

## Chapter 5

### DISCUSSION

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Viewing the result of concern **null hypotheses no. one**, results have shown a higher level of MBI-HSS subscales of burnout scores among critical unit staff nurses than non-critical units. In present study impact of psychological strain was measured by MBI-HSS, which had 3 subscales - EE, DP and PA.

The critical unit staff nurses (CUSN) demonstrated a high mean score of emotional exhaustion, depersonalization and a lower mean score of personal compared to non-critical unit staff nurses (NCUSN) mean scores. Based on the nature of job in critical units, staff nurses have to closely monitor and deliver nursing care to clinically unstable patients, sometimes serious physical, psychological, emotional and social issues which produce burnout among staff nurses. A study from the central part of India revealed that for nurses caring patient in critical units were more stressed than other unit (Divinakumar, Pookala, & Das, 2017). Whereas, study (Saini, Kaur, & Das, 2011) conducted in tertiary level teaching hospital from northern part of India have reported of having less burnout score among critical unit nurses than general ward nurses.

Studies from other countries (Klassen, 2013; Zhang, Huang, & Guan, 2014) also reported in their findings with similar scores in the burnout subscales of MBI-HSS among critical unit nurses. A study from China, by Ayala and Carnero (2013) shown that the military nurses from ICU area had lower mean scores of EE, DP subscale and high in the PA subscales of burnout than present study

Kelleci et al. (2011) also reported lower mean score (EE 17.2, DP 3.3) of burnout than present study except personal accomplishment mean score (24.1), among nurses working in 3 hospitals in Turkey, but they have not categorized nurses as working in critical and non-critical, that might be the reason of variation in the burnout scores.

The problem of burnout is not only with critical unit nurses, it was seen among other health care provider working in critical care areas. Study conducted by Embriaco et al. (2007a) measured high level of burnout among 46.5% of medical professional which includes medical students, residents doctors, and attending doctors, surgeons.

Further, to explore the level of MBI-HSS subscale (EE, DP & PA) of burnout, scores were categorized as mild, moderate and higher level of burnout among staff nurses posted in CU and NCUs.

Emotional exhaustion is an individuals' feeling of being strained and exhausted by one's work. A higher proportion 22 (44%) of staff nurses posted in critical units had moderate level and 15 (30%) high level of emotional exhaustion score. Whereas, very few 2 (4%) staff nurses posted in non-critical units were under high level and almost one third 18 (36%) were in moderate emotional exhaustion level of burnout.

In a study (Azeem, Nazir, Zaidi, & Akhtar, 2014) from northernmost city of India revealed a moderate level of emotional exhaustion score among a private hospital nurses. The emotional exhaustion mean scores were similar from present study results of NCUSN. Similar result were reported in a research by Kelleci et al. (2011); Al-Turki et al. (2010) most of the nurses reported moderate level of emotional exhaustion score, but these results were not specified as critical and non-critical units.

The present study finding had shown, a less (4%) proportion of NCUSN in high level of burnout in EE subscale. While, a study conducted in govt. hospital from northern part of India reported of having more number (16%) of nurses in high level of emotional exhaustion. These variations in the findings may be due to the cost in health care management, as in government hospitals most of the services are provided without or with very minimal charges, which increases the load of patients and high turnover in patient occupancy.

A recent study conducted in China by Li, Ruan, and Yuan (2015) have shown a higher number (76.4%) of ICU nurses in high level of Emotional exhaustion scores which is higher from the present study. Cheng, Meng, and Jin (2015) had 45% nurses in high level of Emotional exhaustion scores. This indicates that the staff nurses working in non-critical units also get emotionally exhausted at moderate level but, the number of staff nurses are more from critical units.

A second subscale of the MBI-HSS is depersonalization, it is an insensitivity, improper response and inhuman toward his patient while providing nursing care. In the present study, mostly (56%, 42%) staff nurses were in moderate level of DP subscale of burnout from critical unit and non-critical units respectively. Whereas one third (34%) staff nurses in high level from CU and less number (20%) for NCU. Similar results were observed in studies by Li et al. (2015); Al-Turki et al. (2010) with 39.6%, 42% nurses in high level of depersonalisation scores. A study by Saini et al. (2011), reported less number (8%) staff nurses from general areas in the category of high levels of depersonalization scores.

Decreased personal accomplishment is an experience and feelings of unskilfulness and failed to provide nursing care. In this subscale, mostly 26 (52%) CUSN were in high level in comparison with NCUSN (26%). While, more than half (52%) NCUSN were expressed about having competent and successful in their job, as they were at a low level of DP score. It might be possible that, despite of the nurses' best efforts from critical units, many clients get worse, not better due to their critical condition and poor outcomes. This makes CUSN reduced personal accomplishment and less achievement in their job. Study from India by (Saini et al., 2011), shown similar results from present study participants (NCUSN).

