

Stress and Coping Strategies among nursing students during clinical practice

A Systematic Review

Reujoy Genotiva

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Author: Reujoy Genotiva

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Abstract

Stress is a common problem for nursing students throughout the nursing school year. Pressure from academic, clinical, and some external sources (such as family, personal affairs, and even environmental forms) has a large impact on these students. However, by using various coping mechanisms, these students can control their stress and move on to realize their dream of becoming skilled nurses in the future.

To gain more knowledge and explore more coping strategies related to stress among nursing students during their clinical practice is the aim of the study. The research focuses on 2 questions: 1. What makes nursing students feel stress during their clinical practice, and 2. What are the strategies used by nursing students to reduce their stress during clinical practice?

The systematic review approaches have all been used to review and summarize the eight studies that were selected to investigate the sources of stress and the coping mechanisms used by nursing students during their clinical practice. Stress, nursing students, coping mechanisms, and clinical practice are the keywords included in the search, which is limited to works published between 2016 and 2022.

Assignments, workloads, and examinations are both identified as stressors academically and clinically, along with lack of knowledge and skills, clinical teachers, and nursing staff during students' clinical practice, while financial and personal problems, family, and noise are all external factors. Active coping, problem-solving methods, staying optimistic, sharing emotions, physical activities, positive reframing, and religious approaches are frequently used coping strategies employed by nursing students, while Emotional support, substance abuse, denial, avoidance, and negative coping are the least used approach among nursing students.

Language: English

Key Words: stress, coping strategies, nursing students, clinical practice

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1 Introduction

The stressful environment of nursing school is widely recognized as having a good effect on students' academic achievement and mental health. Exams, lengthy assignments, grades, a lack of free time, a delay in receiving post-performance evaluation, and particular aspects of academic programs, such as the scheduling and conduct of seminars, are all sources of academic stress (Kumar, et al., 2020). Clinical Practice placement under stress can result in a variety of symptoms, including persistent headaches, anxiety, nervousness, lack of sleep, inattentiveness, cognitive decline, and learning difficulties. These symptoms reduce the ability to provide clinical care and may even make a nursing career in the future less appealing (Wu, Rong, & Huang, 2021). Stress is the most significant problem in nursing education today. Nursing students are constantly exposed to a variety of stressors during their academic and clinical training, which can either directly or indirectly impair their performance and learning (Labrague, 2013).

The foundation of the healthcare system is nurses, and being a skilled nurse takes intensive training that begins on the first day of nursing school or college and continues for hours, days, or even years (Mamta, Ashok, Aashish, & Raj, 2020). Additionally, stress is a common occurrence for nursing students throughout their training, and how well a student can manage their stress is greatly influenced by the coping mechanisms they employ. Additionally, students with high levels of stress find it harder to manage situations efficiently and are more susceptible to both physical and mental health issues (Mamta, Ashok, Aashish, & Raj, 2020). When we grasp how people react to extreme stress, one of the most crucial areas of human understanding, we will be able to immediately comprehend many more specific and unexpanded forms of behavior (Gibbons, Dempster, & Moutray, 2011)

Coping techniques are important factors in nurses' stress reactions. A coping mechanism is a stabilizing factor that is as important to the stressful event itself. The coping strategies that nursing students use might alter the stress they feel during their clinical and academic placement (Yasmin, Hussain, Parveen, & Gilani, 2018). Everybody utilizes coping strategies to lessen stress, but not all of them are effective or suitable for the situation. Students can dramatically increase their academic performance and stress management by developing effective coping techniques (El-Aziz Mohamed Madian, Abdelaziz, & Ahmed, 2019).

2 Background

Stress at the university is quickly increasing in relation to students' psychosocial issues. While the university population is in desperate need of effective coping mechanisms, it is crucial for these students to recognize and comprehend stress because this need is more pronounced among students pursuing health-related degrees, which has clearly demonstrated that this population has the highest levels of stress (Freire, et al., 2020).

2.1 What is stress?

Stress is the body's response to pressure from a circumstance or event, and it can be a mental, emotional, or physical response. However, stress is not necessarily negative because it sharpens your focus, increases awareness of your surroundings, and, in some situations, offers you energy and motivates you to complete tasks (DerSarkissian, 2021). It is also a feeling of emotional pressure or strain that it is difficult to cope or being overwhelmed by something (Waters, 2021). When we are under stress, powerful neurochemicals and hormones are released to get us ready to respond; if we ignore them for a long time, the response will cause and exacerbate health issues. Our health and well-being will suffer greatly if our stress is not adequately controlled and becomes lengthy, unforeseen, and interrupted (Stöppler, 2022). However, everyone can benefit from being aware of the state of stress since it is almost a universal human experience and affects people of all ages, genders, races, and religions (Patterson, 2022). In accordance with the (Canadian Centre for Occupational Health and Safety, 2018) stress is defined as a reaction to a circumstance, but it is not solely about the event; we experience stress when we believe that the demands of the situation are more than our capacity to handle them.

2.2 Effect of stress in the body

The entire structure of the human organism is made up of both live and non-living elements, including all the living cells, tissues, and organs that perform special functions required in our daily lives (Dutfield & Rettner, 2021). A collection of organs in our body collaborate to create and maintain life and when the body feels the danger, stress hormones is release and leads to short-term physical changes (Vascovik, 2022). (ReachOut Australia, 2022) states that while these modifications assist you stay focused and alert, stress can become very problematic or endanger our internal organs if it is not managed. The cardiovascular system

