



# EFFECTIVENESS OF HAND MASSAGE ON REDUCTION OF STRESS LEVEL AMONG NURSES WORKING IN ROTATIONAL SHIFTS

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**Abstract:** Nursing primarily focuses on practical application. The training procedure consists of two components: theory and practice. The primary objective of nursing is to educate and cultivate skilled and proficient nurses who possess the ability to provide service to the general public, the community, and the nation. Nursing students are required to assume a dual role throughout their training programme, which might potentially induce anxiety during their course of study. Undergraduate nursing students often experience concerns such as financial difficulties, course content challenges, and the clinical environment. Stress may lead to a decline in students' academic performance, less focus and concentration in class, feelings of tension, and a lack of engagement with classmates. Emotions are a significant factor in human existence. Emotional maturity may serve as a means for kids to develop strong emotional regulation skills and respond appropriately to different circumstances. Implementing stress management techniques may help students achieve a state of relaxation and improve their psychological well-being. Hand massage may enhance the effectiveness of therapy for arthritis, carpal tunnel syndrome, neuropathy, and other medical disorders. Engaging in a professional hand massage is a prudent expenditure for enhancing one's general well-being. Engaging in a regular self-massage regimen may provide continuous advantages.

**Purpose:** A study was conducted to evaluate the efficacy of nursing academic stress and coping mechanisms among nurses. To evaluate the extent of occupational stress and its many aspects, including psychological, institutional, familial, physical, and financial stress, among government staff nurses employed in government hospitals.

**Methodology:** The purpose of the research is to investigate occupational stress among nurses. The researcher used the convenience sampling strategy in this investigation. Several variables contribute to the occurrence of occupational stress. Nursing occupational stress is directly influenced by employees coping strategies, the Big Five locators of personality, quality of work life, motivation, and job satisfaction. Empirical data has shown that a consistent hand massage may alleviate pain, enhance hand strength, and mitigate sensations of tension and anxiety.

**Keywords:** Stress, Rotational Shifts, Coping Strategies, Hand Massage, Reduce Stress

## I. INTRODUCTION

Nurse stress refers to the emotional and physical responses that arise from the interactions between a nurse and their work environment when the demands of the job surpass their talents and available resources. A professional nursing organization is obligated to fulfill its duties towards both its members and the general public. Its purpose is to establish and define the extent and criteria for professional activity in its field.

The American Nurses Association (ANA), as the governing body for registered nurses, is responsible for creating the scope and criteria that govern the practice of all professional nurses [1]. These guidelines also serve as a model for specialized nursing practices. Standards, however, are the responsibility of the profession and so need extensive participation in their creation and modification.

The causes of stress experienced by nurses are diverse, yet many stressors are universal across nurses, regardless of their job or work environment.



As a consequence of this issue, these experts spend the majority of their time attending to patients and have little time to attend to their well-being [2]. Amidst their efforts to fulfill the requirements of their demanding profession, they often overlook the impact of stress on their well-being.

This research examined the psychophysiological ramifications of stresses arising from both work and daily life for nursing professionals, elucidating strategies for enhancing their personal and occupational well-being.

The specific medical and health issues being addressed influence the unique attributes exhibited by nursing across different contexts, which in turn affect the nature of the activity. The presence of mental disease may pose a significant risk to one's life and often leads to further social difficulties, making the field of nursing in inpatient psychiatry intricate and demanding [3]. The nursing staff faces additional responsibilities due to the organizational difficulties within the intricate mental care system. They often experience a sense of insufficiency, which is associated with the phenomenon of stress of conscience.

The nursing profession entails many types of stress that are distinct from those seen in non-health industries. Nurses operate in a distinctive setting that is characterized by high levels of noise, pollution, and susceptibility to infections. Employment requires the qualities of patience, strong cognitive talents, and physical prowess. Nurses encounter life-threatening circumstances, heavy workloads, extended shifts, competitiveness, inadequate expertise, and limited information exchange with colleagues and doctors in their everyday professional routines [4]. Therefore, it is crucial to prioritize addressing the occupational stress experienced by nurses, which involves identifying the primary stressors and devising appropriate measures to mitigate them.

The nursing profession entails managing various and contradictory expectations from nurse supervisors, managers, as well as medical and administrative personnel. This circumstance seems to result in an excessive workload and potential role conflict. One kind of conflict often discussed in surveys of nurses is the inherent contradiction between the pragmatic and objective needs of "improving the patient's condition" and the expectations associated with providing emotional support and alleviating patient stress.