In a study by Bakker, Le Blanc, and Schaufeli (2005) burnout phenomenon was reported as a spreadable in ICU nurses. Among the nurses who reported the highest prevalence of burnout, their colleagues were more likely to experience high levels of burnout themselves. Another study by Klassen (2013) has shown almost similar results among nurses working in critical unit. Present study scores of PA among NCUSN were consistent with study by Al-Turki et al. (2010), they had 28.5% of nurses in high levels of PA.

Multiple studies have shown different results about subscales of burnout (EE, DP, PA), but none of the study have shown a difference of burnout level among staff nurses posted in CU and NCUs, present study results are a milestone to measure and differentiate different levels of burnout nurses experience while working in critical and non-critical areas. Hence, the findings of the present study can be a base for other studies to replicate in different institutions at the national and international level.

The result of research **hypothesis no. two** indicate significance difference in heart rate, galvanic skin response (GSR) and skin temperature of staff nurses posted in critical and non-critical units at baseline.

Difference in heart rate (HR) of staff nurses posted in critical and non-critical units:

In the present study, the heart rate score was found higher among staff nurses posted in critical units than the staff nurses posted in non-critical units. Heart rate is regulated by sympathetic and parasympathetic activity. The staff nurses posted in critical units have a more hectic job than non-critical unit staff nurses. In critical units, nursing demand is high, continuous and multitasking as there are patients with critically ill in condition with multiple diseases. It results in continuous stimulation of autonomic nervous system of staff nurses that causes alterations in respiration, heart rate, blood pressure, skin temperature and GSR values to prepare the body to deal with and adapt the situation in critical units.

In an experimental study heart rates were recorded by similar instrument among healthy adults have shown a slight lower scores of the heart rate from present study findings. It reveals that the nurses posted in different units of hospitals are having more stress than other healthy persons. Furthermore, present study findings demonstrated that the staff nurses posted in critical units were more stressed than non-critical unit staff nurses as a higher scores of heart rates among critical unit staff nurses.

Nurses posted in critical units work with high job demand as they have to continue to monitor critically ill patients with multiple medications, performing lifesaving procedures which are seen less often in non-critical units. In a study (D.

Johnston et al., 2016), it was found that the majority nurses' heart rate was increased as work demand was high.

Nurses posted in critical unit not only physically stressed, but also psychologically, as they deal with more deceased patients and emotional reactions of patient's relatives. This makes nurses more emotionally stressed, it was seen that heart rate was elevated during periods of negative emotional activities among healthy adults (Kamarck et al., 1998).

Mladen Milosevic et al. (2012) in their research studied result showed that the advance procedure, nursing activities and working environment during training sessions creates significant strain on nursing students. They found an increase in heart rate during advance nursing activities and procedures.

Galvanic skin responses (GSR) of staff nurses posted in critical and non-critical units:

During psychological (emotional) or physiological strain the sympathetic nervous system gets activated which results into increased activity of sweat glands in the palms and tip of the fingers. This increases the conductivity of the skin. Present study findings also have shown similar phenomenon, the GSR score were higher among staff nurses posted in critical units than those posted in non-critical units. This shows the staff nurses posted in critical units were emotionally and physically aroused more than those posted in non-critical units. In a study conducted in the western part of India by (Turankar et al., 2013) among healthy human and the GSR scores are similar with staff nurses posted in non-critical units.

Results from various studies (Civitello et al.; Conway et al., 2013; Garcia, Uribe, Tavares, & Tomaz, 2011) found that during physical and cognitive task

activities the GSR scores were high. Another study by Perala and Sterling (2007) from Washington recorded GSR among soldier, the obtained score was high in airport activity and at night duty. Similarly, the nurse's nature of work consists of multitasking activities, the complexity of the work setting, and night shift duties make more vulnerable to develop psychological and physiological strains.

Skin temperature of staff nurses posted in critical and non-critical units:

Under emotional reaction, sympathetically-mediated vasoconstriction produces a sudden decline in skin temperature, and this inflow of peripheral blood, along with stress prompted heat production, at the same time core temperature increases (Marks, Vianna, & Carrive, 2009; Oka et al., 2001).

The tip of the finger is a best site to measure changes in temperature, in this area blood is circulated via arterioles, which are controlled by sympathetic nervous system. Studies have reported during negative emotions such as fear, sadness the skin temperature decreases, while in the state of happiness, excitement the skin temperature increases (Ekman, 1993; Philippot, Baeyens, & Douilliez, 2006). The core body temperature is usually around 37°C (98.6°F), the rest of the body can be 2-4°C colder on average with normal lower extremity temperatures ranging from 31-35°C (87.8-95°F).