includes the heart and the circulatory system. Its major job is to move blood, which carries nutrition, hormones, and oxygen throughout the body. Additionally, carbon dioxide, a metabolic byproduct, is eliminated (Vascovik, 2022). Stress causes the cardiovascular system to exhibit symptoms like elevated cholesterol, hypertension, and an increased risk of heart attack and stroke. Our bodies are protected by the immune system, which defends them against microorganisms that can contaminate us and cause illness (Vascovik, 2022). When the immune system was functioning properly, we simply weren't aware that they existed. We are more susceptible to illness when it is not functioning properly and unable to combat hostile bacteria that are invading our bodies (Mcleod, 2010). We cannot defend ourselves against hazardous infections that invade our bodies without the aid of our immune system. Therefore, their primary duties consist of eliminating pathogens that infect our bodies, including bacteria, viruses, and even parasitic illnesses (Mcleod, 2010). When we are under stress, the immune systems' ability to fight invading pathogens is decreased, and because of that, we are susceptible to infections (Mcleod, 2010). A built-in mechanism in our respiratory system stops dangerous substances from entering our lungs through the air and our respiration is also controlled by this system (WebMD Editorial Contributors, 2021). They are responsible for supplying our bodies with oxygen and removing waste products like carbon dioxide. The lungs are the most crucial component of our respiratory system since they are responsible for carrying out the gas exchange during breathing (Zimmermann, 2021). It will be quite difficult to breathe when you are stressed if you have asthma or emphysema, and even more so if you have chronic stress. When we are under stress, we breathe quickly to give oxygen-rich blood to the body (Pietrangelo, 2020). The digestive system breaks down food into little components that the body can absorb and use as fuel (Vascovik, 2022). The digestive system transforms food into energy and nutrients when we eat so that the body can work, grow, and heal itself (Taylor, 2020). The liver produces extra glucose to boost energy levels while we are under stress. However, there is a substantial chance of developing Type 2 diabetes when under constant stress. Due to some impairment in the transportation of food through the body, diarrhea, constipation, and sensations of nausea, vomiting, and stomachache are all present (Pietrangelo, 2020). The muscular system, which is the sole tissue in our bodies capable of contracting and moving the other sections of the human body, is responsible for moving our body and muscles. The muscular system is also in charge of maintaining posture and body position (Buckley, 2021). Muscles constrict during tension to prevent injury; once you relax, they usually release once more.

However, persistent stress prevents the muscles from relaxing, and when the muscles are tense, we experience headache, back, and shoulder discomfort, as well as general aches (Pietrangelo, 2020).

2.3 Types of stress

People frequently believe that stress results in negative behaviors that are harmful to the person experiencing them. Not all forms of stress are detrimental or even negative (Scott, 2022).

2.3.1 Acute Stress

One of the least detrimental types of stress, it is the body's quick reaction to a stressful environment. A perceived immediate threat, whether physical, emotional, or psychological, is what causes acute stress. It's simple to handle because it occurs and then ends. Because it is feasible to recover from it and is generally simple to do so, it has little negative impact on health (Scott, 2022). Acute stress response is no longer regarded as a mental illness. Grief and coping with unpleasant events don't have a predetermined timetable. However, because symptoms of acute stress reactions typically appear within a few days after the stressful incident has passed, treatment may not always be necessary. It is beneficial when we know the source of our symptoms and we can talk to a friend or family member about it (Shah, 2022).

2.3.2 Episodic Stress

This typically occurs when someone set themselves up for failure by placing excessively high standards for themselves or others, fussing over details, or making unreasonable expectations. It is frequently seen in those who have "A" type personality, which is characterized by extreme aggression and demand, as well as occasionally nervousness and malice (Sincero, 2012). Even though some people may not find some situations or events to be stressful, others who experience acute episodic stress frequently experience fear and overwhelm. Given its regularity and repetition, this could have negative effects on both mental and physical health. The persistence and cyclical nature of episodic stress disturbs both the body and cognition (Tiwari, 2021).

2.3.3 Chronic Stress

A body's systemic response brought on by unfavorable internal and external elements usually takes place gradually (Waters, 2021). It is often referred to as a constant, chronic stress that is harmful to health, and it is another type of stress that wears us down over time is this one (Joey, 2019). It develops from significant life issues that are out of our control. Demands are coming in thick and fast, and nobody knows when they'll stop. However, the root of the problem resides in our thinking or challenging circumstances. Because of this, many people lose their will to change and begin to accept ongoing stress. (Ehrenfeld, 2018).

2.4 Nursing students' sources of stress

Many students today experience stress in both academic and clinical settings. The most recent study discovered that there were numerous sources of academic and clinical stress for nursing students. Academic stressors include preparing for tests, teachers' critical comments in clinical settings, passing theoretical exams or assessments, unhappiness with instructional methods, ambiguous content and curriculum, gaps between theory and practice, and a lack of teacher assistance (Yasmin, Hussain, Parveen, & Gilani, 2018). Clinical simulation thrives in a technology-enhanced active teaching approach. With this approach, instructors hope to equip students with information and abilities that are sometimes lacking or unavailable in clinical settings. Due to unequal access to opportunities to perform specific treatments on patients, which can affect the clinical experience, this incident occurs (Boostel, Felix, Bortolato, & Pedrolo, 2018). Nursing students typically experience physical signs of stress such as trembling, being pale, sweating, cold and sticky skin, emotional outburst, fainting, and crying because of an overwhelming negative feeling such as fear, insecurity, anxiety, and distress when practicing health care, particularly in practice laboratories and when caring for patients for the first time. A nursing student does not have the same responsibilities as a registered nurse when it comes to the personalized care of patients in clinical practice (Onieva-Zafra, et al., 2020). According to reports, a nurse's practical training is far more stressful than academic training. Additionally, a significant source of stress for many students is their lack of skills and knowledge. Nursing students may find their first experiences in clinical practice stressful due to the anxiety of making mistakes, addressing emergencies, inconsistencies in clinical practice, and professional unit visits (Onieva-Zafra, et al., 2020). Relationships with other hospital staff members, having a bad reputation, dealing with tough patient circumstances and family members, and even seeing

the deaths of patients they are caring for are all listed as stressors (Onieva-Zafra, et al., 2020). It has been established that nursing students are prone to stress, and it was discovered that nursing students are under a lot of pressure from studying for a long time, having a lot of tasks, having little free time, not getting timely feedback, and not having their needs met by the lecturers. Nursing students constantly have to adjust to the learning environment of higher education institutions where they are receiving their nursing education. According to studies, the most stressful aspects of nursing school are the scientific courses (Perveen, Mondal, & Afrose, 2021). Clinical stress is the second major source of stress for nursing students. Clinical stress is caused by the fear of making mistakes during clinical assignments and the sense of responsibility for what happened to patients. Not having enough time to complete all nursing tasks and figuring out how to discuss patients' conditions with clinical instructors are two more major sources of stress for nursing students (Yasmin, Hussain, Parveen, & Gilani, 2018).