The manifestation of role conflict is particularly apparent while attending to patients who are in a severe condition and approaching the end of their lives [5]. Undoubtedly, critical or intense care nursing has garnered significant focus within the field of nursing. The healthcare industry has a significant prevalence of aggressive behavior.

Several studies on nursing stress have endeavored to quantify or guess the impact of this stress on the health and well-being of nurses. Work-related stress widely impacts the quality of nurses' work lives, increases minor psychiatric illness, and may contribute to certain physical health issues, especially musculoskeletal problems, stress, and depression.

The healthcare sector in India is a significant contributor to the economy and is seeing rapid growth. Nurses play a key role in the healthcare system. Nurses are the primary providers of health care in all nations, with their contribution reaching up to 80 percent in some circumstances [6]. Given that nurses play a crucial role in healthcare and bear significant obligations in patient care, the occupational stress experienced by nurses may have a profound impact on their work behavior. The research focuses only on nurses. Occupational stress may help the organization recruit and maintain a robust and dedicated workforce in hospitals. The work schedules for nurses consist of three shifts: 7-1 hours, 1-7 hours, and 7-7 hours, respectively. In the present day, individuals are engaged in labor for durations exceeding 12 hours every day [7].

This results in job unhappiness, eventually causing occupational stress. Dissatisfaction leads to a multitude of physical, mental, and emotional issues that impact humanity. They must make significant efforts to get a favorable position and a sense of contentment in their employment. Only a select handful are lucky enough to be endowed with complete fulfillment in their professional lives. Regrettably, some are dissatisfied. The study is based on the discontent and underlying reasons behind it [8].

Hand massage is a therapeutic method that involves manipulating the hands and fingers to induce relaxation, alleviate stress and tension, and enhance blood circulation. Despite being underestimated, this particular kind of massage plays a key role in the entire physical and mental state of the body. Hand massage can relieve a range of ailments and provide several advantages that go beyond only the hands. Regularly practicing hand massages may alleviate pain, enhance flexibility, and foster a sense of peace and well-being.

S. No	Authors	Findings & Research
1.	Edjah et al. 2020 [16]	The students are exposed to academic stress related to their desire for success more than any other form of stress. Several demands characterize academic excellence.
2.	Babapour et al. 2022 [20]	Evaluated whether college students adopt substance abuse significantly as a solution to their stress exposures. It is essential to understand the subject considering it a high-risk activity.
3.	Labrague et al., 2018 [21]	A comprehensive analysis examining the correlation between stress levels among nursing students and different age cohorts. The evaluated publications revealed a consistent pattern where individuals aged 20-24 reported greater levels of felt stress compared to students in other age brackets.
4.	Akacan et al., 2017 [22]	Evaluated the students' experiences and challenges in dealing with stressful situations. The study revealed that the university period for any student is new in their life and pertinent to their development in acquiring many new experiences in the social, academic, and personal times in preparation for their survival. The study suggests that the students will be expected to adapt to the different exposures to survive and succeed in meeting their career or academic goals.
5.	Bennet, et al., 2018 [17]	The majority of nursing students reported that clinical assignments and being directly engaged in a patient's death were significant stressors.
6.	Salmah Alghamdi et al., 2019 [18]	Examined the prevalent causes of stress among a group of 87 female nursing students. The Student Nurse Stress Index (SNSI) was used to delineate the origins of stress from four domains: academic workload, clinical anxieties, personal issues, and interface concerns.
7.	Edwards, et al. (2018) [19]	The cohort consisted of a significant number of non-traditional nursing students, with an average age of 36.23. It was hypothesised that older students, given their life experiences and coping skills, would be better equipped to handle the strains of school. According to the research, younger students exhibited lower stated levels of stress.
8.	Ramaiah Itumalla (2018) [23]	Their research that occupational stress has a significant effect on the job performance of nurses.
9.	Rajeswari and Sreelekha, (2016) [24]	Have indicated that the occupational stress of the nurses causes physical and psychological implications.
10.	Sharma, P., et al. (2014) [25]	Declared that Nursing is a profession characterized by elevated levels of stress. The detrimental effects of work stress extend beyond nurses' physical well-being and also impair their capacity to handle job requirements. The effects of occupational stress among nurses affect not only the health of an individual nurse but also the performance and reputation of the hospital establishment.
11.	Hanish Dev Bhurtun et al., 2019 [26]	Conducted a thorough evaluation of an integrated review process on existing research about stress and coping mechanisms among undergraduate nursing students throughout their clinical training.