In the present study, results were in a similar direction, the mean score of skin temperature was lower (80°F) among nurses posted in critical units, this reduction was of 7°F from the lower range of normal value. While, mean score skin temperature of NCUSN was 83.8°F, which is near to the lower range of normal value. These results support present study and confirms the SN posted in CU had more strain which are

seen in the results of MBI-HSS subscale and computerised stress profile test parameters

Studying the results concerning **hypotheses no. three**, domain wise quality of life of critical and non-critical unit staff nurses were found statically significance. Working in critical units affects the quality of life of staff nurses than non-critical.

There are various factors (e.g., hectic night shift, handling unconscious patient, lifting, shifting, positioning comatose patients frequently based on clinical condition, multiple communication regarding investigation reports of patient report with the physician and in the laboratory, and other health care personnel) which can affect QOL of staff nurses posted in critical units. Many investigations or procedures are performed at bedside in critical units for which all the preparation needs to be done by assigned staff nurse, whereas in NCU patient are conscious, follow instructions and for investigations or procedures patients are shifted to concern unit or department.

These aspects influence staff nurse's physical health, psychological welling, social relation and environmental health. These aspects were revealed in the study results with a lower mean score of physical health, psychological wellbeing, social health and environmental health domain of QOL of CUSN than NCUSN.

During the night shift, in comparison with non-critical unit nurses, critical unit's nurse has more workload, as they have to monitor the patient's clinical condition, vital recording, administer varieties of medication and many other undefined tasks related to patient care. Whereas, NCUSN have to observe patient's vitals and administer medications less frequently during night shift duty. Because of heavy night duty, nurses from CUSN have to sleep in day time and could not spend



more time with family and friend which results in a poor social relationship than NCUSN.

The mean score of physical health of Staff nurses posted in non-critical units were more than the staff nurses posted in critical units.

Physical health depends upon various factors such as illness, energy for everyday life, quality and pattern of sleep, support from others in day to day activities. Various studies from India (Gandhi, Sangeetha, Ahmed, & Chaturvedi, 2014; Joshi, Reingold, Menzies, & Pai, 2006; Kane, 2009) and from other countries (Humaida, 2012; Milutinović, Golubović, Brkić, & Prokeš, 2012; Thomas & Abhyankar, 2014) have been reported that the nurses suffered from many psychosomatic illnesses, which deteriorates the aspects of physical health from quality of life.

A recent study from southern part of India by Jathanna and D'Silva (2014) found that the physical domain scores were almost equal with critical unit staff nurses from the present study. Whereas, another study from southern part of India by (Jose & Bhat, 2014) the nurses' physical health domain score was similar with non-critical unit staff nurses. But, in both studies the result was not classified as critical and non-critical areas of work.

A study findings reported contradicted from present study results, they reported of almost equal scores of Physical health domain of critical care nurses and ward (Chiu et al., 2007).

Studies from European country Croatia (Milan Milosevic et al., 2011; Sorić et al., 2013), found that the physical health domain scores were corresponding from present study participant posted in non-critical units. While, in another study (Paschoa

et al., 2007), physical health domain scores of nurses posted in intensive care units was low, which was consistent with present study results of critical unit staff nurses.

Another study (Milan Milosevic et al., 2011), median score were closer to the physical and psychological health of non-critical unit's nurses, whereas the environmental health median scores were approximately closer to the median scores of critical unit's nurses. The social health median scores precisely similar in the both the groups of nurses, which were similar in other study (Milan Milosevic et al., 2011).

This indicates that the staff nurses working are having lower levels of physical health than NCUSN. In critical units, the nature of work in the ICUs, cardiac care units, causality etc. are quite stressful. In causality, ICUs, CCUs, cardio-thoracic vascular ICU, NICU and other critical units, patients are in the acute stage of illness (e.g. road traffic accident, head injury, myocardial infraction, stroke, chronic kidney disease, diabetes mellitus with ketoacidosis etc.) where the staff nurses are engaged in a lot of physical work while caring patients.

Another component of quality of life is psychological domain. The researcher found that the mean score of the psychological health domain was lower among staff nurses posted in critical units than non-critical units.

A recent study conducted in southern part of India by Jathanna and D'Silva (2014) found that the psychological domain score was lower than the critical unit staff nurses from the present study. Whereas, another study from southern part of India by (Jose & Bhat, 2014) the nurses' psychological health domain score was higher than critical unit staff nurses and lower than the NCUSN. These results may be due to non-categorization of nurses working units by the researchers.

In a study the findings were contradicted from present study results, they reported a higher score of the psychological health domain of nurses posted in critical care than ward (Chiu et al., 2007).