2.5 Nursing students coping strategies

Maintaining one's physical and mental health while dealing with challenging or dangerous situations requires the application of behavioral and cognitive views, or coping. Any decision—conscious or unconscious—that provides comfort or relief during stressful situations is a coping strategy (Newell, 2021). Additionally, having access to a wide variety of coping mechanisms may be a crucial precursor to coping flexibility. Each person must first possess a varied array of coping mechanisms that they can use when stressed in order to demonstrate openness within a group of coping mechanisms (Heffer & Willoughby, 2017). Coping mechanisms are helpful skills to support us in navigating challenging circumstances and overcoming them with resiliency. Stressful situations can help people build valuable adaptive responses by adopting a variety of coping mechanisms that help them learn new coping mechanisms for dealing with unexpected, surprise situations. If effective, these coping techniques give the ability to control, lessen, or accept the challenging setting (Crecan-Suciu , Păunescu , & Micluția , 2022). Stress is a part of nursing, for both professionals and students, because of the many demands and heavy workloads, the lack of adequate support for the pressures they felt performing their daily tasks, the constantly changing nature of their work, and dealing with death. These factors all contribute to high levels of stress throughout nursing careers. The correct coping mechanisms can lower some stress levels and enhance these pupils' quality of life. In order to deal with the circumstance

perceived as stressful, coping, which is prompted by a stressor, is oriented toward this internal or external event that exceeds the students' flexibility skills (Hirsch, et al., 2015). As long as they received the proper care, nursing students' physical and mental health are affected by their coping mechanisms. It's critical for nursing students to recognize coping mechanisms as a kind of early intervention. According to research, nursing students are able to identify a variety of stress-reduction techniques. Some coping mechanisms they employ to deal with stress include talking to friends, engaging in sports, sobbing aloud, ignoring stress, feeling depressed or miserable, and engaging in alcohol consumption, either in a healthy or unhealthy way (Rafati, Nouhi, Sabzevari, & Nayeri, 2017). The most common techniques employed by nursing students, according to some, are transference, optimism, and problem-solving. Other nursing students, however, adopted emotion-focused coping techniques. Some nursing students are also aware of the benefits of problem-solving in managing stress (Rafati, Nouhi, Sabzevari, & Nayeri, 2017). According to the study conducted by (Din, Hussain, Afzal, & Gilani, 2019) the avoidance coping method is frequently employed by students to deal with stressors including completing assignments and providing patient care, interacting with coworkers and daily life, and dealing with teachers and nursing staff. Furthermore, problem-solving is another method they employed to deal with stress. The students also heavily relied on optimism and transference to manage stress. Prior to each clinical release, nursing students should have a firm grasp of hospital surroundings, ward management, and policies. Our nursing educators, supervisors, and nurse instructors play a vital role in helping student nurses develop healthy coping mechanisms for managing stress as well as assisting them in identifying certain learning requirements for successful coping (Chin, Ching, & Bit-Lian, n.d). According to (Masilamani, et al., 2020) Coping mechanisms reportedly also depend on experience, and an approach to stress that is problem-focused is utilized by workers with more experience. However, when faced with challenging circumstances, retirees and students resorted to emotion-focused coping mechanisms. Such disparity in coping mechanisms has been connected to personality factors in terms of how well one handles stressful situations. Additionally, it has been shown that students frequently combine problem- and emotion-focused coping strategies.

3 Aim and Research Question

The aim of this study is to gain more knowledge, and to explore more coping strategies related to stress among Nursing Students during their clinical practice.

1. What makes nursing students feel stressed during their clinical practice?
2. What are the strategies used by nursing students to reduce their stress during clinical practice?

4 Theoretical Framework

The Transactional Theory of Stress and Coping (TTSC) is a body of work that focuses on evaluations to determine risks, warnings, and challenges. The results of this evaluation serve as an illustration of how to handle difficult circumstances. Numerous aspects of our lives are impacted by stress, including our thoughts, feelings, behaviors, and attitudes. Rather from being caused by internal variables, these are often caused by external ones. The level of stress a person feels will depend on how they interpret these circumstances (Janse, 2021). The Transactional Theory of Stress and Coping (TTSC) was first conducted by Dr. Richard Lazarus in 1966. However, he works with other scientist in the named of Dr. Susan Folkman as he continued with his research and produce several books and articles (Janse, 2021). While completing the curriculum, nursing students encounter a variety of fresh and occasionally challenging situations, particularly the clinical component, which can cause stress. These students typically possess a variety of personality qualities and coping mechanisms that enable them to react to challenging circumstances in a learning environment. As a result, the transactional model is helpful for examining how stressful situations affect nursing students' reactions (Ahmad, Alzayyat, & Al-Gamal, 2018). Furthermore, our coping strategies and reactions to stress vary throughout time. In reality, whenever we make an effort to deal either adaptively or non-adaptively, we reappraise, repeating the process of primary and secondary appraisal. The system is transactional in the sense that our responses change the situation or ourselves as a result of our evaluations, which in turn alters our assessments. We might change our coping strategies or stop feeling stressed as a result of these reappraisals, and if we can find the time to consider how we are feeling and why, understanding the transactional model can benefit us in a number of ways (Frings, 2017). (Folkman, 2010) asserts that the idea of stress and coping is the cornerstone

of research on psychological stress. She interprets stress as contextual and process according to the theory. It is contextual because a relationship between a person and their environment is involved, and it is also a process since it evolves through time. In addition, Lazarus and Folkman put up the Theory of the Cognitive Appraisal model in 1984 to describe how stressors affect the mind.