12.	Foozieh Rafati et al., 2017 [27]	Investigated the coping methods used by nursing students to manage stress in a clinical environment: An in-depth qualitative analysis. The analysis of the data yielded three categories: "Active confrontation with stress," "Mastering the mind and body," and "Avoidance." These categories revolve around the major subject of "Seeking well-being."
13.	Mamta Nebhinani et al., 2019 [28]	Examined the levels of stress and the tactics used to cope with stress among undergraduate nursing students from Western Rajasthan. There was a substantial correlation between the level of stress and the interest of students in nursing. Interface issues and academic-related problems have surfaced as significant stressors.
14.	Baba Vajrala et al., 2018 [29]	Analyzed the degree of stress and coping mechanisms used by B. Sc. Nursing students at NRI Nursing College in Guntur. The results have implications for the administration and counselling of nursing students about coping techniques.
15.	Emad Shdaifat et al., 2018 [30]	Demonstrated the extent of stress experienced by nursing students and examined the specific stressors they encounter. Additionally, the study sought to analyse how demographic factors contribute to variations in stress levels. Lastly, the study aimed to discover the coping strategies used by nursing students to manage their stress. The presence of a moderate degree of stress among students highlights the need for stress management programmes and the provision of appropriate assistance.

**OBJECTIVE**

This research aims to examine the occupational stress experienced by nurses involved in rotating employment. The objective of this study is to conduct a comparative investigation of the stress levels and different stressors experienced by nurses in diverse practice settings. This research is distinctive and valuable in elucidating the extent and origins of occupational stress experienced by nurses employed in government and private sector healthcare facilities.

**II. ROTATIONAL SHIFT EMPLOYMENT:**

Shift work positions are subject to many norms and regulations that are uncommon in businesses that do not include employees working in shifts. In this part, will examine the characteristics of shift work.

**2.1 Shift Pattern-Three main shifts:**

**Morning Shift:**

The morning shift, often known as the day shift, is the most suitable shift according to the circadian rhythm of humans. Adhering to the natural law and our biological clock, it is deemed most advantageous to get up at dawn and retire at night. The human brain secretes the melatonin hormone by the timing of dawn and sunset. The secretion of the melatonin hormone signals the body to initiate sleep and wakefulness at appropriate times. The morning shift typically begins between 7 a.m. and 9 a.m. and concludes between 4 p.m. and 6 p.m. Upon returning home from work, the majority of individuals indulge in a little slumber to rejuvenate themselves before engaging in other daily endeavors. The morning shift remains the most coveted work schedule among individuals engaged in shift work positions [9]. The stated justifications for favouring this shift also include the facilitation of social interactions for those working the morning shift, since a majority of their family members and friends are employed during daytime hours. Nevertheless, studies have shown that some individuals have challenges while attempting to rise early in the morning and instead choose later hours. Similarly, some individuals opt for night shifts due to the same rationale. Due to their inclination towards working late, people struggle to fall asleep early and are known to get less than the usual 6-7 hours of sleep. They like to wake up a little later in the day. Another issue raised by workers working the day shift is that if they need to carry out tasks in organizations that operate only during business hours, they are required to use their allocated leave time. Additionally, those engaged in other occupations, such as students or active participants in non-governmental organizations, see this rotational schedule as unsuitable for their circumstances [10].

**The Afternoon or Evening Shift:**

The commencement of this shift occurs between 4 p.m. and 6 p.m., while its conclusion falls between 1 a.m. and 3 a.m. It is favored by those who have a dislike for waking up early and may have other commitments for a few hours during the daytime. Individuals employed during this shift often rest for around 1-2 hours after the conclusion of their work shift and awaken between the hours of 10 a.m. and 12 p.m. Following the completion of regular daily tasks, the majority of individuals engage in a brief period of rest before preparing for their professional obligations. This shift closely resembles the day shift since the employees only sleep a few hours later than the morning shift workers [11].