Studies from European country Croatia (Milan Milosevic et al., 2011; Sorić et al., 2013), found that the psychological health domain scores were corresponding from present study participant posted in non-critical units. While, in another study (Paschoa et al., 2007), the psychological health domain score of nurses posted in intensive care units was low, which was consistent with present study results of critical unit staff nurses.

The psychological health is mostly affected by the working environment. Nurses working in critical units are exposed to verities of psychological and physical pressure related to work. Most of the time they deal with the patient at the end of life, giving CPR, delaying death by ventilator support and care of dead body. These repetitive exposure makes nurses physically and psychologically low and they may result in the development of psychological problems (Escot, Artero, Gandubert, Boulenger, & Ritchie, 2001; Gray-Toft & Anderson, 1981; Hamaideh, Mrayyan, Mudallal, Faouri, & Khasawneh, 2008).

Social health and social life are based on personal relationship with co-worker, family member and significant others; relationship with life partner; and how much support one gets from friends when required. Findings from present study revealed that the social health of staff nurses was better among non-critical units than critical units. Studies from southern part of India, conducted by Jose and Bhat (2014); Jathanna and D'Silva (2014) found that the social relationship domain score was almost equal to the score of NCUSN.

In a study the findings were contradicted from present study results, they reported a similar score of the social health domain of nurses posted in critical care and ward (Chiu 2007).

Few studies from European country Croatia (Milan Milosevic et al., 2011; Sorić et al., 2013), found that the social health domain scores were corresponding from present study participant posted in non-critical units. While, in another study (Paschoa et al., 2007), social health domain score of nurses posted in intensive care units was low, which was consistent with present study results of critical unit staff nurses.

The environmental health domain received the better scores than physical and psychological health domains, while it was equal to the social domain among critical unit staff nurses. The environmental health domain consists of eight aspects that explains the environment circumstances and ways of life of the staff nurses. These aspects are related to family and job environment, physical environment (work and living space / noise / climate / pollution / traffic), facilities of health services and chances to spend relaxed and fun time.

Although in the present study the environmental health was lower among CUSN than NCUSN but still it was found better than the other studies reported from India and other countries Jose and Bhat (2014); Jathanna and D'Silva (2014); Milan Milosevic et al. (2011); Sorić et al. (2013). This shows the geographical condition (less pollution, noise and traffic, etc.) in the present study was a favourable factor for better environmental health of staff nurses. The reason of this difference in the scores of staff nurses from CU and NCU was mainly was work environment.

In a study, the findings were contradicted from present study results, they reported a similar score in the environmental health domain of nurses posted in critical care and ward (Chiu et al., 2007). Another study conducted by Paschoa et al. (2007) among critical care nursing assistant shows even lower scores in the environmental health domains of the QOL.

Results for null **hypothesis no. four**, regarding the overall quality of life and overall perception of health among staff nurses posted in critical and non-critical units

Study findings indicated that the scores of overall QOL among CUSN were lower than NCUSN. Perception of overall QOL depends on nurses' own health, working and living environment, interpersonal relationship, and harmony with co-workers, and many more.

Studies has been reported that the critical care unit's environment was more stressful due to conflict within health care workers, and poor interpersonal relationship, also the hospital environment is risky because of a high infection rate (Jerng et al., 2017; Kelly, Kutney-Lee, Lake, & Aiken, 2013; Olson, Brasel, Redmann, Alexander, & Schwarze, 2013). Physical setup of any critical unit is very different with other hospital units/wards, they are closed, without natural light and continuous sounds of monitors and other biomedical equipment, these make a lot noise pollution (Khademi, Roudi, Farhat, & Shahabian, 2011; Khaiwal et al., 2016). These all factors collectively deteriorate the overall quality of life of staff nurses.

The overall perception of health was found equal among both, critical as well as non-critical unit staff nurses. Also, there was no significant difference found in Staff nurses from both critical and non-critical units. This indicates that, staff nurses from both, CU and NCU had similar health status. In both the settings (CU & NCU) there

are always a risk of biological, thermal, physical and chemical injury to the human body due to the presence of multiple infection, electromagnetic field and various drugs, & chemicals. In the demographic data, staff nurses had expressed about the suffering of minor illness was equal in number from CU and NCU.

Many studies from India (Gandhi et al., 2014; Joshi et al., 2006; Kane, 2009) and other countries (Humaida, 2012; Milutinović et al., 2012) have been supported present study finding, they reported that the nurses suffered from many psychosomatic illnesses. Also, stress was the reason to develop various physical symptoms such as headache, hypertension, psychogenic impotence, and digestive problems (Levenson, 2007).

The data pertaining to null **hypothesis no. five and nine** shows that staff nurses posted in critical units when shifted to non-critical unit and staff nurses posted in non-critical units when shifted to critical units have shown significant differences in the MBI-HSS subscales of burnout at baseline and 60<sup>th</sup> of change in posting.

