study concluded that measures need to be taken to decrease work load and resolve conflict among nurse supervisors.

Rawal & Pardeshi (2014), examined stress among 850 nurses working in selected public hospitals and private hospitals in Pune, Maharashtra. Findings revealed that interpersonal relationships issues such as conflicts with patients, doctors, and colleagues frequently leads to undesirable personal stress in the working environment.

Saini, Kaur & Das (2014), conducted a study among 73 nurses working in medical surgical units (ICU) at Nehru Hospital, Post-Graduate Institute of Medical Education and Research (PGIMER), Chandigarh. The data was collected using modified Work Stress Symptom Scale (WSSS) and Coping Checklist (CCL). The findings revealed that 51% of the nurses experienced high stress. The factors responsible for stress were lack of goal clarity, role ambiguity, role conflict, poor interpersonal relations, workload, improper performance appraisal, lack of job autonomy and job challenge. The stress was low among nurses who had good interpersonal relations and clarity of

the goals on the job. The problem solving coping strategy was most frequently used by the nurses.

Shastri (2014) identified causes of professional stress and its impact on mental health of the nurses. The study revealed that inadequate information, lack of support from peers and superiors, harassment results in professional stress at the workplace. Stress experience is further increased due to communication gap, lack of resources and work overload. The impact of psychological stress on mental health fitness of the nurses was established.

Doraiswamy & Deshmukh (2015) examined the relationship between meaningful work and role stress among 141 nurses working different states of India. Significant correlation was found between meaningful work and role stress. The result indicated a need to design jobs which enhance autonomy, support and flexibility for the benefit of the organisation and the nurses.

Fernandes & Nirmala (2015) investigated work stress and coping among 51 nurses working in different hospitals of Goa, India using a qualitative approach. The main aim was to identify the situations that contribute to work stress and coping strategies used. Majority of the nurses reported their work as stressful. The work stress was related to supplies/equipments, staffing and workload, peer problems and relational problems among medical and support staff. “Staff shortage” was main stressor for majority of nurses. The coping strategies used were problem avoidance, mental disengagement, problem solving/planning, religious coping and social support.

Saini, Kaur & Das (2016), conducted study among 285 nurses working in general and Intensive Care Units (ICU) at Post Graduate Institute of Medical Sciences,

Chandigarh, India. The data was collected using modified Work Stress Symptom Scale (WSSS) and Coping Checklist (CCL). It was found that nurses working in the ICU experience moderate level of stress while nurses from general wards had higher level of stress. Workload, role ambiguity and less social support amounted for stress experience. The findings revealed that the younger nurses had higher level of stress and female nurses had more stress than males. Higher stress levels were experienced by the married nurses. Coping strategies used were such as problem solving and religious coping are used.

Shiji, Sequera & Mathew (2016), investigated stress and coping among married staff nurses using purposive sampling technique. The tools used for data collected were developed by the researcher. The stress score was highest in the professional area and overall stress score was moderate. The coping strategies used by the nurses included planful problem solving, confrontive coping, self-control, and seeking social support. Other ways included escape/avoidance and accepting responsibility, confrontive coping. The least coping strategy used by nurses was escape avoidance. Study findings revealed significant negative relationship between stress and coping strategies. No association was found between perceived stress level, coping strategies and with the demographics of the nurses.

REVIEW OF THE INSTRUMENTS USED TO MEASURE STRESS AND COPING

This section reviews instruments mentioned in the current literature which were used by researchers for measuring stress and coping, particularly in nursing. The few commonly used scales are briefly described below:

2.3 INSTRUMENTS USED TO MEASURE STRESS

a) Nursing Stress Scale (NSS)

The Nursing Stress Scale (NSS) has been developed by Gray-Toft & Anderson (1981). It consists of 34 items that describe conditions that have been identified as causing stress for nurses in the performance of their tasks. It consist of Likert type responses; first for frequency of stressors which ranges from 0 (Never) to 2 (Often) and second for severity of stressors which ranges from 0 “Not at all” to 4 “Extremely stressful” according to their perception. Higher scores on the NSS indicate more frequently experienced stress. The NSS has seven subscales: “Death and Dying”, “Conflict with Physicians”, “Lack of Support”, “Workload” “Uncertainty Concerning Treatment” “Conflict with other nurses”, and “Inadequate Preparation”. NSS has seven factors in three different work environments. The first environment is physical which includes work overload. The second environment is psychological which includes death, inadequate preparation, pain and suffering, lack of support, mistakes. The third environment is social which includes uncertainty related to conflicts with doctors and other nurses and lack of knowledge and conflict with supervisor.

Gray-Toft & Anderson (1981) surveyed stress among nurses working in acute care nursing units. They reported an internal consistency coefficients ranging from 0.79 to 0.89. In other nursing studies, Cronbach alpha was as follows: 0.89-0.92 (AbuAlRub, 2006), 0.92 (Hamaideh et al, 2008), , 0.89 (Emilia & Hassim, 2007) and 0.89 for the whole scale and 0.64-0.77 for the subscales (Healy & McKay, 2000).

b) Expanded Nursing Stress Scale (ENSS)

French et al. (2000) further expanded the widely used Nursing Stress Scale (NSS) and identified additional sub-scales of workplace stressors which may cause stress among nurses. Each item has five likert types of responses from "Never Stressful (1)" to "Extremely Stressful (4)" and "Does not apply (0)". Higher the score of the respondent higher is the stress. ENSS is simple to understand and takes around 20 minutes to answer. It has a good validity as well as test retest reliability. The overall reliability coefficient is reported as 0.89 for overall scale and from 0.64 to 0.77 for each subscale of the NSS.

c) Modified Nursing Stress Scale (MNSS)

Pathak, Chakraborty & Mukhopadhyay (2013), conducted factorial analysis NSS on Indian nursing population in order to establish validity of NSS in India. No changes or addition was made in the scale items. The items were relocated on different sub-scales, after factor analysis accordingly the name of sub-scales was changed. This was first time that validity and reliability was established in the Indian population. The scale was structurally modified and it was named as Modified Nursing Stress Scale (MNSS).

d) Perceived Stress Scale (PSS)

The Perceived Stress Scale developed was by Sheldon Cohen (1984). PSS is an instrument used for measuring the perception of stress. PSS is designed to measure situations in one's life those are appraised as stressful. The items in the scale assess intensity of unpredictable, uncontrollable, and overloaded individuals face in their lives. The respondent's current level of stress experience is assessed through a number of direct queries. The items in the scale are general in nature and not specific

to any population or sub-groups. The questions in the PSS explore feelings and thoughts recently experienced. This scale is used in some nursing studies but it is not specific to nursing.

e) Occupational stress indicator (OSI)

Another instrument to measure occupational stress is called Occupational stress indicator (OSI) that was prepared by Cooper et al. in 1988. The OSI is commonly used in a wide range of settings, including healthcare, to measure occupational stress. It is accepted as a valid and reliable scale and has been used extensively as a research tool in surveys. The scale has a biographical questionnaire and six subscales that used six point Likert rating for measurement.

2. 4 INSTRUMENTS USED TO MEASURE COPING

1) Ways of Coping Checklist (WCC)

Folkman and Lazarus (1980) have prepared a 68-item self-report inventory to analyse different ways of coping used in the work place. It was designed for the respondents to answer "yes"/"no" to items designed to measure how respondents use problem-solving to regulate emotions to cope with stressful situations.

2) Ways of Coping Questionnaire (WCQ)

Folkman and other researchers Folkman and Lazarus (1985, 1988) have further worked in the area of coping by designing a WCQ with 66-items composed of eight subscales, to measure different ways of coping. The specific dimensions captured by the questionnaire include "Confrontation Coping", "Distancing", "Self-controlling", "Seeking Social Support", "Accepting Responsibility", "Escape-avoidance", "Planful Problem-Solving" and "Positive Reappraisal".

3) Coping Strategies Questionnaire (CSQ)

CSQ is an instrument designed to assess coping strategies of patients experiencing pain (Rosentiel & Keefe, 1983). It is a 44-item inventory that measures coping strategies of patients who experience high levels of pain. Items are rated on a seven-point frequency format, and the items have been reduced into six coping strategies including ignoring, diverting, praying, etc., and behaviour strategies that suggested change in patient behaviour and life style.

4) Coping Strategies Inventory (CSI)

CSI (Tobin, Holroyd, Reynolds, & Wigal, 1989; Tobin, Holroyd & Reynolds, 1984) is a 72-item self-report inventory composed of 15 sub scales that attempt to measure coping strategies of people in general. The dimensions captured using this scale include, "Problem-solving", "Cognitive restructuring", "Suppressing emotions", "Social support", "Problem-avoidance", etc.,"

5) COPE Inventory

Carver, Scheier, & Weintraub (1989), have designed a COPE inventory that attempts to capture emotion-focused coping strategies; problem-solving based coping strategies, dysfunctional coping strategies and other strategies used by people when faced with stressful situations. The authors have also prepared a briefer version of the scale with 28 items known as Brief COPE Inventory for convenience in use, allowing for modifications based on emergent situations.

6) Coping Strategy Indicator (CSI)

Amirkhan (1990, 1994) has drafted an instrument that captures the preferred coping strategy of respondents as Problem-solving, Seeking support or Avoidance.

2.5 CONCLUDING REMARKS

Review of the literature on nurses reveals that a great deal of research has been carried out relating to stress and coping among nurses internationally, and limited research is done in Indian settings. Also, most of the studies conducted in India seem to be using the scales developed outside the country to measure stress and coping. The researcher could not identify any comprehensive measurement scales developed to measure stress and coping strategies in India.

It has been noticed that none of the scales reported have used any dimensions typically found in health care settings in India and else-where in the recent years. For example, image of the nursing profession held by the nurses themselves may have a significant impact on the stress levels experienced at the workplace. Similarly, self health concerns of nurses do not seem to have caught the attention of other researchers but due to the increasing risk perceived from emerging diseases like AIDS, SARS, EBOLA, and others have heightened stress of being affected among nurses. While discrimination dimension had been a part of some of the existing stress measuring scales, the items are based on global scenario and not found in the Indian context. Therefore, if used in existing format, nurses may not relate to them and report differently from the actual situations faced by them at workplace. So there is a need to modify the items under such sub-scales to adapt the scales to local work environment.

More importantly, none of the instruments reviewed to measure coping of individuals is adapted to the nursing profession. As the nurses' workplace is unique and nurses report high levels of workplace stress, they may be using coping strategies exclusive to the profession, which may not be captured when using the existing scales. A need to design an exclusive instrument to measure coping strategies of nurses is strongly felt.

CHAPTER III

3. RESEARCH METHODOLOGY

"Research methods are the steps, procedures and strategies for gathering and analyzing the data in a research investigation (Polit & Hungler, 2001)".

"The methodology of research indicates the general pattern to get empirical data for the problem under investigation (Burns & Groove, 1997)".

This chapter deals with the methodology adopted for the study including research approach, design, description of the setting, population, sample, sampling technique, data collection, techniques, development of tool, description of the tool, content procedure for data collection, and plan for data analysis.

3.1 RESEARCH DESIGN AND APPROACH

According to Polit & Hungler (2001) "Research approach refers to a general set of orderly, disciplined procedures used to acquire dependable and useful information".

According to Treece & Treece (1986), Survey Approach is a non - experimental study in which the researcher investigates the community or a group of people. Surveys are not aimed at discovering the cause of a phenomenon, but are intended to provide accurate quantitative description of the situation or event.

A cross-sectional survey design was used to address the research questions developed based on the review of existing literature, exploratory study and researcher's experience in the area. The questionnaire survey is probably the most commonly used

method to collect data in social science and a cross sectional survey would have the potential to answer research questions of this study.

Research Design

An overall research plan for obtaining answers to the research questions or for testing the research hypothesis is referred to as the research design (Polit & Hungler, 2001). Research design helps the researcher in the selection of subjects or procedures for data collections and the type of statistical analysis to be used to interpret the data.

According to Burns & Groove (2001), the purpose of the research design is to achieve greater control and thus improve the validity of the study in examining the research problem.

The survey design was used with aim of development and initial validation of new instruments. The study also aimed to develop a process model of workplace stress and coping and to test data for statistically significant relationships between these two main variables.

3.2 ETHICAL CONSIDERATIONS

The study was approved by the Faculty Review Committee (FRC) of the Goa University. Formal administrative permissions were obtained from the heads of the institutions/hospitals in order to contact and collect data from nurses working in the hospitals and health centres. The research study was not sponsored by any agency. Participants were made aware that their participation in the study was voluntary. Participants were not given of any incentives. Assurance was given to the participants

that their responses would be kept confidential and that the data would be used only for the research purpose.

3.3 POPULATION AND THE RESEARCH SETTINGS

"Setting is the physical location and conditions in which data collection takes place in a study" (Polit & Beck, 2009).

According to Burns & Grove (2001), there are three common settings for common settings for conducting research, i.e. natural, partially controlled and highly controlled settings. Conducting a study in a natural settings means that the researchers does not manipulate or change the environment for the study.

The target population of the study was nurses working in various hospitals and health centres in Goa, India. Goa is one of the smallest State of India. It is located in the region known as Konkan on the west coast of India. Goa was liberated on 19th December 1961 from Portuguese rule which lasted for 450 years. Goa has been known for having most efficient health systems in India. By the year 2000, the Government of Goa had achieved the 'Health for All' goal through its several health and medical care programs. Administration of health system & services are carried out by the Directorate of Health Services. The Directorate of Health Services primarily provides preventive, promotive, curative and rehabilitative health services to the people through primary health care approach which has been accepted as one of the main instruments of action for development of human resources, accelerating the socio-economic development and attaining improved quality of life. Goa is considered as one of the best performing states in the country where health and medical care facilities are concerned. Nursing education was started by the Portuguese

in Goa during the 15th century, the first of its kind in the whole of Asia. After liberation of Goa in 1961, the old nursing education courses were gradually phased out. Later the union government with technical assistance from the World Health Organization (WHO) and U.N.I.C.E.F gradually started different nursing programmes recognised by the Indian Nursing Council, Delhi. Today nurses have the opportunity to pursue post-graduate nursing education in Goa.

Based on the model of the research study, nurses working in different health care organizations were included in the sample studied.

Goa Medical College and Hospital

The **'Escola Medico Cirurgica da Goa'** was established in 1842 during the Portuguese rule and renamed as Goa Medical College in 1963. It is the oldest medical college in Asia. The college is affiliated the Goa University since 1986 before which it was affiliated the Bombay University. **Goa Medical College & Hospital** which now has its headquarters in Bambolim has a long tradition of providing quality services to all sections of the society. The Institute of Psychiatry and Human Behaviour (Bambolim), the TB and Chest Disease Hospital (St. Inez), The Rural Health and Training Centre (Mandur) and the Urban Health Centre (St. Cruz) form part of the establishment.

Health Care delivery System in Goa, India

Health care facilities in the rural areas of Goa are provided through an integrated network of medical and family welfare systems. The Primary Health Care facilities in the state are carried out in a three – tier system, that is, Community Health Centres (CHC), Primary Health Centres (PHC) and Sub Centres. Out of the 19 PHC's in the

state, thirteen have attached hospitals with 12 to 30 beds under the charge of a Health Officer. They act as referral points for the Sub Centers and provide curative and preventive health services to the citizens. There are five Community Health Care centres' in the state, headed by a Health Officer and are well equipped with a minimum of 30 beds and four specialist doctors. They also act as referral units for the Primary Health Centers. Goa is geographically divided into two districts - South Goa and North Goa, with one district hospital each – Hospicio Hospital and Asilo Hospital.

Tertiary-Care, Super-Specialty, Multi-Specialty Hospitals in Goa

There are only three tertiary-care, super-specialty, multi-specialty hospitals in Goa and nurses working in all of these are included in the sample selected for this study. These hospitals provide comprehensive diagnostic, medical, surgical and emergency care of world-class standards.

3.4 SAMPLING

Purposive sampling technique was used to select hospitals, including only those hospitals/ health centres with in-patient services. Convenience sampling technique was used to select nurses working in these hospitals, based on their availability and willingness to be a part of this study. Out of a total population of 1700 nurses working in the selected hospitals chosen, the research instruments were administered to 1100 nurses and the final sample size was 833. The data was collected from a large sample in order to have a separate sample for Exploratory Factor Analysis and Confirmatory Factor Analysis. For Exploratory Factor Analysis (EFA) sample data of 506 respondents had been used for both stress and coping scales, whereas Confirmatory

Factor Analysis (CFA) was conducted on the data obtained from a completely different set of 295 respondents (for both scales).

3.5 OPERATIONAL DEFINITION OF TERMS

Nurse

In this study nurse means a registered nurse who is holding a degree or diploma in nursing which is recognized by the Indian Nursing Council, New Delhi and who is working as a staff nurse in different health care settings of Goa.

Workplace Stress

Workplace stress is viewed as any negative, stressful or difficult situation of hardship that is encountered in the occupational setting (Jackson et al., 2007).

Coping Strategies

Coping strategies: "Thoughts and actions individuals use to change the perceived experience of a stressful event so as to master, reduce, or tolerate the demand created by that event" (Folkman & Lazarus, 1980).

3.6 INSTRUMENTATION

The scales developed by the researcher which were used for data collection were

1. TOOL-I: - The Nursing Workplace Stress Scale (NWSS)

2. TOOL-II: - The Nursing Workplace Stress Coping Scale (NWSCS).

Development of Tool –I and Tool-II are described in detail in Chapter IV- Scale Development of this thesis.

Along with the tools developed by the researcher, the demographic characteristics of the respondents, which included age, sex, marital status, professional qualification, total years of working experience, type of hospital, were collected so as to facilitate inter-group analysis.

3.7 DATA COLLECTION PROCEDURE

The data was collected from nurses working in select hospitals and health care settings. The nursing department heads/ HR managers and ward in-charges were oriented to the research objectives and in order to avoid researcher bias, questionnaires were handed over to nurses through their respective heads. The data was collected from January 2015 to July 2015.

Table 3.1

Details of questionnaires distributed to respondents (Response Rate)

T**otal** Questionnaires Distributed	Total Questionnaires Received (response rate)	Incomplete Questionnaires Received	Total Complete Questionnaires	Total Questionnaires used For analysis
1130	905 (80%)	72	833	833

3.8 DATA ANALYSIS TECHNIQUES

Statistical packages SPSS version 21.0 and AMOS version 22.0 were used to analyse the data. Exploratory Factor Analysis was used to identify the dimensions of the nursing workplace stress and the nursing workplace stress coping. The confirmatory factor analysis was also done for the purpose of scale development. Path analysis was also used. Correlation and ANOVA was used to establish relationships.

SUMMARY

This chapter dealt with the research methodology adopted for the study and included the description of research approach and design, setting, sample, sampling technique, data collection technique, tools, and plan for analysis. The study adopted survey design; the setting was government and private hospitals in Goa. The purposive sampling technique was used to select health care settings and convenience sampling technique was used to select nurses working in these health care settings.

CHAPTER IV

4. SCALE DEVELOPMENT

This chapter focuses on the first four objectives of this study. The objectives are:-

- to identify the dimensions of workplace stress.
- to develop a scale to measure workplace stress.
- to identify coping strategies used by nurses at workplace.
- to develop a scale to measure workplace coping.

This chapter discusses the development and validation process of the two measurement scales specifically designed for nursing professionals in order to measure workplace stress and coping strategies. In this process, various statistical tools in the software SPSS version 22 and AMOS version 22 were used to test and validate the measurement scales.

4.1 INTRODUCTION

The construction of a new multi-item measure is an extremely multifaceted process. The multi-item scale development requires a number of steps to develop a multi-item scale to measure any construct. When designing items a theoretical background is essential. The process of item generation can be done using either inductive or deductive method, and both these approaches are used in behavioural sciences. After item generation, an item analysis is required to eliminate poor and ambiguous items. Further the validity and reliability of the construct is determined by using factor analysis. The main steps in scale development are reported and discussed:

4.2 CONCEPT CLARIFICATION

The definition of the construct is primarily the first step in the process of scale development (Rossiter, 2002). The definition of a construct needs to specify the object, the attribute, and the rater entity in order to indicate that the construct is operational in the study. In order to define the construct deductive or inductive approach may be used by the researcher depending upon the situation and the objectives of the study. When the researcher wants to explore an uncommon or unfamiliar phenomenon where little is known, it is called an inductive approach. When items are generated or guided based on existing theory, it is known as deductive scale development. The deductive approach of scale development will be supported by existing literature; therefore methodical understanding of theory and concepts related to the construct need to reviewed in depth. In this study, deductive approach was adopted to generate items.

4.3 ITEM GENERATION

The item development began with a review of existing literature to obtain background information on stress and coping and to locate instruments designed to measure these constructs. Relevant literature was identified through a search of key terms and combinations of these terms (such as stress concepts, stress models, workplace stress, job stress, work-related stress, occupational stress, coping, concepts, theories, coping strategies, ways of coping, etc) using online databases. Published articles, books and other reports were considered to be relevant if they described such terms. The initial set of literature was reviewed and used to establish further search terms and related literature. The literature review in the area of theory and concepts of stress and coping, studies related to stress and coping among nurses and research instrument

used in coping was reviewed and presented in previous Chapters –I and chapter –II of this thesis.

An exploratory study was conducted in order to explore the new variables and also formal and informal focus group discussions were used to identify new variables. The existing scales to measure stress among nurses were identified through review of literature, and the Nursing Stress Scale (Gray-Toft & Anderson, 1981) a scale with 34 items and seven subscales was found to be widely used all over the world as well in India. The Nursing Stress Scale (NSS) was revised and expanded with two additional dimensions and 21 new stressful situations making a total of 57 items and was named as Expanded Nursing Stress Scale (French, Lenton, Walters & Eyles, 2000). The initial items were framed after discussion with the senior nursing faculty, research scholars and the research supervisor. After this the initial pool of items was prepared.

"Ethical Issues", "Perceived Image and Status of Nursing", "Lack of leadership and Promotional Avenues" and "Self Health Concerns" were the new subscales introduced into the scale based on the discussions with practicing nurses. To check the applicability of these proposed sub-scales to the existing scale, the author of the existing Expanded Nursing Stress Scale (ENSS) was asked to offer her comments on the proposed new sub-scales.

The literature related to stress and coping among nurses in Indian scenario was limited. The researcher's personal experience and expert opinions helped the researcher to generate items for the new subscales and existing subscales. Five subscales were conceptually added to the existing Expanded Nursing Stress Scale with several items and new items were also added to the existing subscales. On the

whole, 91 items were added to the existing scale making a total of 148 items in the proposed scale.

Similarly, existing coping scales were identified and items were reviewed for relevancy in nursing, only a few items of the existing coping scales were relevant for nurses hence the researcher proposed to construct a scale purely for coping of stress used by nurses in the workplace. The items in the coping scale conceptually fitted in seven dimensions namely problem avoidance, problem solving, planning, religious coping, social support, self criticism and social withdrawal. Items were framed considering the nursing work situations along with the initial pool of 45 items.

The items thus generated for stress scale were again sent for the opinion of the experts; the items which were overlapping with existing sub-scale items were identified and deleted / collapsed/merged to a single item as per the suggestion of the experts. The scale had 103 items after this procedure. The scale with 103 items was prepared and the items were conceptually fitted into 13 sub-scales. This scale was initially given to four colleagues to check for the relevance, clarity and simplicity. After their agreement and suggestions these items were further modified and reduced to 100. The five options provided for the stress scale was "Never Stressful", "Occasionally Stressful", "Frequently Stressful", "Extremely Stressful" and "Does not apply". The workplace stress coping strategies had four options which were "Does not apply or not used", "Used somewhat", "Used very often", and "Used to a great Extent"

These items were again sent for opinion of the experts; the items which were ambiguous and unclear were further identified and deleted. Items closely overlapping were checked and merged to a single item as per the suggestion of the experts. The

process was been repeated for the items generated to reflect coping strategies, and subjected to the applicability of proposed sub-scales by giving to it four experts from the field of nursing. After their agreement and suggestions these items were further modified and reduced to 34 items.

4.4 CONTENT VALIDITY

Content validity is a basic step in developing a new instrument as it is a pre-requisite for checking other types of validity. Here, judgement –quantification process is done based on revision of items as per experts' feedback (Zamanzadeh et al., 2014)

The judgment-quantification stage requires a panel of experts, working independently, to evaluate the instrument and rate items of relevance according to the content domain (Yaghmale, 2003). In addition, item content and clarity, as well as overall instrument comprehensiveness, are evaluated in this stage. Polit and Beck (2006) recommends that the expert panel members should evaluate how representative the items are in the content domain. As part of this process, expert panel members should be requested to suggest modifications for items that are not consistent with the conceptual definitions. When estimating Content validity, it is essential to utilize a quantitative measure, the content validity index (CVI). CVI is calculated by tallying the results of the experts based on the degree to which the experts agree on the relevance and clarity of the items (Polit & Beck, 2006).

In this study, 16 people were identified as experts in the area and each expert was contacted personally to obtain the consent to validate the scale. A covering letter with a request to validate the scale was sent along with the objectives of the study and a brief description of scales and rating scale. The panel was asked to review the items in the tool and give their suggestions regarding relevancy, clarity and simplicity of the

content. The time taken to return the tool was around one week to two months. Only 14 experts returned the scale during this period. After all correspondence was received regarding content validity for each item, it was found that only 10 of the 14 experts used rate scale to rate the item, whereas others provided their suggestions and comments. The content validity of each subscale was calculated and the subscales were found to be valid. A focus group discussion with four experts from the nursing profession was held to evaluate the instrument for overall comprehensiveness. The objective of the focus group was to reach consensus on the overall comprehensiveness of the instrument, that is, to determine whether the experts felt the instrument measured what it was intended to measure.

Content validity index was calculated for each item (I-CVI) and for Scale (S-CVI) for both scales. I-CVI was > 0.80 for all items of both scales and S-CVI > 0.80 for both scales (Details provided in the appendices)

4.5 FACE VALIDITY

Face validity is another form of validity which supports content validity. Face validity is used to check whether the designed instrument apparently relates to the construct to be measured (Yaghmale, 2003). Face validity is done once the instrument undergoes the content validity process. Thus, face validity is one of the limited aspects of content validity, concerning an examination of the final designed instrument to make sure that it represents a completed instrument.

The face validity of both scales were tested by giving it to two experts in the field of nursing and it is reported that the designed instruments were appropriate to measure the underlying constructs of workplace stress and coping strategies.

4.6 PRE-TESTING THE SCALE

The Nursing Workplace Stress and Coping strategies Scale was administered to thirty nurses who were not the part of the main study. The intent of the pre-test is to refine the wording of the questions and to see which questions measure the constructs under consideration. There was no major difficulty reported in understanding any of the items of the scale. Minor revision in the format of scale and corrections related to instructions were made after pre-testing of scale based on the respondents' difficulties.

4.7 NORMALITY OF DATA COLLECTED

Factorial analysis requires data which is normally distributed (Child, 2006). Importantly there should be an absence of outliers (Field, 2009). In the present study the data was not fully run for normality test, however data was checked for outliers and unusual cases. Initially, random data of 506 respondents was selected for the Exploratory Factor Analysis (EFA) which was reduced to 494 after deleting outliers and unusual cases. Data collected from 295 respondents was used for the Confirmatory Factor Analysis (CFA) of the stress scale. In case of the coping strategies scale data obtained from 506 respondents which was utilised to run EFA and data for CFA was obtained from 249 respondents. The sample size was appropriate for both EFA and CFA.

4.8 FACTOR ANALYSIS

The construct validity was further explored by using an Exploratory Factor Analysis and Confirmatory Factor Analysis, which contributed to the psychometric assessment of the instruments.

Exploratory Factor Analysis (EFA) is carried out to analyze and determine which variables 'go together' when a researcher wants to find out the number of underlying factors influencing variables (De Coster, 1998). The grouping of variables can be done when the data set consists of many variables, by getting all similar variables grouped together to measure a single factor. Factor analysis is useful for research studies which involve a few or hundreds of items from a questionnaire which can be reduced to a smaller set, in order to get at an underlying concept to facilitate interpretations (Rummel, 1970). The factors can also be considered based on the assumption that there is a linear relationship when computing the correlations between the factors and the variables (Gorsuch, 1983). A factor should have at least 3 items to call it as a factor (Tabachnick & Fidell, 2007).

Confirmatory Factor Analysis (CFA) is a statistical technique in which a set of observed variables are used to verify the factor structure. The relationship between observed variables and unobserved (latent constructs) is hypothesized and tested. The hypothesized relations are based on theory, empirical research, or both. CFA specifically, depends on a number of statistical tests to establish the sufficiency of the model fit to the data.

Proposed measurement scales in this study underwent vigorous testing and validation using these advanced statistical techniques. The results obtained from EFA and CFA for measurement scales is explained in the following section:

4.9 EXPLORATORY FACTOR ANALYSIS OF WORKPLACE STRESS SCALE

The series of exploratory factor analysis was performed for the stress scale. The final factor structure of the workplace stress was identified using Exploratory Factor Analysis (EFA). Promax rotation was used and factor loadings less than 0.4 were suppressed for clarity. The results of EFA are presented below:

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy

KMO measure of sampling adequacy is done to determine the suitability of data for factor analysis. The result which is presented in Table 4.1 provides SPSS output of data for factor analysis

Table 4.1

KMO and Bartlett's Test

KMO Measure of Sampling Adequacy.		**.910**
Bartlett's Test of Sphericity	Approx. Chi-Square	8226.887
	df	1176
	Sig.	.000

The value of KMO measure of sampling adequacy is 0.910. The value of greater than 0.05 is recommended for factor analysis. The Bartlett's Test of Sphericity is significant at 0.00. It can be interpreted that the data is appropriate for factor analysis.

Number of factors of workplace stress scale

Several tests were run in order to get a clear and meaningful pattern matrix. The items with low loading and cross loaded items were deleted. The final EFA solution consisted of 49 items each moderately or highly loaded by one of eleven meaningful

factors. This resulted in an eleven-factor pattern matrix which is presented in Table 4.2

Table 4.2

Factors matrix for stress scale

Items	Factor Loadings
Factor 1 -Problems Faced With Patients and Their Families (PPPF)	
Patients making unreasonable demands **(PF3)**	.736
Patients' family making unreasonable demands **(PF2)**	.684
Having to deal with abuse from patients' families **(PF4)**	.681
Disrespectful behavior of patients and relatives **(PF5)**	.664
Having to deal with abusive patients **(PF1)**	.583
Factor 2 -Lack of Resources and Support (LRS)	
Physician not being present when a patient dies **(P1)**	.669
Number of patients admitted more than available beds **(PC3)**	.662
Poor work conditions such as limited water supply, interrupted power supply, etc. **(WL3)**	.625
Uncooperative support staff **(PP1)**	.586
A physician not being present in a medical emergency **(P2)**	.558
Lack of communication by other nurses regarding patients care **(PP2)**	.512
Having to work without breaks **(WL4)**	.466
Factor 3 – Problems with Nursing Supervisor (PNS)	
Conflict with nursing supervisors **(NS2)**	.758
Criticism by a nursing supervisor **(NS1)**	.746
Lack of effective supervision by nursing supervisor **(NS4)**	.644

Items	Factor Loadings
Unfair superiors **(NS5)**	.640
Lack of support from the nursing supervisors **(NS3)**	.556
Factor 4 - Lack of Autonomy and Power (LAP)	
Patient's treatment rescheduled without any valid reason **(LA3)**	.775
Not being allowed to make decisions related to patient care **(LA1)**	.667
Being the only one who has to deal with patients' families **(LA4)**	.638
Being treated as a non-professionals **(LA2)**	.628
A physician ordering what appears to be inappropriate treatment for a patient **(LA5)**	.493
Factor 5- Workplace Discrimination (WD)	
Experiencing discrimination on the basis of gender **(D1)**	.834
Experiencing discrimination on the basis of caste **(D2)**	.707
Being discriminated on the basis of qualification **(D3)**	.581
Fear of being sexually harassed **(D4)**	.413
Factor 6-Worload (WL)	
Not enough time to complete all of my nursing tasks **(TC3)**	.636
Being asked to perform tasks of other health team members **(TC2)**	.624
Not having enough time to communicate to patients' families **(TC1)**	.590
Being exposed to health and safety hazards **(TC4)**	.588
Factor 7 – Death and Suffering (DS)	
Not enough time to provide emotional support to a patient **(DS2)**	.639
The death of a patient with whom you have developed a close relationship **(DS1)**	.636

Items	Factor Loadings
The death of a patient **(DS4)**	.590
Observing a patient suffer **(DS3)**	.574
Factor 8–Self Health Concerns (PSHC)	
Concerns that working in night shifts may lead to premature aging	.822
Working on night shifts	.778
Concerns that my work may lead to chronic illnesses	.593
Factor 9 –Lack of Professional Status (LPS)	
Feeling nursing skills and knowledge are being undervalued **(R1)**	.654
Having to perform many non-nursing tasks such as clerical work **(R2)**	.587
Having to follow directives from people of influence **(R4)**	.417
Factor 10- Uncertainity Concerning Care Provided (UCCP)	
Fear of making mistakes while providing care **(UCC2)**	.869
Being aware that the care provided may pose risks to patient's health and safety **(UCC3)**	.678
Fear of being reported for perceived inadequate care **(UCC1)**	.583
Providing care to patients of the medical profession **(UCC5)**	.487
Factor 11- Ethical Issues AND Meeting Demands (EIMD)	
Having to meet demands of the doctors **(MD3)**	.724
Difficulty in maintaining the dignity of patients **(MD1)**	.656
Having to organize physicians' work **(MD4)**	.590
Unable to meet the identified needs of patients **(MD2)**	.580
Lack of control over use of medications and diagnostic procedures **(MD5)**	.497

The final scale consisted of 49 items measuring workplace stress. Only 22 items were retained from the original ENSS. **The new Measurement Scale was named as "NURSING WORKPLACE STRESS SCALE (NWSS)"**

The NWSS was further subjected to Confirmatory factor analysis (CFA) to verify the factor structure of a set of observed variables of workplace stress and to test the hypothesis between observed variables and the underlying unobserved construct called Nursing Workplace Stress.