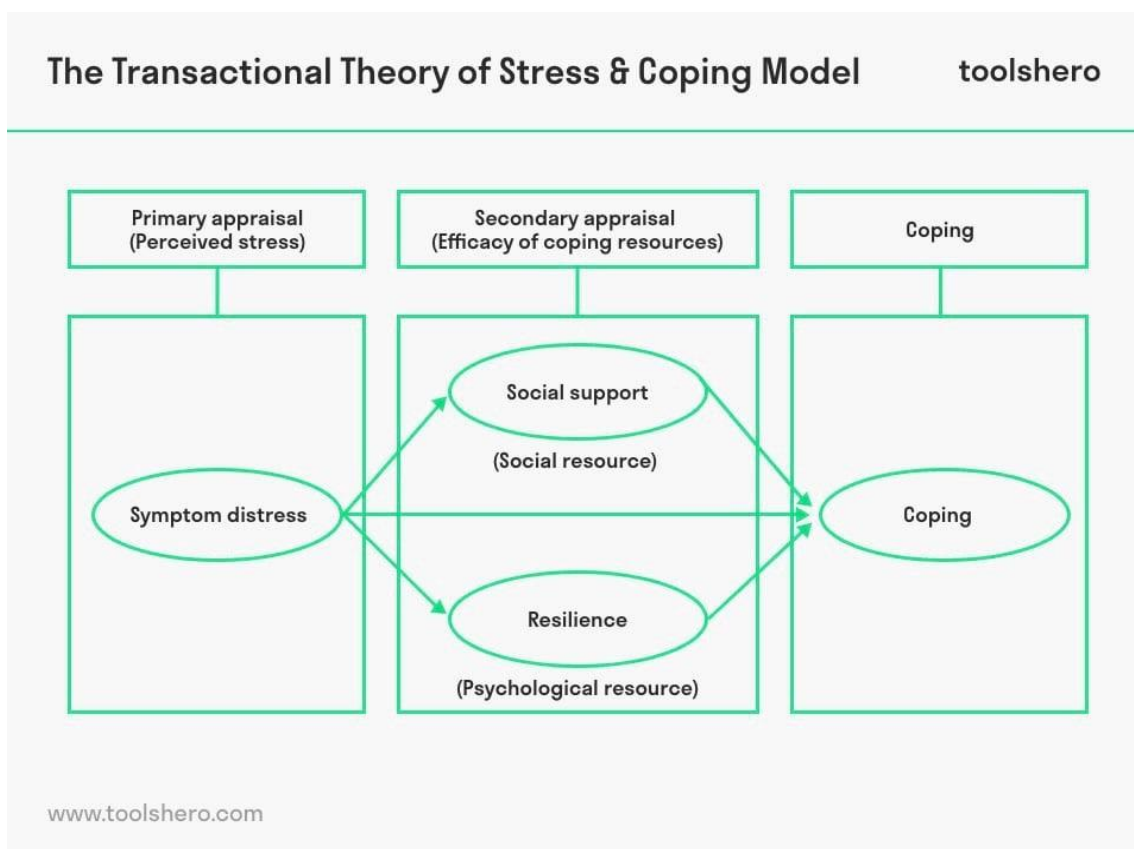


Figure 1: *Transactional Theory of Stress & Coping Model by Lazarus and Folkman.* / Janse, B. (2021). *Transaction Theory of Stress and Coping (TTSC)*. Retrieved 10.06.2022 from Toolshero: <https://www.toolshero.com/psychology/transactional-theory-of-stress-and-coping/>

According to Lazarus, stress is a two-way process that involves both the environment, which produces stressors, and the individual response to these stressors (Sincero, 2012). The three component processes were seen by the transactional model. These elements were actual ideas, contents, and modifications. Additionally, there are two styles of coping that are used: problem- and emotion-focused coping. While emotional-focused coping seeks to control the affective reaction to the stresses, problem-focused coping aims to manage and alter the stressor. This concept argues that there is an evaluation of the circumstance during times of

stress, and it suggests that there are two stages of appraisal before we experience stress and know how to handle it. The primary and secondary appraisal (Frings, 2017). In accordance with the transactional theory of stress and coping, a person's level of stress is influenced by two factors. The first phase in primary appraisal is the person's assessment of the pressures. The second is secondary appraisal, which is the person's assessment of the coping-relevant resources at their disposal (Sanderson, 2022). Additionally, a person's beliefs, values, and aspirations form their main appraisal, and they also evaluate their possibilities for coping in their secondary appraisal (Folkman, 2010). The transactional model focuses on the imbalance between the perceived resources that are available to meet those needs and the environmental demands themselves. The individual is clearly under stress if the demands surpass their capacity. Two fundamental processes that affect how people interact with their environment are cognitive assessment and coping (Ahmad, Alzayyat, & Al-Gamal, 2018). Finally, the theory seeks to address issues with respect to the sources of stress encountered by nursing students during their clinical training, the kind of stress to which they are exposed, their individual reactions, the management, and coping mechanisms available, as well as potential effects for the various forms of stress to which students are exposed.

5 Methodology

A systematic review is a summary of the medical literature that accurately and reproducibly identifies, assesses, and synthesizes a particular issue. It incorporates the findings of numerous important studies that are connected to one another to eliminate bias and unsystematic error. A statistical synthesis known as a meta-analysis, however, may be used to synthesize the studies' findings into a useful systematic review, depending on whether the studies are similar enough to do so (Gopalakrishnan & Ganeshkumar, 2013). Systematic reviews give accurate information regarding the impacts of interventions because they adhere to a rigorous scientific design that is based on clear, established, and reproducible techniques. When this is done correctly, findings drawn from systematic reviews are therefore defensible. Additionally, systematic reviews can be used to direct future research by highlighting knowledge gaps (Gopalakrishnan & Ganeshkumar, 2013). Systematic reviews, according to (Polit & Beck, 2010) are inquiries that adhere to many of the same guidelines as primary research. However, because narrative integration, the most typical kind of systematic review, uses non-statistical approaches to integrate findings and because such reviews are consistently published in the nursing literature, it is frequently employed

today. Furthermore, it is generally recognized that meta-analytical methods can be used to integrate quantitative data because they use a common metric to statistically aggregate results.

5.1 Data Analysis

The content analysis method is utilized to analyze the 8 articles that have been selected for the study with the inclusion of Theme and Subthemes Analysis. The use of content analysis allows for the systematic collection of data from collections of text that can be written by oral or visual means, such as books, newspapers, and magazines, and the identification of patterns in recorded communication (Luo, 2019) meanwhile, analyzing data using themes is a method for evaluating qualitative information. In most cases, it alludes to a grouping of texts, such as an interview or transcript. The researcher meticulously examines the data in order to identify common themes—topics, concepts, and patterns of meaning that repeatedly appear. The thematic analysis provides you with a great deal of flexibility in how you interpret the data and makes working with massive data sets easier by grouping enormous data sets into common themes (Caufield, 2022).

5.2 Data collection and Sampling

The information used in this study was gathered using CINAHL EBSCO, MEDLINE, and PubMed as the primary databases from Tritonia Finna Yrkeskolan Novia, with a focus on articles from the years 2016 to 2022 and keywords related to the study such as Stress, Coping Strategies, Nursing Students, and Clinical Practice. It is established that PRISMA, or (Preferred Reporting Items for Systematic reviews and Meta-analyses), was used to compile the data from the three databases. PRISMA was released in 2009 to assist systematic reviewers in reporting their findings in a clear and concise manner. The new PRISMA 2020, which featured revised reporting requirements reflecting advancements in the identification, selection, assessment, and synthesis of research techniques, replaced PRISMA 2009, nevertheless (Page, et al., 2021). The terms Stress, coping strategies, nursing students, and clinical practice were used to find 59 articles across the three databases (CINAHL EBSCO, MEDLINE, and PubMed). However, with the inclusion and exclusion criteria used, only 8 articles were chosen for the study. (For a summary of the 8 articles, see tables 1 and 1a.).