**Night Shift:**

The night shift begins between 12 a.m. and 2 a.m. and concludes between 9 a.m. and 11 a.m. People who prefer a conventional daytime schedule often detest the morning shift because it completely contradicts their usual routine. It is abnormal to fall asleep when the sun is still up and everyone else is working and making sounds. Individuals employed during the night shift have a higher prevalence of sleep disturbances and insomnia in comparison to those working other shifts. Telemarketers, door-to-door marketers, and individuals providing routine services such as waste collectors, vehicle washes, and housekeepers perturb the individuals at their residences. They struggle to get uninterrupted sleep for 6–8 hours due to disturbances and the challenge of both falling asleep and remaining asleep caused by sounds originating from inside and outside the home. Additionally, they are socially isolated due to their contrasting daily schedules with others who work regular hours [12]. They engage in intermittent rest periods, both before their shift and during the day, to alleviate the effects of physical effort. They mostly express dissatisfaction with weariness while working the night shift, in contrast to their experience during other hours.

**3.2 The other uncommon shifts:**

In addition to these three primary rotations often provided by organizations shift work, several more shifts are common in the culture of rotating shifts.

**Mid Shift:**

The mid shift is the shift that occurs between the evening shift and the night shift, often starting between 7 p.m. and 11 p.m. certain organizations use multiple mid shifts, referred to as early mid and late mid shifts, which typically begin at intervals of around two hours or slightly less. The mid-shift is characterized by its deviation from the regular schedule since it concludes during the early morning hours, often ranging from 4 a.m. to 8 a.m. Employees furthering their education choose to work this particular shift for the opportunity to rest after it ends and before it begins again. Nevertheless, this transition is unfavourable for those who like waking up early in the morning and those who have no significant commitments outside their residence in their daily schedule. This shift exhibits comparable sleep disruption issues to those seen with night shifts [13].

**Early Morning Shift:**

The early morning shift is the shift that comes before the morning shift. The event often begins between the hours of 3 a.m. and 5 a.m. and concludes in the afternoon. Early birds find this change advantageous. Operating during severe winters, especially when dense fog greatly reduces visibility, poses significant challenges. The fog is very concentrated at the onset of this shift, making commuting exceedingly difficult and hazardous.

**Late Morning/Early Afternoon Shift:**

The late morning/early afternoon shift begins between 11 a.m. and 1 p.m. This particular shift closely resembles the morning shift and has the least impact on the circadian rhythms compared to other shifts. It is most appropriate for those who are not inclined to get up early in the morning but choose to work the morning shift due to a few external responsibilities [14]. Individuals with concurrent daytime commitments tend to avoid working during this shift.

**Shift transition:**

The substantial time interval between shifts when someone is moved from one shift to another makes it difficult for them to adapt. It is necessary to adjust the timing of daily regular habits and activities, such as meal preparation, eating, and sleeping, either earlier or later. However, this may be a challenging endeavour. Most individuals need around three days to acclimatize their sleep routine to a new time. During the transitional period, workers express dissatisfaction with drowsiness during their previous sleep hours, decreased appetite, and a tendency to take time off due to weariness. Failure to do so may result in significant consequences, including accidents, as several studies have shown.

**Day offs:**

The number of days off each week varies based on the business, ranging from one to two. Typically, they exhibit variability and rotation, much like a shift pattern. Only a small number of organizations provide their workers with set



days off, often on Saturdays and Sundays. Those who have a consistent schedule of having Saturdays and Sundays off find it easier to socialize with their family and friends compared to those who have rotating days off. Another concern about rotating shifts is that workers do not get enough relaxation after a certain number of days. Due to rotation, workers may experience intervals as short as 3 days and as long as 7-8 days without breaks, resulting in physical and emotional fatigue and dissatisfaction. Employees who have weekdays off have challenges socializing.

**Break System:**

Employees receive a specific number of breaks during their shifts. According to Indian Labour Law, workers who work for 8.5 hours a day have the right to take two 15-minute short breaks and one 30-minute lunch break. In many jobs that involve rotation, employees are required to take breaks systematically, similar to having days off. This is because most organizations cannot afford to have all employees take breaks at the same time, as the nature of their business requires them to operate continuously. For instance, in the hospital industry, it is not feasible for the housekeeping and nursing staff to take breaks simultaneously [15]. Similarly, the BPO business needs its workers to be operational 24/7, and there are several other organizations, such as the food industry and manufacturers, that also want their services to be active around the clock. The personnel take breaks from work in a sequential or alternating manner. An inherent limitation of this working environment is that, despite an employee experiencing extreme hunger, they must wait for another employee to relieve them of their duties before they may take a break to eat or care for their biological needs. During this procedure, individuals may have a decreased appetite and inadequate food intake, leading to nutritional deficiencies. Certain workers may not have the chance to consistently maintain their lunch breaks at a fixed time each day, thus disrupting their eating habits. The frequent rotation of their shift schedules exacerbates this issue.