4.10 CONFIRMATORY FACTOR ANALYSIS OF EACH DIMENSION OF THE NURSING WORKPLACE STRESS SCALE (NWSS)

To determine the unidimensionality of the **NWSS**, it was important to estimate standardized regression weights also known as factor loadings. The first step was the calculation of standardized regression weights of the individual scale items on its assigned factor. Regression weights above 0.70 were considered good and values more than 0.40 was considered as moderately acceptable. Lower scores can be retained if additional item reliability measures and face validity support their inclusion (Netemeyer et al., 2003). The second measurement was the correlation analysis between the items which indicated the relatedness of the questions asked in the respective dimensions. The correlation value should not be more than 0.90 for any two items as it would be considered to measure the same thing, and thus the redundant questions should be eliminated. Each of the eleven dimensions of Nursing Workplace Stress Scale (NWSS) were reviewed for their unidimensionality. In Figure 4.1 the first dimension- Problems with Nursing Supervisors (PNS) is shown.

Unidimensionality of the scale dimension– "Problems Faced with Nursing Supervisors (PNS)"

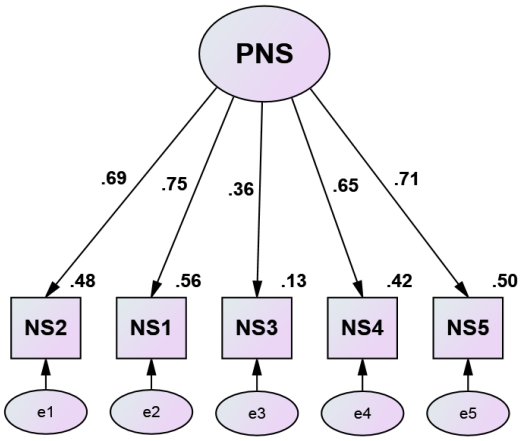

Figure 4.1(a): CFA model of "Problems faced with Nursing Supervisors (PNS)" dimension

All the standardized regression weights/ factor loadings are above 0.40 except for the item NS3, however based on the literature review and face validity the item was retained. The model indicated acceptability of all other items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.3.

Table 4.3

Scale Item Correlation results- Problems Faced with Nursing Supervisors (PNS)

N=295

Item	NS1	NS2	NS3	NS4	NS5
NS1	1				
NS2	0.520**	1			
NS3	0.289**	0.230**	1		
NS4	0.485**	0.456**	0.223**	1	
NS5	0.527**	0.494**	0.266**	0.463**	1

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

It can be interpreted from Table 4.3 that all pair wise comparison is significant and correlation values ranges from 0.335 to 0.527. The correlation values are not more than 0.90 for any two items, therefore there is no redundancy in the items of the sub-scale All correlations are significant at 0.01 level of significance.

Unidimensionality of the scale dimension– "Problems Faced with Patients and their Families (PFPF)"

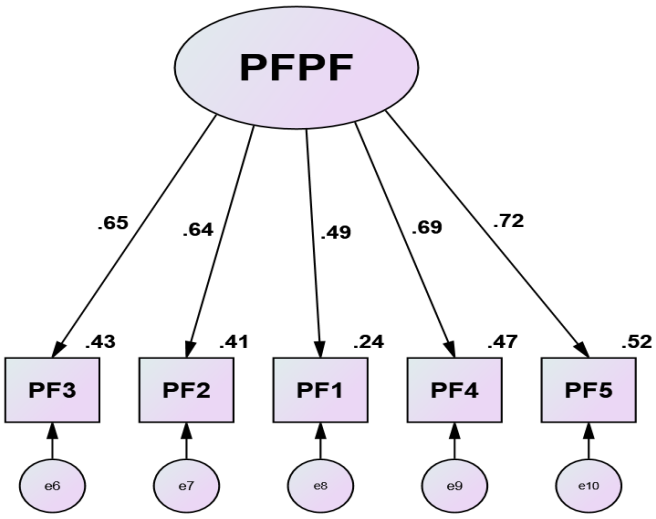

Figure 4.1(b): CFA model of "Problems faced with Patients and their Families (PFPF)" dimension

All the standardized regression weights/ factor loadings are above 0.40. The model is indicating acceptability of all items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.4

Table 4.4

Scale Item Correlation results- Problems Faced with Patients and their Families (PFPF)

N=295

Item	PF1	PF2	PF3	PF4	PF5
PF1	1				
PF2	0.353**	1			
PF3	0.246**	0.521**	1		
PF4	0.324**	0.397**	0.430**	1	
PF5	0.402**	0.402**	0.449**	0.544**	1

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

It can be interpreted from Table 4.4 that all pair wise comparison is significant and correlation values range from 0.246 to 0.544. All correlations are significant at 0.01 level of significance.

Unidimensionality of the scale dimension– "Lack of Resources and Support (LRS)"

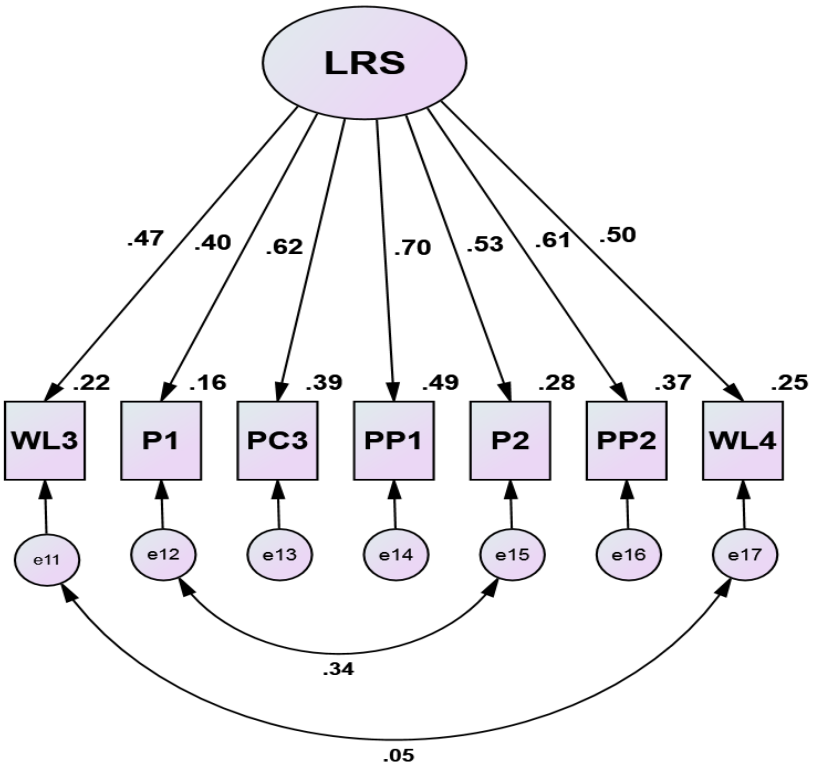

Figure 4.1(c): CFA model of "Lack of Resources and Support (LRS)" dimension

In the Confirmatory Factor Analysis of dimension "Lack of Resources and Support ", two pairs of error variables e11 and e17, and e12 and e15 are slightly co varied as they are similar in terms of representing the resources and support (i.e. e12 and e15 represents the "Absence of physician during emergency" aspect of support dimension, and e11 and e17 represent the "work conditions" aspect).

All the standardized regression weights/ factor loadings are above or equal to 0.40. The model was indicating acceptability of all items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.5.

Table 4.5

Scale Item Correlation results- Lack of Resources and Support (LRS)

N=295

Items	P1	P2	PP1	PP2	P3	WL3	WL4
P1	1						
P2	0.476**	1					
PP1	0.275**	0.337**	1				
PP2	0.229**	0.280**	0.520**	1			
P3	0.318**	0.415**	0.394**	0.300**	1		
WL3	0.133*	0.203**	0.306**	0.262**	0.395**	1	
WL4	0.183**	0.312**	0.343**	0.290**	0.314**	0.278**	1

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

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

It can be interpreted from Table 4.5 that all pair wise comparison is significant and correlation values range from 0.133 to 0.520. All correlations are significant at 0.01 and at 0.05 level of significance.

Unidimensionality of the scale dimension– "Lack of Autonomy and Power (LAP)"

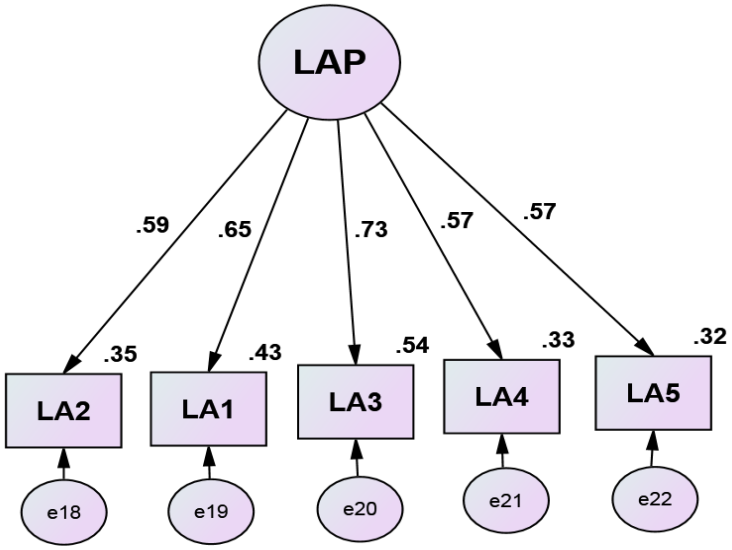

Figure 4.1(d): CFA model of "Lack of Autonomy and Power (LAP)" dimension

All the standardized regression weights/ factor loadings are above 0.40. The model indicated the acceptability of all items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.6

Table 4.6

Scale Item Correlation results- Lack of Autonomy and Power (LAP)

N=295

Items	LA1	LA2	LA3	LA4	LA5
LA1	1				
LA2	0.442**	1			
LA3	0.473**	0.422**	1		
LA4	0.370**	0.267**	0.439**	1	
LA5	0.329**	0.345**	0.416**	0.370**	1

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

It can be interpreted from above table that all pair wise comparison is significant and correlation values range from 0.267 to 0.473. All correlations are significant at 0.01 and 0.05 level of significance.

Unidimensionality of the scale dimension– "Workplace Discrimination (WD)"

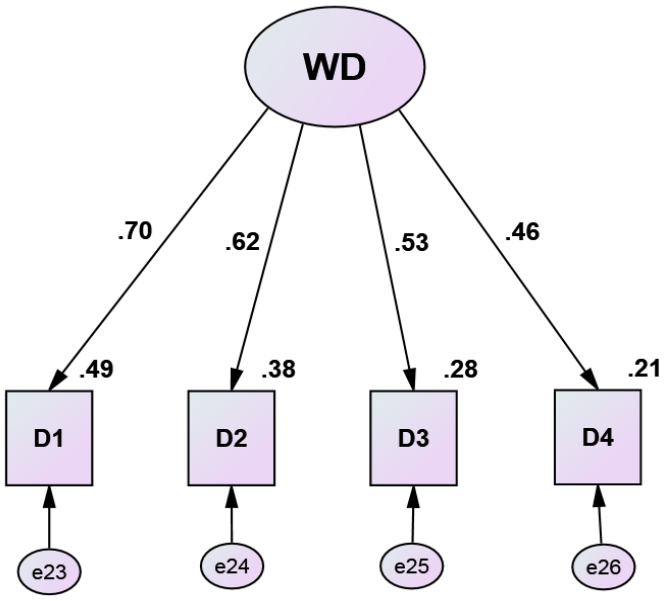

Figure 4.1(e): CFA model of "Workplace Discrimination (WD)" dimension

All the standardized regression weights/ factor loadings are above 0.40. The model indicates acceptability of all other items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.7

Table 4.7

Scale Item Correlation results- Workplace Discrimination (WD)

N=295

Items	D1	D2	D3	D4
D1	1			
D2	0.418**	1		
D3	0.430**	0.268**	1	
D4	0.272**	0.389**	0.194**	1

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

It can be interpreted above Table 4.7 that all pair wise comparison is significant and correlation values range from 0.094 to 0.430. All correlations are significant at 0.01 and 0.05 level of significance.

Unidimensionality of the scale dimension– "Ethical Issues and Meeting Demands (EIMD)"

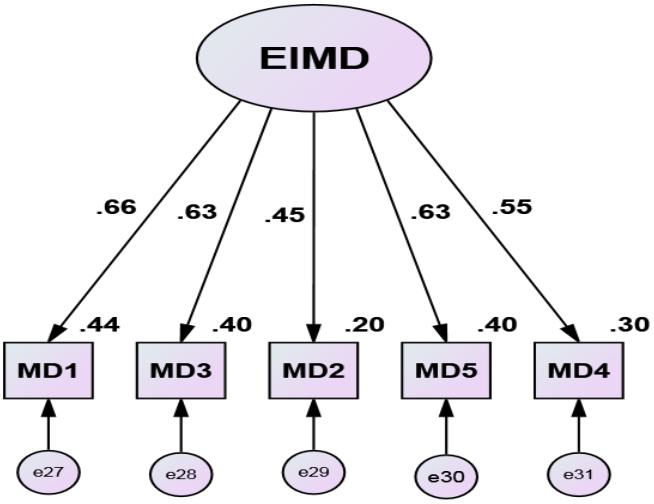

Figure 4.1(f): CFA model of "Ethical Issues and Meeting Demands (EIMD)" dimension

All the standardized regression weights/ factor loadings are above 0.40. The model indicates acceptability of all other items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.8

Table 4.8

Scale Item Correlation results- Ethical Issues and Meeting Demands (EIMD)

N=295

Items	MD1	MD2	MD3	MD4	MD5
MD1	1				
MD2	0.332**	1			
MD3	0.430**	0.214**	1		
MD4	0.333**	0.174**	0.409**	1	
MD5	0.405**	0.361**	0.370**	0.349**	1

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

It can be interpreted from Table 4.8 that all pair wise comparison is significant and correlation values range from 0.174 to 0.430. All correlations are significant at 0.01and 0.05 level of significance.

Unidimensionality of the scale dimension– "Uncertainty Concerning Appropriateness of Care (UCAC)"

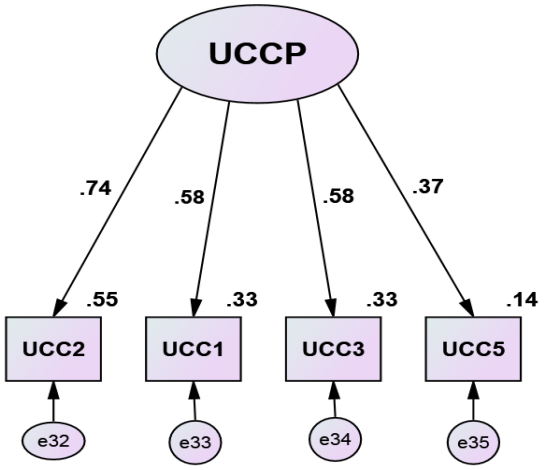

Figure 4.1(g): CFA model of "Uncertainty Concerning Appropriateness of Care (UCAC)" dimension

All the standardized regression weights/ factor loadings are above 0.40. The model indicates acceptability of all other items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.9

Table 4.9

Scale Item Correlation results- Uncertainty Concerning Appropriateness of Care (UCAC)

N=295

Items	UCC1	UCC2	UCC3	UCC5
UCC1	1			
UCC2	0.419**	1		
UCC3	0.331**	0.434**	1	.
UCC5	0.240**	0.273**	0.191**	1

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

It can be interpreted from Table 4.9 that all pair wise comparison is significant and correlation values range from 0.191 to 0.434. All correlations are significant at 0.01 and 0.05 level of significance.

Unidimensionality of the scale dimension– "Workload (WL)"

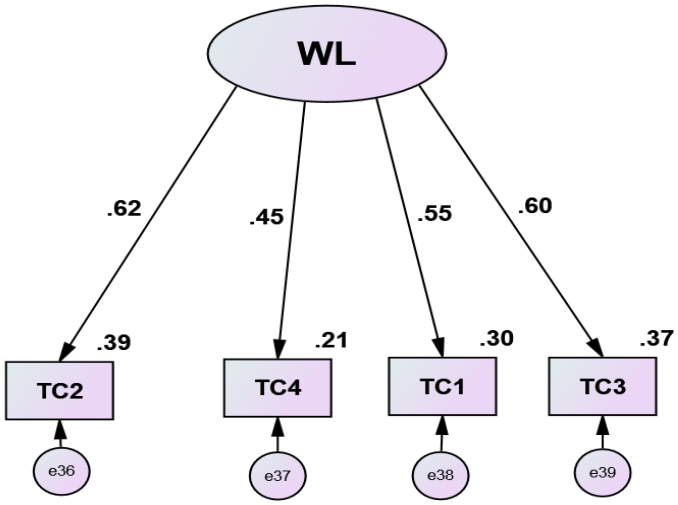

Figure 4.1(h): CFA model of "Workload (WL)" dimension

All the standardized regression weights/ factor loadings are above 0.40. The model indicates acceptability of all other items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.10

Table 4.10

Scale Item Correlation results- Workload (WL)

N=295

Items	TC1	TC2	TC3	TC4
TC1	1			
TC2	0.368**	1		
TC3	0.301**	0.379**	1	
TC4	0.253**	0.245**	0.313**	1

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

It can be interpreted from Table 4.10 that all pair wise comparison is significant and correlation values range from 0.253 to 0.579. All correlations are significant at 0.01and 0.05 level of significance.

Unidimensionality of the scale dimension– "*Lack of Professional Status (LPS)*"

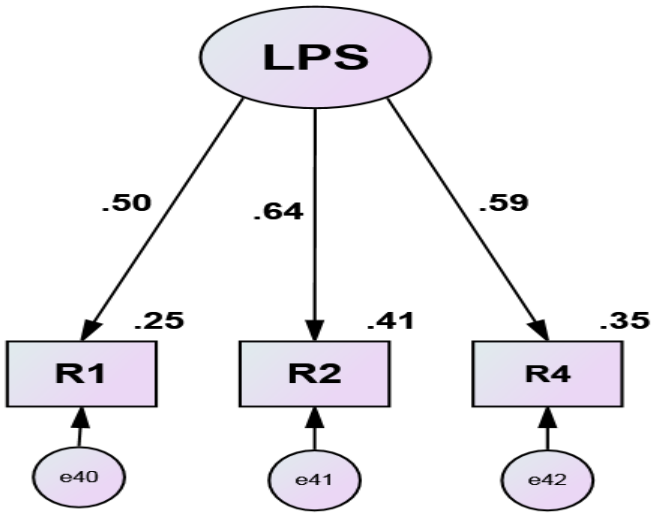

Figure 4.1(i): CFA model of "Lack of Professional Status (LPS)" dimension

All the standardized regression weights/ factor loadings are above 0.40. The model indicates acceptability of all items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.11

Table 4.11

Scale Item Correlation results- Lack of Professional Status (LPS)

N=295

Items	R1	R2	R4
R1	1		
R2	0.323**	1	
R4	0.295**	0.378**	1

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

It can be interpreted from Table 4.11 that all pair wise comparison is significant and correlation values range from 0.295 to 0.378. All correlations are significant at 0.01 and 0.05 level of significance.

Unidimensionality of the scale dimension– "Death and Suffering (DS)"

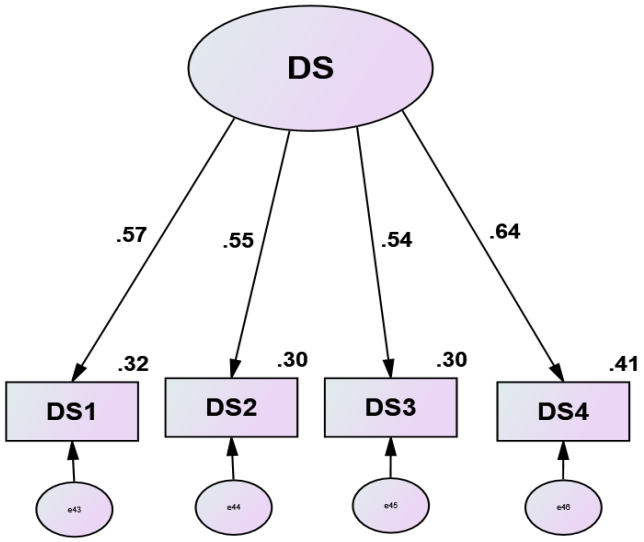

Figure 4.1(j): CFA model of "Death and Suffering (DS)" dimension

All the standardized regression weights/ factor loadings are above 0.40. The model indicates acceptability of all items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.12

Table 4.12

Scale Item Correlation results- Death and Suffering (DS)

N=295

Items	D1	D2	D3	D4
D1	1			
D2	0.418**	1		
D3	0.430**	0.268**	1	
D4	0.272**	0.389**	0.194**	1

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

It can be interpreted from Table 4.12 that all pair wise comparison is significant and correlation values range from 0.194 to 0.430. All correlations are significant at 0.01 and 0.01 level of significance.

Unidimensionality of the scale dimension– "Perceived Self Health Concerns (SHC)"

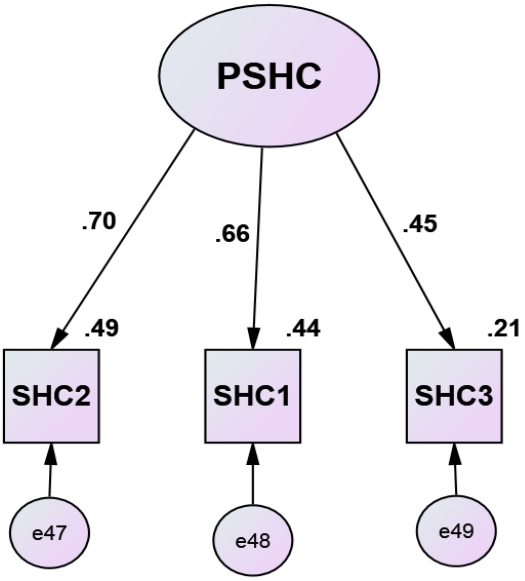

Figure 4.1(k): CFA model of "Perceived Self Health Concerns (PSHC)" dimension

All the standardized regression weights/ factor loadings are above 0.40. The model indicates acceptability of all other items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.13

Table 4.13

Scale Item Correlation results- Perceived Self Health Concerns (SHC)

N=295

Items	SHC1	SHC2	SHC3
SHC1	1		
SHC2	0.467**	1	
SHC3	0.302**	0.319**	1

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

It can be interpreted from Table 4.13 that all pair wise comparison is significant and correlation values range from 0.302 to 0.467. All correlations are significant at 0.01 level of significance.

4.11 RELIABILITY ANALYSIS

The Cronbach's Alpha test is most commonly used to ascertain reliability index of instruments. The Cronbach's Alpha test was used to calculate internal consistency of scale and sub-scales of the NWSS. The result is presented in Table 4.14 and Table 4.15

Table 4.14

Reliability statistics of NWSS

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.930	**.931**	**49**

Table 4.15

Reliability statistics of NWSS Sub-scales

Sub-Scales	Cronbach's alpha	Number of items
PNS	**0.765**	**5**
PFPF	**0.773**	**5**
LRS	**0.758**	**7**
LAP	**0.755**	**5**
WD	**0.666**	**4**
EIMD	**0.718**	**5**
UCCP	**0.644**	**4**
WL	**0.643**	**4**
LPS	**0.598**	**3**
DS	**0.660**	**4**
PSHC	**0.631**	**3**

It can be interpreted from the above Table 4.14 that Nursing Workplace Stress Scale (NWSS) has an excellent internal consistency (0.931).

Fit indices for each dimension of Nursing Workplace Stress Scale (NWSS)

The fit indices for nine out of eleven workplace stress dimensions were calculated. Two dimensions "Lack of Profession Status (LPS)" and "Perceived Self Health Concerns (PSHC) were not calculated as had only three scale items. To provide relevant fit indices minimum of four items are required, as with three scale items the degree of freedom becomes zero since the number of distinct sample moments (6) equals the number of distinct parameters to be estimated (6).The Table 4.16 presents the fit indices for all workplace stress dimension models and exhibit fit of the data to the theorized one factor models.

Table 4.16

Nursing Workplace Stress Scale (NWSS) Dimensions – Fit Indices

Fit statistics	Recom-mended Value*	PNS (5 Items)	PFPF (5 Items)	LRS (7 Items)	LAP (5 Items)	WD (4 Items)	EMID (5 Items)	UCC (4 Items)	WL (4 Items)	LPS (3 Items)	DS (4 Items)	PSHC (3 Items)
Chi-square/df	≤ 3.00**	0.14	5.07	2.73	1.83	7.12	2.78	0.36	1.42	NA	2.51	NA
Goodness of fit index(GFI)	≥ 0.90	0.99	0.96	0.96	0.98	0.97	0.98	0.99	0.99	NA	0.99	NA
Adjusted Goodness of Fit Index ((AGFI)	≥ 0.90	0.99	0.90	0.92	0.96	0.87	0.94	0.99	0.97	NA	0.95	NA
Normed Fit Index (NFI)	≥ 0.90	0.99	0.93	0.92	0.97	0.91	0.94	0.99	0.98	NA	0.96	NA
Relative Fit Index (RFI)	≥ 0.90	0.99	0.86	0.86	0.94	0.75	0.89	0.99	0.94	NA	0.90	NA
Comparative Fit Index (CFI)	≥ 0.90	1.00	0.94	0.94	0.98	0.92	0.96	1.00	0.99	NA	0.98	NA
Incremental Fit Index (IFI)	≥ 0.90	1.00	0.94	0.95	0.98	0.92	0.96	1.02	0.99	NA	0.98	NA
Tucker Lewis Index (TLI)	≥ 0.90	1.02	0.88	0.91	0.97	0.78	0.92	1.00	0.98	NA	0.94	NA
Root mean Square Error of Approximation (RMSEA)	≤ 0.07	0.00	0.11	0.07	0.05	0.14	0.07	0.07	0.03	NA	0.07	NA
Root Mean Square Residual (RMR)	≤ 0.07	0.00	0.04	0.04	0.02	0.04	0.03	0.01	0.02	NA	0.02	NA

* Criteria according to Hair et al. (1998), Arbuckle and Wothke (1995)

** Segars and Grover (1993) recommend chi-square/degrees of freedom value of 3.00

*** NA – Not Applicable

Hypothesized relationship between the dimensions and construct

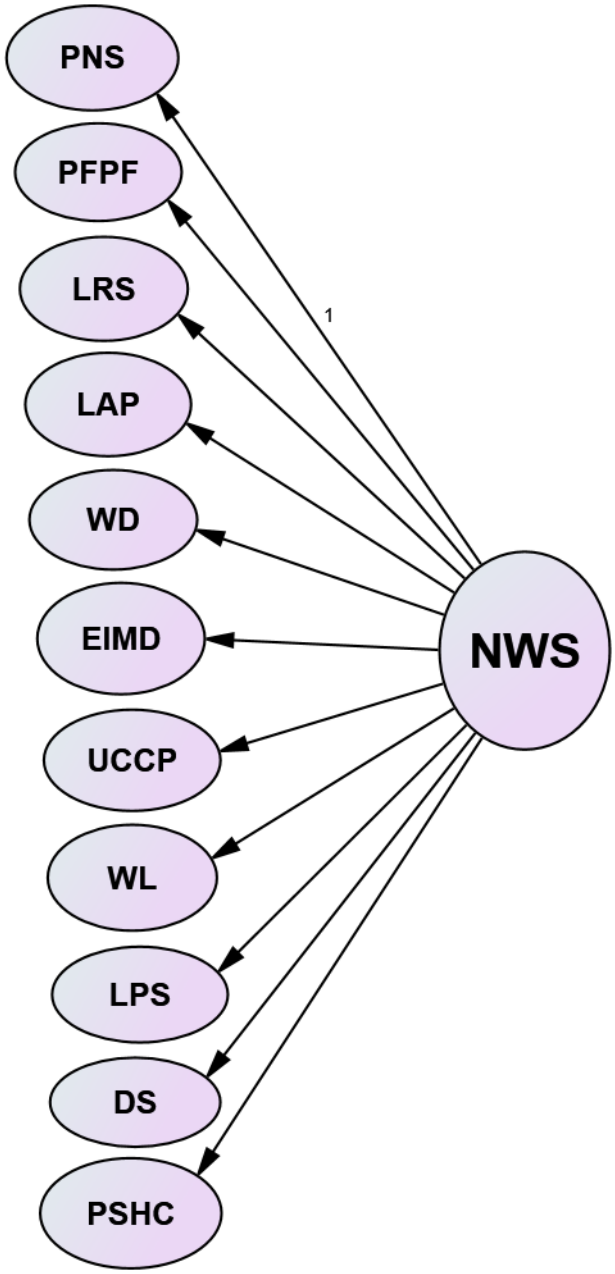

Figure 4.2: Hypothesized Measurement Model of "Nursing Workplace Stress Scale (NWSS)

It is hypothesized that Nursing Workplace Stress consists of eleven dimensions or Sub-scales namely PNS, PFPF, LRS, LAP, WD, EIMD, UCCP, WL, LPS, DS and PSHC.

Confirming the Measurement Model Using CFA- First Order

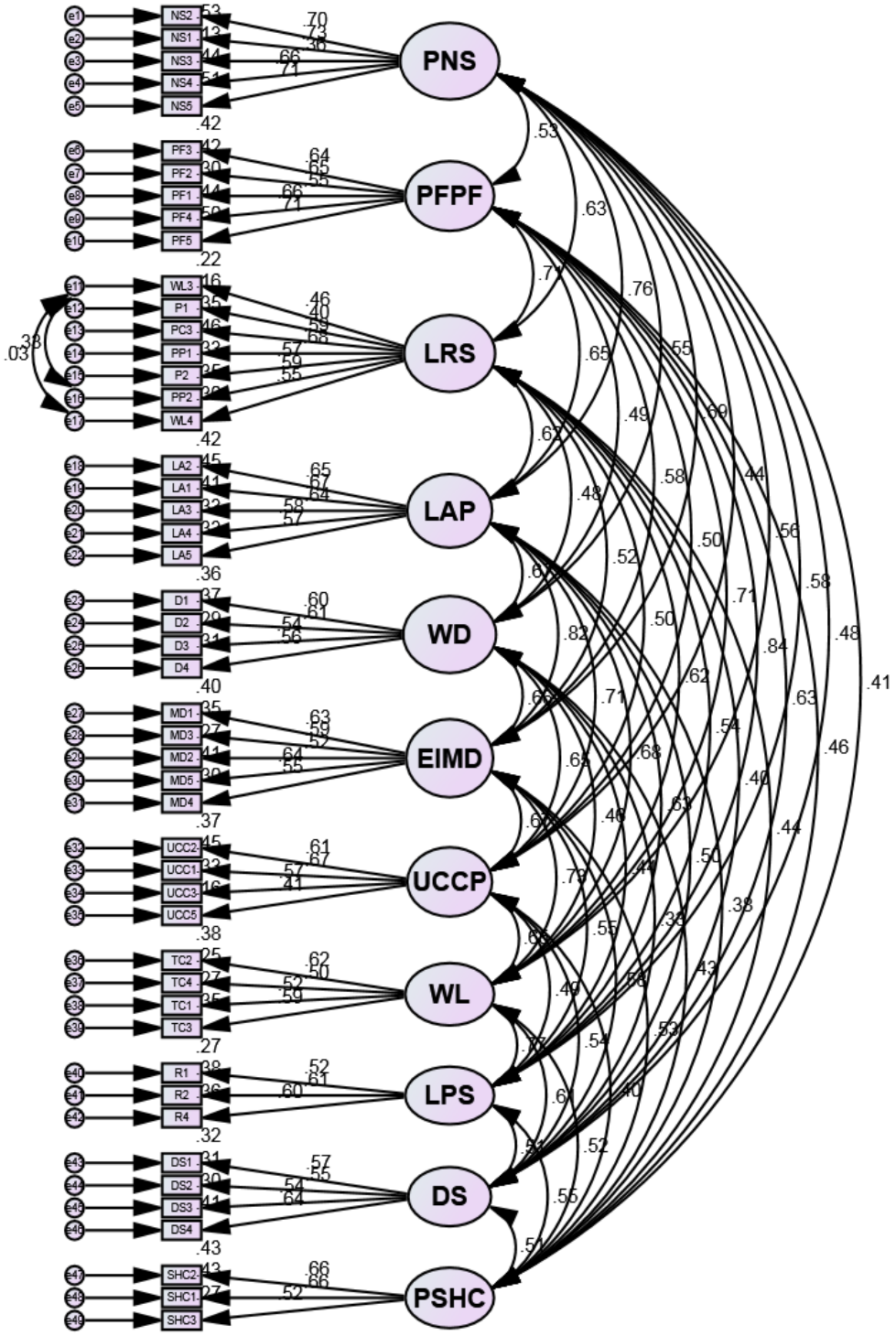

Figure 4.3: First Order CFA of the Nursing Workplace Stress Scale (NWSS)

4.12 ASSESSING THE OVERALL MEASUREMENT MODEL FITNESS (FIRST ORDER CFA)

The results presented in Table 18 provides an overall overview of the model fit, which includes the value (1693.857), together with its degrees of freedom (1070) and probability value (0.000).