TERMS USED:

Stress and coping strategies, Nursing Students,
Clinical practice

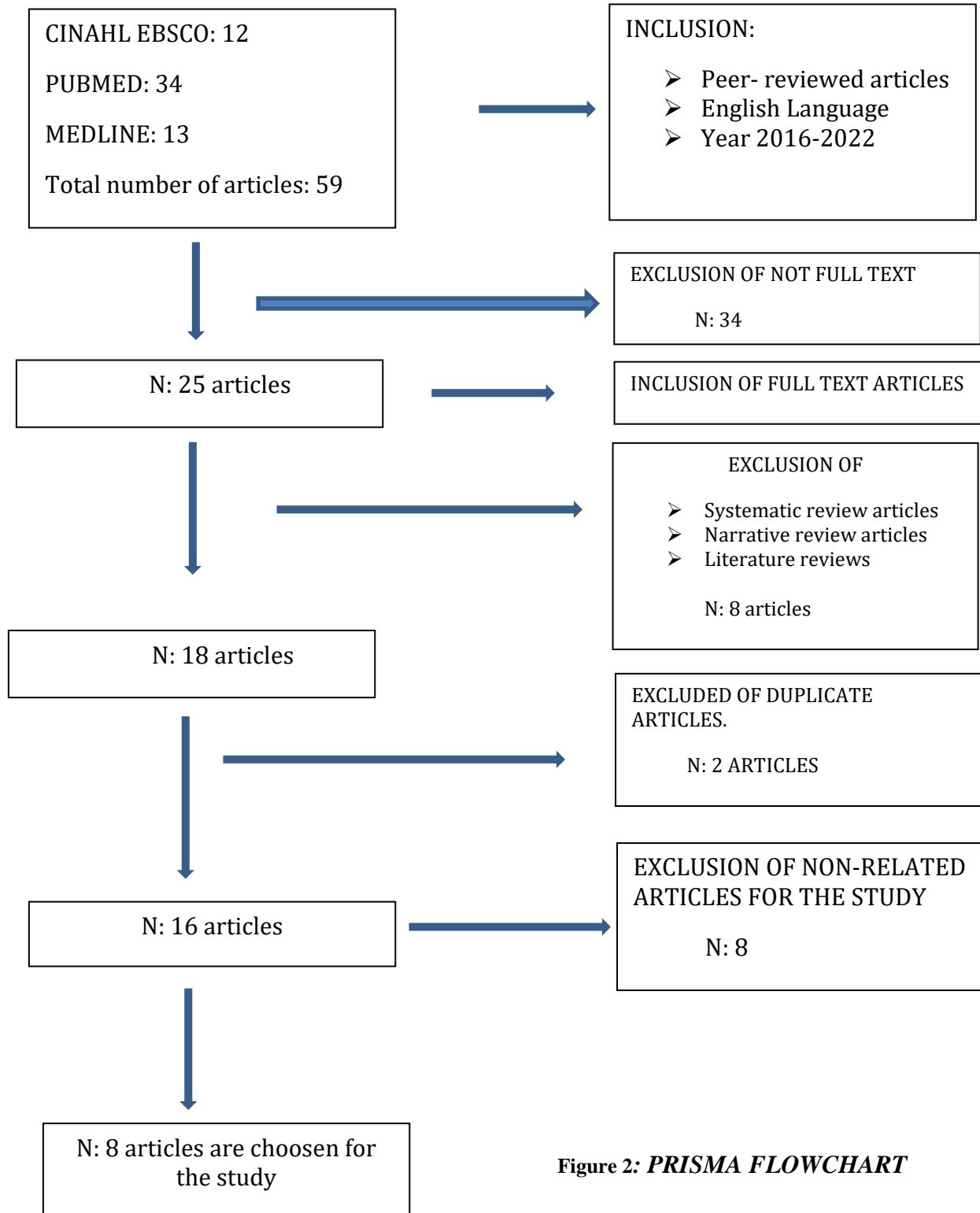


Figure 2: **PRISMA FLOWCHART**

6 Ethical Considerations

The code of ethics in research is crucial because it advances knowledge and guards against falsehoods and mistakes. Limiting errors and preventing data manipulation promotes accuracy in research (Resnik, 2020). Following the rules established by the Research Ethics Advisory Board, or TENK in Finland, ethics is highly valued in the conduct of this research. On the recommendation of the scientific community, the Ministry of Education and Culture appointed the Finnish National Board of Ethics as a body expert. The organizations develop national guidelines, prevent misconduct across all scientific disciplines, host seminars, advance proper education, coordinate ethical review of the human sciences, and, due to their networking influence on a national and international scale, it ensure the integrity and caliber of the research (Finnish National Board on Research Integrity (TENK), 2019).

7 Results

Eight studies conducted from different school internationally has been identified. Most studies included students studying nursing from Malaysia, Northern Malawi, Kingdom of Saudi Arabia, Germany, Canada, Finland, India, and China. I categorize the result into 2 parts, Students stressors and Students coping strategies and then sub- categorize stressors into Academic, Clinical, and External Stressors while Coping strategies are sub-categorize into frequent used and least used coping strategies. Mostly of the studies included uses Descriptive and cross-sectional studies with sample sizes that ranges from 26- 346 nursing students.

7.1 Instruments

Most research used measures for measuring perceived stress to determine the causes and levels of stress among nursing students is the Perceived stress scale. PSS was used by four studies (Ab Latif R, 2019), (Baluwa, Lazaro, Mhango, & Msiska, 2021), (Ahmed & Mohammed, 2019) (Bhurtun, Turunen, Estola, & Saaranen, 2021) Other tools, such as the Standardized Student Nurse Stress Index (Mamta, Ashok, Aashish, & Raj, 2020) and the Intern Nursing Student Stressor Scale, use questionnaires (Liu, et al., 2022). Perceived Stress Scale is a popular psychological instrument that is used universally to measure the perception of stress. As well, measuring the level of awareness of one's life is considered

stressful too. Goals were developed to evaluate respondents, who believe that their lives were uncertain, unmanageable, and overburdened (Lee, 2012). The Brief COPE questionnaire and the Coping Behavioral Inventory were used to measure coping mechanisms. Simple Coping Style Questionnaires were utilized in other investigations. Brief-COPE, a 28-item self-report questionnaire, was created to assess the effectiveness of strategies for coping with stressful life events. The scale is frequently applied in medical settings to determine how patients are feeling emotionally in response to a dangerous situation (Carver, 1997). The CBI is a Likert scale with 19 evenly weighed elements on a scale of 1 to 5. The scale ranges from zero (never) to four (always). It has four subscales: problem-solving behavior (six items), avoidance coping behavior (six items), optimistic behavior (four items), and (3 items) Transference (Ahmad, Alzayyat, & Al-Gamal, 2018). There have been very few studies on how the CBI has been applied in regard to different cultural groupings. The goal of this tool is to assess nursing students' coping skills. It is still vital to look into how stable the CBI is in persons who have gone through a variety of stressful life events. To assess the coping mechanisms of nursing students, the researchers used a range of too.