In present study change in posting of staff nurses from critical to non-critical unit was introduced as an intervention programme. Change in posting of staff nurses from critical to non-critical unit has significantly reduced mean scores of EE and DP in 60 days, and improved mean score of PA subscale of MBI-HSS. The opposite trend was seen in staff nurses posted in non-critical units, when they were shifted to critical units, at 60<sup>th</sup> day their mean scores of EE & DP were increased and PA mean score got reduced.

It indicates that working in critical units are more challenging, it creates more physical and psychological strain over staff nurses that non-critical units. When staff nurses shifted to non-critical units, they were able to deliver nursing care more

comfortably as most patients are clinically stable, and there more opportunity to communicate with the patients which makes easy to plan nursing care, also gives a sense of job satisfaction.

Job rotation as an administrative strategy was used to train workers for new skills so that these employees can be given additional responsibilities at work, improves performance and autonomy benefit for the organisation (Cristini & Pozzoli, 2010).

Similarly, job rotation program was investigated among librarians, results has shown that the study participant were satisfied with this programme and also expressed about new skills development, more social relation with other employee during this programme, which helped in the improvement of the social health of employees (Baro, 2012).

The data pertaining to null **hypothesis no. six and ten** shows that staff nurses posted in critical units when shifted to non-critical unit and staff nurses posted in non-critical units when shifted to critical units have shown significant changes in the average scores of heart rate, GSR and skin temperature at baseline and 60<sup>th</sup> day of change in posting.

Heart rate is influenced by physical health, emotional status, environment, age, gender, drugs, altitudes etc. In present study heart rate was measured at baseline, where staff nurses were working in their respective unit i.e. critical and non-critical.

To find the effect of intervention, the heart rate of staff nurses was measured after 60<sup>th</sup> day of change in posting. Results shows that there was a significant decrease in the mean score of staff nurses when shifted from CU to NCU. These study results

confirms the relationship between mind and body, if one would affect other will inversely be affected.

Whereas, NCUSN gained in mean scores of heart rate significantly when they were shifted to CU. It has been observed that the environmental factors such as sound, social stress was the significant cause in the heart rate variability (Schnell et al., 2013). The finding of the present study was supported from the study result by D. W. Johnston and Anastasiades (1990), they found a positive relationship between heart rate and time pressure, also study subjects shown correlation in alertness and anxiety with heart rate.

Physical activity is another factor in heart rate, as a nature of the job, staff nurses have to always rush for delivering nursing care for critically ill patients, lifting of heavy weight unconscious patients and many more strenuous activities. Rennie et al. (2003) noted that HR was found to be higher (and cardiac rhythm lower) in subjects having physical activity from moderate to vigorous and during increased mental activity (Taelman et al., 2009). In a study by Vrijkotte, Van Doornen, and De Geus (2000), results have shown there was significant differences in heart rate during hectic working days and non-working days.

In a study by Bruning and Frew (1987) three intervention strategies: management skills training, meditation, and exercise were utilised for stress intervention strategies and results shows that all three interventions were effective to decrease in heart rate. In the present study, change in work posting were not only effective in decreasing psychological and physiological component, but also nurses from NCU had an exposure to CU and got experience of working with critically ill



patients. This will also help to NCUSN to manage patients in their unit if any patient becomes suddenly clinically deteriorates.

It has been evident that GSR readings significantly rises when work activity, and cognitive load level increases (Zhou, Jung, & Chen, 2015). This supports present study results, there was a significant increase in mean GSR scores of NCUSN after 60<sup>th</sup> day of change in posting to CU. Whereas, there was a reduction in mean scores of GSR value among CUSN after 60<sup>th</sup> day of change in posting to NCU.

A task or activity which require continuous cognitive load and monotonous in nature can creates stress among workers. This was found in a study conducted among drivers, there was a gradual decrease in skin temperature during a mock-up of driving exercise (Yamakoshi et al., 2008). In present study also, a similar phenomenon was seen, there was a significant decline in skin temperature of staff nurses after 60<sup>th</sup> day of change in posting from NCU to CU.

Surprisingly, baseline mean scores of heart rate (HR), GSR and skin temperature (ST) values of NCUSN became almost equal to the values of HR, GSR & ST of CUSN at 60<sup>th</sup> day of change in posting.

It indicates that, working in critical unit is more strenuous than the non-critical units which has been exhibited in the results. This difference in skin temperatures are in similar way with the GSR and heart rate, which was believed to be a component of the physiological stress marker.