Table 4.17

AMOS Output Showing Model Fit

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	155	1693.857	1070	0.000	1.583
Saturated model	1225	.000	0		
Independence model	49	5397.852	1176	0.000	4.590

Relatively small chi-square value in SEM supports the proposed theoretical model being tested. In this model the value is 1693.857, which is comparatively much lesser than the independence model chi-square value (5397.852). from this it can be interpreted that the obtained chi-square value is good.

Other fit indices usually reported to assess overall model fit or goodness of fit are presented in Table 4.18

Table 4.18

Fit indices of measurement model- First Order CFA - NWSS

Fit statistics	Recommended Value	Values
Chi-square/df	≤ 2.00	1.583
Goodness of fit index(GFI)	≥ 0.90	0.813
Adjusted Goodness of Fit Index ((AGFI)	≥ 0.90	0.785
Normed Fit Index (NFI)	≥ 0.90	0.686
Relative Fit Index (RFI)	≥ 0.90	0.665
Comparative Fit Index (CFI)	≥ 0.90	0.852
Incremental Fit Index (IFI)	≥ 0.90	0.856
Tucker Lewis Index (TLI)	≥ 0.90	0.838
Root mean Square Error of Approximation (RMSEA)	≤ 0.07	0.045
Root Mean Square Residual (RMR)	≤ 0.07	0.055

* Criteria according to Hair et al. (1998), Arbuckle and Wothke (1995)

RMSEA is 0.045 and is below the recommended limit of 0.05, and Root Mean Square Residual (RMR) is also below the recommended limit of 0.07 at 0.0556 which is a good value. Other fit indices are acceptable. The Confirmatory Factor Analysis showed an acceptable overall model fit. To confirm hypothesized construct that loads into the number of underlying dimensions or components second order factor analysis is performed and the results are presented in following section.

4.13 SECOND ORDER CONFIRMATORY FACTOR ANALYSIS OF MEASUREMENT SCALE- NWSS

The Second Order CFA is a statistical method used to confirm hypothesized construct that loads into a number of underlying dimensions or components. For example, the theory posits that workplace stress consist of eleven underlying dimensions which is measured using certain number of items in a questionnaire. The effect of the main construct on the dimensions is estimated. In Second Order CFA, the main construct becomes the second order construct while the dimensions become the first order construct.

In this study Second Order CFA was performed to identify the construct called Nursing Workplace Stress. In Figure 4.4 it can be noted that there eleven dimensions or sub-constructs which are reflective of the main construct Nursing Workplace Stress.

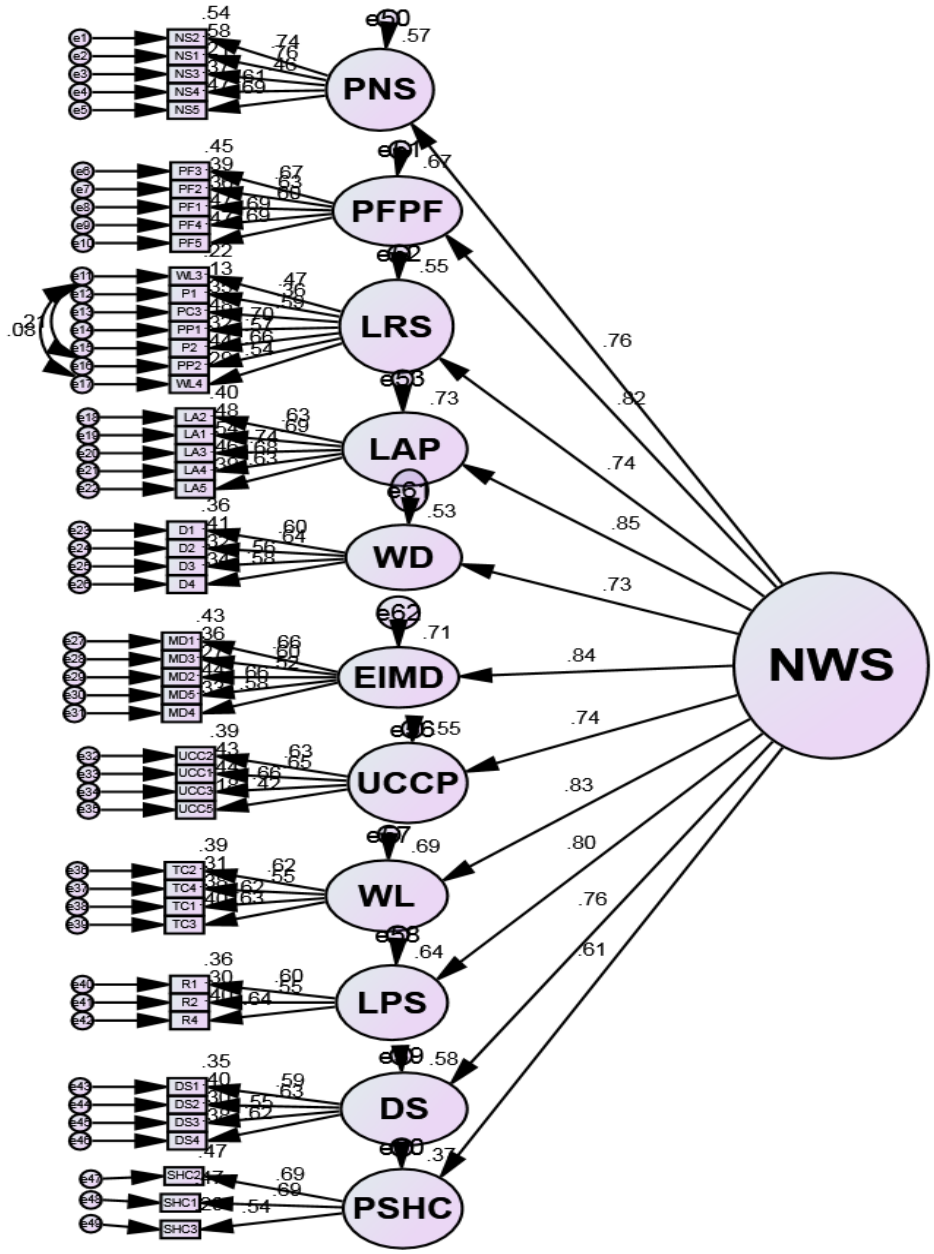

Figure 4.4: CFA for Second Order construct "Workplace Stress"

The Measurement Model

The measurement model shown in Figure 4.4 comprises of eleven sub-scales or factors namely PNS, PFPF, LRS, LAP, WD, EIMD, UCCP, WL, LPS, DS and PSHC. Each sub-scale is measured by a maximum of six to a minimum of three observed variables. Observed variable is regressed into its respective sub-scale.

The results show the workplace stress factor loadings on its eleven sub-scales. The factor loading ranges from 0.61 to 0.86. Furthermore, the R^2 for the sub-scales ranges from 0.37 to 0.73, which reflect the contribution of workplace stress on its eleven dimensions or sub-scales, is good.

Further the significance of the main construct on every sub-scale in the model is examined; the output of Regression Path coefficient is presented in Table 4.19

Table 4.19

The regression path coefficient and its significance

		Estimate	S.E.	C.R.	P	Results
PNS	**<--- NWS**	1.000		Reference point		
PFPF	**<--- NWS**	.817	.059	13.871	***	Significant
LRS	**<--- NWS**	.545	.053	10.291	***	Significant
LAP	**<--- NWS**	1.059	.077	13.679	***	Significant
WD	**<--- NWS**	.704	.060	11.746	***	Significant
EIMD	**<--- NWS**	.777	.057	13.743	***	Significant
UCCP	**<--- NWS**	.769	.063	12.208	***	Significant
WL	**<--- NWS**	.800	.061	13.041	***	Significant
LPS	**<--- NWS**	.759	.062	12.200	***	Significant
DS	**<--- NWS**	.792	.066	11.930	***	Significant
PSHC	**<--- NWS**	.731	.066	11.055	***	Significant

*** Significant at the 0.001 level (two-tailed).

The findings presented in Table 4.19 shows that there is a significant relationship between workplace stress and its eleven dimensions which means these eleven subscales are reflective of nursing workplace Stress. The hypothesized measurement model of stress is accepted.

Model Evaluation Criteria: Goodness of Fit

The Structural Equation Model primarily describes to what extent hypothesized relations fits in the given data. Evaluation of the model is ideally done from a different perspective and is based on certain laid down criteria.

Table 4.20

AMOS Output Showing Model Fit

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	111	2714.796	1114	0.000	2.437
Saturated model	1225	.000	0		
Independence model	49	14107.409	1176	0.000	11.996

It can be interpreted from Table 4.20 chi-square is 2714.796 the value support the proposed measurement model being tested. In this model the value is 2714.796 and is smaller when compared to the value of the independence model (14107.40). Hence the value is good. Overall model fit indices are presented in Table 4.21

Table 4. 21

Fit indices of measurement model - NWSS

Fit statistics	Recommended Value*	Values
Chi-square/df	≤ 3.00**	2.437
Goodness of Fit Index(GFI)	≥ 0.90	0.875
Adjusted Goodness of Fit Index ((AGFI)	≥ 0.90	0.863
Normed Fit Index (NFI)	≥ 0.90	0.808
Relative Fit Index (RFI)	≥ 0.90	0.797
Comparative Fit Index (CFI)	≥ 0.90	0.876
Incremental Fit Index (IFI)	≥ 0.90	0.856
Tucker Lewis Index (TLI)	≥ 0.90	0.838
Root Mean Square Error of Approximation (RMSEA)	≤ 0.07	0.042
Root Mean Square Residual (RMR)	≤ 0.07	0.046

* Criteria according to Hair et al. (1998), Arbuckle and Wothke (1995)

** Segars and Grover (1993) recommend chi-square/degrees of freedom value of 3.00

Goodness of Fit Index (GFI) obtained is 0.87 as against the recommended value of above 0.90, The Adjusted Goodness of Fit Index (AGFI) is 0.86 as against the recommended value of above 0.90. The Normed Fit Index (NFI), Relative Fit index (RFI), Comparative Fit index (CFI), Tucker Lewis Index (TLI) are 0.80, 0.79, 0.87, 0.86 respectively as against the recommended level of above 0.90. RMSEA is 0.04 and is well below the recommended limit of 0.07, and Root Mean Square Residual (RMR) is 0.046 which is below the recommended limit of 0.07 hence the model shows an overall acceptable fit. The model is an over identified model.

The Confirmatory Factor Analysis shows an acceptable overall model fit and hence, the theorized model fits well with the observed data. Thus it can be concluded that the hypothesized eleven dimension CFA model fits the sample data very well.

4.14 EXPLORATORY FACTOR ANALYSIS FOR SCALE DEVELOPED TO CAPTURE COPING STRATEGIES OF NURSES

A series of exploratory factor analysis was performed on the data collected using the second scale that was developed for capturing coping strategies used by nurses. The final factor structure of the scale was identified using Exploratory Factor Analysis (EFA). Promax rotation was used and factor loadings less than 0.4 were suppressed for clarity. The result of EFA is described below.

Table 4.22

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.743
Bartlett's Test of Sphericity	Approx. Chi-Square	1686.131
	df	120
	Sig.	.000

As presented in the Table 4.22, Bartlett's test of Sphericity was significant (p= <.00), KMO =.743; the NWSCSS was deemed appropriate for further psychometric assessment by EFA.

Number of Factors of stress coping strategies scale

Several tests were run in order to get a clear and meaningful pattern matrix. The items with low loading and cross loading items were deleted. The final EFA solution consisted of 16 items each highly or moderately loaded by one of the four meaningful factors. This resulted in a four-factor solution which is presented in Table 4.23

Table 4.23

Pattern matrix for coping strategies scale

Items	Component			
	1	2	3	4
I avoid talking to my colleagues **(SB6)**	.691			
I know I am not worthy to be a nurse **(SB3)**	.683			
I lose my temper and let my feelings out somehow **(SB5)**	.664			
I blame myself for choosing nursing as career **(SB1)**	.650			
I don't report to work when I feel stressed **(SB3)**	.634			
I avoid talking to patients families **(SB4)**	.576			
I try to solve the problem by using available resources **(PSP4)**		.852		
I try to plan and organise my work **(PSP3)**		.758		
I develop confidence to solve problems by gaining knowledge on the subject **(PSP1)**		.687		
I prepare myself to handle emergencies **(PSP2)**		.597		
I always seek God's help in my difficulties **(RC1)**			.866	
I ask God's forgiveness for my shortcomings **(RC2)**			.858	
I pray before I do something for my patients **(RC3)**			.527	
I try to share experiences of the workplace with colleagues **(SS3)**				.762
I seek help from my colleagues**(SS2)**				.734
I discuss the workplace problems with colleagues **(SH1)**				.605

In above Table 4.23 it can be seen that the items are loaded in four components or factors which makes a meaningful matrix.

The first factor consists of 6 items- "I avoid talking to my colleagues", "I know I am not worthy to be a nurse", "I lose my temper and let my feelings out somehow", "I blame myself for choosing nursing as career", "I don't report to work when I feel stressed" and "I avoid talking to patients families". The factor loadings ranged from 0.57 to 0.69. This factor was named as **"Self Blame and Social Withdrawal (SBSW)".**

The second factor consists of 4 items- "I try to solve the problem by using available resources", "I try to plan and organise my work", "I develop confidence to solve problems by gaining knowledge on the subject", and "I prepare myself to handle emergencies". The factor loadings ranged from 0.59 to 0.85. This factor was named as **"Problem Solving and Planning (PSPL)"**

The third factor consists of 4 items- "I always seek God's help in my difficulties", "I ask God's forgiveness for my shortcomings" and "I pray before I do something for my patients". The factor loadings ranged from 0.52 to 0.86. This factor was named as **"Turning to God (TG)".**

The fourth factor consists of 3 items- "I try to share experiences of workplace with colleagues", "I seek help from my colleagues" and "I discuss the workplace problems with colleagues". The factor loadings ranged from 0.60 to 0.76. This factor was named as **"Seeking Help and Social Support (SHSS)".**

The final scale consists of 16 items measuring stress coping. **The Measurement Scale is named as "NURSING WORKPLACE STRESS COPING STRATEGIES SCALE (NWSCSS)"**

The NWSCSS is further subjected to Confirmatory Factor Analysis (CFA) to verify the factor structure of a set of observed variables of workplace stress and to test the hypotheses between observed variables and the underlying unobserved construct called Nursing Workplace Stress Coping Strategies.

4.15 CONFIRMATORY FACTOR ANALYSIS OF EACH DIMENSION OF THE NURSING WORKPLACE STRESS COPING STRATEGIES SCALE (NWSCSS)

To determine the unidimensionality of the **NWSCSS**, it is important to estimate standardized regression weights also known as factor loadings. The first step was the calculation of standardized regression weights of the individual scale items on its assigned factor. Regression weights above 0.70 were considered good and values more than 0.40 was considered as moderately acceptable, although lower scores can be retained if additional item reliability measures, and face validity supported their inclusion (Netemeyer et al., 2003). The second measurement was the correlation analysis between the items which indicated the relatedness of the questions asked in the dimensions. The correlation value should not be more than 0.90 for any two items as it would be considered to measure the same thing, and thus redundant questions should be eliminated. Each of the four of Nursing Workplace Stress Coping Strategies Scale (NWSCSS) dimensions were reviewed for their unidimensionality. In Figure 4.5(A), the first dimension- Self Blame and Social Withdrawal (SBSW) are shown.

Unidimensionality of the scale dimension– "Self Blame and Social Withdrawal (SBSW)"

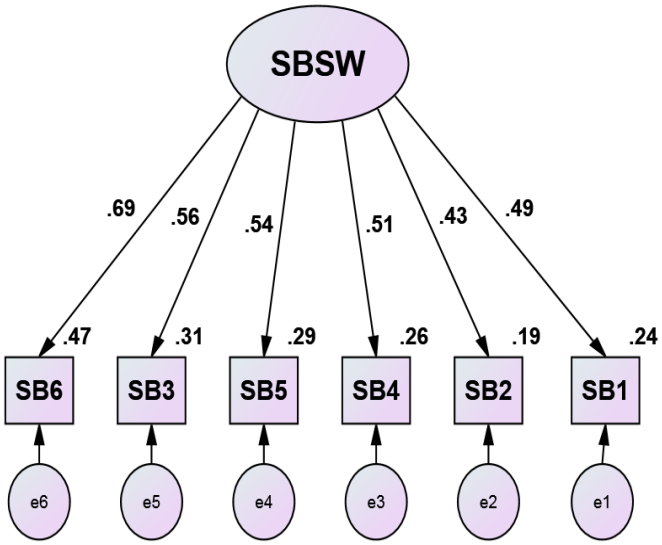

Figure 4.5(a): CFA model of "Self Blame and Social Withdrawal (SBSW)" dimension

All the standardized regression weights/ factor loadings were above 0.40. The model indicated acceptability of all items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.24

Table 4.24

Scale Item Correlation results – Self Blame and Social Withdrawal

N=249

Item	SB1	SB2	SB3	SB4	SB5	SB6
SB1	1					
SB2	0.182**	1				
SB3	0.247**	0.322**	1			
SB4	0.216**	0.188**	0.258**	1		
SB5	0.333**	0.170**	0.342**	0.270**	1	
SB6	0.343**	0.314**	0.357**	0.401**	0.333**	1

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

It can be interpreted from the above table that all pair wise comparison is significant and correlation values ranged from 0.170 to 0.401. All correlations are significant at 0.01 level of significance.

Unidimensionality of the scale dimension– "Problem Solving and Planning (PSPL)"

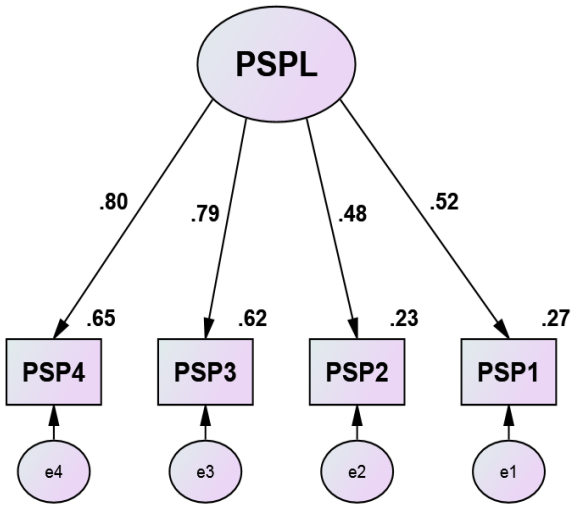

Figure 4.5(b): CFA model of "Problem Solving and Planning (PSPL)" dimension

All the standardized regression weights/ factor loadings were above 0.40. The model indicated acceptability of all other items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.25

Table 4.25

Scale Item Correlation results – Problem Solving and Planning

N=249

Item	PSP1	PSP2	PSP3	PSP4
PSP1	1			
PSP2	0.314**	1		
PSP3	0.406**	0.359**	1	
PSP4	0.399**	0.386**	0.640**	1

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

It can be interpreted from the above table that all pair wise comparison is significant and correlation values ranged from 0.314 to 0.640. All correlations are significant at 0.01 level of significance.

Unidimensionality of the scale dimension– "Turning to God (TG)"

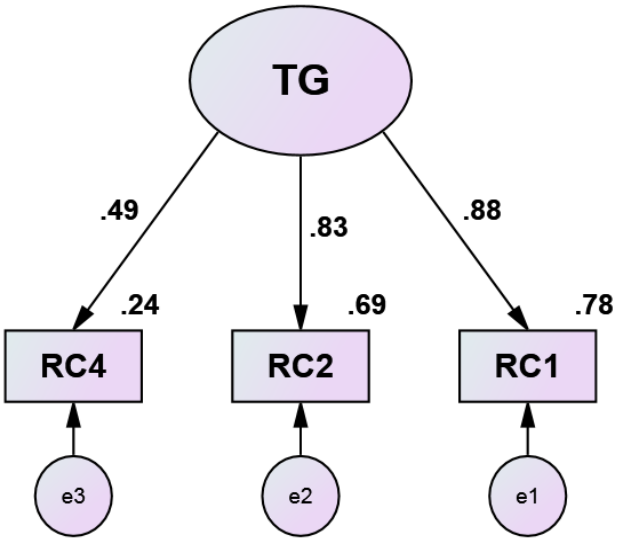

Figure 4.5 (c): CFA model of "Turning to God (TG)" dimension

All the standardized regression weights/ factor loadings were above 0.40. The model indicated acceptability of all items. The correlation analysis was performed by using SPSS 21.0 and is presented in Table 4.26

Table 4.26

Scale Item Correlation results – Turning to God

N=249

Item	RC1	RC2	RC4
RC1	1		
RC2	0.733**	1	
RC4	0.430**	0.406**	1

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

It can be interpreted from the above table that all pair wise comparison is significant and correlation values range from 0.430 to 0.733. All correlations are significant at 0.01 level of significance.

Unidimensionality of the scale dimension– "Seeking Help and Social Support (SHSS)"

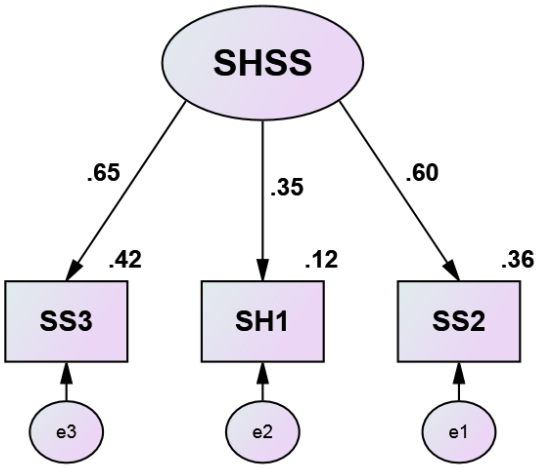

Figure 4.5(d): CFA model of "Seeking Help and Social Support (SHSS)" dimension

All the standardized regression weights were above 0.40 except the 'SH1' dimension of 'Seeking Help and Social Support'. However this item was retained as the face validity and literature review supports this item. The model indicated acceptability of all other items.The correlation analysis was performed using SPSS 21.0 and it is presented in Table 4.27

Table 4.27

Scale Item Correlation results – Seeking Help and Social Support

N=249

Item	SH1	SS2	SS3
SH1	1		
SS2	.209**	1	
SS3	.225**	.391**	1

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

It can be interpreted from the above table that all pair wise comparison is significant and correlation values range from 0.391 to 0.209. All correlations are significant at 0.01 level of significance.

4.16 RELIABILITY ANALYSIS

The reliability was calculated for the scale and sub-scales of NWSS. The result is presented in Table 4.28 and Table 4.29

Table 4.28

Reliability statistics of NWSCS

Cronbach's Alpha	Number of Items
0.716	**16**

Table 4.29

Reliability statistics of NWSCSS Sub-scales

Sub-scale/Dimension	Cronbach's Alpha	Number of items
SBSW	0.726	6
PSPL	0.720	4
TG	0.679	3
SHSS	0.552	3

It can be interpreted from the above Table 4.14 that Nursing Workplace Stress Scale (NWSCSS) has an acceptable internal consistency (0.716).

Fit indices for each dimension of Nursing Workplace Stress Coping Strategies Scale (NWSCSS)

Fit indices of Workplace Stress coping strategies dimensions were calculated, except for two dimensions "Turning to God (TG)" and "Seeking Help and Social Support (SHSS)" as they had only three scale items. To provide relevant fit indices minimum four items are required, as with three scale items the degree of freedom becomes zero since the number of distinct sample moments (6) equals the number of distinct parameters to be estimated (6).The Table 4.31 presents the fit indices for all Workplace Stress dimension models and exhibits fit of the data to the theorized one factor model.

Table 4.30
Nursing Workplace Stress Coping Strategies Stress Scale (NWSSCS) Dimensions – Fit Indices

Fit statistics	Recommended Value*	SBSW (6 Items)	PSPL (4 Items)	TG (3 Items)	SHS (3 Items)
Chi-square/df	≤ 3.00**	1.662	1.269	NA	NA
Goodness of fit index(GFI)	≥ 0.90	0.98	0.99	NA	NA
Adjusted Goodness of Fit Index ((AGFI)	≥ 0.90	0.96	0.97	NA	NA
Normed Fit Index (NFI)	≥ 0.90	0.94	0.98	NA	NA
Relative Fit Index (RFI)	≥ 0.90	0.90	0.96	NA	NA
Comparative Fit Index (CFI)	≥ 0.90	0.98	0.99	NA	NA
Incremental Fit Index (IFI)	≥ 0.90	0.98	0.99	NA	NA
Tucker Lewis Index (TLI)	≥ 0.90	0.96	0.99	NA	NA
Root mean Square Error of Approximation (RMSEA)	≤ 0.07	0.04	0.33	NA	NA
Root Mean Square Residual (RMR)	≤ 0.07	0.23	0.16	NA	NA

* Criteria according to Hair et al. (1998), Arbuckle and Wothke (1995)
** Segars and Grover (1993) recommend chi-square/degrees of freedom value of 3.00
***NA – Not Applicable

Hypothesized relationship between the dimensions and construct

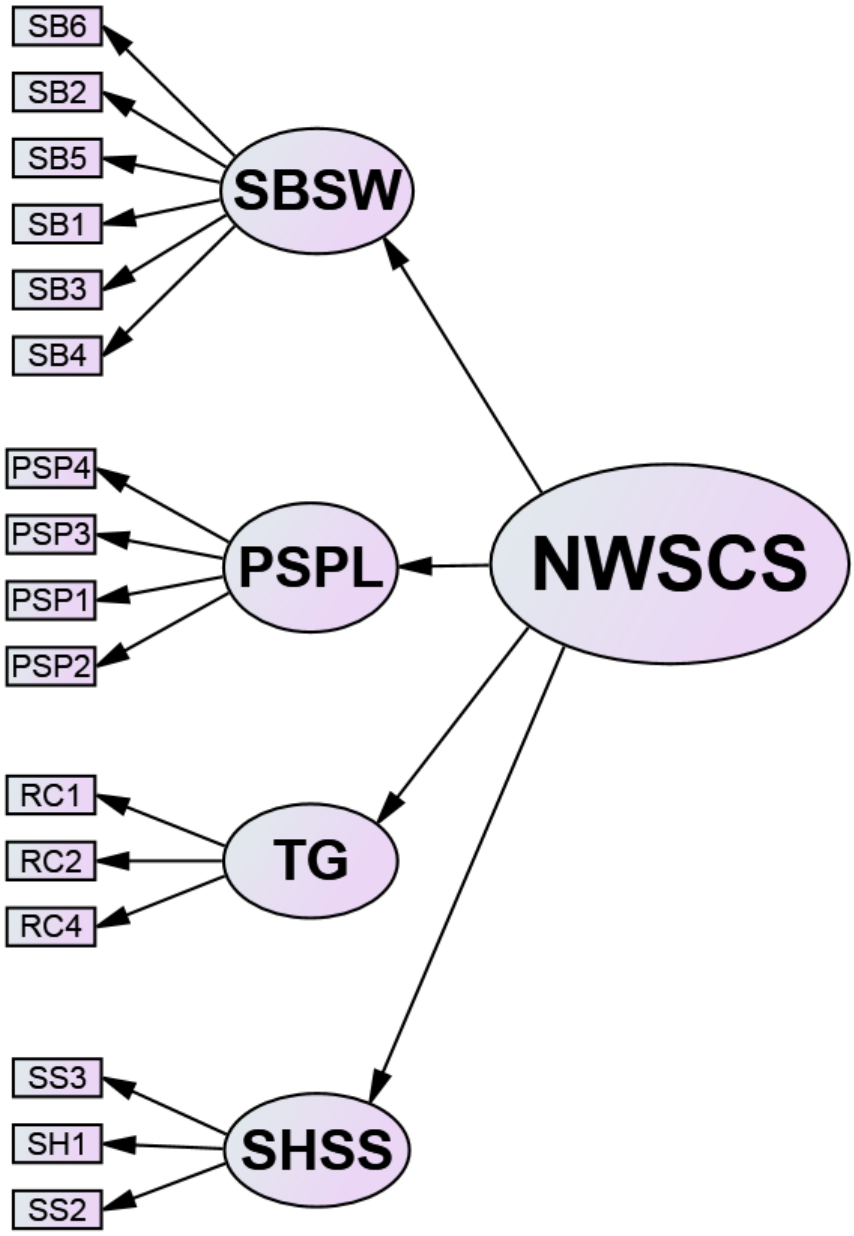

Figure 4.6: Hypothesized Measurement Model of "Nursing Workplace Stress Coping Strategies (NWSCSS)"

It is hypothesized that four coping strategies measures construct called Nursing Workplace Coping Strategies

Confirming the Measurement Model Using CFA- First Order

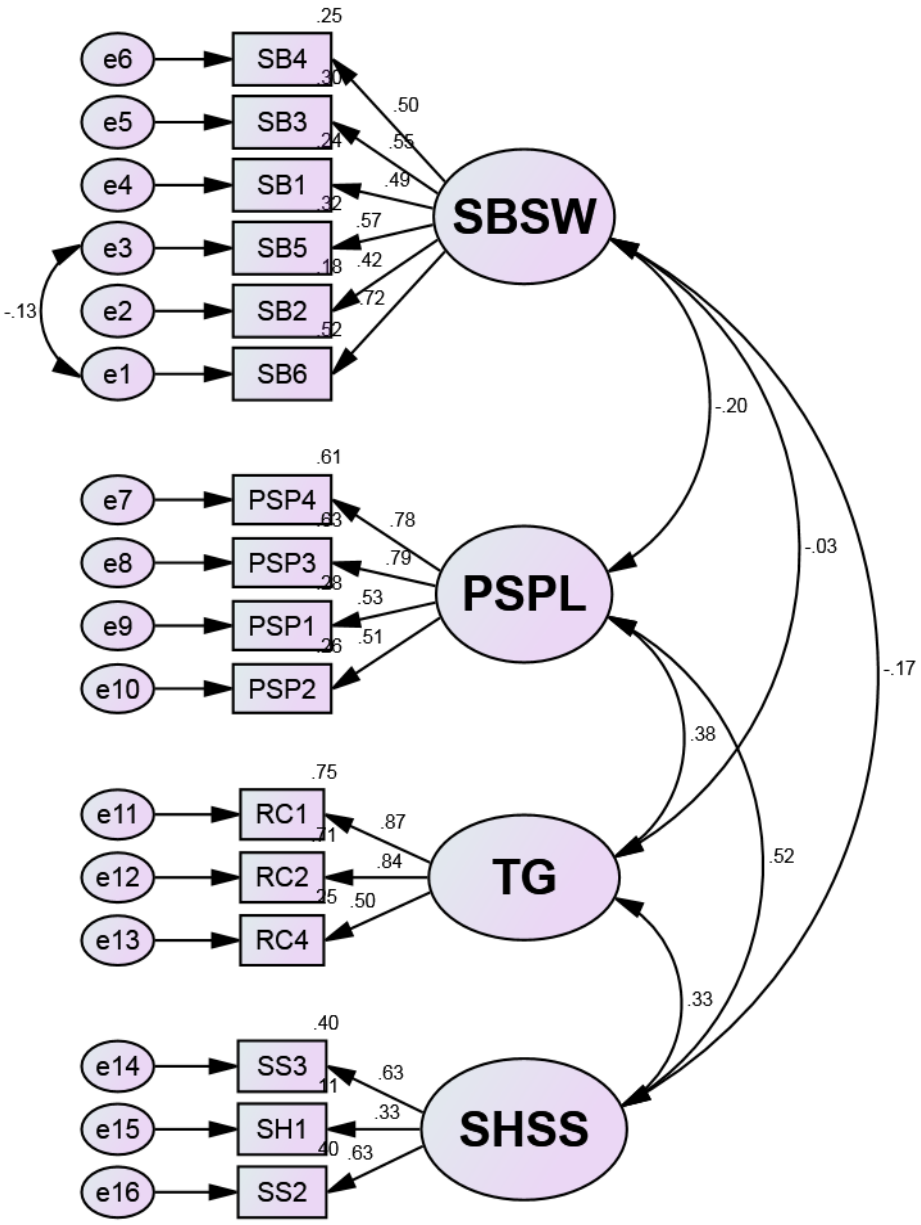

Figure 4.7: CFA- First Order of Nursing Workplace Stress Strategies Scale (NWSCSS)

4.17 ASSESSING THE OVERALL MEASUREMENT MODEL FITNESS (FIRST ORDER CFA)

The results presented in Table 4.32 provide an overall overview of the model fit, which includes the value (133.147), together with its degrees of freedom (97) and probability value (0.009).