7.2 Sources of stress

All 8 studies reviewed identified 3 sources of stress among nursing students from 8 universities in 8 different countries. Academic stressors, clinical stressors, and external stressors has been identified. The 3 sources of stress reported by different studies are highlighted in Table 2. Significantly, only Students from Northern Malawi (Baluwa, Lazaro, Mhango, & Msiska, 2021) and Germany (Hwang, Kim, & Shin, 2021) reported that they experience stress academically due to assignments, workloads, and examination (Baluwa, Lazaro, Mhango, & Msiska, 2021) (Lavoie-Tremblay, Sanzone, & Paquet, 2021). External stress such as a financial problem, family (Baluwa, Lazaro, Mhango, & Msiska, 2021), personal problems (Mamta, Ashok, Aashish, & Raj, 2020), and noise (Ahmed & Mohammed, 2019) are reported by the students from Malawi, KSA, and India. Academic and external stressors from other students included in the study are not reported. However, clinical stressors experienced by students in clinical practice were highly reported by all 8 reviewed studies. According to the studies conducted among nursing students from different universities especially from Malaysia, Malawi, Kingdom of Saudi Arabia, Germany, Canada, Finland, India, and China that students go through stress clinically due to the Lack

of knowledge and skills (Ahmed & Mohammed, 2019) (Bhurtun, Turunen, Estola, & Saaranen, 2021) (Liu, et al., 2022), Clinical teachers and nursing staff (Baluwa, Lazaro, Mhango, & Msiska, 2021) (Lavoie-Tremblay, Sanzone, & Paquet, 2021) (Mamta, Ashok, Aashish, & Raj, 2020), clinical assignments, and the workloads (Ab Latif R, 2019) (Ahmed & Mohammed, 2019) (Hwang, Kim, & Shin, 2021) given to them.

7.3 Coping Strategies

Nursing students used coping strategies to reduce their stress were also reviewed. The coping strategies reported from these studies are shown on Table 3. In this study, frequently used strategies and least used strategies has been reported. There are different main coping strategies that frequently used by nursing students included in the studies. Students in Malawi, Germany, and India highly used Active Coping (Baluwa, Lazaro, Mhango, & Msiska, 2021) (Hwang, Kim, & Shin, 2021) (Mamta, Ashok, Aashish, & Raj, 2020) as their main coping strategies. At the same time, students in the Kingdom of Saudi Arabia often use problem-solving methods and staying optimistic (Ahmed & Mohammed, 2019). Canadian students share their emotions to others and take time to reflect in a stressful situation, others acted in improving their organizational skills, and some do physical activities like exercising and walking (Lavoie-Tremblay, Sanzone, & Paquet, 2021) as means of coping with stress. Finnish students use Transference (Bhurtun, Turunen, Estola, & Saaranen, 2021), while Chinese students use positive reframing (Liu, et al., 2022). Additionally, nursing students from Malaysia often use their religious and spiritual beliefs (Ab Latif R, 2019) as a strategy for coping with stress. Furthermore, there are few students used different kind of approach in coping with their stress, however, it is only few of them used this kind of approach. Throughout the review of all the 8 studies, nursing students from 5 universities reported using Emotional support, Substance abuse (Ab Latif R, 2019) (Baluwa, Lazaro, Mhango, & Msiska, 2021), denial (Baluwa, Lazaro, Mhango, & Msiska, 2021) (Mamta, Ashok, Aashish, & Raj, 2020), Avoidance (Bhurtun, Turunen, Estola, & Saaranen, 2021), negative coping (Liu, et al., 2022) as the least used coping strategies that these students are using to cope up with their stress during their nursing years in the universities.

8 Discussion

These reviews showed that most of the research were carried out in Asia, particularly in Malaysia, India, the Kingdom of Saudi Arabia, and China, with the inclusion of two European nations (Germany and Finland) with the remainder coming from North America and Africa. The conclusions drawn from this eight research mainly center on the stressors and coping mechanisms employed by nursing students to lessen the pressure they feel while participating in clinical rotations.

8.1 Methodological considerations

Descriptive sectional studies made up the majority of the studies, along with two other descriptive designs, one transversal descriptive qualitative study, and a longitudinal descriptive comparative study. However, they are all the same descriptive kind. Cross-sectional studies analyze data on a population at a particular point in time and area sort of observational study, or descriptive research. In this kind of study, researchers don't change any variables or interfere with the environment but instead they merely look at a group of participants and show what already exists in the community. Cross-sectional studies attempt to describe a variable rather than quantify it (Simkus, 2021). Future studies should pay greater attention to qualitative research methodologies to better understand the challenges that nursing students must deal with. This fact demonstrated that the dynamic nature of the stressors experienced by nursing students has not been thoroughly investigated in the present studies. Qualitative designs should be used in future research to measure this variable aspect of stress. In this study, a variety of sample sizes and kinds were used from a population of 26 to 346 nursing students. This demonstrated how studies using small sample sizes may restrict the applicability of the study results. It is typically advised for nursing researchers to select sample sizes with higher degrees of outcome accuracy. So, if the sample size is small, the results cannot be charted as the entire population because the sample does not accurately reflect the population (Gumpili & Das, 2022).

The most used instrument for measuring perceived stress to determine the sources and level of stress among nursing students in this, is the Perceived Stress Scale. PSS was used by four studies (Ab Latif R, 2019), (Baluwa, Lazaro, Mhango, & Msiska, 2021), (Ahmed & Mohammed, 2019) (Bhurtun, Turunen, Estola, & Saaranen, 2021) .Others used the Standardized Student Nurse Stress Index (Mamta, Ashok, Aashish, & Raj, 2020) and the

Intern Nursing Student Stressor Scale (Liu, et al., 2022) while the rest measures are using questionnaires (Hwang, Kim, & Shin, 2021) (Lavoie-Tremblay, Sanzone, & Paquet, 2021). However, one study has not emphasize what instrument they use to determine their students sources of stress and coping style but their data were collected from only 26 participants using a semi-structured interview guide questions (Lavoie-Tremblay, Sanzone, & Paquet, 2021). COPE Brief Inventory are utilized by 3 studies (Ab Latif R, 2019) (Baluwa, Lazaro, Mhango, & Msiska, 2021) (Mamta, Ashok, Aashish, & Raj, 2020), and two studies used the Coping Behavioral Inventory (Ahmed & Mohammed, 2019) (Bhurtun, Turunen, Estola, & Saaranen, 2021)