The data pertaining to null **hypothesis no. seven, eight, eleven and twelve** shows that staff nurses posted in critical units when shifted to non-critical unit and staff nurses posted in non-critical units when shifted to critical units have shown significant differences in the mean scores of physical, psychological health, social

relationship, environmental health, overall QOL and overall health at baseline and 60<sup>th</sup> of change in posting.

In the studies of Preto and Pedrão (2009); Embriaco, Papazian, Kentish-Barnes, Pochard, and Azoulay (2007); Milutinović et al. (2012) most of the nurses had high stress level. In all these studies, the work environment was reported to be stressful for ICU nurses in terms of physical environment, pressure and volume of work, caring for critically ill or patient at the end of life, and observing the pain and suffering of the patients and their families. In present study researcher had intervened staff nurses and shifted their work posing form critical to non-critical and vice a versa. This change in environment has shown a significant difference from baseline to 60<sup>th</sup> day of change in work posting.

In present study component of the PBD burnout level had significantly reduced and psychological domain of QOL had a significant improved among CUSN when shifted to NCU. In an investigation by HemmatiMaslakpak, Farhadi, and Fereidoni (2016) showed that after the implementation of the Neuro-linguistic programming (NLP) strategies, level of stress was significantly reduced in experimental group.

Study by Ho, Chang, Shih, and Liang (2009), job rotation was found an effective strategy and found a positive effect on work satisfaction, institutional commitment. Work satisfaction had shown positive relationship with QOL of nurse (Cimete, Gencalp, & Keskin, 2003). Similarly, the present study findings indicated that there is an improvement in QOL of staff nurses when shifted from critical units to non-critical units.

## **Chapter 6**

### **CONCLUSION**

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Stressful experiences at the workplace may exhibit themselves in a variety of psychological and behavioral reactions.

Normally, an employee can manage stress for a short duration through changing situation, or by managing his or her reaction to the stress. Many times, this kind of situations keep going on in the life, but if it goes for longer duration, and unable to cope up the situation, the individual shows the sign and symptoms of stress.

Negative emotions, tension, worry, and depression are some of the first signals of such a stressful situation, and may be accompanied by impaired cognitive functions and performance capacity. Further behavioral change, such as avoidance of, or escape from, the situation, either physically or mentally, may follow. Many reactions of this nature are evident only to the closest members of the sufferer's family. That is why work-related problems often develop into major psychological, behavioral, or physical disorders with consequent problems in relation to occupational functions.

The researcher's aim to study the difference of psycho-behavioral determinants affecting quality of life of staff nurses posted in CU & NCU and effects of change in posting from critical to non-critical units and vice a versa.

The finding of the study showed that there were significant differences in the component of psycho-behavioral determinants which includes burnout and behavioral responses of the body (heart rate, GSR, & skin temperature) while working in CU and NCU which also affected the quality of life of staff nurses. At baseline, majority of staff nurses were in moderate levels of burnout scores in MBI-HSS. But, the mean

score of subscale MBI-HSS among CUSN was significantly higher than NCUSN. Similarly, mean scores of heart rate & GSR were higher and skin temperature was lower among CUSN than NCUSN, which had shown significant differences in independent t test results.

The mean scores of domains of QOL were significantly high among staff nurses posted in non-critical units than critical unit. Also, the mean score of overall QOL was significantly high among non-critical unit staff nurses.

The study revealed that the change in posting of staff nurses from the critical unit to non-critical unit had significantly reduced burnout score in subscale of MBI-HSS (EE, DP), heart rate and GSR and improved personal accomplishment, skin temperature and QOL.

Reversely, this change in posting had significantly increased burnout score in subscale of MBI-HSS (EE, DP), heart rate and GSR and reduced personal accomplishment, skin temperature and QOL. But, after re-shifting to the original unit, NCUSN had reduced in burnout scores (EE, DP), heart rate, GSR and improved in PA, skin temperature and quality of life at 30<sup>th</sup> day. Similarly, CUSN when re-shifted to their original units, were able to maintain almost same mean scores in the subscale of MBI-HSS, heart rate, GSR, skin temperature and QOL.

Change in posting is a new approach to reduce psycho-behavioral problems and help in the improvement in QOL of staff nurses working in critical areas. It has been also observed that the NCUSN developed psycho-behavioral problems during two months of posting in critical units, but after returning to their original unit at the 30<sup>th</sup> day they were recovered to previous state.

## **Chapter 7**

### **SUMMARY**

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This chapter gives a summary of the study, implications and recommendations.

**Statement of the problem:**

Psycho-behavioral determinants affecting quality of life of staff nurses posted in critical vs. non-critical units.