Table 4.31

AMOS Output Showing Model Fit

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	39	133.147	97	0.009	1.373
Saturated model	136	0.000	0		
Independence model	16	955.012	120	0.000	7.958

The relatively small chi-square value in SEM supports the proposed theoretical model being tested. In this model the value is 133.147, which is comparatively much lesser than the independence model chi-square value (955.012). Thus it can be interpreted that the obtained chi-square value is good.

Other fit indices usually reported to assess overall model fit or goodness of fit are presented in Table 4.32

Table 4.32
Fit indices of measurement model- First Order CFA - NWSS

Fit statistics	Recommended Value	Values
Chi-square/df	≤ 2.00	1.373
Goodness of Fit Index(GFI)	≥ 0.90	0.93
Adjusted Goodness of Fit Index ((AGFI)	≥ 0.90	0.91
Normed Fit Index (NFI)	≥ 0.90	0.86
Relative Fit Index (RFI)	≥ 0.90	0.82
Comparative Fit Index (CFI)	≥ 0.90	0.95
Incremental Fit Index (IFI)	≥ 0.90	0.95
Tucker Lewis Index (TLI)	≥ 0.90	0.94
Root mean Square Error of Approximation (RMSEA)	≤ 0.07	0.03
Root Mean Square Residual (RMR)	≤ 0.07	0.05

* Criteria according to Hair et al. (1998), Arbuckle and Wothke (1995)

Goodness of Fit index (GFI) obtained is 0.93 as against the recommended value of above 0.90, The Adjusted Goodness of Fit Index (AGFI) is 0.91 as against the recommended value of above 0.90 as well. The Normed fit Index (NFI), Relative Fit index (RFI), Comparative Fit index (CFI), Tucker Lewis Index (TLI) are 0.86, 0.82, 0.95, 0.94 respectively as against the recommended level of above 0.90. RMSEA is 0.03 and is well below the recommended limit of 0.07, and Root Mean Square Residual (RMR) is 0.05 also below the recommended limit. Measurement model of workplace Stress Coping Strategies is fully supported by these statistical tests. This measurement model is reliable, valid and useful to measure nursing workplace stress coping strategies among nurses.

To confirm hypothesized construct that loads into number of underlying dimensions or components a second order factor analysis was performed the results are presented in following section.

4.18 SECOND ORDER CONFIRMATORY FACTOR ANALYSIS OF MEASUREMENT SCALE- NWSCSS

The Second Order CFA is a statistical method used to confirm a hypothesized construct that loads into number of underlying dimensions or components. For example, the theory posits that workplace stress coping strategies consist of four underlying dimensions, measured using certain number of items using a measurement scale. The effect of the main construct on the dimensions is estimated. In Second Order CFA, the main construct becomes second order construct while the dimensions become the first order construct.

In this study Second Order CFA was performed to identify the construct called Nursing Workplace Stress Coping Strategies. In Figure 4.8 it can be noted that there are four dimensions or sub-constructs which are reflective of main construct NWSCS.

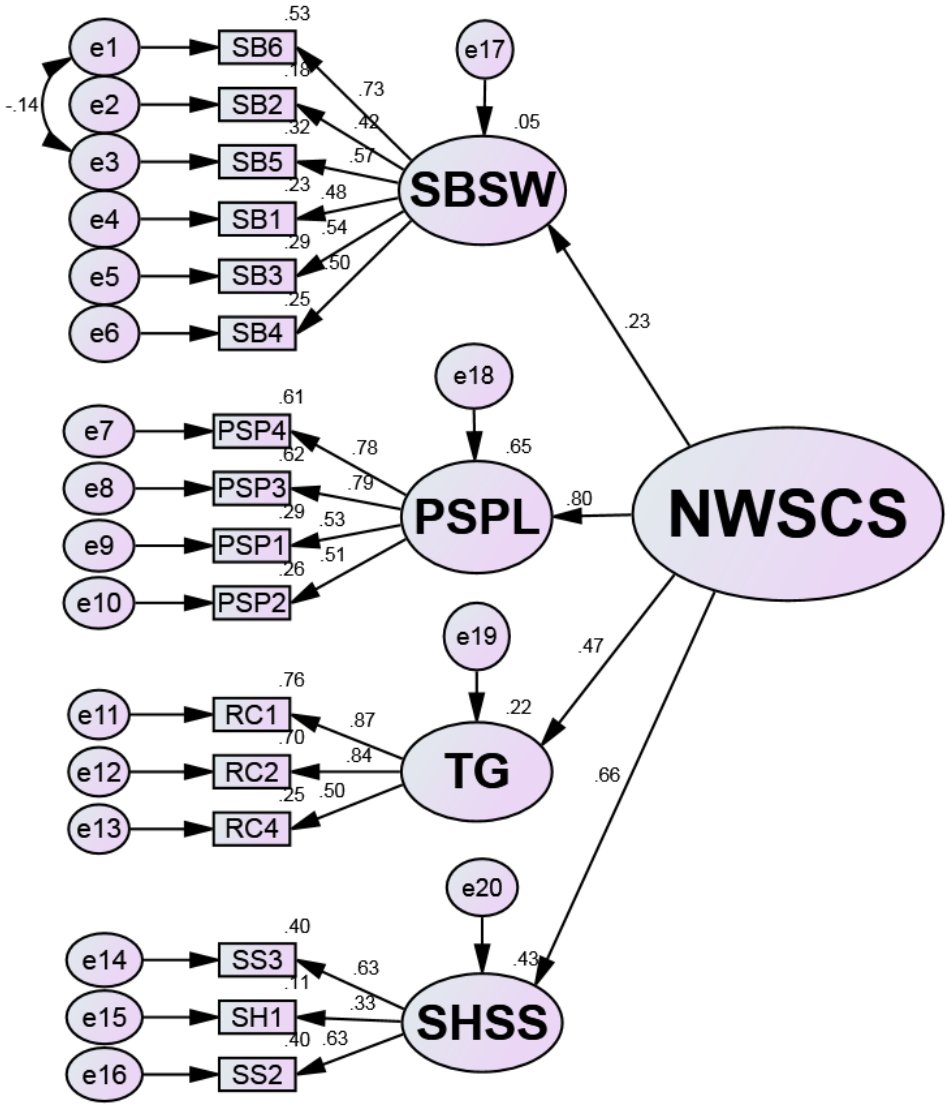

Figure 4.8: CFA for Second Order construct for "Nursing Workplace Stress Coping Strategies Scale (NWSCSS)

As noted in above figure 4.4 this construct has four sub-scales namely Self Blame and Social Withdrawal (SBSW), Problem Solving and Planning (PSPL), Turning to God (TG), Seeking Help and Social Support (SHSS). The four latent sub-scales are measured using certain number of items.

The result shows that workplace stress coping strategies factor loadings on its types of coping strategies. The factor loading of Self Blame and Social Withdrawal (SBSW), Problem Solving and Planning (PSPL),Turning to God (TG), Seeking Help and Social Support (SHSS) are 0.23, 0.80, 0.47 and 0.66 respectively. Furthermore, the R^2 for the sub-subscales are 0.05, 0.65, 0.22 and 0.43, which reflects the contribution of workplace stress coping strategies on its three sub-scales, is good to acceptable.

Further the significance of the main construct on every sub-scale in the model is examined; the output of Regression Path coefficient is presented in Table 4.33

Table 4.33

The regression path coefficient and its significance

		Estimate	S.E.	C.R.	P	Results
SBSW	<--- NWSCS	0.296	0.133	2.225	0.026	Significant
PSPL	<--- NWSCS	1.357	0.396	3.429	***	Significant
TG	<--- NWSCS	1.034	0.270	3.832	***	Significant
SHSS	<--- NWSCS	1.000		Reference point		

The findings presented in Table 4.33 show that there is a significant relationship between workplace stress coping strategies and its four sub-scales Self Blame and Social Withdrawal (SBSW), Problem Solving and Planning (PSPL), Turning to God (TG), Seeking Help and Social Support (SHSS) which means that these four subscales are reflective of the coping strategies used at the workplace by the nurses.

Model Evaluation Criteria: Goodness of Fit

The Structural Equation Model primarily describes to what extent hypothesized relations fits in the given data. Evaluation of a model is ideally done based on certain laid down criteria and from different prospective Goodness of fit (GOF).

Table 4.34

AMOS Output Showing Model Fit

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	37	134.486	99	0.010	1.358
Saturated model	136	0.000	0		
Independence model	16	955.012	120	0.000	7.958

It can be interpreted from Table 4.34 chi-square is 1.358 the value support the proposed measurement model being tested. In this model the value is 134.486 and when it is smaller compared to the value of the independence model (955.012). Hence the value is good.

For the current CFA model, as shown in Table 4.35 value is 1.358 suggesting acceptable model fit.

Table 4.35

Fit indices of measurement model - NWSCSS

Fit statistics	Recommended Value	Values
Chi-square/df	≤ 2.00	1.358
Goodness of fit index(GFI)	≥ 0.90	0.93
Adjusted Goodness of Fit Index ((AGFI)	≥ 0.90	0.91
Normed Fit Index (NFI)	≥ 0.90	0.85
Relative Fit Index (RFI)	≥ 0.90	0.82
Comparative Fit Index (CFI)	≥ 0.90	0.95
Incremental Fit Index (IFI)	≥ 0.90	0.95
Tucker Lewis Index (TLI)	≥ 0.90	0.94
Root mean Square Error of Approximation (RMSEA)	≤ 0.07	0.03
Root Mean Square Residual (RMR)	≤ 0.07	0.04

* Criteria according to Hair et al. (1998), Arbuckle and Wothke (1995)

Goodness of Fit index (GFI) obtained is 0.93 as against the recommended value of above 0.90, The Adjusted Goodness of Fit Index (AGFI) is 0.91 as against the recommended value of above 0.90 as well. The Normed Fit Index (NFI), Relative Fit Index (RFI), Comparative Fit Index (CFI), Tucker Lewis Index (TLI) are 0.85, 0.82, 0.95, 0.94 respectively as against the recommended level of above 0.90. RMSEA is 0.03 and is well below the recommended limit of 0.07, and Root Mean Square Residual (RMR) is also well below the recommended level of 0.04. Measurement model of workplace stress coping strategies is fully supported by the statistical tests. Thus this measurement model is reliable, valid and useful to measure nursing

workplace stress coping strategies among nurses. The Confirmatory Factor Analysis shows an acceptable overall model fit and hence, the theorized model fits well with the observed data. It can be concluded that the hypothesized four dimension CFA model fits the sample data very well.

Table 4.36

Summary of SEM output

Summary	Particulars	Value
Notes for group	Model is recursive	-
	Sample size	249
Variable counts	Number of variables in the model:	41
	Number of observed variables:	16
	Number of unobserved variables:	25
	Number of exogenous variables:	21
	Number of endogenous variables:	20
Computation of degrees of freedom (Default model)	Number of distinct sample moments:	136
	Number of distinct parameters to be estimated:	37
	Degrees of freedom (136 - 37):	99
Result	Minimum was achieved	
	Chi-square	134.486
	Degrees of freedom	99
	Probability level	0.01

Type of Model

In this study the hypothesized measurement model is recursive, i.e., uni-directional, in this no variable has effect on itself. Recursive models are the most clear-cut following a path of single headed arrows and have two basic characteristics their distribution are uncorrelated, and all causal effects are unidirectional.

Model Identification

The present measurement model of NWSCSS is an over-identified model with positive degrees of freedom (99) as shown in table 4.38. In this model there are 136 distinct sample moments (i.e., pieces of information) and 36 distinct parameters to be estimated, leaving 99 degrees of freedom, which is positive (greater than zero). Hence the model is an over identified one.

Table 4.37

Parameter Summary

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	25	0	0	0	0	25
Labeled	0	0	0	0	0	0
Unlabeled	15	1	21	0	0	37
Total	40	1	21	0	0	62

Based on the above results and summary of the model fit, it can be concluded that measurement model of Nursing Workplace Stress Coping Strategies Scale (NWSCSS) developed in this study has achieved excellent fit indices.

SUMMARY

This chapter dealt with the development of two measurement scales namely Nursing Workplace Stress Scale (NWSS) and Workplace Stress Coping Strategies Scale (NWSCSS). A number of statistical tests were applied to established psychometric properties of the developed scales. The hypothesized eleven dimension of workplace stress were found to measure workplace stress and the hypothesized four dimensions of workplace stress coping confirmed that the scale measures workplace stress coping. Both scales underwent an exhaustive process of scale development from conceptualization to obtaining excellent model fit indices. The statistical packages AMOS 22 and SPPS 21 were used for computing various statistics. The scales are found to be reliable, valid and useful to measure Workplace Stress and Coping especially among nursing professionals.

CHAPTER V
5. FORMULATION OF HYPOTHESES

After the scales had been tested for their robustness, the data obtained from the nurses had been subjected to analysis for testing relationships between the different variables included in the study. The developed scales helped in identification of the dimensions of workplace stress and coping, which were taken as the basis for further analysis and discussion. This chapter includes the objectives designed for the purpose, and the formulation of the hypotheses based on the conceptual models developed for testing.

5.1 OBJECTIVES OF THE STUDY:

To identify the relationship between the workplace stress and coping strategies used by nurses, the following are the objectives that have been formulated:

- to find the relationship between workplace stress and coping strategies used by nurses.
- to identify the difference in stress and coping between nurses, based on their demographics(age, gender, professional qualification, marital status, total years of experience, type of hospital)

Research hypotheses

The following research hypotheses were formulated and were statistically tested at 0.05 level of significance. This suggests that the scope for error in findings is limited to only 5%, increasing their relevance, and many quality works of research also report findings at 5% error levels.

5.2 RELATIONSHIP BETWEEN WORKPLACE STRESS AND COPING STRATEGIES

Several studies have found relationship between stress and coping among nurses, but there have been contradictory findings. While some reported positive association, some reported negative, while others have reported no relationship (Qiao, Li & Hu (2011), Kakade, Kakade & Devi (2014) Shiji, Sequera & Mathew (2016)). In order to understand the nature of relationship between workplace stress and coping strategies used by the nurses in the population studied, the following hypotheses were formulated

Hypothesis 1

***H_1*-There is a significant relationship between total workplace stress and coping strategies used by nurses.**

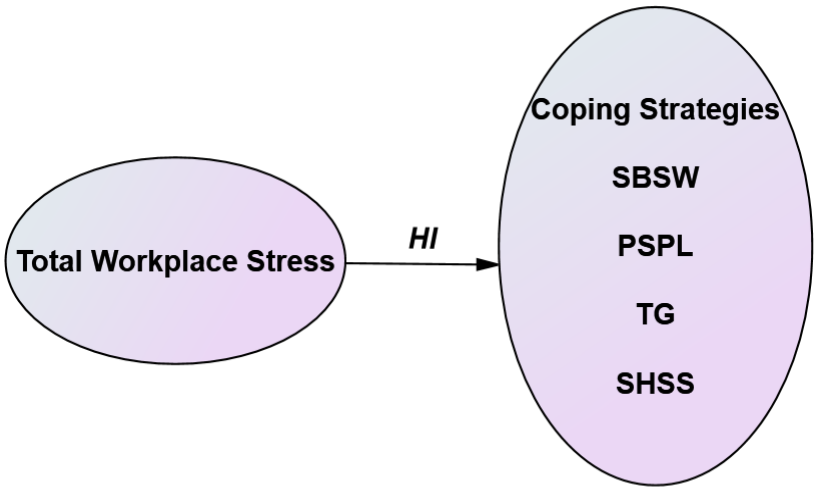

Figure 5.1: Hypothesized relationship between total workplace stress and coping strategies

It is hypothesised that there is a statistically significant relationship between total workplace stress experienced by respondents and each of the coping strategies they may use to cope with this stress.

***H_2*-There is a significant relationship between workplace stress dimensions and coping strategies, used by nurses.**

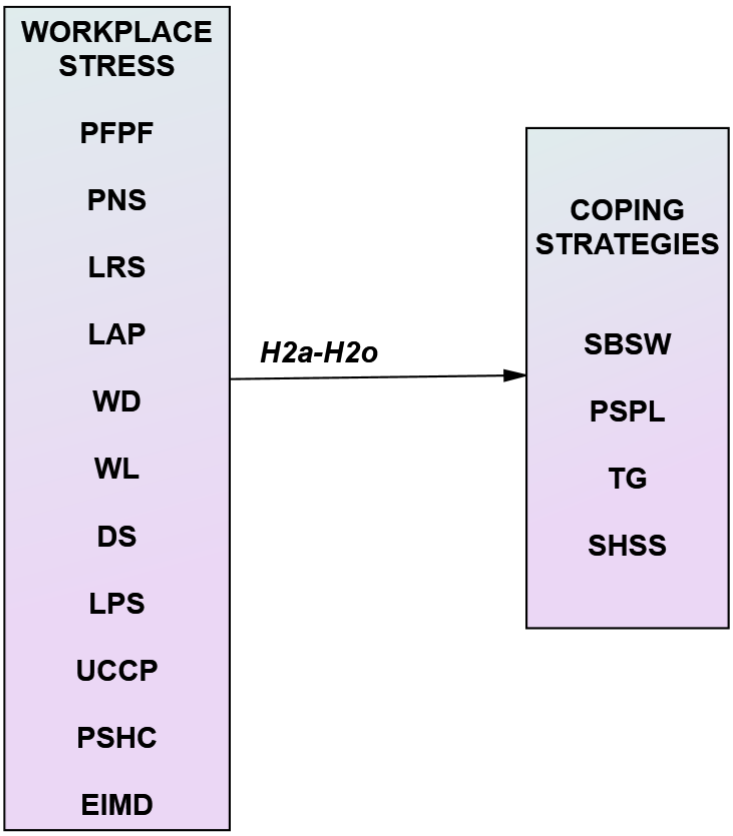

Figure 5.2: Hypothesized relationship between workplace stress dimensions and coping strategies

It is hypothesised that each of the eleven dimensions of the workplace stress identified in this study will have a significant relationship with each of the four coping strategies identified. To test these relationships, the following specific hypotheses are formulated.

H_{2a} - There is a significant relationship between Problems Faced with Patients and their Families (PFPF) and coping strategies, used by nurses.

H_{2b} - There is a significant relationship between Problems with Nursing Supervisors (PNS) and coping strategies used by nurses

H_{2c} - There is a significant relationship between in Lack of Autonomy and Power (LAP) and coping strategies

H_{2d} - There is a significant relationship between Ethical Issues and Meeting Demands (EIMD) and coping strategies - Turning to God, Self blame and avoidance, Seeking help and support

H_{2e} - There is a significant relationship Ethical Issues and Meeting Demands (EIMD) and coping strategy- Planning and problem solving

H_{2f} - There is a significant relationship between Lack of Professional Status (LPS) and coping strategies

H_{2g} - There is a significant relationship between Lack of Resources and Support (LRS) and coping strategies-Turning to God, Seeking help and support and Planning and problem solving.

H_{2h} - There is a significant relationship between Lack of Resources and Support (LRS) and coping strategies Self Blame and Avoidance (SBA)

H_{2i} - There is a significant relationship between Workplace Discrimination (WD) and coping strategies -Turning to God, Planning and problem solving, Self Blame and Avoidance

H_{2j} - There is a significant relationship between Workplace Discrimination (WD) and coping strategies- Seeking help and support.

H_{2k} - There is a significant relationship between Perceived Self Health Concerns (SHC) and coping strategies.

H_{2l} - There is a significant relationship Death and Suffering (DS) and coping strategies

H_{2m} - There is a significant relationship between Uncertainty Concerning Appropriateness of Care (UCAC) and coping strategies-Turning to God, Self blame and avoidance, Seeking help and support

H_{2n} - There is a significant relationship between Uncertainty Concerning appropriateness of Care (UCAC) and coping strategies-Planning and problem solving

H_{2o} - There is a significant relationship between the workplace stress dimension-Workload (WL) and coping strategies

5.3 RELATIONSHIP BETWEEN WORKPLACE STRESS, COPING AND DEMOGRAPHICS OF NURSES.

The relationships between the stress and demographic variables have been reported in the literature but findings are not consistent. While some authors reported that there is no significant association between stress, coping and personality of respondents (Rosnah & Azmi, 2008), some authors (Jose & Bhat, 2013) reported association between stress levels and demographics, and still others (Kakade. Kakade & Devi, 2014) found no impact of demographic variables of nurses on their stress levels or coping abilities. Based on such contrary findings, this study aimed at testing the

relationships with the data obtained from respondents. The following hypotheses are formulated to test relationship between workplace stress, coping strategies and demographics of the nurses.

H_3 **- There is a significant relationship between workplace stress of nurses and Demographic variables -** age, gender, professional qualification, marital status, total years of experience and type of hospital.

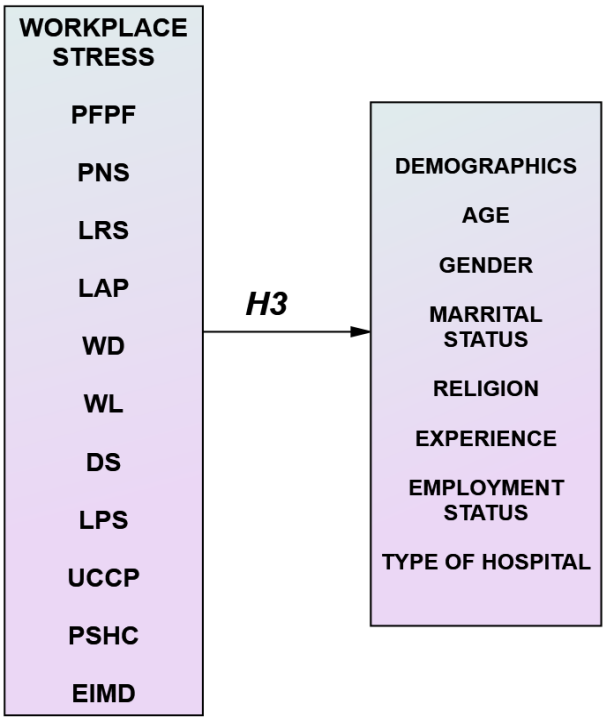

Figure 5.3: Hypothesized relationship between workplace stress dimensions and demographic variable of nurses

It is hypothesized that there is a significant relationship between each of the dimension of work place stress and the demographic variables of the respondents which are captured in the study. Also the relationship between the dimension of total workplace stress and each of the demographic variables was tested.

H_4 **- There is a significant relationship between workplace stress coping strategies used by nurses and Demographic variables** - age, gender, professional qualification, marital status, total years of experience and type of hospital.

Similarly, the relationship between individual coping strategies, viz., 'Self Blame and Social Withdrawal', 'Problem Solving and Planning', 'Turning to God', 'Seeking help and Social Support' and all the demographic variables like Age, gender, marital status, religion, experience, employment status and type of hospital included in the study are hypothesised and tested for significance.

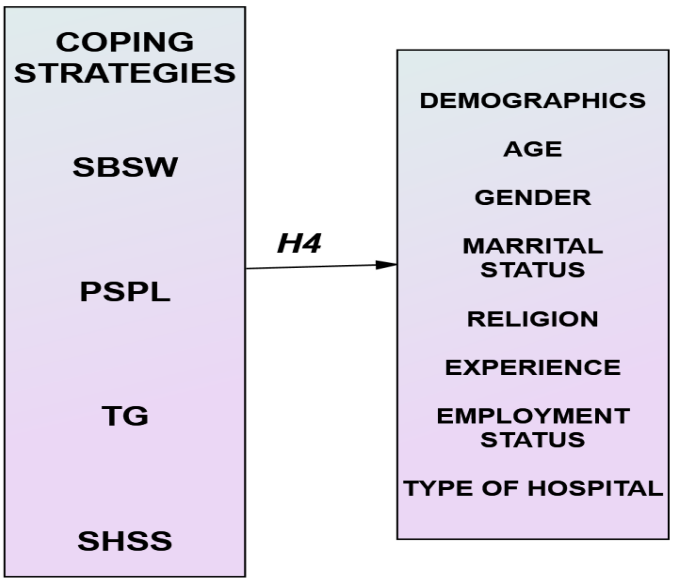

Figure 5.4: Hypothesized relationship between coping strategies and demographic variable of nurses

CHAPTER VI

6. ANALYSIS AND DISCUSSION

This chapter deals with analyses and discussion of data collected from 833 nurses working in Government and private health care settings in Goa, India in order to find the relationship between workplace stresses and coping strategies used by the respondents. The tools used were Nursing Workplace Stress Scale (NWSS) and Nursing Workplace Stress Coping Scale (NWSCS) that were developed by the researcher.

The data was analyzed using Statistical Package for Social Sciences (SPSS) version 21 and AMOS version 22. Various statistical tests were applied to test the relationships, significant differences among groups, model fit and to discuss the findings in relation to existing literature.

The data was analyzed based on the objectives of the study.

The objectives of the study were

- to find the relationship between workplace stress and coping strategies used by nurses.
- to identify the difference in stress and coping between nurses, based on their demographics (age, gender, professional qualification, marital status, total years of experience, employment status, type of hospital)
- to develop and test the process model of workplace stress and coping.

To achieve the objectives of the study, the hypotheses were stated and tested at 0.05 levels of significance.

Organization of the data

The analyses of data was organized and presented under the following headings.

6.1 Description of Sample Characteristics

6.2 Description of Workplace Stress and Coping Strategies used by nurses.

6.3 Relationship between Workplace Stress and Coping Strategies

6.4 Relationship between Workplace Stress and Demographic Variables

6.5 Relationship between Coping Strategies and Demographic Variables.

6.6 Description of the Process Model of Workplace Stress and Coping Strategies.

6.1 DESCRIPTION OF SAMPLE CHARACTERISTICS

This section deals with the characteristics of 833 nurses included in the study. The demographic variables of the nurses were i.e. age, gender, professional qualification, marital status, and work variables i.e., total years of experience and type of hospital. The data is described in terms of frequency and percentages in Table 6.1.

Table 6.1

Descriptive Statistics of the Respondents

N=833

Demographic variables	Frequency (f)	Percentage (%)
Age in years		
> 25	158	19.0
25-35	384	46.0
36-45	166	19.9
46-55	100	12.0
< 55	25	3.0
Gender		
Male	68	8.2
Female	765	91.8
Professional Qualification		
Diploma in nursing	507	60.9
Degree in nursing	326	39.1
Marital status		
Single	327	39.3
Married	506	60.7
Total years of experience		
0-5	333	40.0
6-10	177	21.2
11-15	105	12.6
16-20	76	9.1
> 20	142	17.0
Religion		
Hindu	443	53.2
Christians	366	43.9
Muslims	12	1.4
Others	2	0.2
Don’t want to mention	10	1.2
Type of health settings		
Government	657	78.9
Private	176	21.1
Employment status		
Regular	723	86.8
Contract	110	13.2

The data in Table 6.1 show that the majority (46%) of the subjects were in the age group of 25 to 35 years. The majority (98.1%) of the sample were female nurses as nursing is a female dominated profession. In regard, to professional qualification nurses with a diploma in nursing (60.9%) were more than those having a degree in nursing (39.1%). With reference to marital status, 505 (50.7%) were married and 327(39.3%) were single. Majority (40%) of the sample were having work experience of 1 to 5 years and 328 (39.4%) had less than one year work experience. With regard to religion 443 (53.2%) samples were Hindus followed by 366 (43.9%) Christians whereas, Muslim samples were 12(1.4%). This shows that there was representation of all religion as per the population of Goa. The majority 657(78.9%) of the study sample were from the Government health care settings as key health care delivery in Goa is through Government hospitals and health centres. In regard to the employment status 723 (86.8 %) were holding regular post whereas 110 (13.2%) were employed on contract basis.

Although there is no published national data on nursing statistics in similar terms, information from articles published on different health care issues, reflect similar findings. Hence, the sample can be considered representative of the nursing population in India.

6.2 ANALYSIS OF THE STRESS LEVELS AMONG RESPONDENTS:

The data obtained from the respondents has been analysed for descriptive statistics including mean, standard deviation, median, minimum and maximum stress scores. Research accepts that the statistical results will reflect dispersion of the data across the sample studied. The stress scores are calculated as per dimension based on the stressors identified and have been described during the process of scale development. The total score is the summation of scores of all the dimensions studied, which is presented in table 6.2

6.2(a) STRESS

Table 6.2

Workplace Stress of nurses – Descriptive statistics

N=833

Sub-scales	Mean ± SD	Median	Minimum Score	Maximum Score
Total workplace stress	108.82 ± 31.87	111	4	189
Problems faced with Nursing Supervisors	10.95 ± 4.92	11	0	20
Problems Faced with Patients and their Families'	12.71± 4.41	13	0	20
Lack of Resources and Support	20.20 ± 4.85	21	0	67
Lack of Autonomy and Power	10.07 ± 1.98	10	0	20
Workplace	5.63 ± 3.80	5	0	16
Discrimination	9.50 ± 4.15	10	0	33
Ethical Issues and Meeting Demands.				
Uncertainty concerning to appropriateness of care provided	7.66 ± 3.39	8	0	31
Workload				
Lack of professional status.	9.26 ± 3.32	9	0	16
Death and Suffering	7.27 ± 2.83	7	0	12
Perceived Self	9.23 ± 3.36	9	0	16
Health Concerns	6.29 ± 3.01	6	0	12

Data presented in Table 6.2 shows that the mean of the total workplace stress score (108.82 ± 31.87) indicates that the majority of nurses experience moderate stress at the workplace. The highest score (20.20 ± 4.85) dimension wise was in the area of lack of resources and support followed by problems faced with patients and their families' (12.71± 4.41). The lowest mean stress score (5.63 ± 3.80) dimension wise was in the area of workplace discrimination. This suggests that lack of resources is the primary concern of most of the nurses working in Goa, and workplace discrimination is the least of their concerns.

Bhatia et al., (2010) and Jathanna et al., (2012) also reported that discrimination was least stressful among the nurses. There are no reports of similar findings internationally, but we can see that for nurses in India, though discrimination is recognised as a stressor, it is of lesser intensity than the other stressors studied.

A detailed analysis of each of these stressors and their relationship with other variables studied is given in this chapter.

Based on the total stress scores of the respondents, the stress scores were classified into three categories of stress levels – low, moderate and severe, so that further analysis could be made on the relationship between the stress levels and types of coping strategies used, etc. A total stress score of 98 or less was classified as a low stress score, while any score higher than 148 was classified as a severe stress score. The scores ranging from 99-147 were classified as moderate levels of stress experienced by the nurses.

Table 6.3

Frequency of respondents classified as per their level of total stress score

N=833

Workplace Stress	Frequency (f)	Percentage (%)
Low	302	36.2
Moderate	458	55.0
Severe	73	8.8

The data in Table 6.3 shows that the majority of the respondents experienced moderate levels of stress, and less than 10% respondents had severe stress levels, and the remaining one third of the respondents experienced low levels of stress. This suggests that nurses experience stress of different intensity at their workplace. These findings are in accordance with the earlier findings of Emery (1993). In contrast Sudhaker & Gomes (2010) and Bhatia et al., (2010) found that the majority of nurses were highly stressed. The findings of this study suggest that only less than 10% of the nurses are highly stressed and 56% of the respondents reported moderate levels of stress and 36% respondents experienced low levels of stress. Though the two studies reported were conducted in India, the impact of the local workplace conditions in Goa may have caused this variation, as Goa essentially is considered to be one of the best performing states in relation to providing health care services.

Low prevalence of occupational stress among nurses working in maternal and child health services was reported by Rosnah & Azmi (2008). The findings may not be exactly similar to the present study in terms of percentage as stress factors depend on many other factors such as institutional policies, type of nursing services provided by the nurses and the perception and personality of individual nurses.