8.2 Results Discussion

The sources of stress and coping mechanisms that these students regularly employed to lessen their stress during clinical practice are explained in this review. These students are susceptible to academic and external stresses in addition to being clinically stressed. In the study, nursing students from 8 universities in different countries reported having the same experiences with academic stressors; however, only 2 universities included academic stressors in their studies thus it is difficult to compare and analyze this aspect of the stressor due to a lack of data from other studies. Further, Nursing students that participated in subsequent research discussed the stress they felt in the clinic and shared their different clinical practice experiences. If more research is included in the review, the results will be more accurate and easier to compare and interpret, rather than just relying on the 8 articles that has been selected. Most studies also indicated that stressors experienced by nursing students at various universities includes academic and clinical assignments and workloads, teachers and nursing staff who expected students to demonstrate their abilities in the field, patient care, a lack of professional skills and competence, and knowledge of their responsibilities in the workplace. Additionally, some students who participated in the evaluation indicated that they may experience stress from external stressors such as family issues, noise, and personal issues, However, as only students from three universities reported on this part, the accuracy of the results was somewhat impacted. These students require special interventions to reduce their stress during clinical practice, developing their own coping mechanisms enables them to continue their nursing studies. In this review, the students' most popular coping mechanisms for stress were active coping techniques. This type of strategy is typically utilized by people who are addressing difficulties, looking for

information, getting social support, and seeking expert assistance. Other students employed problem-solving techniques to manage their stress. These techniques include establishing plans, priority lists, and resolving stressful situations. Keeping a positive outlook on life's events and having the confidence to ignore difficulties are other ways to reduce stress. Students can talk to one another and express their feelings, taking advantage of stressful situations to reflect and learn to control their reactions. Another coping approach for students to deal with stress is to engage in physical activity like walking and working out. Some students can use transference to help them solve problems by drawing on prior experience. Attempting to see the bright side, shifting perspectives, and finding what really matters in life are all examples of positive coping strategies. Moreover, there are also some students used unhealthy coping techniques such as smoking, drinking, taking drugs, and expecting miracles. They also tended to avoid the teachers who make them feel stressed out. Since it only addresses the feelings associated with stress and ignores its underlying causes, this approach is believed to be the least popular. This analysis also discovered a very distinctive technique employed by some students, especially from one university who are part of the study, which is the usage of a religious approach through prayer and meditation. However, since religion is a sensitive subject, it is challenging to address this type of approach.

Students must be involved in decisions regarding patient care. Furthermore, it was shown that students had anxiousness prior to the start of their clinical rotation. This is because they were unfamiliar with the clinical environment and were therefore unsure of how things would go. They feared that any mistake could have devastating effects on their professional advancement. They kept being cautious. The time has come for seniors and clinical faculty to address the students' concerns. They need to feel motivated and valued as a team member if you want to help them overcome their obstacles (Bux, 2021).

This evaluation provided new information on the stress that nursing students endure during their clinical education to researchers, educators, and students in the field. The results of this review urge for additional research and have significant implications for nursing education.

9 Conclusion

Given how many people experience this condition, stress is a particularly hot topic among researchers. People are looking for new ways to deal with stress because it is already a part of daily life. Furthermore, academic, clinical, and external pressures are just a few of the many reasons why nursing students are so prone to stress. Considering these findings, nursing schools must offer these students stress-reduction techniques, such as seminars, counselling, or stress-management classes, to help them before they begin their first clinical rotation. Teachers who are open to communication and who have received training in recognizing signs of stress in students might help them develop more effective coping mechanisms. Assignments and workloads are more known to be sources of their stress. It would be best if they could set longer deadlines because students won't be able to complete all these academic and clinical workloads at once, even with appropriate time management. Nursing students will be more willing to learn during their first clinical rotation and will have a more positive outlook on finishing school and becoming an effective nurse in the future if they are able to identify their stress and develop a healthy coping strategy with the assistance and encouragement of their teachers. Nursing staff members in the setting where nursing students complete their clinical practice must be kind and approachable when engaging with students because they are the ones who are more knowledgeable about the profession. By sharing their knowledge, these students will pick up new skills and raise the standard of patient care they offer.

10 Appendices

10.1 Tables

Table 1: Overview of the 8 choosen article

Title	Author	School/Country	Year
1. Stressors and coping strategies during clinical practice among diploma nursing students.	Rusnani AB Latif, Mohd Zarawi Mat Nor	Kubang Kerian Nursing College, Kelantan, Malaysia	2019
2. Stress and coping strategies among Malawian undergraduate nursing students	Masumbuko Albert Baluwa, Matthews Lazaro, Lucky Mhango, Gladys Msiska	Mzuzu University, Northern Malawi	2021
3. Nursing Students stress and coping strategies during clinical training in KSA	Waled A:M. Ahmed, PhD, Badria M.A Mohammed PhD	Albaha University, Kingdom of Saudi Arabia	2019
4. Initial Clinical Practicum stress among among nursing students: A cross sectional study on coping style	Eunhee Hwang, Mijung Kim, Sujin Shin	Heinrich-Heine-University, Dusseldorf Germany	2021
5. Sources of Stress and coping strategies among undergraduate nursing students across all year	Melanie Lavoie-Tremblay, Lia Sanzone, Thalia Aube, and Maxime Paquet	University in Montreal Canada	2021

6. Changes in stress levels and coping strategies among Finnish nursing students	Bhurtun, Hanish Turunen, Dev Hannele Estola, Matti Saaranen, Terhi	University of Eastern Finland	2020
7. Stress and Coping Strategies among Undergraduate Nursing Students: A Descriptive Assessment from Western Rajasthan	Mamta Nebhinani , Ashok Kumar , Aashish Parihar , Raj Rani ¹	Nursing College of Tertiary Care Hospital, Western Rajasthan India	2016
8. Stress and coping styles among nursing students during the initial period of the clinical practicum: A cross-section study	Jing LiuYeqin YangJunya ChenYi ZhangYawei ZengJufang Li	School of Nursing, Wenzhou Medical University, Wenzhou, Zhejiang, China	2021

Table 1a: Overview of the 8 articles aims, research design, and sample size

Title/Author	Aims/Goals	Research Design	Sample size	Instruments
1. Stressors and coping strategies during clinical practice among diploma nursing students. Rusnani AB Latif, Mohd Zarawi Mat Nor	Identify stress and coping strategies among diploma nursing students during clinical practice in the Kubang Kerian Nursing College, Kelantan.	Descriptive Cross- Sectional Study	346 students	Percieved Stress Scale and Brief COPE inventory