**Objectives of the Study:**

1. To find out baseline differences in psycho behavioral determinants of Staff Nurses posted in critical and non-critical units.
2. To find out baseline differences in Quality of life of Staff Nurses posted in critical and non-critical units.
3. To find the effect of change in posting on Psycho-behavioral determinants among Staff Nurses posted in critical units.
4. To find the effect of change in posting on Quality of Life among Staff Nurses posted in critical units.
5. To find the effect of change in posting on Psycho-behavioral determinants among Staff Nurses posted in non-critical units.
6. To find the effect of change in posting on Quality of Life among Staff Nurses posted in non-critical units.

## Hypotheses

1.  $H_0$  Staff nurses posted in critical units will not differ in their mean scores of sub scales of MBI-HSS than those posted in non-critical units.
2.  $H_0$  Staff nurses posted in critical units will not have difference in value of heart rate (HR), galvanic skin response (GSR) and skin temperature than those posted in non-critical units.
3.  $H_0$  Staff nurses posted in critical units will not differ in mean scores of domain wise quality of life than those posted in non-critical units.
4.  $H_0$  Staff nurses posted in critical units will not differ in mean scores of overall quality of life and overall health than those posted in non-critical units.
5.  $H_0$  Staff nurses posted in critical units when shifted to non- critical units will not differ in mean scores of MBI-HSS sub scales of burnout.
6.  $H_0$  Staff nurses posted in critical units when shifted to non- critical units will not differ in mean score of heart rate, galvanic skin response (GSR) and skin temperature.
7.  $H_0$  Staff nurses posted in critical units when shifted to non-critical units will not differ in mean scores of quality of life-physical, psychological, social and environmental domain.
8.  $H_0$  Staff nurses posted in critical units when shifted to non-critical units will not differ in mean scores of overall quality of life and overall health.
9.  $H_0$  Staff nurses posted in non- critical units when shifted to critical units will not differ mean scores of MBI-HSS sub scales of burnout

10.  $H_0$  Staff nurses posted in non- critical units when shifted to critical units will not differ in mean scores of heart rate, galvanic skin response (GSR) and skin temperature.
11.  $H_0$  Staff nurses posted in non- critical units when shifted to critical units will not differ in mean score of quality of life - physical, psychological, social and environmental domain.
12.  $H_0$  Staff nurses posted in non- critical units when shifted to critical units will not differ in mean score of overall quality of life and overall health.

### **Methodology**

In this study quantitative research approached was utilized as the researcher's aim to study the difference of psycho-behavioral determinants affecting quality of life of staff nurses from CU & NCU and effect of change in posting from critical to non-critical units and vice a versa.

The tools used for the data collection were, demographic proforma to collect personal and professional characteristic of staff nurses, MBI-HSS to assess the burnout level, WHOQOL-BREF to assess quality of life and computerised stress profile test (CSPT) to measure heart rate, GSR value and skin temperature of study participants posted CUs and NCUs. Permission was obtained to use tools form the concern author(s). All the tools and instruments were standard and used them without any modification.

The study was conducted in selected tertiary care level, 750 bedded teaching Hospital after taking approval from administrative authorities of the institution. This study included fifty subjects from each critical and non-critical units. All the staff

nurses were screened for inclusion and exclusion criteria. On every fourth week of month nine staff nurses from CUs and nine from NCUs were selected with simple random technique. All the participants were explained the nature and purpose of the study and those who provided the consent were requested to sign a written consent form.

All the selected staff nurses were requested to fill demographic proforma, MBI-HSS and WHOQOL-BREF to fill and then computerised stress profile test (CSPT) was done. Staff nurse was given the name of the unit in which his/her duties were shifted for two months. At the interval of 15 days, staff nurses were contacted and requested to fill MBI-HSS and WHOQOL-BREF questionnaire and in the 4<sup>th</sup> week of second month second computerised stress profile test was repeated. After re-shifting of staff nurses in their original unit, they were requested to fill MBI-HSS and WHOQOL-BREF questionnaire at 15<sup>th</sup> and 30<sup>th</sup> day. Data was analysed and interpreted by using descriptive as well as inferential statistics. Statistical analysis was done with the help of SPSS-22 for Windows.

**Results:** Following were the major findings of this study:

- The mean age of CUSN ( $31.35 \pm 4.4$ ) was almost similar with NCUSN ( $31.89 \pm 4.6$ ) staff nurses. Gender wise distribution of participant was equal from CUs and NCUs. Regarding marital status, the proportion of married staff nurses was equal from critical units (72%) and non-critical units (76%). Those, who were married had almost similar proportion in terms of number of child in CUs and NCUs. Almost all the staff nurses from CU and NCU had financial responsibility for their



family. Majority (CUSN 54%, NCUSN 64%), belonged to nuclear family. A very few (8%) had a habit of smoking/ alcoholism/ tobacco uses. Majority (86%, 96%) staff nurses reported that their residence was 1 – 4 kilometre away from the hospital among CUSN and NCUSN respectively.