6.2(b) COPING STRATEGIES USED BY RESPONDENTS:

Coping refers to the response to a stressor. Individual nurses respond to different stressors differently. A descriptive analysis of the different coping strategies used by the respondents helped in understanding the frequencies of usage of the different coping strategies studied, which is presented in Table 6.4

Table 6.4

Coping Strategies used by Nurses – Descriptive Statistics

N=833

Coping Strategies	Mean ± SD	Median	Minimum Score	Maximum Score
Turning to God (TG)	6.23 ± 2.37	7	0	9
Self Blame and Social Withdrawal (SBSW)	3.39 ± 3.23	2	0	18
Planning and Problem Solving (PPS)	8.62 ± 2.59	9	0	12
Seeking Help and Support (SHS)	5.45 ± 1.98	6	0	9

The above table shows that the mean score was highest (8.62) for planning and problem solving coping strategies followed by turning to God (6.23). This indicates that nurses make efforts to cope with workplace stress by planning and problem solving strategy, which is generally considered as an adaptive/ positive coping. It is observed that the mean score was least in the areas of self blame and social withdrawal (3.39) i.e. blaming self and avoiding others. This indicates that nurses make less use of this strategy, which is sometimes called as a maladaptive coping strategy. Lambert & Lambert (2008) reported similar findings that seeking social support, planful problem-solving, self-control, and positive reappraisal are the most preferred coping strategies used among nurses. A study among Indian nurses by Saini,

Kaur & Das (2016) reported that problem solving and religious coping strategies were preferred by the nurses, and Safaeian & Esmaeilinasab (2014) reported that problem focused coping strategy was used more by nurses than doctors and they reported that avoidance coping was not used by nurses. On the contrary, the study findings suggest that 'self-blame and social withdrawal' was used by nurses to cope with different stressors at the workplace. Even though nurses face many stressors in the hospital set-up they cope positively using adaptive coping strategies. There may be some difference in coping strategies preferred based on culture and personality which may influence the preference or choice of coping strategies. It is also observed that studies conducted in different cultural settings, problem-solving seems to be the most preferred coping strategy. Whatever the constraints faced by nurses that stress them, nurses seem to prefer to solve the problems first, that enables them to provide the best possible care to the patients.

DIFFERENCES BETWEEN NURSES COPING STRATEGIES BASED ON THEIR STRESS LEVELS– PAIRED COMPARISON OF MEANS:

It has been noted earlier that nurses differ in their levels of stress, and data is also presented on different coping strategies which are used by nurses. The researcher was interested to understand whether nurses differ significantly in the type of coping strategies used, based on their total levels of stress. To ascertain this one-way ANOVA was performed on the data to find whether significant differences existed between respondents, based on their levels of stress, on the type of coping strategies used. The results are given in Table 6.5

Table 6.5

Levels of Workplace Stress and Coping Strategies used by Nurses

N=833

Levels of Workplace Stress and coping strategies among nurses						
Coping strategies	**Level of stress**	**N**	**Mean**	**S.D.**	**F**	**Sig.**
PSPL	Low	302	8.36	2.89	6.09	0.002
	Moderate	458	8.65	2.40		
	Severe	73	9.53	2.26		
SBSW	Low	302	2.50	2.66	24.22	0.000
	Moderate	458	3.74	3.32		
	Severe	73	4.98	3.81		
TG	Low	302	5.78	2.61	16.09	0.000
	Moderate	458	6.33	2.21		
	Severe	73	7.46	1.74		
SHSS	Low	458	5.50	1.88	15.38	0.000
	Moderate	73	6.52	1.84		
	Severe	302	5.45	1.98		

The ANOVA results as shown in Table 6.5 indicates significant differences in level of workplace stress and use of coping strategies used by nurses. It can be seen that in all the four coping strategies, except for seek help and social support, there is a similar pattern for mean scores obtained, with low stress score respondents having a low mean score for the coping strategy studied. Further it can be observed that higher the stress levels, higher the mean scores for the different coping strategies studied. It can be interpreted that nurses with severe levels of stress, frequently use all four coping strategies at their workplace. However, the table shows that nurses with moderate levels of stress prefer to seek help and social support more than those with higher or lower levels of stress. Also it can be observed that a difference between each of the group is found to be significant. These findings can help practitioners in designing suitable training/ stress management interventions. However, in this study, it was

found that nurses reported using avoidance coping strategy also to cope with different work stressors. It was also found that 'planning and problem solving', 'Turning to God' are more preferred coping strategies over 'seeking help and social support' and 'self-blame and social withdrawal'. Thus it can be deduced that nurses may respond to stress/stressor with different types of coping strategies based on the situation or patients' needs and their own personality. There are no comparable studies found in literature that reported stress levels of nurses on different dimensions of workplace stress, and studies that analysed respondents with different levels of stress scores in relation with the coping strategies are not found in literature reviewed. Hence, these findings add a significant value to the understanding of the relationship between workplace stress of nurses and coping strategies.

6.3 TESTING OF HYPOTHESES:

6.3 (a) RELATIONSHIP BETWEEN WORKPLACE STRESS AND COPING STRATEGIES (Hypothesis 1)

This section presents the relationship between workplace stress and coping strategies used by the respondents. The correlation coefficient is a measure of linear association between two variables. The correlation coefficient value is always between -1 and +1. It is a statistical tool that helps in establishing relationships between the variables studied. Though it is difficult to establish the causality between the variables studied, it serves as an important indicator to reflect the extent to which a variable can increase or decrease the value of a parallel variable. Positive correlation is when the value of one variable increases than the value of the other variable also increases. A negative correlation indicates that the degree of increase in the value of one variable results in the decrease in the value of another variable.

In order to find the relationship between workplace stress and coping strategies the following hypothesis was stated.

***H_1*-There is a significant relationship between total workplace stress and coping strategies used by nurses.**

To test this hypothesis, correlation analysis was conducted to analyse the relationship between total workplace stress and coping strategies used by nurses, and the results are presented in Table 6.6

Table 6.6

Correlation between Total Workplace Stress and Coping Strategies

N= 833

Coping Strategies	Total Workplace Stress
Turning to God	0.191**
Self blame and social withdrawal	0.251**
Seeking help and support	0.178**
Planning and problem solving	0.140**

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

The findings presented in Table 6.6 shows that there is positive correlation for workplace stress with coping strategies- turning to God, seeking help and support, planning and problem solving and self blame and social withdrawal. It may be inferred that when the workplace stress is high among nurses, their use of coping strategies is also high. **Hence the hypothesis H_1 is accepted stating that there is a significant relationship between total workplace stress and coping strategies used by nurses.**

Several earlier, studies have found different relationships between stress and coping among nurses. There have been contradictory findings reported in literature. Qiao, Li & Hu (2011) indicated significant positive correlation between few workplace stressors and coping strategies. Strong negative correlation was reported by (Sudhaker & Gomes 2010, and Shiji et al., 2016). In another study by Kakade et al. (2014) the findings revealed that there was no significant association between the level of stress and coping abilities. Stress is a personalised experience and depends on individual's perception, the coping will depend on personal resources and many other factors such as personality, age, gender etc. Coping usually increases when stress increases, but when there is inadequacy of coping resources within oneself, individual's response may be negative or there may be no effort from the individual to respond to the perceived stressors/stress.

6.3 (b) RELATIONSHIP BETWEEN THE DIFFERENT STRESSORS AT WORKPLACE AND THE COPING STRATEGIES USED BY NURSES (Hypothesis 2)

In this study **eleven workplace stressful dimensions** were identified and nurses reported using different types of coping strategies to deal or cope with these stressors. In order to further analyse, the relationship between each dimension of the workplace stress and four types of coping strategies, hypothesis were stated to determine the relationship between these two variables under the study.

a. **Relationship between the workplace stressor 'Problems Faced with Patients and their Families (PFPF)' and the different coping strategies used by Nurses:** Problems with patients and their families was reported by the respondents as one of the stressors in the workplace. As nurses have more frequent and regular

interaction with patients and their families than other health team members, it is natural for patients and their family members to expect quality health care from nurses. However, when nurses are unable to meet their demands due to a variety of reasons, it seems to cause stress. To find out the relationship between data obtained for this stressor and the different coping strategies used by the respondents, correlation analysis has been done. The results are presented in the Table 6.7

Table 6.7

Correlation between Problems Faced with Patients and their Families and Coping Strategies used by the Nurses

N=833

Coping Strategies	Problems Faced with Patients and their Families (PFPF)
Turning to God	0.145**
Self blame and social withdrawal	0.154**
Seeking help and support	0.155**
Planning and problem solving	0.157**

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

Findings presented in Table 6.7 shows that there is positive correlation for problems faced with patients and their families with coping strategies of- turning to God, seeking help and support and planning and problem solving and self blame and social withdrawal. It may be inferred that nurses use all four types of coping strategies to cope with problems faced with patients and their families at the workplace. **Hence the hypothesis H_{2a} that stated "There is a significant**

relationship between problems faced with patients and their families (PFPF) and coping strategies used by nurses" is accepted.

Bratt et al., (2000) reported that dealing with the patients' families is very frequently reported as a workplace stressor by nurses. Nurses come in contact with patients' families very often and to cope with this problem, it was found that they use all the four coping strategies included in the study.

b. Relationship between the workplace stressor 'problems faced with nursing supervisors (PFNS)' and the different coping strategies used by nurses: Nurses have reported problems with their nursing superiors. Many a time, nurses feel that their superiors are not concerned or supportive to junior staff and this may lead to conflict between nurses and their supervisors. Correlation analysis was used to test the relationship between problems faced with nursing supervisors (PFNS) and coping strategies used by nurses, and the results are presented in Table 6.8

Table 6.8

Relationship between Problems Faced with Nursing Supervisors and coping strategies used by the nurses

N=833

Coping Strategies	Problems Faced with Nursing Supervisors (PFNS)
Turning to God	0.207**
Self blame and social withdrawal	0.139**
Seeking help and support	0.158**
Planning and problem solving	0.150**

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

Findings presented in Table 6.8 shows that there is positive a correlation for problems faced with nursing supervisors and with coping strategies- turning to God, seeking help and support and planning and problem solving and self blame and social withdrawal. From this it may be inferred that nurses use all four type of coping strategies to cope with problems faced with nursing supervisors at the workplace. **Hence the hypothesis H_{2b} that stated "There is a significant relationship between Problems Faced with nursing supervisors (PFNS) and coping strategies used by nurses" is accepted.**

c. **Relationship between the workplace stressor 'Lack of Autonomy and Power (LAP)' and the different coping strategies used by Nurses:** Nurses perceive that they lack autonomy and power at their workplace. They are unable to take decisions on their own even though they are with patients for all 24 hours of the day in the absence of other health team members. When they have to assume job responsibility without authority it leads to stress. To know what kind of coping is prefered to handle this kind of situation, a co-relational analysis was performed between lack of autonomy and power and coping strategies, the findings of the same are presented in table 6.9.

Table 6.9

Relationship between Lack of Autonomy and Power and coping strategies used by the nurses

N=833

Coping Strategies	Lack of Autonomy and Power (LAP)
Turning to God	0.137**
Self blame and social withdrawal	0.192**
Seeking help and support	0.100**
Planning and problem solving	0.133**

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

Findings presented in Table 6.9 shows that there is positive correlation for lack of autonomy and power with coping strategies- turning to God, seeking help and support and planning and problem solving and self blame and social withdrawal. Therefore it may be inferred that respondents use all four types of coping strategies to cope with lack of autonomy and power at the workplace. **Hence the hypothesis H_{2C} which stated that "There is a significant relationship between in lack of autonomy and power (LAP) and coping strategies" is accepted.**

Kath et al. (2012) stated that the most effective buffer for stress experience was Autonomy. When there is lack of autonomy and power it can lead to stress and when autonomy is given nurses it can be a buffer for other stressors at the workplace. Increasing autonomy among nurses will have a positive impact on the functioning and diligent execution out their (nurses) roles.

d. Relationship between the workplace stressor 'ethical issues and meeting demands (EIMD)' and coping strategies- turning to God, self blame and avoidance, seeking help and support used by Nurses: Nurses are very often confronted with ethical issues at their workplace related to patient care which leads to ethical dilemmas. Some decisions are related to life and death situations. The demands placed by doctors and other health team members on nurses, who is a central person in the hospital set up, often leads to stress among nurses. A correlation analysis determined the relationship between ethical issues and meeting demands (EIMD) and coping strategies - turning to God, self blame and avoidance, seeking help and support. The findings are presented in Table 6.10

Table 6.10

Relationship between Ethical Issues and Meeting Demands (EIMD) and coping strategies used by the nurses

N=833

Coping Strategies	Ethical Issues and Meeting Demands (EIMD)
Turning to God	0.103**
Self blame and social withdrawal	0.313**
Seeking help and support	0.086*

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

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

Findings presented in Table 6.10 shows that there is a positive correlation for ethical issues and meeting demands with coping strategies- turning to God, seeking help and support and self blame and social withdrawal. Though correlation between ethical issues and meeting demands with coping strategies- seeking help and support is statistically significant the magnitude of the correlation coefficient is very close to zero. So this workplace stressor has no influence on this coping strategy. From these results it may be inferred that nurses use basically three types of coping strategies to cope with ethical issues and meeting demands at the workplace to different degrees. **Hence the hypothesis H_{2d} is accepted stating that -there is a significant relationship between ethical issues and meeting demands (EIMD) and coping strategies - turning to God, self blame and avoidance, seeking help and support.**

e. Relationship between the workplace stressor 'ethical issues and meeting demands (EIMD)' and coping strategy planning and problem solving used by nurses: Nurses reported that they face ethical issues and problems with meeting demands of different health team members at the workplace as a stressor, it was interesting to find out whether nurses use planning and problem solving coping strategy to overcome this stressor at workplace. To determine relationship between ethical issues and meeting demands (EIMD) and coping strategy-planning and problem solving correlation was computed which is present in Table 6.11

Table 6.11

Relationship between* Ethical Issues and Meeting Demands (EIMD) *and coping strategies used by the nurses

N=833

Coping Strategies	Ethical Issues and Meeting Demands (EIMD)
Planning and problem solving	0.046 NS

NS= Not Significant

Findings presented in Table 6.11 shows that there is a positive correlation for ethical issues and meeting demands with coping strategies- planning and problem solving which was found to be not statistically significant. It may be inferred from these results that nurses do not use planning and problem solving coping strategies to cope with ethical issues and meeting demands at the workplace. **Hence the hypothesis H_{2e} is not accepted stating that - there is a significant relationship between ethical issues and meeting demands (EIMD) and coping strategy-planning and problem solving.**

f. Relationship between the workplace stressor 'Lack of professional status (LPS)' and coping strategies used by nurses: Though nursing is one of the oldest occupation, is yet to be recognised and valued as a profession by society. Nurses have reported that knowledge and skill are being undervalued by other health care professional at the workplace. Many a times due recognition is not given to nurses. These situations result in workplace stress for many nurses. To determine relationship between lack of professional status (LPS) and coping strategies correlation is computed and presented in Table 6.12

Table 6.12

Relationship between Lack of Professional Status and coping strategies used by the nurses

N=833

Coping Strategies	Lack of Professional Status (LPS)
Turning to God	0.155**
Self blame and social withdrawal	0.121**
Seeking help and support	0.174**
Planning and problem solving	0.166**

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

Findings presented in Table 6.12 show that there is a positive correlation for lack of professional status and coping strategies- turning to God, seeking help and support and planning and problem solving and self blame and social withdrawal. From the results it may be inferred that to cope with the lack of professional status respondents use different coping strategies. **Hence the hypothesis H_{2f} is accepted stating that there is a significant relationship between lack of professional status (LPS) and coping strategies.**

g. Relationship between the workplace stressor 'lack of resources and support (LRS)' and coping strategies-turning to God, seeking help and support and planning and problem solving used by nurses: The work environment with adequate resources in terms of material supply and manpower is always less stressful. As health care involves team work; lack of support from other team members can be stressful to nurses. Respondents in the study have reported lack of resources and support as a major workplace stressor. To understand the nature of relationship that exists between this stressor and coping strategies-turning to God, seeking help and support and 'planning and problem solving', correlation analysis was done and is presented in Table 6.13

Table 6.13

Relationship between Lack of Resources and Support and coping strategies used by the nurses

N=833

Coping Strategies	**Lack of Resources and Support (LRS)**
Turning to God	0.136**
Seeking help and support	0.110**
Planning and problem solving	0.129**

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

Findings presented in Table 6.13 shows that there is positive correlation for lack of resources and support with coping strategies- turning to God, seeking help and support and planning and problem solving. It may be inferred that nurses use three types of coping strategies to cope with lack of resources and support at the workplace. **Hence the hypothesis H_{2g} is accepted stating that - there is a**

significant relationship between Lack of Resources and Support (LRS) and coping strategies-Turning to God, Seeking help and support and Planning and problem solving.

h. Relationship between the workplace stressor 'lack of resources and support (LRS)' and coping strategy- self blame and avoidance (SBA) **used by nurses:** The respondents in the study have reported encountering situations where resources and support is inadequate. The correlation analysis is performed to determine relationship between this stressor and coping strategy- self blame and avoidance (SBA). The findings are presented in Table 6.14

Table 6.14

Relationship between lack of resources and support and coping strategies used by the nurses

N=833

Coping Strategies	**Lack of Resources and Support (LRS)**
Self blame and social withdrawal	0.068 NS

NS= Not significant

Findings presented in Table 6.14 shows that there is weak positive correlation for lack of resources and support with coping strategy- self blame and social withdrawal which is statistically not significant. It may be inferred that nurses do not use self blame and social coping strategies to cope with lack of resources and support at the workplace. **Hence the hypothesis H_{2h} is not accepted stating that -there is a significant relationship between lack of resources and support (LRS) and coping strategy- self blame and avoidance (SBA)**

i. Relationship between the workplace stressor 'workplace discrimination (WD)' and coping strategies- turning to God, and self blame and avoidance (SBA) used by nurses: Though workplace discrimination is reported to be least stressful it is faced by some of the respondents, to know its relationship with coping strategies correlation is computed and the findings are presented in Table 6.15

Table 6.15

Relationship between Workplace Discrimination (WD) and coping strategies used by the nurses

N=833

Coping Strategies	Workplace Discrimination (WD)
Turning to God	0.093**
Self blame and social withdrawal	0.344**

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

Findings presented in Table 6.15 shows that there is weak positive correlation for discrimination and coping strategies- Turning to God and self blame and social withdrawal. Though a correlation between discrimination (WD) and coping strategy- Turning to God is statistically significant the magnitude of the correlation coefficient is very close to zero. So discrimination has no influence on this coping strategy. It may be inferred that respondents use two types of coping strategies to cope with discrimination at the workplace to different degrees. **Hence the hypothesis H_{2i} is accepted stating that - there is a significant relationship between workplace discrimination (WD) and coping strategies -turning to God and self blame and avoidance**

j. Relationship between the workplace stressor 'Workplace Discrimination (WD)' and coping strategy- Seeking help and support used by Nurses: To establish the relationship between the workplace discrimination and coping

strategy- Seeking help and support, correlation analysis is done and the findings are presented in Table 6.16

Table 6.16

Relationship between Workplace Discrimination (WD) and coping strategies- seeking help and support and planning and problem solving used by the nurses

N=833

Coping Strategies	Workplace Discrimination (WD)
Seeking help and support	NS
Planning and problem solving	NS

NS= Not Significant

Findings presented in Table 6.16 shows that correlation for discrimination and coping strategies- seeking help and support and planning and problem solving is statistically not significant. It may be inferred that nurses do not use seeking help and support and planning and problem solving coping strategies to cope with discrimination at the workplace. **Hence the hypothesis H_{2j} is not accepted stating that - there is a significant relationship between workplace discrimination (WD) and coping strategies- Seeking help and support and planning and problem solving.**

k. Relationship between the workplace stressor Perceived Self Health Concerns (SHC) and coping strategies used by Nurses: Nurses provide care to the patients suffering from various medical ailments which itself can be stressful. Working in night shifts could be another stressor for many nurses as it can result in health problems. To ascertain the relationship between perceived self health

concerns and coping strategies correlation is computed and findings are presented in Table 6.17

Table 6.17

Relationship between Self Health Concerns and coping strategies used by the nurses

N=833

Coping Strategies	Self Health Concerns (SHC)
Turning to God	0.084*
Self blame and social withdrawal	0.211**
Seeking help and support	0.095**
Planning and problem solving	0.094**

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

Findings presented in Table 6.17 shows that there is positive correlation for self-health concerns with coping strategies. Though correlations between self health concerns with coping strategies- Turning to God, Planning and problem solving and seeking help and support is statistically significant the magnitude of the correlation coefficient is very close to zero. Therefore it may be inferred that nurses use three types of coping strategies to cope with self health concerns demands at the workplace to different intensity. **Hence the hypothesis H_{2k} is accepted stating that - there is a significant relationship between perceived self health concerns (SHC) and coping strategies.**

Klonoff & Ewers (1990) and Vijay & Vazirani (2012) reported stress due to general concerns about providing care to patients with contagious diseases. The study reports that nurses worry about getting infected due to inadequate resources

needed for practising universal precautions. Also nurses are at a high risk of developing contagious diseases due to lack of safety measure.

l. Relationship between the workplace stressor "Death and Suffering (DS)" and coping strategies used by nurses: Death and observing a person physically suffering is a stressful situation to most people. Many nurses have to encounter similar situations over and over again at their workplace and these have been reported to be very stressful. To establish a relationship between stressor-death and suffering and coping strategies correlation is computed and the findings are presented in Table 6.18

Table 6.18

Relationship between Death and suffering and coping strategies used by the nurses

N=833

Coping Strategies	Death and suffering (DS)
Turning to God	0.171**
Self blame and social withdrawal	0.110**
Seeking help and support	0.166**
Planning and problem solving	0.110**

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

Findings presented in Table 6.18 shows that there is weak a positive correlation for Death and Suffering with coping strategies. It may be inferred that nurses use all four types of coping strategies to cope with death and suffering of patients at the workplace. **Hence the hypothesis H_{2l} is accepted stating that - there is a significant relationship between Death and Suffering (DS) and coping strategies.**

m. Relationship between the workplace stressor 'Uncertainty Concerning Appropriateness of Care (UCAC)' and coping strategies used by Nurses: Nurses provide care to patients with different mindsets and nurses are mostly unaware of the expectations of these patients or outcome of care provided. Theses situations are perceived by many nurses as stressful and to ascertain the relationship between the workplace stressor- Uncertainty Concerning Appropriateness of Care and coping strategies correlation is computed and findings are presented in Table 6.19

Table 6.19

Relationship between Uncertainty Concerning Appropriateness of Care and coping strategies used by the nurses

N=833

Coping Strategies	**Uncertainty Concerning Appropriateness of Care (UCAC)**
Turning to God	0.093**
Self blame and social withdrawal	0.256**
Seeking help and support	0.152**

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

Findings presented in Table 6.19 shows that there is a positive correlation for Uncertainty Concerning Appropriateness of Care and coping strategies- Turning to God, self blame and social withdrawal, and Seeking help and support. It may be inferred that nurses use three types of coping strategies to cope with Uncertainties at the workplace to different extents. **Hence the hypothesis H_{2m} is accepted stating that - there is a significant relationship between Uncertainty Concerning Appropriateness of Care and coping strategies -Turning to God and Self Blame and Avoidance, Seeking help and support.**

n. Relationship between the workplace stressor 'Uncertainty Concerning Appropriateness of Care (UCAC)' and coping strategies used by Nurses: To determine the relationship between the workplace stressor- Uncertainty Concerning Appropriateness of Care and coping strategy- planning and problem solving correlation is computed and the findings are presented in Table 6.20

Table 6.20

Relationship between uncertainty concerning appropriateness of care and coping strategies used by the nurses

N=833

Coping Strategies	**Uncertainty Concerning Appropriateness of Care (UCAC)**
Planning and problem solving	-.005 NS

NS= Not Significant

Findings presented in Table 6.20 shows that there is a weak negative correlation for Uncertainty Concerning Appropriateness of Care with coping strategy- Planning and problem solving which is statistically not significant. It may be inferred that nurses do not use Planning and problem solving strategies to cope with Uncertainty Concerning Appropriateness of Care at the workplace. **Hence the hypothesis H_{2n} is not accepted stating that –there is a significant relationship between Uncertainty Concerning Appropriateness of Care (UCAC) and coping strategies-Planning and problem solving.**

o. Relationship between the workplace stressor 'Workload (WL) and coping strategies used by Nurses: Nurses workload are increased frequently due to any reasons. To find a relationship between workplace stressor-workload and coping strategies used by nurses correlation is computed. The findings are presented in Table 6.21

Table 6.21

Relationship between Workload and Coping Strategies used by the Nurses

N=833

Coping Strategies	Workload (WL)
Turning to God	0.139**
Self blame and social withdrawal	0.117**
Seeking help and support	0.143**
Planning and problem solving	0.087*

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

Findings presented in Table 6.21 shows that there is a positive correlation for Workload and coping strategies. Though a correlation between Workload and coping strategy- Planning and problem solving is statistically significant the magnitude of the correlation coefficient is very close to zero. So this Workload has no influence on this coping strategy. It may be inferred that nurses use all four types of coping strategies to cope with Workload at the workplace to different extent. **Hence the hypothesis H_{2o} is accepted stating that - there is a significant relationship between the workplace stress dimension- Workload (WL) and coping strategies.**

DIFFERENCES IN NURSES' WORKPLACE STRESS AND COPING STRATEGIES, BASED ON THEIR DEMOGRAPHICS

Research in social sciences says that people's behaviour change with their age and kinds of experience in their lives. Hence most of the research in this category captures demographics of the respondents and try to understand the inter-group differences, which add to the depth of understanding of the processes studied, across different sub-groups of respondents included in the sample. In this research, the stress levels of nurses and the type of coping strategies they used have been captured. It will be interesting to find out how coping strategies differ with their age, total experience, etc. To understand this, one-way analysis of variance (ANOVA) was used to find any significant differences between the means of three or more independent (unrelated) groups.

6.4 DIFFERENCES IN NURSES WORKPLACE STRESS, BASED ON THEIR DEMOGRAPHICS (Hypothesis 3):

***H_3*- There is significant relationship between workplace stress of nurses and demographic variables:** age, gender, professional qualification, marital status, total years of experience and type of hospital.

Differences in Nurses' workplace stress, based on their age: People are said to mature with age and their behaviour varies significantly across age groups. As this research is a cross sectional study with nurses from different age groups included in the sample, it was interesting to find out if there was significant differences in the stress levels of respondents belonging to different age groups. Differences in

respondents based on both total stress levels, and by different stressors, have been calculated by doing One-way ANOVA and the results are given in Tables 6.22

Table 6.22

Differences in workplace stress of Respondents, by Age

N=833

Age and Workplace Stress Among Nurses					
Workplace Stressors	**Age Group**	**Mean**	**S.D.**	**F**	**Sig.**
Workplace Stress	Below 25 years	111.39	28.02	7.53	0.00
	25-35 years	112.34	31.87		
	36-45 years	107.48	30.18		
	46-55 years	99.67	34.21		
	Above 55 years	84.16	39.28		

The ANOVA output as shown in Table 6.22 indicates significant differences ($F = 7.53$, $p = 0.000$) in age of nurses and workplace stress, which indicates that Workplace stress is higher among nurses in age group of 25-35 years. The findings shows stress decreases as age increases. Similar findings were reported by Saini et al., (2016) and Kath et al., (2012) that stress is decrease with increase age. This could because nurses become adapted to work situations and maturity sets in as people age.

Differences in workplace stress dimensions, by Age of Respondents

Further ANOVA was computed to find difference in workplace stress dimensions by age of the respondents and the findings are presented in Table 6.23

Table 6.23

Differences in Workplace Stress Dimensions of Respondents, by Age

N=833

Age and Workplace Stress Among Nurses					
Workplace Stressors	**Age Group**	**Mean**	**S.D.**	**F**	**Sig.**
PNS	Below 25 years	11.49	4.57	5.04	0.001
	25-35 years	11.35	4.82		
	36-45 years	10.62	5.02		
	46-55 years	9.90	5.05		
	Above 55 years	7.84	5.71		
PFPPF	Below 25 years	12.73	3.86	4.39	0.002
	25-35 years	13.15	4.43		
	36-45 years	12.61	4.21		
	46-55 years	11.81	4.96		
	Above 55 years	10.04	5.09		
LRS	Below 25 years	20.35	6.50	2.46	0.043
	25-35 years	20.42	7.18		
	36-45 years	20.46	6.10		
	46-55 years	19.76	8.64		
	Above 55 years	15.96	9.72		
LAP	Below 25 years	10.17	4.40	5.02	0.001
	25-35 years	10.60	4.76		
	36-45 years	9.88	4.95		
	46-55 years	8.95	5.14		
	Above 55 years	7.08	5.64		
WD	Below 25 years	6.22	3.72	5.09	0.000
	25-35 years	5.93	4.00		
	36-45 years	5.30	3.54		
	46-55 years	4.41	3.22		
	Above 55 years	4.52	3.84		
EIMD	Below 25 years	9.50	3.84	7.09	0.000
	25-35 years	10.12	4.05		
	36-45 years	8.95	3.94		
	46-55 years	8.84	4.64		
	Above 55 years	6.44	4.83		
UCAC	Below 25 years	8.71	2.94	11.66	0.000
	25-35 years	7.84	3.53		
	36-45 years	7.21	3.12		
	46-55 years	6.77	3.17		
	Above 55 years	4.76	3.51		

Age and Workplace Stress Among Nurses					
Workplace Stressors	**Age Group**	**Mean**	**S.D.**	**F**	**Sig.**
DS	Below 25 years	9.24	3.20	1.16	0.326
	25-35 years	9.31	3.32		
	36-45 years	9.37	3.45		
	46-55 years	8.98	3.48		
	Above 55 years	7.96	3.85		
WL	Below 25 years	9.06	3.11	2.33	0.054
	25-35 years	9.50	3.30		
	36-45 years	9.44	3.38		
	46-55 years	8.45	3.45		
	Above 55 years	9.00	3.51		
LPS	Below 25 years	7.45	2.67	5.19	0.000
	25-35 years	7.49	2.85		
	36-45 years	7.36	2.69		
	46-55 years	6.34	2.97		
	Above 55 years	5.84	3.02		
PSHC	Below 25 years	6.43	2.71	4.72	0.001
	25-35 years	6.59	3.02		
	36-45 years	6.22	3.06		
	46-55 years	5.46	3.08		
	Above 55 years	4.72	3.34		

The ANOVA output as shown in Table 6.23 indicates a significant difference in age of nurses and workplace stress dimensions. Problem with nursing supervisors decreases as age increases. It is found that the mean score is high in nurses in the age group 25-35 years for the problems faced with patients and their families and as age increases stress levels decrease.

Different dimensions of workplace stress except for the death and suffering dimension result indicated that situations related to death and dying are stressful across all age groups.

These findings will be useful for nursing managers and hospital administrators who are interested in providing quality health care, by considering such differences in stress types and stress levels among nurses of different age groups.

To understand the trends of workplace stress among nurses with different age groups, correlation analysis has been done to assess the nature and extent of relationship between the variables of workplace stress and Age, the results given in Table 6.24

Table 6.24

Correlation between Age of Respondents and their Total Workplace Stress and each dimension

N=833

Workplace stressors	Age
Total Workplace Stress	-0.161**
PFNS	-0.141**
PFPF	-0.108**
LRS	-0.064
LAP	-0.121**
WD	-0.149**
EIMD	-0.130**
UCAP	-0.223**
WL	-0.044
LPS	-0.129**
DS	-0.043
PSHC	-0.126**

** $p < .01$ *$p > 0.05$

It can be seen that workplace stress is highest when age is lowest, and workplace stress is lowest when age is highest, except for workplace stress dimensions- Death and Suffering, Lack of Resources and Support and Workload which do not have a statistically significant relationship with age. Thus it can be interpreted that age has no impact on these workplace stressors- Death and Suffering, Lack of Resources and Support and Workload.

Differences in Nurses' workplace stress, based on their total years of experience:

People may join the nursing profession at different ages, but most of the nurses go through similar experiences in different phases of their career. This study explored the total years of experience as a demographic variable. An analyse has been done to check whether there is an inter-group differences vary from that of the dimension age as described above.

In the dimension Age, analysis has been done to test inter-group differences, and ANOVA and correlation analyses have been conducted, the results of which are presented in Tables 6.25

Table 6.25

Differences in Workplace Stress dimensions of Respondents, by Total years of Experience

N=833

Total years of experience and Workplace Stress among Nurses					
Workplace Stressors	**Total years of Experience**	**Mean**	**S.D.**	**F**	**Sig.**
Workplace Stress	0-5 years	110.18	30.69	5.20	0.00
	6-10 years	113.11	31.35		
	11-15 years	112.74	31.77		
	16-20 years	106.59	27.31		
	Above 20 years	98.59	35.51		

The ANOVA output as shown in Table 6.25 indicate a significant differences ($F = 5.20$, $p = 0.000$) in total years of experience and workplace stress, which indicates that workplace stress is highest among nurses with 6- 10 years of experience.