<p>2.Stress and coping strategies among Malawian undergraduate nursing students</p> <p>Masumbuko Albert Baluwa, Matthews Lazaro, Lucky Mhango, Gladys Msiska</p>	<p>To investigate stress and its coping strategies among nursing students in Malawi.</p>	<p>Descriptive cross-sectional research design</p>	<p>102 nursing students</p>	<p>Percieved Stress Scale and COPE inventory</p>
<p>3.Nursing Students stress and coping strategies during clinical training in KSA</p> <p>Waled A:M. Ahmed, PhD, Badria M.A Mohammed PhD</p>	<p>to assess the degree of stress experienced by nursing students at Albaha University, KSA and the coping strategies they subsequently employ.</p>	<p>Descriptive Cross-Sectional study</p>	<p>125 nursing students</p>	<p>Percieved Stress Scale and CBI</p>
<p>4.Initial Clinical Practicum stress among nursing students: A cross sectional study on coping style</p> <p>Eunhee Hwang, Mijung Kim, Sujin Shin</p>	<p>The purposes of this study are (1) to describe stress related to clinical practicum and stress-coping styles during the first clinical practicum and (2) to identify the differences in stress related to clinical practicum according to different coping styles.</p>	<p>Descriptive Design</p>	<p>125 nursing students</p>	<p>Used Questionnaires Consist of 94 items.</p> <ul style="list-style-type: none"> • 24 clinical practice stress • 62 stress-coping style • 8 general characteristics

<p>5.Sources of Stress and coping strategies among undergraduate nursing students across all year</p> <p>Melanie Lavoie-Tremblay, Lia Sanzone, Thalia Aube, and Maxime Paquet</p>	<p>to understand nursing students' sources of stress and coping strategies in each year of study.</p>	<p>Transversal Descriptive Qualitative Study</p>	<p>26 nursing students</p>	<p>semi-structured interview guide questions</p>
<p>6. Changes in stress levels and coping strategies among Finnish nursing students</p> <p>Bhurtun, Hanish Turunen, Dev Hannele Estola, Matti Saaranen, Terhi</p>	<p>to examine changes in stress levels and coping strategies among bachelor's level nursing students in Finnish universities of applied sciences.</p>	<p>A longitudinal descriptive comparative study</p>	<p>131 nursing students</p>	<p>Percieved stress scale and coping behavioral Inventory questionnaires</p>
<p>7. Stress and Coping Strategies among Undergraduate Nursing Students: A Descriptive Assessment from Western Rajasthan</p> <p>Mamta Nebhinani , Ashok</p>	<p>to assess stress and coping strategies among nursing students of Western Rajasthan.</p>	<p>Descriptive Study</p>	<p>221 students</p>	<p>Standardized Student Nurse Stress Index and brief cope scale</p>

Kumar , Aashish Parihar , Raj Rani ¹				
8. Stress and coping styles among nursing students during the initial period of the clinical practicum: A cross-section study Jing LiuYeqin YangJunya ChenYi ZhangYawei ZengJufang Li	to explore the level of stress, types of stressors, type of coping styles, and factors influencing stress levels and coping styles among nursing students during the initial period of the clinical practicum.	Descriptive cross-sectional study	158 nursing students	Intern Nursing Student Stressor Scale, and the Simple Coping Style Questionnaire.

Table 2: Sources of Stress of among nursing students studying from different universities and countries

THEMES	SUBTHEMES	MAIN STRESSORS
	ACADEMIC STRESSORS	<i>Assignments and Workload (art. 2)</i> <i>Examinations, Assignments, and workload (art.5)</i>

STRESSORS	CLINICAL STRESSORS	<p><i>Clinical Assignments and workloads (art.1)</i></p> <p><i>Clinical teachers and nursing staff, lack of expertise, hospital environment and patient care (art.2)</i></p> <p><i>Taking care of patients, assignments and capacity, lack, lack of professional knowledge and competence(art.3)</i></p> <p><i>Practicum education environment, Undesirable role model, Practical work burden, Interpersonal conflict (art.4)</i></p> <p><i>Increasing expectations of instructors/staff in demonstrating their skills in the field (art.5)</i></p> <p><i>Lack of professional knowledge and skills (art.6)</i></p> <p><i>Responsibilities they are having in the field, and the atmosphere created by teaching staff or nursing staff towards them(art.7)</i></p> <p><i>Need of knowledge and skills(art.8)</i></p>
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	EXTERNAL STRESSORS	<p><i>Financial problems and family members who force them to behave well (art.2)</i></p> <p><i>Noise (art.3)</i></p> <p><i>Personal problems (art.7)</i></p>
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Table 3: Coping strategies used by nursing students from different universities and countries.

THEMES	SUBTHEMES	MAIN COPING STRATEGIES
	FREQUENTLY USED STRATEGIES	<p><i>Religion and spiritual beliefs, instrumental support, Planning, positive refraining (Art.1)</i></p> <p><i>Active coping and planning (art.2)</i></p> <p><i>Problem solving approach by making plans, list of priorities, and solve stressful events and staying optimistic by keeping a positive attitude in dealing with life events and by being confident in overlooking difficulties (Art.3)</i></p> <p><i>Active coping and Passive coping (art. 4)</i></p> <p><i>Taking with others and share emotions, time to reflect in a stressful situation, recognizing and controlling one's response, took action and improve organizational skills, Physical activities such as exercises and walking (art.5)</i></p>

<p>COPING STRATEGIES</p>		<p><i>Transference by employing past experiences to solve the problem (art. 6)</i></p> <p><i>Active coping and planning (art. 7)</i></p> <p><i>Positive coping style by trying to see the good side, changing minds and rediscovering what matters in life, Talking to people and sharing problems (art.8)</i></p>
	<p>LEAST FREQUENTLY USED STRATEGIES</p>	<p><i>Emotional support, self-destruction, Venting, Behavioral disengagement, substance abuse (art. 1)</i></p> <p><i>Substance abuse and Denial (art.2)</i></p> <p><i>Avoidance by avoiding teachers, quarrel with others and lose temper, expect miracles, one does not have face difficulties, and expect others to solve the problem</i></p> <p><i>Avoid teachers and expect miracles so one does not have to face difficulties. (art.6)</i></p> <p><i>Denial, venting, Self-blame, and Self-distraction (Art.7)</i></p> <p><i>Negative coping style by smoking, drinking, taking drugs, and eating. Relying on others to solve the problems, trying to forget the whole thing. (art.8)</i></p>

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