**Desiring a particular Shift:**

Research has shown that individuals are not inclined to work in an atmosphere that requires them to work many shifts. Individuals perceive it more as a limitation than a voluntary decision. Individuals provide several justifications for working rotating shifts, including significant daytime obligations that necessitate working at night, attraction to sectors that operate in different shifts, higher compensation in industries that need rotating shifts, and enthusiasm for working in a certain area. Typically, the majority of workers on rotating shifts aspire to work during the day and would like to remain on the day shift if given the option.

### III. HAND MASSAGE

Massage therapy generally leads to the beneficial outcome of less stress. Stress may manifest in both physiological and psychological forms. Muscular stress may manifest as a consequence of injury or excessive usage, leading to the accumulation of tension and subsequent escalation of pain. Mental stress may arise as a result of limited mobility, discomfort, or injury. Mental stress arises from the release of cortisol, a hormone that may also exacerbate feelings of worry and sadness. While a moderate level of stress may have positive effects on an individual, excessive stress can lead to physical discomfort, anxiety about resuming physical activities after an accident, and a lack of confidence in oneself. Deep strokes include using substantial force to penetrate deep into the muscular tissues. Significant muscular tension may often originate from both deep tissues and superficial layers. Deeper muscular stress may lead to heightened discomfort and limited mobility. Long and forceful strokes raise the temperature of the muscles, which in turn enhances the flexibility of the tissues. Enhancing tissue flexibility promotes muscular relaxation and reduces stress and tension. Reducing muscular tension leads to a reduction in discomfort and an improvement in mobility. Trigger pointing efficiently alleviates tension. Trigger points may induce referred pain and migraines and exacerbate psychological distress. Trigger pointing involves the use of fingers and thumbs to provide strong and steady pressure. Applying pressure triggers an ischemia response.

When pressure is applied, blood flow to a specific location is initially limited and then increases with the relaxation of pressure, which is known as an ischemia response. Before the release of pressure, the applied pressure will initiate a process of softening, resulting in a numbing feeling. Once the numbing feeling sets in, you can adjust the amount of pressure applied based on the depth or size of the trigger point, or relax the pressure.

Lymphatic drainage is an effective method for reducing stress. Lymphatic drainage entails the activation of the lymphatic system to enhance the effective elimination of metabolic waste. Metabolic waste accumulation may arise after an accident, surgical procedure, or excessive physical exertion. Metabolic by-products exacerbate muscle exhaustion and debilitation, perhaps leading to inflammation and discomfort. Edoema, muscle exhaustion, and muscular debility may impede mobility and hinder the recovery from injuries. Imposing limitations on mobility and impeding the recovery process may heighten psychological strain, as individuals may experience frustration at being unable to use a certain body part effectively or resume their physical activities or sports.

A massage enhances the activity of the lymphatic system. Massage therapists use various extended and profound movements to eliminate metabolic waste from the body and replenish it with beneficial oxygen and minerals. Enhancing the process of eliminating metabolic waste from the body via lymphatic drainage may effectively decrease edema, alleviate discomfort, and alleviate movement limitations. Reducing inflammation, discomfort, and limitations alleviates psychological strain.

#### IV. RESEARCH GAP

- Stress among working women due to added responsibilities.
- Resrestrictions posed by family members on work travel or staying out late.
- Proceed to accidents due to sleepiness
- Problems faced by people working during the night in adjusting their sleep patterns.
- Degree of wakefulness due to fatigue occurring because of rotational work.
- Higher risk of chronic diseases due to disturbed sleep cycle.

#### V. CONCLUSION

Occupational stress has emerged as the primary determinant impacting human effectiveness and contentment in contemporary work settings. The nursing profession is becoming more and more defined by elevated levels of occupational stress. The current analysis highlights that the majority of nurses are employed in both the government and commercial sectors. All nurses, regardless of their fields of work, recognize the signs of occupational stress. Factors such as age, marital status, employment level, monthly income, and experience significantly relate to the perception of the total effect of occupational stress symptoms. Age and experience mostly influence the perception of impact symptoms. Alleviating stress encompasses the act of both physically and mentally unwinding. Massage therapists may use techniques such as deep strokes, trigger points, and lymphatic drainage to alleviate stress. Massage therapy may effectively alleviate stress in many conditions, such as acute pain, post-injury recovery, and promoting relaxation.

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