Differences in Nurses workplace stress dimensions, based on their total years of experience:

The workplace stress dimensions and inter-group differences based on their total years of experience was computed. ANOVA and correlation analyses have been computed, the results of which are presented in Tables 6.26 and 6.27

Jose & Bhat (2013) reported an association between high stress level and demographics such as (qualification and marital status). In another study by Kakade, Kakade. & Devi, (2014) found no impact of the demographic variables of nurses on their stress or coping abilities, whereas a study conducted by Pawar (2014) reported a significant relationship between the level of stress and demographic variables such as age, years of experience and educational qualification. Higher stress was experienced by the married nurses. Shiji, Sequera & Mathew (2016) reported no association between perceived stress level and coping strategies with the demographics of the nurses. The association between stress and demographics may differ due to workplace culture difference and individual factors. One cannot ascertain exactly the reason behind the demographics and its association to stress or coping.

Table 6.26

Differences in workplace stress dimensions of Respondents, by Total years of experience

N=833

Total years of experience and Workplace Stress Among Nurses					
Workplace Stressors	**Age Group**	**Mean**	**S.D.**	**F**	**Sig.**
PFNS	0-5 years	11.26	4.66	2.47	0.043
	6-10 years	11.20	5.03		
	11-15 years	11.18	5.12		
	16-20 years	10.86	4.51		
	Above 20 years	9.80	5.30		
PFPF	0-5 years	12.67	4.25	4.201	0.002
	6-10 years	13.68	4.36		
	11-15 years	12.87	4.28		
	16-20 years	12.19	4.41		
	Above 20 years	11.74	4.73		
LRS	0-5 years	19.93	6.93	1.50	0.200
	6-10 years	21.12	7.24		
	11-15 years	20.38	6.17		
	16-20 years	20.68	6.11		
	Above 20 years	19.30	8.60		
LAP	0-5 years	10.26	4.60	2.90	0.021
	6-10 years	10.46	4.76		
	11-15 years	10.66	4.93		
	16-20 years	9.63	4.68		
	Above 20 years	8.94	5.41		
WD	0-5 years	5.98	3.92	5.49	0.000
	6-10 years	5.90	3.93		
	11-15 years	6.12	3.95		
	16-20 years	5.13	3.24		
	Above 20 years	4.40	3.23		
EIMD	0-5 years	9.86	4.01	3.45	0.008
	6-10 years	9.77	4.09		
	11-15 years	9.66	4.04		
	16-20 years	9.13	3.48		
	Above 20 years	8.42	4.74		

Total years of experience and Workplace Stress Among Nurses					
Workplace Stressors	**Age Group**	**Mean**	**S.D.**	**F**	**Sig.**
UCACP	0-5 years	8.16	3.15	7.85	0.000
	6-10 years	8.00	3.79		
	11-15 years	7.56	3.43		
	16-20 years	7.18	2.82		
	Above 20 years	6.39	3.31		
WL	0-5 years	9.07	3.16	2.55	0.037
	6-10 years	9.77	3.37		
	11-15 years	9.60	3.43		
	16-20 years	9.42	3.14		
	Above 20 years	8.73	3.55		
LPS	0-5 years	7.32	2.82	5.76	0.000
	6-10 years	7.64	2.89		
	11-15 years	7.60	2.74		
	16-20 years	7.56	2.56		
	Above 20 years	6.28	2.84		
DS	0-5 years	9.16	3.20	2.57	0.036
	6-10 years	9.09	3.45		
	11-15 years	10.17	3.39		
	16-20 years	8.77	3.25		
	Above 20 years	9.09	3.58		
PSHC	0-5 years	6.47	2.93	4.48	0.001
	6-10 years	6.42	2.99		
	11-15 years	6.89	3.09		
	16-20 years	6.00	2.99		
	Above 20 years	5.44	3.06		

It is evident from Table 6.26 that significant differences exist between respondents having different levels of experience, in that they experience different dimensions of workplace stress. However, there is no significant difference among experienced and inexperience nurses in the stress they encounter problem of lack of resources and support, which shows that lack of resources and support is a stressor faced by all nurses irrespective of total years of experience.

Also this table gives us an indication on the levels of stress faced by nurses across different age groups. It can be seen that the mean scores for the first four stressors given in the table are high across all age groups (PFNS, PFPF, LRS & LAP), while the stressors WD, PSHC (workplace discrimination and perceived self- health concerns) seem to have the minimum mean stress scores, while the others range somewhere in-between. Such an analysis will help nursing managers and hospital administrators to prioritise the concerns and find remedial measures to reduce stress levels caused by these stressors. For example, lack of resources seems to be causing almost four times the stress as workplace discrimination, and it may be prudent first to ensure that adequate resources are provided before spending too much of an effort on sensitising people towards workplace discrimination, though it is an equally an important organisational concern.

To understand the trends of workplace stress among nurses with total years of experience, correlation analysis has been done to assess the nature and extent of relationship between the variables of workplace stress and total years of experience, the results are given in Table 6.27

Table 6.27

Correlation between total years of experience of Respondents and their total workplace stress and each dimension

N=833

Workplace stressors	Total years of experience
TOTAL WORKPLACE STRESS	-0.161**
PFNS	-0.141**
PFPF	-0.108**
LRS	-0.044
LAP	-0.121**
WD	-0.149**
EIMD	-0.130**
UCAP	-0.223**
WL	-0.064
LPS	-0.129**
DS	-0.043
PSHC	-0.126**

** p < .01 *p > 0.05

It can be seen that workplace stress is highest when work experience is lowest, and workplace stress is lowest when total experience is highest, except for workplace stress dimensions- Death and Suffering, Lack of Resources and Support and Workload which do not have a statistically significant relationship with total years of experience. It can be interpreted that experience has no impact on these workplace stressors- Death and Suffering, Lack of Resources and Support and Workload. These findings are similar to the findings of the relationship between respondents' age and total workplace stress and different workplace dimensions.

Differences of workplace stress between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in):

After analysing the data for inter-group differences in nurses based on their Age and total years of experience, this study has further analysed inter-group differences based on the other demographics including the gender of the respondents, their professional qualification, their marital status, religion, status of employment, and the type of hospital they are employed in. An independent t-test has been conducted to check if the differences in the workplace stress scores are statistically significant and the results are presented in Table 6.28

Table 6.28

Differences in total workplace stress of Respondents, based on their professional qualification, marital status, religion, employment status and hospital type

N=833

Workplace stress		N	Mean	SD	t value	p
Gender	Male	68	108.94	29.95	0.03	0.97
	Female	765	108.81	32.06		
Professional Qualification	Diploma	507	107.66	32.46	1.31	0.19
	Degree	326	110.63	30.90		
Marital Status	Single	327	110.70	29.80	1.36	0.17
	Married	506	107.61	33.11		
Religion	Hindu	443	106.38	30.83	-2.29	0.02
	Christians	366	111.55	33.17		
Employment Status	Regular	723	108.75	31.65	-0.17	0.86
	Contract	110	109.30	33.45		
Hospital Type	Government	657	109.18	31.42	0.63	0.53
	Private	176	107.48	33.57		

The findings presented in Table 6.28 indicate that there is no significant difference between means of male and female in total workplace stress (P = 0.97), which means that workplace stress perceived by female and male nurses is the same. With regard to the professional qualifications, analysis shows there was no significant difference between means of samples with diploma and degree in nursing. Therefore reveals that professional qualification has no impact on total workplace stress. Also, statistical tests reveal that there is no significant relationship with regard to marital and employment status of nurses, which means that workplace stress experience, is similar among nurses who are married and single and whether the nurse is regular or contract employee. With regard to religion, the independent test was conducted only between Hindu and Christian sample as Muslim sample size was low (1.2%). The statistical result shows a significant difference in the means of nurses with Hindu and Christian sample (p=0.02), which indicates that workplace stress experience is higher among Christian nurses. Finally, it shows significant difference between means of nurses working in government and private hospitals (p=0.05), which means that experience of workplace stress is higher among nurses who are employed in government hospitals.

On the whole, only the Religion and type of employing agency (Government/ Semi-Government/Private) are significant determinants contributing to the differences in workplace stress levels, and the other demographics do not seem to impact the same.

Differences of workplace stress dimensions between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in):

It was interesting to analyse differences in workplace stress among respondents, based on their demographics. Further, this research analysed scores on workplace stress dimensions based on these demographics, by conducting a t-test with each demographics as the independent variable and individual stress dimension included in this study as dependent variables. Interesting observations have been made.

a. **Differences of workplace stress dimension PFPF between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in):**

   It was very interesting to note that the Religion and type of hospital which were found to be significant in contributing to total workplace stress, seemed to lose their significance when analyse by the stress caused by the patients and their families. None of the demographics included for analysis here had any statistically significant relationship with this PFPF workplace stress dimension studied. The results obtained of the t-test conducted to test these relationships are presented in the Table 6.29

Table 6.29

Differences in workplace stress dimension PFPF of Respondents, based on their professional qualification, marital status, religion, employment status, and type of hospital employed in.

N=833

Problems faced with patients and their families (PFPF)		N	Mean	SD	t value	p
Gender	Male	68	12.32	3.80	-0.75	0.44
	Female	765	12.74	4.46		
Professional Qualification	Diploma	507	12.83	4.61	0’96	0.33
	Degree	326	12.53	4.08		
Marital Status	Single	327	12.57	4.15	-0.74	0.45
	Married	506	12.80	4.57		
Religion	Hindu	443	12.63	4.43	-0.66	0.50
	Christians	366	12.84	4.47		
Employment Status	Regular	723	12.75	4.38	0.70	0.48
	Contract	110	12.43	4.63		
Hospital Type	Government	657	12.82	4.46	1.47	0.14
	Private	176	12.27	4.23		

As noted elsewhere, these findings will be of interest to all hospital administrators and nursing managers as they suggest that nurses face similar stress from patients and their families at the workplace and common interventions may be introduced to reduce the stress levels, irrespective of the demographics of the nurses.

b. **Differences of workplace stress dimension PNS between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: Nurses report to nursing supervisors on a regular basis, and these supervisors allocate work, design work schedules. Many other aspects of nurses' work is influenced by the supervisors. When the relationship between the nursing supervisor and the nurses is not cordial, the resultant stress could be a very important stressor in their workplace.

Table 6.30

Independent t test- professional qualification, marital status, religion, employment status, hospital type and Problems with nursing supervisors (PNS)

N=833

Problems with nursing supervisors (PNS)		N	Mean	SD	t value	p
Gender	Male	68	10.79	4.59	-0.28	0.77
	Female	765	10.97	4.95		
Professional Qualification	Diploma	507	10.61	5.03	-2.49	0.13
	Degree	326	11.48	4.70		
Marital Status	Single	327	11.26	4.58	1.47	0.14
	Married	506	10.75	5.12		
Religion	Hindu	443	10.68	4.91	-1.77	0.07
	Christians	366	11.29	4.94		
Employment Status	Regular	723	10.95	4.96	0.02	0.79
	Contract	110	10.94	4.65		
Hospital Type	Government	657	10.99	4.88	0.45	0.64
	Private	176	10.80	5.05		

The findings presented in Table 6.30 shows no significant differences (p = 0.77) in means of male and female nurses regarding Problems with nursing supervisors (PNS). It also shows no significant differences (p = 0.13) in means of nurses with

diploma and degree as a professional qualification in regard to Problems with nursing supervisors (PNS). It revealed that there is no significant difference (p = 0.14) in means of the married and single nurses and Problems with nursing supervisors (PNS). It revealed that there is no significant difference (p = 0.07) in means of Hindu and Christian nurses and Problems with nursing supervisors (PNS). It also revealed that there is no significant difference (p = 0.79) in means of nurses working on regular and contract basis and Problems with nursing supervisors (PNS). In regard to hospital type it also shows no significant difference (p = 0.64) among nurses working in Government and private health settings and Problems with nursing supervisors (PNS). Based on the above findings it can be concluded that workplace stressor- Problems with nursing supervisors (PNS) is faced equally by all nurses, irrespective of their demographics.

c. **Differences of workplace stress dimension LAP between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: lack of power and autonomy is one of the workplace stress faced by the nurses. It was interesting to find out whether this stressor is different among different respondent groups, based on the demographics of the respondents. Independent t-test was undertaken to understand these differences and the findings are presented in Table 6.31.

Table 6.31

Independent t test- professional qualification, marital status, religion, employment status, hospital type and of Lack of autonomy and power (LAP)

N=833

Lack of autonomy and power (LAP)		N	Mean	SD	t value	p
Gender	Male	68	11.07	4.11	1.77	0.07
	Female	765	9.98	4.90		
Professional Qualification	Diploma	507	9.89	4.88	-1.34	0.17
	Degree	326	10.35	4.80		
Marital Status	Single	327	10.39	4.54	1.53	0.12
	Married	506	9.86	5.03		
Religion	Hindu	443	9.79	4.67	-1.52	0.12
	Christians	366	10.32	5.08		
Employment Status	Regular	723	10.08	4.82	0.19	0.84
	Contract	110	9.99	5.08		
Hospital Type	Government	657	10.04	4.89	0.33	0.73
	Private	176	10.18	4.72		

The findings presented in Table 6.31 shows that there is no significant differences ($p = 0.07$) in mean scores of male and female nurses regarding Lack of autonomy and power (LAP). The t-test also shows no significant differences ($p = 0.17$) in the mean scores of nurses with diploma and degree as a professional qualification in regard to Lack of autonomy and power (LAP). The t-test also revealed that there is no significant difference ($p = 0.12$) in the mean scores of the married and single nurses and Lack of autonomy and power (LAP). Further the t-test revealed that

there is no significant difference (p = 0.12) in the mean of Hindu and Christian nurses and Lack of autonomy and power (LAP). Statistical results revealed that there is no significant difference (p = 0.84) in the mean scores of nurses working on regular and contract basis and Lack of autonomy and power (LAP). With regard to type of hospital the respondents results show that there is no significant difference (p = 0.73) among nurses working in Government and private health settings and Lack of autonomy and power (LAP). Based on the above findings it can be concluded that workplace stressor- Lack of autonomy and power (LAP) is faced by nurses irrespective of their demographics.

d. **Differences of workplace stress dimension EIMD between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: Ethical issues are reported to be faced by most of the nurses; it was interesting to find out that this stressor is influenced by demographics of the nurses. This conclusion was made based on the Independent t-test results and the findings are presented in Table 6.32.

Table 6.32

Independent t test- professional qualification, marital status, religion, employment status, hospital type and Ethical issues and meeting demands (EIMD)

N=833

Ethical issues and meeting demands (EIMD)		N	Mean	SD	t value	p
Gender	Male	68	10.10	3.76	1.23	0.21
	Female	765	9.45	4.18		
Professional Qualification	Diploma	507	9.28	4.04	-1.96	0.05
	Degree	326	9.85	4.28		
Marital Status	Single	327	9.83	4.00	1.81	0.07
	Married	506	9.29	4.23		
Religion	Hindu	443	9.24	4.03	-1.58	0.11
	Christians	366	9.71	4.31		
Employment Status	Regular	723	9.55	4.12	0.85	0.39
	Contract	110	9.19	4.32		
Hospital Type	Government	657	9.46	4.11	-0.58	0.55
	Private	176	9.67	4.29		

The findings presented in Table 6.32 shows no significant differences (p = 0.21) in the mean scores of male and female nurses regarding Ethical issues and meeting demands (EIMD). However, it showed a significant differences (p = 0.05) in the mean scores of nurses with diploma and degree as a professional qualification with regard to Ethical issues and meeting demands (EIMD). From statistical results be interpreted that Ethical issues and meeting demands workplace stressor is higher among nurses with degree qualification. It also

reveals that there is no significant difference (p = 0.07) in the mean scores of the married and single nurses and Ethical issues and meeting demands (EIMD). The t-test revealed that there is no significant difference (p = 0.11) in the mean scores of Hindu and Christian nurses and Ethical issues and meeting demands (EIMD). The t-test also revealed that there is no significant difference (p = 0.39) in the mean scores of nurses working on regular and contract basis and Ethical issues and meeting demands (EIMD). With regard to the type of hospital the nurses worked in, statistical t-test showed no significant difference (p = 0.55) among nurses working in Government and private health care settings and Ethical issues and meeting demands (EIMD). Based on above findings it can be concluded that workplace stressor- Ethical issues and meeting demands (EIMD) as perceived by nurses and is not influenced by demographics except for the professional qualification, which somehow seem to significantly impact the stress faced by nurses having a degree.

e. **Differences of workplace stress dimension LPS between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: The findings have revealed that nurses experience lack of professional status as a workplace stressor. It was interesting to find out if this stressor is different on the basis of demographics of the nurses. Independent t-test was used for analysis and the findings are presented in Table 6.33

Table 6.33

Independent t test- professional qualification, marital status, religion, employment status, hospital type and Lack of professional status (LPS)

N=833

Lack of professional status (LPS)		N	Mean	SD	t value	p
Gender	Male	68	7.20	3.00	-0.20	0.83
	Female	765	7.27	2.82		
Professional Qualification	Diploma	507	7.12	2.95	-1.87	0.06
	Degree	326	7.50	2.64		
Marital Status	Single	327	7.37	2.72	0.86	0.38
	Married	506	7.20	2.91		
Religion	Hindu	443	7.11	2.83	-1.66	0.09
	Christians	366	7.44	2.86		
Employment Status	Regular	723	7.23	2.81	-1.00	0.31
	Contract	110	7.52	2.96		
Hospital Type	Government	657	7.36	2.83	1.86	0.06
	Private	176	6.92	2.84		

The findings presented in Table 6.33 shows no significant differences (p = 0.83) in the mean scores of male and female nurses regarding Lack of professional status (LPS). The table also shows no significant differences (p = 0.06) in the mean scores of nurses having diploma and degree as a professional qualification in regard to Lack of professional status (LPS). Thus it can be interpreted that Lack of professional status (LPS) stressor is perceived by both diploma and graduate nurses. It reveals that there is no significant difference (p = 0.38) in means of the married and single nurses and Lack of professional status (LPS). The analysis also

revealed that there is no significant difference (p = 0.09) in the mean scores of Hindu and Christian nurses and Lack of professional status (LPS). The statistical tests revealed that there is no significant difference (p = 0.31) in the mean scores of nurses working on regular and contract basis and Lack of professional status (LPS). Similarly the type of hospital where the respondents worked also showed there is no significant difference (p = 0.06) in the mean scores among nurses working in Government and private health settings and Lack of professional status (LPS). Based on above findings it can be concluded that workplace stressor- Lack of professional status (LPS) as perceived by nurses and demographics has no significant impact.

f. **Differences of workplace stress dimension LRS between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: The study findings have revealed that nurses experience 'lack of resources and support' as a major stressor at their workplace. Independent t-test was done to find if any difference exists across nurses based on their demographics. Findings are presented in Table 6.34.

Table 6.34

Independent t test- professional qualification, marital status, religion, employment status, hospital type and Lack of resources and support (LRS)

N=833

Lack of resources and support (LRS)		N	Mean	SD	t value	p
Gender	Male	68	19.36	6.88	-1.00	0.31
	Female	765	20.28	7.19		
Professional Qualification	Diploma	507	20.13	7.34	-0.36	0.77
	Degree	326	20.31	6.89		
Marital Status	Single	327	20.03	6.81	-0.54	0.58
	Married	506	20.31	7.39		
Religion	Hindu	443	19.76	6.83	-2.05	0.04
	Christians	366	20.80	7.56		
Employment Status	Regular	723	20.06	7.10	-1.44	0.14
	Contract	110	21.12	7.55		
Hospital Type	Government	657	20.74	7.06	4.26	0.00
	Private	176	18.18	7.21		

The findings presented in Table 6.34 shows no significant differences (p = 0.31) in the mean scores of male and female nurses regarding Lack of resources and support (LRS). Table 6.34 also shows no significant differences (p = 0.77) in the mean scores of nurses with diploma and degree as a professional qualification in regard to Lack of resources and support (LRS). The t-test reveals that there is no significant difference (p = 0.58) in means of the married and single nurses and Lack of resources and support (LRS). Further it reveals that there is a significant

difference (p = 0.04) in means of Hindu and Christian nurses and Lack of resources and support (LRS). The mean score (20.80) was higher among Christian nurses. The findings revealed that there is no significant difference (p = 0.14) in the mean scores of nurses working on regular and contract basis and Lack of resources and support (LRS). With regard to the type of hospital the respondents were employed in t-test showed a significant difference (p = 0.00) among nurses working in the Government and private health settings and Lack of resources and support (LRS). As per findings it can be interpreted that nurses working in private hospitals have better resources and support than to the nurses working in the government sector. Also Christian nurses seem to be more stressed about lack of resources and support, compared to their Hindu colleagues.

g. **Differences of workplace stress dimension WD between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: Workplace discrimination was one of the least reported stressors by the respondents. It is interesting to know which group of nurses experienced this stressor. Independent t-test was done to find out if any difference exists across nurses based on their demographics. Findings are presented in Table 6.35

Table 6.35

Independent t test- professional qualification, marital status, religion, employment status, hospital type and workplace discrimination (WD)

N=833

Workplace discrimination (WD)		N	Mean	SD	t value	p
Gender	Male	68	6.11	3.28	1.08	0.27
	Female	765	5.59	3.84		
Professional Qualification	Diploma	507	5.64	3.87	0.04	0.96
	Degree	326	5.63	3.70		
Marital Status	Single	327	6.15	3.85	3.17	0.00
	Married	506	5.30	3.73		
Religion	Hindu	443	5.51	3.85	-0.51	0.60
	Christians	366	5.65	3.76		
Employment Status	Regular	723	5.65	3.75	0.30	0.76
	Contract	110	5.53	4.15		
Hospital Type	Government	657	5.34	3.75	-4.29	0.00
	Private	176	6.72	3.80		

The findings presented in Table 6.35 shows no significant differences (p = 0.27) in the mean scores of male and female nurses regarding Workplace discrimination (WD). The table It also shows no significant differences (p = 0.96) in the mean scores of nurses with diploma and degree as a professional qualification in regard to Workplace discrimination (WD). The statistical test reveals that there is a significant difference (p = 0.00) in means of the married and single nurses and Workplace discrimination (WD). From the table 6.35 it can be interpreted that

unmarried nurses experience higher workplace discrimination than married nurses. The Table 6.35 reveals that there is no significant difference (p = 0.60) in the mean scores of Hindu and Christian nurses and Workplace discrimination (WD). The table also reveals that there is no significant difference (p = 0.76) in the mean scores of nurses working on regular and contract basis and Workplace discrimination (WD). With regard to the type of hospital nurses work in show significant difference (p = 0.00) among nurses working in Government and private health settings and Workplace discrimination (WD). According to these findings it can be interpreted that nurses working in private hospitals experience higher workplace discrimination than nurses working in the government sector, and there are also significant differences between married and unmarried nurses. Similar findings were reported by Katyal (2013) of nurses working in government hospitals experiencing a higher level of stress burnout than the nurses working in the private hospitals. This could be due more patient turnover in the government hospitals and probably because of low budget allocation which makes care difficult due to resource scarcity.

h. Differences of workplace stress dimension PSHC between nurses based on selected demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in): Nurses are continually exposed to a variety of diseases due to the nature of their job responsibilities. They know that they are susceptible to ill health which results in self-health concerns. The resultant fear consequently may lead to stress among nurses. To test the variation in stress experienced related to self-health concerns among the respondents, independent t-test was done. The findings are presented in Table 6.36

Table 6.36

Independent t test- professional qualification, marital status, religion, employment status and hospital type and perceived self health concerns (PSHC)

N=833

Perceived self health concerns (PSHC)		N	Mean	SD	t value	p
Gender	Male	68	6.20	2.78	-0.26	0.79
	Female	765	6.30	3.04		
Professional Qualification	Diploma	507	6.29	3.14	0.00	0.99
	Degree	326	6.29	2.81		
Marital Status	Single	327	6.37	2.88	0.60	0.54
	Married	506	6.24	3.10		
Religion	Hindu	443	6.28	3.07	-0.22	0.88
	Christians	366	6.33	2.95		
Employment Status	Regular	723	6.34	3.06	1.07	0.28
	Contract	110	6.00	2.71		
Hospital Type	Government	657	6.28	3.03	-0.18	0.85
	Private	176	6.33	2.95		

The findings presented in Table 6.36 shows no significant differences (p = 0.79) in the mean score of male and female nurses regarding Perceived self health concerns (PSHC). Results also show no significant differences (p = 0.99) in the mean score of nurses with diploma and degree as a professional qualification in regard to Perceived self health concerns (PSHC). The test reveals that there is no significant difference (p = 0.54) in the mean score of the married and single nurses and Perceived self health concerns (PSHC). It revealed that there is no significant difference (p = 0.88) in means of Hindu and Christian nurses and perceived self

health concerns (PSHC). It revealed that there is no significant difference (p = 0.28) in the mean score of nurses working on regular and contract basis and Perceived self health concerns (PSHC). With regard to the type of hospital nurses working in there was no significant difference (p = 0.85) in the mean scores between nurses working in the Government and private health care settings and Perceived self health concerns (PSHC). Based on the above findings it can be concluded that workplace stressor- Perceived self health concerns (PSHC) is perceived equally by all nurses, irrespective of their demographics.

i. **Differences of workplace stress dimension DS between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: In order to determine the association between workplace stressor- 'death and suffering' and demographics of the respondents, Independent t-test was done. The findings are presented in Table 6.37

Table 6.37

Independent t test- professional qualification, marital status, religion, employment status and hospital type and death and sufferings (DS)

N=833

Death and sufferings (DS)		N	Mean	SD	t value	p
Gender	Male	68	8.41	2.95	-2.09	0.03
	Female	765	9.30	3.39		
Professional Qualification	Diploma	507	9.24	3.43	0.12	0.84
	Degree	326	9.20	3.25		
Marital Status	Single	327	9.20	3.21	-0.17	0.86
	Married	506	9.24	3.46		
Religion	Hindu	443	9.09	3.32	-1.28	0.19
	Christians	366	9.39	3.46		
Employment Status	Regular	443	9.09	3.32	0.89	0.37
	Contract	366	9.39	3.46		
Hospital Type	Government	657	9.31	3.44	1.42	0.15
	Private	176	8.90	3.05		

The findings presented in Table 6.37 shows significant differences (p = 0.03) in the mean scores of male and female nurses regarding Death and sufferings (DS). From the table can be interpreted that female nurses perceive higher stress levels related to Death and sufferings. The table 6.37 shows no significant differences (p = 0.84) in the mean scores of nurses with diploma and degree as a professional qualification in regard to Death and sufferings (DS). Further it reveals that there is no significant difference (p = 0.86) in the mean scores of the married and single nurses and Death and sufferings (DS). It revealed that there is no significant

difference (p = 0.19) in the mean scores of Hindu and Christian nurses and Death and sufferings (DS). T-test revealed that there is no significant difference (p = 0.37) in the mean scores of nurses working on regular and contract basis and with Death and sufferings (DS). The type of hospital the respondents worked in the test shows no significant difference (p = 0.15) among nurses working in the Government and private health settings and Death and sufferings (DS). Based on above findings it can be concluded that workplace stressor- Death and sufferings (DS) was perceived as not stressful by respondents irrespective of demographics except for gender.

j. **Differences of workplace stress dimension UCAC between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: Nurses have reported that uncertainty concerning appropriateness of care as one of the stressful situations at the workplace. In order to find out the association between this stressor and demographics of nurses, independent t-test was done. The findings are presented in Table 6.38

Table 6.38

Independent t test- professional qualification, marital status, religion, employment status and hospital type and workplace stress and uncertainty concerning appropriateness of care (UCAC)

N=833

Uncertainty concerning appropriateness of care (UCAC)		N	Mean	SD	t value	p
Gender	Male	68	8.13	2.96	1.19	0.23
	Female	765	7.61	3.42		
Professional Qualification	Diploma	507	7.33	3.33	-3.50	0.00
	Degree	326	8.17	3.41		
Marital Status	Single	327	8.28	3.02	4.30	0.00
	Married	506	7.25	3.55		
Religion	Hindu	443	7.28	3.24	-3.42	0.00
	Christians	366	8.10	3.57		
Employment Status	Regular	723	7.55	3.37	-2.30	0.02
	Contract	110	8.35	3.44		
Hospital Type	Government	657	7.47	3.41	-3.13	0.00
	Private	176	8.36	3.23		

The findings presented in Table 6.38 shows no significant differences (p = 0.23) in the mean scores of male and female nurses regarding Uncertainty Concerning Appropriateness of Care (UCAC), which means that workplace stressor-Uncertainty Concerning Appropriateness is common among both genders. It also shows significant differences (p = 0.00) in the mean scores of nurses with diploma and degree as a professional qualification in regard to Uncertainty Concerning

Appropriateness of Care (UCAC), is revealed in the table 6.38 thus it can be interpreted that nurses with graduate professional qualification experience higher level of Uncertainty concerning appropriateness of care than diploma holders. The table 6.38 reveals that there is a significant difference (p = 0.00) in the mean scores of the married and single nurses and Uncertainty concerning appropriateness of care (UCAC). The unmarried nurses perceived more Uncertainty concerning appropriateness of care than married nurses. T-test revealed that there is significant difference (p = 0.00) in the mean scores of Hindu and Christian nurses and Uncertainty concerning appropriateness of care (UCAC). The t- test also revealed that there is a significant difference (p = 0.02) in the mean scores of nurses working on regular and contract basis and uncertainty concerning appropriateness of care (UCAC), which means nurses working on contract basis experience more workplace stress related to Uncertainty concerning appropriateness of care. Finally, with regard to the type of hospital the nurses works the t test revealed a significant difference (p = 0.00) among nurses working in the Government and private health settings and Uncertainty concerning appropriateness of care (UCAC), which means the workplace stressor-Uncertainty concerning appropriateness of care (UCAC) is higher among nurses working in private hospitals.

k. **Differences of workplace stress dimension WL between nurses based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: Nurses have reported that workload as a work stressor. In order to determine the association between this stressor and demographics of nurses, independent t-test was done. The findings are presented in Table 6.39

Table 6.39

Independent t test- professional qualification, marital status, religion, employment status and hospital type and workplace stress and Workload (WL)

N=833

Workload (WL)		N	Mean	SD	t value	p
Gender	Male	68	9.20	2.97	-0.16	0.87
	Female	765	9.27	3.35		
Professional Qualification	Diploma	507	9.26	3.43	-0.08	0.93
	Degree	326	9.27	3.14		
Marital Status	Single	327	9.20	3.13	-0.43	0.66
	Married	506	9.30	3.43		
Religion	Hindu	443	8.96	3.23	-2.84	0.00
	Christians	366	9.62	3.40		
Employment Status	Regular	723	9.27	3.32	0.13	0.89
	Contract	110	9.22	3.33		
Hospital Type	Government	657	9.30	3.35	0.69	0.48
	Private	176	9.11	3.19		

The findings presented in Table 6.39 shows no significant differences (p = 0.87) in the mean score of male and female nurses regarding Workload (WL). Further the table 6.39 shows no significant differences (p = 0.93) in the mean scores of nurses with diploma and degree as a professional qualification with regard to Workload (WL). The findings of the t-test reveal that there is no significant difference (p = 0.66) in the mean scores of the married and single nurses and Workload (WL). In addition findings of the t-test reveal that there is a significant difference (p = 0.00) in the mean scores of the Hindu and Christian nurses and

Workload (WL) from this it can be interpreted that Christian nurses perceive higher stress related to Workload (WL). The table 6.39 reveals that there is no significant difference (p = 0.89) in the mean scores of nurses working on regular and contract basis and Workload (WL). With regard to the type of the respondents the t-test results shows no significant difference (p = 0.48) among nurses working in the Government and private health settings and Workload (WL). Based on the above findings it can be concluded that except for religion workplace stressor-Workload (WL) is perceived similarly by nurses irrespective of demographics.

6.5 DIFFERENCES IN USE OF COPING STRATEGIES AMOMG NURSES, BASED ON THEIR DEMOGRAPHICS (Hypothesis 4):

H_4- There is a significant relationship between workplace coping strategies used by nurses and

H_{4a}- Demographic variables: age, gender, professional qualification, marital status, total years of experience and type of hospital.

H_{4a}- Demographic variables: age, gender, professional qualification, marital status, total years of experience and type of hospital.

Differences in use of coping strategies among nurses, based on their age:

Each individual responds to workplace stress differently, coping response of individual may be significantly different or the same across demographics of the respondents. As age increases, coping abilities of individual may also increase. As this research is a cross sectional study with nurses from different age groups, it was interesting to find out if there were significant differences in the use of coping strategies used by different age groups. Differences in the use of coping strategies

based on age of respondents have been calculated by doing One-way ANOVA and the results are given in Tables 6.40

Table 6.40

One way ANOVA- Age and coping strategies

N=833

Age and coping strategies among nurses					
Coping strategies	**Age Group**	**Mean**	**S.D.**	**F**	**Sig.**
PSPL	Below 25 years	8.53	2.44	2.90	.021
	25-35 years	8.60	2.52		
	36-45 years	8.52	2.68		
	46-55 years	9.32	2.68		
	Above 55 years	7.60	3.22		
SBSW	Below 25 years	3.99	3.58	5.81	.000
	25-35 years	3.69	3.41		
	36-45 years	2.71	2.63		
	46-55 years	2.60	2.62		
	Above 55 years	2.84	2.70		
TG	Below 25 years	6.31	2.20	2.03	.088
	25-35 years	6.11	2.32		
	36-45 years	6.08	2.49		
	46-55 years	6.83	2.44		
	Above 55 years	6.28	2.83		
SHSS	Below 25 years	5.88	1.87	4.89	.001
	25-35 years	5.45	1.89		
	36-45 years	4.95	2.11		
	46-55 years	5.65	2.08		
	Above 55 years	5.24	1.94		

The ANOVA output as shown in Table 6.40 indicates significant differences (F = 2.90, p = 0.021) in the coping strategy- problem solving and planning (PSPL), in different age groups, the table indicates that problem solving and planning coping strategy is used more by nurses in the age group (45-55 years). There is a significant differences (F = 5.81, p = 0.00) in age of nurses and use of coping strategy- self blame and social withdrawal (SBSW), which also indicates that self blame and social

withdrawal coping strategy is used more among nurses in the age group below 25 years of age. The table 6.40 shows no significant differences (F = 2.03, p = 0.088) in nurses of different age groups regarding use of coping strategy of turning to God (TG), which means that turning to God coping strategy is used irrespective of age to cope up with workplace stress. also the table reveals significant differences (F = 4.89, p = 0.02) in the use of the coping strategy- seeking support and help (SHSS) among nurses of different ages which means that seeking support and help coping strategy is used more among nurses age below 25 years of age.

To determine the use of different coping strategies and its relationship with age of the nurses, correlation analysis has been done between age and coping strategies, results given in Table 6.41

Table 6.41

Correlation of age and coping strategies

N=833

Coping strategies	Age
PSPL	.027
SBSW	-.150**
TG	.042
SHSS	-.077*

** p < .01 *p > 0.05

It can be seen in Table 6.41 that there is a significant negative relationship between age and coping strategies – self blame and social withdrawal and seek help and social support. The findings indicate that as age increases the use of coping strategies of self blame and social withdrawal and seek help and social support decreases. The other two coping strategies are used by the respondents irrespective of age.

Differences in use of coping strategies among nurses, based on their total years of experience: The years of working in the hospitals nurses may gain mastery over their work routines and adapt to stressful situation more positively. As experience increases there may be increase in the coping abilities of individuals. In this study nurses had work experience ranging from one year to more than 20 years; it was interesting to find out that there are significant differences in the use of coping strategies across different work experience groups. Differences in use of coping strategies based on total years of experience of respondents have been calculated by using One-way ANOVA test and the results are given in Tables 6.42

Table 6.42

One way ANOVA- Total years of experience and coping strategies

N=833

Total years of experience and coping strategies among nurses					
Coping strategies	**Age Group**	**Mean**	**S.D.**	**F**	**Sig.**
PSPL	0-5 years	8.42	2.48	1.23	0.295
	6-10 years	8.69	2.66		
	11-15 years	8.63	2.41		
	16-20 years	8.72	2.78		
	Above 20 years	8.97	2.79		
SBSW	0-5 years	3.87	3.57	7.69	0.000
	6-10 years	3.88	3.45		
	11-15 years	2.97	2.70		
	16-20 years	2.53	2.50		
	Above 20 years	2.47	2.43		
TG	0-5 years	6.13	2.26	1.34	0.251
	6-10 years	6.05	2.39		
	11-15 years	6.22	2.36		
	16-20 years	6.53	2.42		
	Above 20 years	6.54	2.56		
SHSS	0-5 years	5.60	1.91	1.48	0.204
	6-10 years	5.45	1.87		
	11-15 years	5.38	2.05		

	16-20 years	5.01	2.06
	Above 20 years	5.39	2.13

The ANOVA output as shown in Table 6.42 indicates that there is no significant difference (F =1.23, p = 0.295) in total years of experience of nurses and coping strategy- problem solving and planning (PSPL). It shows significant differences (F = 7.68, p = 0.00) in total years of experience of nurses and use of coping strategy- self blame and social withdrawal (SBSW), which indicates that self blame and social withdrawal coping strategy is used more by the nurses having less than 10 years of experience. The statistical result shows no significant differences (F = 1.34, p = 0.251) in total years of experience of nurses and use of coping strategy turning to God (TG), which means that turning to God coping strategy is used by all nurses irrespective of years of experience to cope up with workplace stress. Also there is no significant differences (F = 1.48, p = 0.204) in age of nurses and use of coping seeking support and help (SHSS), which means that nurses seek help and social support to cope with workplace stress irrespective of years of experience.

Further analysis i.e. correlation analyses was done to determine the use of different coping strategies and its relationship with the total years of experience of nurses. The results of the analyses are given in Table 6.43.

Table 6.43

Correlation of total years of experience and coping strategies

N=833

Coping strategies	Total years of experience
PSPL	.072*
SBSW	-.180**
TG	.072*
SHSS	-.061

** p < .01 *p > 0.05

In the Table 6.43 it can be observed that there is a significant relationship between total years of experience and coping strategies-problem solving and planning and turning to God. It can be interpreted from this as experience increases the use of these coping strategies increases. It is also seen that there is a significant negative correlation between total years of experience and self blame and social withdrawal coping strategy which indicates that as experience increases nurses do not use coping strategy of blaming self and social withdrawal. No significant relationship is found between total years of experience and seeking help and support coping strategy. It can be inferred that nurses seek help and support to cope up with workplace stressor irrespective of years of experience.

a. **Differences in use of coping strategy- Turning to God (TG) by nurses, based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: Turning to God is one of the coping strategies used by nurses. It was interesting to find the association between this coping strategy and demographics of variables of the respondents. The Independent t-test was done to find the relationship and the findings are presented in Table 6.44

Table 6.44

Independent t test- professional qualification, marital status, religion, employment status and hospital type and Turning to God (TG) coping strategy

N=833

Coping strategy- Turning to God (TG)		N	Mean	SD	t value	p
Gender	Male	68	5.66	2.47	-2.08	0.03
	Female	765	6.28	2.36		
Professional Qualification	Diploma	507	6.28	2.40	0.71	0.47
	Degree	326	6.16	2.33		
Marital Status	Single	327	6.14	2.30	-0.93	0.35
	Married	506	6.29	2.42		
Religion	Hindu	443	5.81	2.55	-5.62	0.00
	Christians	366	6.74	2.07		
Employment Status	Regular	723	6.26	2.38	0.77	0.43
	Contract	110	6.07	2.33		
Hospital Type	Government	657	6.21	2.40	-0.54	0.58
	Private	176	6.32	2.27		

The findings presented in Table 6.44 shows significant difference (p = 0.03) in the mean scores of male and female nurses regarding coping strategy turning to God (TG). Findings reveal that female nurses use turning to God coping strategy more often than males. Findings also show no significant differences (p = 0.47) in the mean scores of nurses with diploma and degree as a professional qualification in regard to coping strategy of turning to God (TG). Also there is no significant difference (p = 0.35) in the mean scores of the married and single nurses and

coping strategy turning to God (TG). Further analyses revealed that there is a significant difference (p = 0.00) in the mean scores of Hindu and Christian nurses and coping strategy turning to God (TG). It can be interpreted that Christian nurses more frequently use coping strategy turning to God (TG). The statistical tests revealed that there is no significant difference (p = 0.43) in the mean scores of nurses working on regular and contract basis and coping strategy turning to God (TG). With regard to the type of hospital where respondents worked there was no significant difference (p = 0.58) in the use of coping strategy turning to God among nurses working in Government and private health settings. Based on above findings it can be concluded that except for gender and religion coping strategy -turning to God (TG) is used by all nurses irrespective of demographics.

b. **Differences in use of coping strategy- problem solving and planning among nurses, based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: It is found that problem solving and planning-coping strategy has a positive relationship with total years of experience of the respondents. Independent t-test was done to find association of this coping strategy with other select demographics of the respondents'. The findings are presented in Table 6.45

Table 6.45

Independent t test- professional qualification, marital status, religion, employment status and hospital type and workplace stress and problem solving and Planning (PSPL) coping strategy

N=833

Coping strategy- and problem solving Planning (PSPL)		N	Mean	SD	t value	p
Gender	Male	68	8.82	2.66	0.64	0.52
	Female	765	8.61	2.59		
Professional Qualification	Diploma	507	8.62	2.68	-0.05	0.95
	Degree	326	8.63	2.46		
Marital Status	Single	327	8.47	2.46	-1.35	0.17
	Married	506	8.72	2.68		
Religion	Hindu	443	8.67	2.74	0.58	0.55
	Christians	366	8.57	2.46		
Employment Status	Regular	723	8.65	2.62	0.67	0.49
	Contract	110	8.47	2.39		
Hospital Type	Government	657	8.75	2.56	2.61	0.00
	Private	176	8.17	2.66		

The findings presented in Table 6.45 show no significant differences (p = 0.52) in the mean scores of male and female nurses regarding coping strategy- problem solving and planning (PSPL). The table also shows no significant differences (p = 0.95) in the mean score of nurses with diploma and degree as a professional qualification in regard to coping strategy- problem solving and planning (PSPL). It reveals that there is no significant difference (p = 0.17) in the mean scores of the

married and single nurses and coping strategy- problem solving and planning (PSPL). Findings revealed that there is no significant difference (p = 0.55) in the mean scores of Hindu and Christian nurses and coping strategy- problem solving and planning (PSPL). The t-test revealed that there is no significant difference (p = 0.49) in the mean scores of nurses working on regular and contract basis and coping strategy- problem solving and planning (PSPL). With regard to the type of hospital the respondents worked in the tests showed a significant difference (p = 0.00) in the use of coping strategy- problem solving and planning (PSPL) among nurses working in Government and private health settings. From it can be interpreted that nurses working in government sector use more often coping strategy- problem solving and planning more often than the nurses working in private sector.

c. **Differences in use of coping strategy- Self blame and social withdrawal (SBSW) among nurses, based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in)**: It was found that use of self blame and social withdrawal -coping strategy of the respondents decrease as age and experience increases. Independent t-test was done to find the association of this coping strategy with other select demographics of the respondents'. The findings are presented in Table 6.46

Table 6.46

Independent t test- professional qualification, marital status, religion, employment status and hospital type and workplace stress and Self blame and social withdrawal (SBSW) coping strategy

N=833

Coping strategy Self blame and social withdrawal (SBSW)		N	Mean	SD	t value	p
Gender	Male	68	4.83	4.32	3.85	0.00
	Female	765	3.27	3.09		
Professional Qualification	Diploma	507	3.38	3.26	-0.16	0.86
	Degree	326	3.42	3.19		
Marital Status	Single	327	4.1560	3.77	5.51	0.00
	Married	506	2.9111	2.73		
Religion	Hindu	443	3.27	3.24	-0.57	0.56
	Christians	366	3.40	3.15		
Employment Status	Regular	723	3.49	3.31	2.08	0.03
	Contract	110	2.80	2.61		
Hospital Type	Government	657	2.85	2.64	-9.99	0.00
	Private	176	5.44	4.27		

The findings presented in Table 6.46 shows significant differences (p = 0.00) in the mean scores of male and female nurses regarding coping strategy- Self blame and social withdrawal (SBSW), from this results it can be interpreted that males use self blame and social withdrawal coping strategy more often than female nurses. The t-test also shows no significant differences (p = 0.86) in the mean scores of nurses with diploma and degree as a professional qualification, in regard

to coping strategy- Self blame and social withdrawal (SBSW). The statistical results reveals that there is a significant difference (p = 0.00) in means scores of married and unmarried nurses and use of coping strategy- Self blame and social withdrawal (SBSW), which means that unmarried nurses make use of self blame and social withdrawal coping strategy more often than married nurses. In contrast that there is no significant difference (p = 0.56) in the mean scores of Hindu and Christian nurses and coping strategy- Self blame and social withdrawal (SBSW). The table 6.46 reveals that there is significant difference (p = 0.03) in the mean scores of nurses working on regular and contract basis and coping strategy- Self blame and social withdrawal (SBSW). It can be interpreted that nurses working on regular basis use more often Self blame and social withdrawal coping strategy. In regard to type of hospital it also shows significant difference (p = 0.00) in use of coping strategy- Self blame and social withdrawal (SBSW) among nurses working in the Government and private health care settings. It can be interpreted that nurses working in private sector use more often coping strategy- Self blame and social withdrawal (SBSW) than the nurses working in the Government sector.

d. Differences in use of coping strategy- Seeking help and social support (SHSS) among nurses, based on select demographic variables (professional qualification, marital status, religion, employment status, and type of hospital employed in): It is found that use of coping strategy- seeking help and social support had no significant relationship with the total years of experience or age of the respondents. To test further association with other select demographics of the respondents' Independent t-test was done and the results are shown in Table 6.47

Table 6.47

Independent t test- professional qualification, marital status, religion, employment status and hospital type and Seeking help and social support (SHSS) coping strategy

N=833

Seeking help and social support (SHSS) coping strategy		N	Mean	SD	t value	P
Gender	Male	68	5.41	2.15	-0.88	0.85
	Female	765	5.4588	1.96		
Professional Qualification	Diploma	507	5.43	1.96	-0.45	0.65
	Degree	326	5.49	2.01		
Marital Status	Single	327	5.63	1.93	2.09	0.03
	Married	506	5.33	2.00		
Religion	Hindu	443	5.38	2.01	-0.90	0.36
	Christians	366	5.51	1.94		
Employment Status	Regular	723	5.40	1.99	-1.86	0.06
	Contract	110	5.78	1.86		
Hospital Type	Government	657	5.40	1.96	-1.32	0.18
	Private	176	5.63	2.02		

The findings presented in Table 6.47 shows no significant differences (p = 0.85) in the mean scores of male and female nurses regarding coping strategy- Seeking help and social support (SHSS) coping strategy. The table also shows no significant differences (p = 0.65) in the mean scores of nurses with diploma and degree as a professional qualification in regard to coping strategy- Seeking help and social support (SHSS) coping strategy. Findings reveal that there is a significant difference (p = 0.03) in the mean scores of married and unmarried nurses and use of coping strategy- Seeking help and social support (SHSS) coping strategy which means that unmarried nurses make use of Seeking help and social

support (SHSS) coping strategy coping strategy more often than married nurses. Further findings revealed that there is no significant difference ($p = 0.36$) in the mean scores of Hindu and Christian nurses and Seeking help and social support (SHSS) coping strategy. Findings also reveal that there is no significant difference ($p = 0.06$) in the mean scores of nurses working on regular and contract basis and coping strategy- Seeking help and social support (SHSS) coping strategy. With regard to the type of hospital nurses worked in the statistical results also show no significant difference ($p = 0.18$) in use of coping strategy- Seeking help and social support (SHSS) among nurses working in the Government and private health settings. It can be interpreted that nurses working in the Government as well as private sector use coping strategy- Seeking help and social support.

6.6 DEVELOPMENT AND TESTING OF PROCESS MODEL OF WORKPLACE STRESS AND COPING STRATEGIES

To empirically validate the process model of workplace stress and coping strategies among nurses Structural Equation Modelling (SEM) was used.

Structural Equation Modelling (SEM) is one of the multivariate techniques, which estimates a series of inter-related dependent relationships that are shown simultaneously. A series of structural equations are modelled pictorially to facilitate a clear conceptualization of the variables under study. A model which is hypothesized can be statistically tested with a complete set of variables under the study simultaneously.

Latent and Observed Variables

Latent variables are those variables which are not observed directly, but are defined operationally in terms of psychological constructs.

Observed variables are measured scores, and they represent or act as indicators for the underlying construct, which it is believed to represent. Hence one latent variable will have more than two observed variables.

Exogenous and Endogenous Latent Variables

These variables cause fluctuations in the values of other latent variables in the model. Exogenous latent variables are identical with independent variables. Endogenous latent variables are identical with dependent variables and these are influenced either directly or indirectly by the exogenous variables in the model.

The structural model defines relations between the unobserved constructs or variables in the model. Process model deals with how constructs are related to each other and used for hypothesis testing.

Each observed variable is having an error term, this error term reflects the adequacy in measurement of the underlying factors. Residual terms signify error in the prediction of endogenous factors from exogenous factors.

In this study data was analysed using confirmatory measurement model of workplace stress and confirmatory model of workplace stress coping strategies model which preceded validation of process model using large data having a sample size of 833.

The structural model shown in Figure 6.1 shows the relationship between the workplace stress and coping strategies. From the model in figure 6.1 it can be seen

that there are 15 unobserved latent factors and 65 observed variables. There are 49 observed variables which are indicators of the underlying 11 unobserved latent factors of workplace stress and 16 observed variables that are the underlying factors of 4 unobserved latent factors of coping strategies.

Each observed variable is having an error term, this error term reflects the adequacy of the measurement of underlying factors. Residual terms signify error in the prediction of endogenous factors from exogenous factors. For example in figure 6.1 represents error in prediction of WS (the endogenous factor) from NWPCS (the exogenous factor).

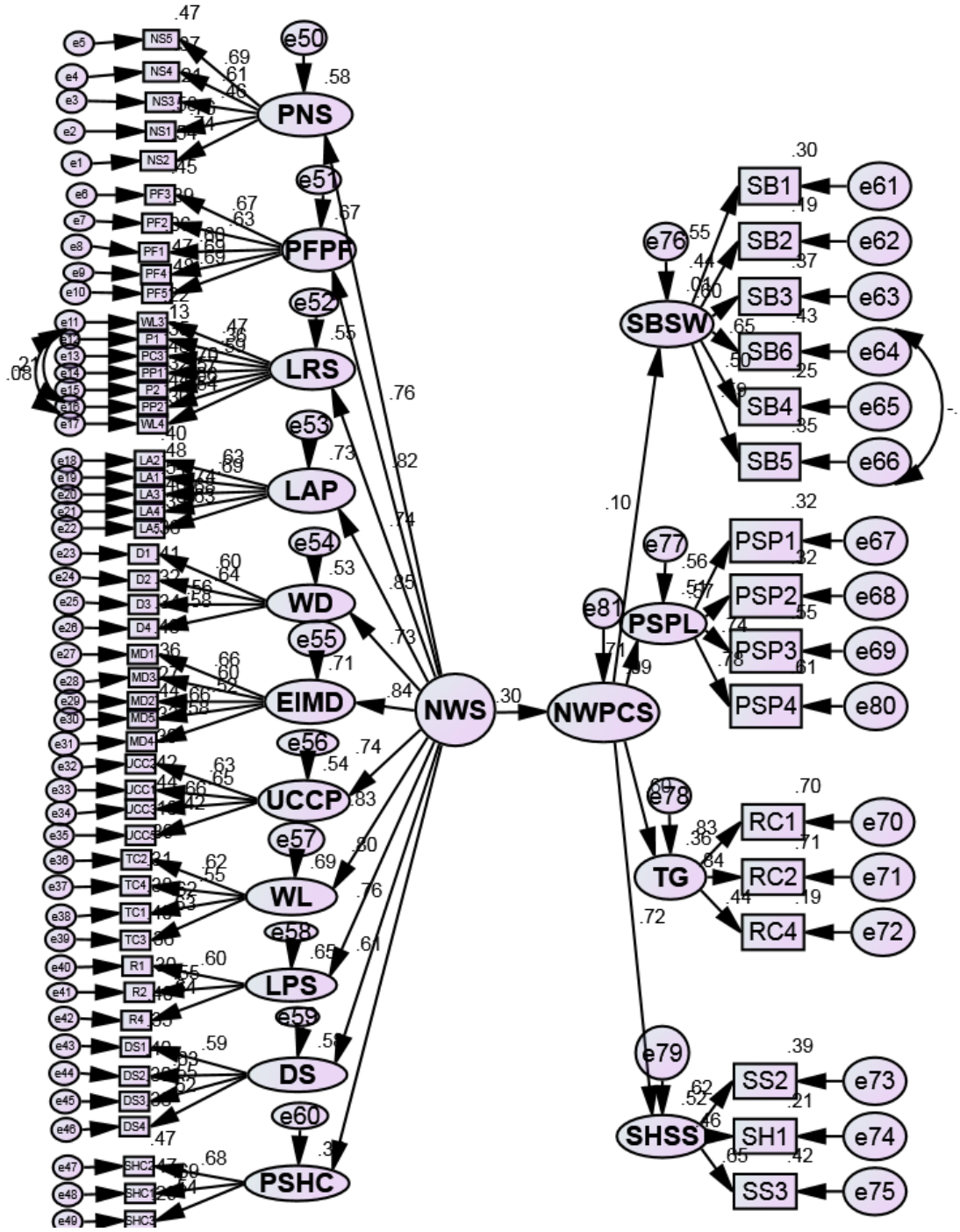

Fig. 6.1: The process model of the workplace stress and the coping strategies

Table 6.48

Fit Indices of the process model on workplace stress and coping strategies (Structural Model)

Fit statistics	Recommended Value*	Values
Chi-square/df	≤ 3.00**	2.174
Goodness of Fit Index (GFI)	≥ 0.90	0.85
Adjusted Goodness of Fit Index ((AGFI)	≥ 0.90	0.84
Normed Fit Index (NFI)	≥ 0.90	0.77
Relative Fit Index (RFI)	≥ 0.90	0.76
Comparative Fit Index (CFI)	≥ 0.90	0.86
Incremental Fit Index (IFI)	≥ 0.90	0.86
Tucker Lewis Index (TLI)	≥ 0.90	0.85
Root mean Square Error of Approximation (RMSEA)	≤ 0.07	0.03
Root Mean Square Residual (RMR)	≤ 0.07	0.05

* Criteria according to Hair et al. (1998), Arbuckle and Wothke (1995)
** Segars and Grover (1993) recommend chi-square/degrees of freedom value of 3.00

The process model of workplace stress and coping strategies is discussed here. "Absolute fit" of the process model as measured by Normed Chi-square value was within the recommended cut-off value of 3.00 at 2.174 and the model goodness of fit measures were below the standard cut off values but some were near to 0.9. However, there was no misfit between the data and the model as indicated by the RMSEA value of 0.03, which was below the benchmark of 0.80 (Hair et al 1998, Arbuckle & Wothke 1995). It can be concluded that the proposed process model of workplace stress and coping strategies fits the data rationally.

Table 6.49

Summary of SEM output

Summary	Particulars	Value
Notes for group	Model is recursive	-
	Sample size	833
Variable counts	Number of variables in the model:	163
	Number of observed variables:	65
	Number of unobserved variables:	98
	Number of exogenous variables:	82
	Number of endogenous variables:	81
Computation of degrees of freedom (Default model**)**	Number of distinct sample moments:	2145
	Number of distinct parameters to be estimated:	149
	Degrees of freedom (2145 - 149):	1996
Result	Minimum was achieved	

Table 6.50

Parameter Summary

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	98	0	0	0	0	98
Labeled	0	0	0	0	0	0
Unlabeled	64	3	82	0	0	149
Total	162	3	82	0	0	247

Based on the above results and summary of the model fit, it can be concluded that model of workplace stress and coping strategies among nurses developed in this study has achieved an acceptable fit indices although it has not reached excellent results in all fit indices. As Hair, Black, Babin, Anderson & Tatham (2006) state that it may not be practical to attain or apply a single set of cut-off values to all the SEM models as, the quality of fit depends on sample size and model complexity. The model developed in this study is complex and sample size of 833 is fairly large, therefore it may have not have attained excellent fit indices in all parameters. Nevertheless the researcher has made an effort towards attaining the standard fit indices and prescribed values without compromising on the concepts and theory of workplace stress and coping strategies and the variables under study.

SUMMARY

This chapter dealt with analysis and results of findings of the study. The data was analyzed and interpreted using descriptive and inferential statistics. One way ANOVA and independent t test was used to check differences and association among respondents' based on to their demographics. Process model of workplace stress and coping strategies was developed and validated using AMOS version 22.

CHAPTER VII

7. CONCLUSIONS

This chapter details the theoretical contributions of the research findings. It also includes discussion on managerial implications based on the findings of the study. The limitations of the study and directions for future research that emerge from the current research work have been outlined.

7.1 THEORETICAL CONTRIBUTIONS

The study has made number of significant contributions in the area of workplace stress and coping.

1. The most significant contribution is the development of Nursing Workplace Stress Scale (NWSC), an eleven dimensions measurement scale that did not exist previously. The Newer dimensions identified are “Lack of Autonomy and Power”, “Ethical Issues”, “Perceived Self Health Concerns” and “Uncertainty Concerning Appropriateness of Care” that did not exist previously. The Discrimination dimension does exist in other scales like Expanded Nursing Stress Scale (ENSS), but NWSS items are different and relevant to current Indian settings.

2. The NWSS provides an overall picture of stress among nurses, there may be occasions when it might be useful to use subscale of NWSS to explore specific stressor at the workplace. The unidimensionality of each scale of nursing workplace was tested for model fit and was found to be valid.

3. Another very important contribution of the study is the development of the Nursing Workplace Stress Coping Strategies Scale (NWSCSS) of 4 dimensions, a measurement scale specific to nursing that did not exist previously to measure workplace coping strategies. This scale has been the first scale to be developed and tested for psychometric properties.

4. The transactional model of stress and coping (Lazarus and Folkman, 1984) explains the misfit between a person, an environment and cognitive appraisal. This explains the workplace stress among nurses as the inability of nurses to cope with the work-related stress due to poor fit between their capabilities and their work needs and conditions which results in physiological, emotional and cognitive responses and behavioural reactions. This study has identified eleven dimensions of workplace stress and specific coping strategies used at the work linking it to the demographic characteristics. The findings of this study, substantiate theoretical model of stress and coping ((Lazarus & Folkman, 1984) and the same can be expanded to include the eleven dimensions of stress identified in this study.

5. In this study relationships between different dimensions of workplace stress and coping strategies are established. The development of workplace stress and coping strategies model of predicting this relationship is an important theoretical contribution of this study.

7.2 MANAGERIAL IMPLICATIONS

Human resource managers are largely responsible for creating work environment in which nurses' practice and patient care is delivered. It is important that they focus on the work environments which are healthy, productive and conducive for individual and organisational growth. This study has several findings which are interesting and important for decision and policy makers, HR Managers, Hospital Administrators, Nursing Administrators and in area of Nursing Education.

1. The Nursing Workplace Stress Scale (NWSS) and Nursing Workplace Coping Strategies Scales (NWCSS) have the potential for further research and human resource management. It could be a useful tool for Human Resource Managers to make decisions related to safety of nurses, staffing, training programme and support program. It will also help to improve work conditions and job satisfaction among nurses by a periodic check on the stress levels of nurses working in an organization.

2. The study provides information that the majority of nurses experience stress at workplace. It suggests that stress is inevitable in the nursing profession. Hence, the nursing educators can include courses on stress and coping in the nursing diploma / degree programs so that the nurses can be trained well in stress management prior to joining the profession.

3. It is found that lack of resources and support is a major stressor for nurses. It is imperative for the managers that resource planning and supply is adequate to avoid stress among nurses and also to build up a support system in an organisation. The nurses may also be provided required education and training

whereby they learn to manage and utilize the allocated resources in efficient way for better patient services.

4. Problems faced with 'Patients and their families' was the second important stressor faced by nurses. These findings calls attention of managers, to build up system for security of nurses at the workplace and also to have well defined strategies or hospital policies in relation to patient care and facilities so that undue pressure, demand and over expectation from patients and their families (which may lead to aggression of patients and their families towards nurses) are prevented.

5. The nurses adopt planning and problem solving coping strategies more frequently which implies that organization needs to provide avenues for better planning by nurses, for improved patient outcomes.

6. The study has found significant difference in levels of workplace stress and use of coping strategies by nurses. This finding has implications that managers promote adaptive coping among nurses in order to lessen stress experience by the nurses.

7. A significant positive relationship was found between total workplace stress and coping strategies used by nurses. Some stress is expected in the nursing profession which cannot be eradicated totally. Knowing the relation between these two variables helps managers to promote healthy coping, thus preventing adverse effects on individual nurses and helps in better patient care.

8. Positive significant relationship is found between Problems Faced with Patients and their Families (PFPF) and coping strategies used by nurses. This finding indicates that nurses use all types of coping strategies to cope with stress. This

provides an insight to managers that coping strategies used by nurses are not only adaptive but also maladaptive and this might have an adverse effect on patient outcomes. Hence, necessary preventive measures may be required at the workplace to promote more adaptive coping strategies.

9. A significant positive relationship is found between problems faced by nurses and coping strategies used by nurses. Nurse Managers need to develop healthy work environment and trusting relationship among the nurses and nursing supervisors. The problems with nursing supervisors have to be amiably solved by human resource managers. Maladaptive coping used by nurses can further lead to an unhealthy work environment.

10. A significant relationship is found between lack of Autonomy and Power (LAP) and coping strategies. This finding plays an important role in understanding the nature of professional issues and how nurses cope with this stressor. The managers may plan programs which will increase motivation of nurses and build professionalism among nurses.

11. A significant positive relationship was found between Ethical Issues and Meeting Demands (EIMD) and coping strategies - Turning to God, Self blame and avoidance and Seeking help and support. This suggests to managers to plan strategies that are directed towards making environment free of ethical issues and less demanding for nurses to carry out their work in a healthy work environment.

12. Significant relationship is found between Lack of Professional Status (LPS) and coping strategies. The managers need to focus on development of relevant interventions so that professional image could be improved among nurses.

13. There is significant relationship between Workplace Discrimination (WD) and coping strategies -Turning to God and Self Blame and Avoidance. This implies that nurse managers should develop strong strategies to curb workplace discrimination among nurses, without which nurses may shy away from patient care, blaming themselves or God in the process.

14. No significant relationship was found between Workplace Discrimination (WD) and coping strategies- Seeking help and support. This indicates nurses facing discrimination do not seek help and support even if required. If the situation continues, patient care is bound to suffer. The Human Resource Managers need to watch out for, and arrest discrimination at the earliest.

15. The findings of this study suggest that workplace stress was higher among nurses in age group of 25-35 years. The HR managers need to have stress management strategies targeting this age group and assess the reasons for higher stress in this age group, which may otherwise lead to early attrition.

16. The study findings suggest that stress decreases as age increases, considering this finding Managers need to target younger nurses and provide some adaptation training and enrol them in stress management programs. Older nurses may be used as mentors for novice nurses, which can work as one of the stress management strategies.

17. There is a significant difference in total years of experience and dimensions of workplace stress. This aspect can be taken into consideration while planning stress management training programmes and other interventions for nurses.

18. There was no significant difference found between gender, professional qualification, marital and employment status in total workplace stress. To address these findings Human Resource Managers may plan common stress management programs for all nurses, irrespective of their demographics characteristics.

19. There was a significant difference in the mean score workplace stress of nurses between Hindu and Christian nurses. It is observed that the workplace stress experience is higher among Christian nurses. This suggests that special attention need to be paid to Christian nurses while planning stress intervention program for nurses.

20. The workplace stress is found to be higher among nurses working in the Government hospitals than in private hospitals. The Government authorities need to take note and devise such stress management program which will aid in relief of stress experience at the workplace.

21. It is found that workplace stressor- problems faced with patients and their families (PFPF), Problems with nursing supervisors, Lack of autonomy and power (LAP) and Lack of professional status is widespread across all groups and demographics have no impact on these workplace stressors. This suggests that organisation-wide changes are required to reduce such stress among all nurses. It also gives an indication to managers about different workplace situations which are stressful to nurses.

22. It is found that Ethical issues and meeting demands (EIMD) and Uncertainty concerning appropriateness of care - workplace stressors are significantly higher among graduate nurses than diploma nurses. This finding suggests that diploma

nurses may be unaware of ethical issues and unwanted demands made on them by the other health care professionals. It also suggests that Uncertainty concerning appropriateness of care is higher among graduate nurses, which may be due to better knowledge concerning care. Nurse administrators need to recognize this difference and organise continuing nursing education programmes for the benefit of diploma nurses and refresher courses to graduate nurses in health care settings.

23. It is found that nurses working in government sector reported lack of resources and support (LRS) higher than the nurses working in the private hospitals. It is crucial factor to be dealt with by the hospital administration in the Government sector where unavailability or delay in resources can have a significant impact on quality patient care.

24. Unmarried nurses working in private hospitals experience higher levels of workplace discrimination. These findings suggest a need for serious attention of hospital authorities for the safety of nurses at workplace, as majority of nurses are females.

25. A significant association was found between demographic variables 'employment status' and 'type of hospital', and uncertainty concerning appropriateness of care (UCAC). This suggests that there are significant differences between contract & regular employees, and also the type of hospital where they are working in the stress caused because of uncertainty. It is possible that contract employees are not given enough information / training on the appropriateness of care, which could result in serious lapse in quality of care provided by them. Similarly, private hospital nurses are found to have higher levels of stress due to UCAC, and so

private hospital managers need to be aware of the consequences and take appropriate measures to reduce such uncertainties.

26. The problem solving and planning coping strategy is used more among nurses with age (45-55), while self blame and social withdrawal coping strategy is used more among nurses below 25 years of age. These findings suggest that older nurses use adaptive coping whereas young nurses use maladaptive coping. Hence, human resource managers planning training program on coping may need to focus on adaptive coping strategies for younger nurses.

7.3 LIMITATIONS

1. Goa is considered to be one of the best performing states in health care sector in the country. A study findings depend on the settings chosen for study, there may be variations in results in states with differing priorities on healthcare.

2. Physical and emotional state of individual nurses at the time of responding to questionnaire may have some limitation in the validity of the findings.

3. The study identified dimensions of stress and coping based on the literature reviewed and data captured from the field. There may be other emerging stressors in other workplace settings which may not have been captured.

4. Stress measurement is based on self-reported data and not based on physiological / biochemical assessments which may be better indicators for levels of stress experienced by people.

The researcher firmly believes that the above limitations have not overpowered the purpose of the study. This study has provided an insight into the area of workplace stress and coping strategies used by nurses.

7.4 DIRECTIONS FOR FUTURE RESEARCH

- Scales with slight modifications may be developed and used among other health care professionals such as doctors, physiotherapists, occupational therapists, etc working in hospitals.

- Results of this study provide health care industry decision makers an insight into the perception about workplace stress and coping among Indian nurses. The model derived from this study could be employed in future studies examining specific work areas.

- Further research may examine different dimensions of workplace stress and preferred coping strategies among nurses, depending on the total stress levels experienced.

- Future research may explore the effect of workplace stress on physical and mental health and study the impact of coping strategies used on this relationship.

- Future research may explore relationships between individual dimensions of workplace stress and different workplace coping strategies used and impact on the health outcomes.

- Future research may investigate and compare workplace stress among nursing working in different speciality or clinical area.

7.5 CONCLUSIONS

This study was undertaken to identify the different dimensions of workplace stress and the coping strategies used in the nursing profession. The scale development underwent exhaustive process to ascertain psychometric properties of two measurement scales namely "Nursing Workplace Stress Scale (NWSS)" and "Nursing Workplace Stress Coping Scale (NWSCSS) were developed in this study. Validation of the scales was done using advanced statistical method such as Exploratory Factor Analysis and Confirmatory Factor Analysis. The study confirmed that nursing workplace stress consists of eleven dimensions or stressors that can contribute to stress among nurses working in different health care settings. The study further established that workplace stress was essentially dealt by nurses with four types of coping strategies- Self Blame and Social Withdrawal, Problem Solving and Planning, Turning to God and Seeking Help and Social Support. The structural model of workplace stress and coping strategies using SEM proved the relation between these two concepts.

The specific and general conclusions can be drawn based on the analysis and findings of the study. Nursing is a stressful profession and nurses work under stress was confirmed in the study. In health care delivery system nurses play an important role as care coordinators and collaborators. The care can be affected when the resources are deficient; this study has confirmed that the lack of resources and support was one of the major stressor for the nurses under study. Nurses come in contact not only with patients but also with their families. The demand placed on nurses by patients and their families results in stress experience among nurses was established. It was documented that nurses cope positively as "planning and problem solving" coping strategy was used more often than other coping strategies. The stress and coping

strategies were found to have positive relationship, thus stress experience and its negative outcome can be reduced or prevented by promoting healthy, positive and adaptive coping. The workplace stressors "Death and Suffering", "Lack of Resources and Support" & "Workload", these stressors were found to be widespread across the entire population being studied irrespective of their demographics. These findings provided evidence that these workplace stressors are experienced by nurses not only because of their personal attributes but rather due to demands of the profession and the problems within administrative control in terms of staffing and resources. The study has made a number of original contributions in the area of workplace stress and coping and provided insights to managers for planning different strategies to reduce or prevent stress at workplace. The scope for future research is outlined so the work in this particular area can be expanded and extended by future researchers.

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GOVERNMENT OF GOA,
PUBLIC HEALTH DEPARTMENT
SECRETARIAT, PORVORIM-GOA

No.21/1/2010-I/PHD 8226 **Dated: 31/03/2015**

To,
The Director,
Directorate of Health Services,
Panaji-Goa.

Directorate of Health Services
Entry No. 67
Dated: 7/4/14

Sub:- Permission to conduct research study.

Sir,

I am directed to refer to your letter No.DHS/Sp.Cell/5-11/2014-15/1906 dated 17/02/2015 on the aforesaid subject and convey permission of the Government to Mr. Wilson Fernandes, Lecturer, Institute of Nursing Education-Bambolim to conduct research study in the area of 'Occupational Stress and Coping among Nurses" which require collecting date from nurses working at the following Health units under DHS with a condition that that data collected from Nurses will be strictly used for the academic purpose and will not be revealed to any other people /organizations for any purpose whatsoever.

1. Hospicio Hospital, Margao
2. Asilo Hospital, Mapusa
3. Cottage Hospital, Chicalim
4. Sub-District Hospital, Ponda
5. Community Health Centres:
   Canacona, Curchorem, Pernem, Valpoi
6. Primary Health Centres:
   Aldona, Bali, Betki, Bicholim, Candolim, Cansaulim, Cansarvarnem, Shiroda, Siolim, Sanquelim, Curtorim and Sanguem.

His office work should not be hampered while undertaking the aforesaid research studies.

Yours faithfully,

31/03/2015

(Neela Dharwadkar)
Under Secretary (Health-II)

Sp cell

APPENDIX – I B

Wilson

No. 9/E2/GMC/MISC/2006/10034
Government of Goa,
Office of the Dean,
Goa Medical College,
Bambolim - Goa.

Date: 30 /01/2015

I. N. E. ... -GOA
Entry No 2985
Date 3/2/15

To,
The Principal,
Institute of Nursing Education,
Bambolim-Goa.

Sub: Permission to conduct research study.

Madam,

With reference to your letter No. 5 (Per)/INE/DHS/2014-15/1139 dated 06 January 2015, It is to inform you that, Shri. Wilson N. Fernandes, Lecturer at Institute of Nursing Education is hereby permitted to conduct research study and interact with the Nurses working in Goa Medical College and Hospital in the process of data collection.

He may be informed that the data collected should be used for academic purpose only and should not be revealed to any other people /organization for any purpose whatsoever.

DEAN
Goa Medical College & Hospital
Bambolim – Goa.

Copy to:-

1. Shri. Wilson N. Fernandes, Lecturer, INE, Bambolim-Goa.
2. Medical Supdt., GMC, Bambolim-Goa.
3. Matron's Office, GMC, Bambolim.
4. The I/C TB & Chest Hospital, St. Inez.
5. The I/C Mandur.
6. Personal File.

Arvedo

CONTENT VALIDITY INDEX (CVI)

WORKPLACE STRESS SCALE

Table 1: Content Validity Index (CVI) of Subscale- **Death and Dying**

Sr. No.	Items	Item CVI
1	Performing procedures that patients experience as painful.	.80
2	Feeling helpless in the case of a patient who fails to improve.	.90
3	Listening or talking to a patient about his/her approaching death.	.90
4	The death of a patient.	1
5	Unexpected death of a patient.	.90
6	The death of a patient with whom you have developed a close relationship.	.90
7	Physician not being present when a patient dies.	1
8	Observing a patient suffer.	.80

Scale CVI=.90

Table 2: Content Validity Index (CVI) of Subscale- **Conflict with Physicians**

Sr. No.	**Items**	Item CVI
1	Criticism by a physician.	1
2	Lack of support by other health care administrators	.80
3	Conflict with a physician about duties and responsibilities.	.80
4	Disagreement concerning the treatment of a patient.	1
5	Making a decision concerning a patient when the physician is unavailable.	.80
6	Having to organize physicians' work.	.80
7	Having to meet unnecessary demands of the doctors	1

S-CVI= 0.88

Table 3: Content Validity Index (CVI) of Subscale- **Inadequate Emotional Preparation**

Sr. No.	**Items**	Item CVI
1	Feeling inadequately prepared to help, meet the emotional needs of a patient's family.	1
2	Not having a satisfactory answer for questions asked by a patient.	.80
3	Feeling inadequately prepared to help, meet the emotional needs of a patient.	1

S-CVI=0.93

Table 4: Content Validity Index (CVI) of Subscale- **Problems Relating to Peers**

Sr. No.	**Items**	Item CVI
1	Lack of an opportunity to discuss problems openly in the work setting with nurses of other wards.	.90
2	Lack of an opportunity to share experiences and feelings with nurses of other wards.	1
3	Lack of an opportunity to express negative feelings toward patients to other nursing personnel in the ward.	.80
4	Experiencing difficulty in working with a particular nurse (or nurses) of another ward.	.90
5	Experiencing difficulty in working with a particular nurse (or nurses) in my ward.	.90
6	Working with nurses of the opposite sex.	1
7	Lack of communication by other nurses regarding patients care.	1

S-CVI= 0.92

Table 5: Content Validity Index (CVI) of Subscale- **Conflict with nursing supervisors**

Sr. No.	**Items**	Item CVI
1	Conflict with nursing supervisors.	1
2	Lack of support from the nursing supervisors.	1
3	Criticism by a nursing supervisor.	1
4	Being held accountable for things over which I have no control.	1
5	Lack of effective supervision by nursing supervisor.	.80
6	Being sent as relieving nurse to unfamiliar ward.	1
7	Unfair superiors.	1

S-CVI= 0.97

Table 6: Content Validity Index (CVI) of Subscale- **Work Load**

Sr. No.	**Items**	Item CVI
1	Unpredictable shift duties.	1
2	Having to perform many non-nursing tasks such as clerical work.	1
3	Not enough time to provide emotional support to a patient.	1
4	Not enough time to complete all of my nursing tasks.	1
5	Not enough staff to adequately meet nursing needs of patients.	1
6	Not having enough time to communicate to patients' families.	1
8	Having to work without breaks.	1
9	Having to make decisions under pressure.	1
10	Inadequate supplies to provide care	.80
11	Poor work conditions such as limited water supply, interrupted power supply, etc.	.80
12	Number of patients admitted more than available beds.	1
13	Uncooperative support staff.	.90
14	Co-ordinating with persons of the other departments.	1
15	Working on night shifts	.90
16	Patients without personal attendant.	1
17	Working with support staff of opposite gender.	.80

S-CVI= 0.92

Table 7: Content Validity Index (CVI) of Subscale- **Uncertainty Concerning Treatment**

Sr. No.	**Items**	Item CVI
1	Inadequate information from a physician regarding the medical condition of a patient.	.90
2	A physician ordering what appears to be inappropriate treatment for a patient.	.90
3	Fear of making mistakes while providing care.	1
4	A physician not being present in a medical emergency.	1
5	Fear of equipment failure during use.	1
6	Answering patient or his/her family about patient's condition and treatment.	.90
7	Feeling inadequately trained for what I have to do.	1
8	Tasks in unfamiliar areas.	1
9	Having to take care of patients suffering from infectious diseases	.80

S-CVI= 0.94

Table 8: Content Validity Index (CVI) of Subscale- **Patients and their Families**

Sr. No.	**Items**	Item CVI
1	Patients making unreasonable demands.	1
2	Patients' family making unreasonable demands.	1
3	Being blamed for everything that goes wrong.	1
4	Being the only one who has to deal with patients' families.	.90
5	Having to deal with physically violent patients.	.90
6	Having to deal with abusive patients.	1
7	Having to deal with abuse from patients' families.	1
8	Having to deal with violent behaviour of families.	.90
9	Fear of being reported for perceived inadequate care.	.90
10	Providing care to patients of the opposite gender.	1
11	Providing care to patients of the medical profession.	1
12	Providing care to people of influence and their family members	.90

S-CVI= 0.95

Table 9: Content Validity Index (CVI) of Subscale- **Ethical Issues**

Sr. No.	Items	Item CVI
1	Assigning nursing tasks to untrained personnel or relatives	.80
2	Providing preferential treatment for selected patients	.90
3	Inability to provide adequate care.	.90
4	Unable to meet identified needs of the patients	1
5	Lack of control over use of medications and diagnostic procedures	1
6	Being aware that the care provided may pose risks to patient's health and safety	1
7	Patient's treatment rescheduled without any valid reason	.90
8	Difficulty in maintaining the dignity of patients.	1
9	Prioritising care when handling multiple patients.	.80
10	Having to handle medico-legal issues related to patients	.90

S-CVI= 0.92

Table 10: Content Validity Index (CVI) of Subscale- **Leadership and Promotional Avenues**

Sr. No.	**Items**	Item CVI
1	Having to follow directives from non-nursing personnel	.90
2	Lack of opportunity to take up leadership role	1
3	Not being allowed to make decisions related to patient care	1
4	Lack of policies related to transfer and promotion	1
5	Being in same position for long time without promotion.	1

S-CVI= 0.98

Table 11: Content Validity Index (CVI) of Subscale- **Perceived status and image of nursing**

Sr. No.	**Items**	Item CVI
1	Being treated as non-professionals	1
2	Lack of respected by doctors	1
3	Disrespectful behaviour of patients and relatives.	1
4	Feeling nursing skills and knowledge being undervalued	1
6	Experiencing public criticism	1
8	Being asked to perform tasks of other health team members	1
9	Non- nursing personnel being asked to perform higher nursing functions	1
10	Having to follow directives from people of influence	0.9

S-CVI= 0.99

Table 12: Content Validity Index (CVI) of Subscale- **Discrimination**

No.	**Items**	Item CVI
1	Fear of being sexually harassed.	.80
2	Experiencing discrimination on the basis of caste.	1
3	Experiencing discrimination on the basis of sex.	1
4	Being discriminated on the basis of years of service.	1
5	Being discriminated on the basis of qualification	1

S-CVI= 0.96

Table 13: Content Validity Index (CVI) of Subscale- **Self Health Concerns**

Sr. No.	**Items**	**Item CVI**
1	Concerns that working in night shifts may lead to premature aging	.80
2	Concerns that my work may lead to chronic illnesses	.80
3	Being exposed to health and safety hazards.	1

S-CVI= 0.86

CONTENT VALIDITY INDEX (CVI)

COPING SCALE

Table 14: Content Validity Index (CVI) of Subscale **Coping: Problem Avoidance**

Sr. No.	Statements	Item CVI
1.	I try to manage with whatever things are available	1
2.	I avoid thinking about the problem.	1
3.	I don't report to work when I feel stressed	1
4.	I avoid situation which causes stress	1
5.	I look at others to resolve the problems for me	1
6.	I somehow complete my work and forget about problems.	1

S-CVI= 1.0

Table 15: Content Validity Index (CVI) of Subscale **Coping: Problem Solving, Planning**

Sr. No.	Statements	Item CVI
1.	I try to plan and organise my work	1
2.	I prepare myself to handle emergencies	1
3.	I try to solve the problem using available resources	1
4.	I think for alternative solution to solve the problem	1
5.	I develop confidence to solve problems by gaining knowledge on subject	1

S-CVI= 1.0

Table 16: Content Validity Index (CVI) of Subscale **Coping: Religious coping**

Sr. No.	Statements	Item CVI
1.	I pray to God before beginning my shift	1
2.	I pray before I do something for my patients	1
3.	I always seek God's help in my difficulties	1
4.	I ask God's forgiveness for my shortcomings	1
5.	I do whatever I have to do even with difficulties thinking it is a service to God.	1
6.	I keep a religious article with me during my working hours	1

S-CVI= 1-0

Table 17: Content Validity Index (CVI) of Subscale **Coping: Seeking Support**

Sr. No.	**Statements**	**Item CVI**
1.	I seek help from patients families	1
2.	I seek help from superiors	1
3.	I discuss the workplace problems with colleagues	1
4.	I seek help from my colleagues	1
5.	I discuss the workplace problems with my family	1

S-CVI= 1.0

Table 18: Content Validity Index (CVI) of Subscale **Coping: Express Emotions**

Sr. No.	**Statements**	**Item CVI**
1.	I lose my temper and displace feelings on others	1
2.	I console myself that stress is part of my job	1
3.	I try to change my behaviour to adapt to the situation	1
4.	I try to share experiences of workplace with colleagues	1
5.	I feel authorities are responsible for workplace problems.	1

S-CVI= 1.0

Table 19: Content Validity Index (CVI) of Subscale **Coping: Self Criticism**

Sr. No.	Statements	**Item CVI**
1.	I realize that I am the creator of my own problems.	1
2.	I blame myself for choosing nursing as career	1
3.	I understand my inability to handle problems.	1
4.	I know I am not worthy to be a nurse	1

S-CVI= 1.0

Table 20: Content Validity Index (CVI) of Subscale **Coping: Social Withdrawal**

Sr. No.	Statements	**Item CVI**
1.	I don’t allow others to know my feelings.	1
2.	I avoid talking to my colleagues.	1
3.	I keep myself busy to avoid others.	1
4.	I avoid talking to patients families.	1

S-CVI= 1.0

APPENDIX – IV

PRELIMINARY SCALE

THE NURSING STRESS SCALE –REVISED (NSS-R)

INSTRUCTION

Below is the list of situations that commonly occur in a hospital. For each situation encountered in your PRESENT WORK-SETTING, kindly indicate HOW STRESSFUL it has been for you.

Encircle the number in the column to the right that best applies to you. If you have not encountered the situation than encircle "0" in the column to the right.

Never Stressful 1	Occasionally Stressful 2	Frequently stressful 3	Extremely stressful 4	Does not apply 0

1.	Performing procedures that patients experience as painful.	1	2	3	4	0
2.	Criticism by a physician.	1	2	3	4	0
3.	Feeling inadequately prepared to help, meet the emotional needs of a patient's family.	1	2	3	4	0
4.	Lack of an opportunity to discuss problems openly in the work setting with nurses of other wards.	1	2	3	4	0
5.	Lack of support from the nursing supervisors.	1	2	3	4	0
6.	Having to follow directives from non-nursing personnel	1	2	3	4	0
7.	Physician not being present when a patient dies.	1	2	3	4	0
8.	Lack of support by other health care administrators	1	2	3	4	0
9.	Co-ordinating with persons of the other departments.	1	2	3	4	0
10.	Tasks in unfamiliar areas.	1	2	3	4	0
11.	Providing care to people of influence and their family members	1	2	3	4	0
12.	Being in same position for long time without promotion.	1	2	3	4	0
13.	Feeling helpless in the case of a patient who fails to improve.	1	2	3	4	0
14.	Not having a satisfactory answer for questions asked by a patient.	1	2	3	4	0
15.	Feeling inadequately trained for what I have to do.	1	2	3	4	0
16.	Providing care to patients of the medical profession.	1	2	3	4	0
17.	Being discriminated on the basis of years of service.	1	2	3	4	0
18.	Listening or talking to a patient about his/her approaching death.	1	2	3	4	0
19.	Having to work without breaks.	1	2	3	4	0
20.	Having to deal with violent behaviour of families.	1	2	3	4	0
21.	Inadequate supplies to provide care	1	2	3	4	0
22.	Poor work conditions such as limited water supply, interrupted power supply, etc.	1	2	3	4	0
23.	Number of patients admitted more than available beds.	1	2	3	4	0

24.	Uncooperative support staff.	1	2	3	4	0
25.	Lack of communication by other nurses regarding patients care.	1	2	3	4	0
26.	Having to handle medico-legal issues related to patients	1	2	3	4	0
27.	Unexpected death of a patient.	1	2	3	4	0
28.	Lack of an opportunity to share experiences and feelings with nurses of other wards.	1	2	3	4	0
29.	Patients' family making unreasonable demands.	1	2	3	4	0
30.	Concerns that working in night shifts may lead to premature aging	1	2	3	4	0
31.	Being discriminated on the basis of qualification	1	2	3	4	0
32.	Lack of an opportunity to express negative feelings toward patients to other nursing personnel in the ward.	1	2	3	4	0
33.	Having to deal with abusive patients.	1	2	3	4	0
34.	Concerns that my work may lead to chronic illnesses	1	2	3	4	0
35.	Working with nurses of the opposite sex.	1	2	3	4	0
36.	Having to follow directives from people of influence	1	2	3	4	0
37.	Having to perform many non-nursing tasks such as clerical work.	1	2	3	4	0
38.	Answering patient or his/her family about patient's condition and treatment.	1	2	3	4	0
39.	Experiencing discrimination on the basis of sex.	1	2	3	4	0
40.	Observing a patient suffer.	1	2	3	4	0
41.	Having to take care of patients suffering from infectious diseases	1	2	3	4	0
42.	Experiencing public criticism	1	2	3	4	0
43.	Conflict with a physician about duties and responsibilities.	1	2	3	4	0
44.	Experiencing difficulty in working with a particular nurse (or nurses) of another ward.	1	2	3	4	0
45.	Having to make decisions under pressure.	1	2	3	4	0
46.	Working on night shifts	1	2	3	4	0
47.	A physician not being present in a medical emergency.	1	2	3	4	0
48.	Patients making unreasonable demands.	1	2	3	4	0
49.	Non- nursing personnel being asked to perform higher nursing functions	1	2	3	4	0
50.	The death of a patient.	1	2	3	4	0
51.	Feeling nursing skills and knowledge being undervalued	1	2	3	4	0
52.	Being sent as relieving nurse to unfamiliar ward.	1	2	3	4	0
53.	Unpredictable shift duties.	1	2	3	4	0
54.	Patients without personal attendant.	1	2	3	4	0
55.	Being exposed to health and safety hazards.	1	2	3	4	0
56.	Not enough time to complete all of my nursing tasks.	1	2	3	4	0
57.	Being asked to perform tasks of other health team members	1	2	3	4	0
58.	Not having enough time to communicate to patients' families.	1	2	3	4	0
59.	Assigning nursing tasks to untrained personnel or relatives	1	2	3	4	0
60.	Disrespectful behaviour of patients and relatives.	1	2	3	4	0
61.	Disagreement concerning the treatment of a patient.	1	2	3	4	0
62.	Having to deal with abuse from patients' families.	1	2	3	4	0

63.	Lack of policies related to transfer and promotion	1	2	3	4	0
64.	Fear of being reported for perceived inadequate care.	1	2	3	4	0
65.	Fear of making mistakes while providing care.	1	2	3	4	0
66.	Being aware that the care provided may pose risks to patient's health and safety	1	2	3	4	0
67.	The death of a patient with whom you have developed a close relationship.	1	2	3	4	0
68.	Not enough time to provide emotional support to a patient.	1	2	3	4	0
69.	A physician ordering what appears to be inappropriate treatment for a patient.	1	2	3	4	0
70.	Being the only one who has to deal with patients' families.	1	2	3	4	0
71.	Patient's treatment rescheduled without any valid reason	1	2	3	4	0
72.	Not being allowed to make decisions related to patient care	1	2	3	4	0
73.	Being treated as non-professionals	1	2	3	4	0
74.	Making a decision concerning a patient when the physician is unavailable.	1	2	3	4	0
75.	Conflict with nursing supervisors.	1	2	3	4	0
76.	Lack of respected by doctors	1	2	3	4	0
77.	Criticism by a nursing supervisor.	1	2	3	4	0
78.	Lack of opportunity to take up leadership role	1	2	3	4	0
79.	Lack of effective supervision by nursing supervisor.	1	2	3	4	0
80.	Prioritising care when handling multiple patients.	1	2	3	4	0
81.	Having to deal with physically violent patients.	1	2	3	4	0
82.	Lack of control over use of medications and diagnostic procedures	1	2	3	4	0
83.	Difficulty in maintaining the dignity of patients.	1	2	3	4	0
84.	Having to meet unnecessary demands of the doctors	1	2	3	4	0
85.	Working with support staff of opposite gender.	1	2	3	4	0
86.	Inadequate information from a physician regarding the medical condition of a patient.	1	2	3	4	0
87.	Fear of equipment failure during use.	1	2	3	4	0
88.	Experiencing discrimination on the basis of caste.	1	2	3	4	0
89.	Unable to meet identified needs of the patients	1	2	3	4	0
90.	Unfair superiors.	1	2	3	4	0
91.	Providing preferential treatment for selected patients	1	2	3	4	0
92.	Inability to provide adequate care.	1	2	3	4	0
93.	Being held accountable for things over which I have no control.	1	2	3	4	0
94.	Experiencing difficulty in working with a particular nurse (or nurses) in my ward.	1	2	3	4	0
95.	Having to organize physicians' work.	1	2	3	4	0
96.	Feeling inadequately prepared to help, meet the emotional needs of a patient.	1	2	3	4	0
97.	Providing care to patients of the opposite gender.	1	2	3	4	0
98.	Being sexually harassed.	1	2	3	4	0
99.	Being blamed for everything that goes wrong.	1	2	3	4	0
100.	Not enough staff to adequately meet nursing needs of patients.	1	2	3	4	0

APPENDIX – V

PRELIMINARY SCALE

NURSING WORKPLACE COPING SCALE

Instructions:-

To respond to the statements in this questionnaire, you must have a specific stressful situation in mind. Take a few moments and think about the stressful situation at your workplace/hospital.

As you respond to each situation, please keep in mind the stressful situations in your hospital. Read each statement carefully and indicate, by circling 0, 1, 2 or 3, to what extend you used it in the hospital work situation.

Does not apply or not used **0**	**Used somewhat** **1**	**Used very often** **2**	**Used to great extend** **3**

1	I somehow complete my work and forget about problems.	0	1	2	3
2	I pray before I do something for my patients	0	1	2	3
3	I lose my temper and let my feelings out somehow	0	1	2	3
4	I avoid talking to patients families.	0	1	2	3
5	I blame myself for choosing nursing as career	0	1	2	3
6	I try to share experiences of workplace with colleagues	0	1	2	3
7	I do whatever I have to do even with difficulties thinking it is a service to God.	0	1	2	3
8	I try to manage with whatever things are available	0	1	2	3
9	I seek help from superiors	0	1	2	3
10	I avoid situation which causes stress	0	1	2	3
11	I prepare myself to handle emergencies	0	1	2	3
12	I know I am not worthy to be a nurse	0	1	2	3
13	I avoid thinking about the problem.	0	1	2	3
14	I seek help from my colleagues	0	1	2	3
15	I think for alternative solution to solve the problem	0	1	2	3
16	I realize that I am the creator of my own problems.	0	1	2	3
17	I look at others to resolve the problems for me	0	1	2	3
18	I develop confidence to solve problems by gaining knowledge on subject	0	1	2	3
19	I keep a religious article with me during my working hours	0	1	2	3
20	I seek help from patients families	0	1	2	3
21	I try to change my behaviour to adapt to the situation	0	1	2	3

22	I don’t report to work when I feel stressed	0	1	2	3
23	I always seek God’s help in my difficulties	0	1	2	3
24	I ask God’s forgiveness for my shortcomings	0	1	2	3
25	I keep myself busy to avoid others.	0	1	2	3
26	I try to plan and organise my work	0	1	2	3
27	I try to solve the problem using available resources	0	1	2	3
28	I avoid talking to my colleagues.	0	1	2	3
29	I understand my inability to handle problems.	0	1	2	3
30	I pray to God before beginning my shift	0	1	2	3
31	I discuss the workplace problems with colleagues	0	1	2	3
32	I console myself that stress is part of my job	0	1	2	3
33	I feel authorities are responsible for workplace problems.	0	1	2	3
34	I discuss the workplace problems with my family	0	1	2	3
35	I don’t allow others to know my feelings.	0	1	2	3

Thank you very much for your co-operation and participation in this study.
Be assured that all your RESPONSES ARE COMPLELETLY CONFIDENTIAL

APPENDIX – VI

FINAL SCALE

THE NURSING WORKPLACE STRESS SCALE (NWSS)

INSTRUCTION

Below is the list of situations that commonly occur in a hospital. For each situation encountered in your PRESENT WORK-SETTING, kindly indicate HOW STRESSFUL it has been for you.

Encircle the number in the column to the right that best applies to you. If you have not encountered the situation than encircle "0" in the column to the right.

Never Stressful 1	Occasionally Stressful 2	Frequently stressful 3	Extremely stressful 4	Does not apply 0

1.	Not enough time to complete all of my nursing tasks	1	2	3	4	0
2.	Concerns that my work may lead to chronic illnesses	1	2	3	4	0
3.	Patients' family making unreasonable demand	1	2	3	4	0
4.	Unable to meet identified needs of the patients	1	2	3	4	0
5.	Being asked to perform tasks of other health team members	1	2	3	4	0
6.	Disrespectful behavior of patients and relatives	1	2	3	4	0
7.	Not being allowed to make decisions related to patient care	1	2	3	4	0
8.	Having to follow directives from people of influence	1	2	3	4	0
9.	Lack of control over use of medications and diagnostic procedures	1	2	3	4	0
10.	Having to work without breaks	1	2	3	4	0
11.	Patient's treatment rescheduled without any valid reason	1	2	3	4	0
12.	Being aware that the care provided may pose risks to patient's health and safety	1	2	3	4	0
13.	Conflict with nursing supervisors	1	2	3	4	0
14.	Fear of being sexually harassed	1	2	3	4	0
15.	Fear of being reported for perceived inadequate care	1	2	3	4	0
16.	Being the only one who has to deal with patients' families	1	2	3	4	0
17.	Patients making unreasonable demands	1	2	3	4	0
18.	Criticism by a nursing supervisor	1	2	3	4	0
19.	The death of a patient with whom you have developed a close relationship	1	2	3	4	0
20.	Providing care to patients of the medical profession	1	2	3	4	0

21.	Poor work conditions such as limited water supply, interrupted power supply, etc.	1	2	3	4	0
22.	Not enough time to provide emotional support to a patient	1	2	3	4	0
23.	Having to meet demands of the doctors	1	2	3	4	0
24.	The death of a patient	1	2	3	4	0
25.	Uncooperative support staff	1	2	3	4	0
26.	Having to perform many non-nursing tasks such as clerical work	1	2	3	4	0
27.	Experiencing discrimination on the basis of caste	1	2	3	4	0
28.	Not having enough time to communicate to patients' families	1	2	3	4	0
29.	Patient's treatment rescheduled without any valid reason	1	2	3	4	0
30.	Observing a patient suffer	1	2	3	4	0
31.	A physician not being present in a medical emergency	1	2	3	4	0
32.	Being discriminated on the basis of qualification	1	2	3	4	0
33.	Physician not being present when a patient dies	1	2	3	4	0
34.	Working on night shifts	1	2	3	4	0
35.	Having to deal with abusive patients	1	2	3	4	0
36.	Experiencing discrimination on the basis of gender	1	2	3	4	0
37.	Fear of making mistakes while providing care	1	2	3	4	0
38.	Lack of effective supervision by nursing supervisor	1	2	3	4	0
39.	Feeling nursing skills and knowledge being undervalued	1	2	3	4	0
40.	Having to organize physicians' work	1	2	3	4	0
41.	Concerns that working in night shifts may lead to premature aging	1	2	3	4	0
42.	Being exposed to health and safety hazards	1	2	3	4	0
43.	Number of patients admitted more than available beds	1	2	3	4	0
44.	Difficulty in maintaining the dignity of patients	1	2	3	4	0
45.	A physician ordering what appears to be inappropriate treatment for a patient	1	2	3	4	0
46.	Lack of communication by other nurses regarding patients care	1	2	3	4	0
47.	Unfair superiors	1	2	3	4	0
48.	Lack of support from the nursing supervisors	1	2	3	4	0
49.	Having to deal with abuse from patients' families	1	2	3	4	0

APPENDIX – VII

FINAL SCALE

NURSING WORKPLACE STRESS COPING STRATEGIES SCALE (NWSCSS)

Instructions:-

To respond to the statements in this questionnaire, you must have a specific stressful situation in mind. Take a few moments and think about the stressful situation at your workplace/hospital.

As you respond to each situation, please keep in mind the stressful situations in your hospital. Read each statement carefully and indicate, by circling 0, 1, 2 or 3, to what extend you used it in the hospital work situation.

Does not apply or not used **0**	**Used somewhat** **1**	**Used very often** **2**	**Used to great extend** **3**

1	I prepare myself to handle emergencies	0	1	2	3
2	I don't report to work when I feel stressed	0	1	2	3
3	I discuss the workplace problems with colleagues	0	1	2	3
4	I pray before I do something for my patients	0	1	2	3
5	I know I am not worthy to be a nurse	0	1	2	3
6	I lose my temper and let my feelings out somehow	0	1	2	3
7	I try to plan and organise my work	0	1	2	3
8	I ask God's forgiveness for my shortcomings	0	1	2	3
9	I always seek God's help in my difficulties	0	1	2	3
10	I develop confidence to solve problems by gaining knowledge on subject	0	1	2	3
11	I blame myself for choosing nursing as career	0	1	2	3
12	I avoid talking to patients families	0	1	2	3
13	I seek help from my colleagues	0	1	2	3
14	I try to share experiences of workplace with colleagues	0	1	2	3
15	I try to solve the problem using available resources	0	1	2	3
16	I avoid talking to my colleagues	0	1	2	3

Thank you very much for your co-operation and participation in this study.
Be assured that all your RESPONSES ARE COMPLELETLY CONFIDENTIAL

APPENDIX – VIII

PUBLICATION OUT OF THIS RESEARCH

Fernandes, W. & Nirmala, R. (2015). Workplace Stress, Coping and Expectation of Nurses. *IOSR Journal of Nursing and Allied Health Sciences,* 4(5), 49-56. e-ISSN: 2320–1959.p- ISSN: 2320-1940.