- All the staff nurses from critical unit had GNM (diploma) as their professional course, whereas ninety percent of staff nurses
- Regarding professional qualification, almost all (100%, 90%) staff nurses had GNM diploma course in CU and NCU respectively. The mean scores of work experience was almost in CUSN and NCUSN. Also, work experience in present unit had showed similar proportion in CU and NCU staff nurses. Fifty percent critical unit staff nurses expressed that they got 1 to 2 patient assignment during work, whereas another fifty percent expressed of 3 to 5 patients. A less number (20%) of NCUSN reported of 3 to 5 patient assignment and majority (80%) got 6 to 10 patient's assignment. Majority (66%, 60%) staff nurses were suffering from health problem in CU and NCU respectively.
- All the demographic variables did not showed significant difference between CUSN and NCUSN, except average daily patient assignment to staff nurses in their respective units. Thus, it is established that both the groups did not differ in their selected personal variables and they were equivalent in this regard before the change in work place.
- At baseline critical unit staff nurses (CUSN) demonstrated a higher mean scores of emotional exhaustion, depersonalization and lower mean score of personal accomplishment as compared to the mean scores of non-critical unit staff nurses (NCUSN).

- At baseline CUSNs had significantly higher mean scores in EE, DP and lower mean score in PA subscales of MBI-HSS than the staff nurses posted in NCUs. But majority of staff nurses were in moderate level of burnout in EE and DP subscales of MBI-HSS. While in Personal Accomplishment (PA) subscale, large number of staff nurses were in high level from CU than NCU. This indicated that the nurses posted in CU had more burnout than in NCU.
- The mean scores of heart rate, GSR value were significantly higher and mean scores of skin temperature were significantly lower among CUSN than NCUSN.
- Staff nurses posted in critical units had shown higher mean scores in all the four domain (physical, psychological, social and environmental) of quality of life in comparison with the staff nurses posted in non-critical units. These difference were significant statistically. Even, overall QOL had a significant higher mean score in NCUSN than CUSN but, in response to perception of health, staff nurses posted in CU and NCU were significantly not differed.
- Change in the posting of staff nurses from critical units to non-critical units had significantly reduced the burnout scores in all the subscale of MBI-HSS at 60<sup>th</sup> day ( $p<0.05$ ).
- There was a significant reduction in mean score of heart rate and GSR value and raise in mean score of skin temperature of staff nurse at 60<sup>th</sup> day of change in from critical to critical unit.
- The mean scores of all the domains (physical, psychological, social and environmental) of QOL of staff nurses were significantly increased after shifting to non-critical unit at 60<sup>th</sup> day. Similar changes were observed in the mean scores

of overall quality of life, whereas there was no significant difference in the overall health status.

- Change in the posting of staff nurses from non-critical units to critical units had significantly increased the burnout scores in all the subscale of MBI-HSS at 60<sup>th</sup> day ( $p < 0.05$ ).
- There was a significant rise in mean score of heart rate and GSR value and decrease in mean score of skin temperature of staff nurse at 60<sup>th</sup> day of change in from non-critical to critical unit.
- The mean scores of all the domains (physical, psychological, social and environmental) of QOL of staff nurses had significant reduction after shifting to critical unit at 60<sup>th</sup> day. Similar changes were observed in the mean scores of overall quality of life, whereas there was no significant difference in the overall health status.
- It was concluded that staff nurses posted in critical unit had higher scores of burnout and physiological behaviour of the body in responses to stress than the staff nurses posted in non-critical unit. Also, change in posting of CUSN had helped in reduction in burnout and component of Computerised stress profile.

## **Limitations**

- Study was partially based on a self-report questionnaire, which were administered every 15<sup>th</sup> day. Hence, some responses, possibly would have chances of biasness.
- At the time of computerised stress profile test, confounding factors (e.g. issue at the workplace or in personal life that could have been affected the results of CSPT) were partially explored from study participants.
- Each study participants were observed for 2 months during a change in posting and only one month after re-sifting to their original unit which could have been done for 2 months of period to measure post effects of change in the posting. Also, the computerised stress profile test was done only at two points (at baseline & 60<sup>th</sup> day in change in posting) which could have been repeated after re-shifting of staff nurses in their original unit.
- Time duration for follow-up assessment was only for one month after re-shifting of staff nurses.
- Personality variables were not measured, that could have been influenced on the results.
- Very limited literature were available to support the study results, especially the findings of CSPT.

## **Implications**

The implications made in the study are vital concern to the nursing practice, nursing education, nursing administrator and nursing research.

**Nursing practice:** Several implications can be drawn from the present study for nursing practice. Continue education programmes based on prevention and management on workplace related stress, techniques to manage their work life.

The findings of the study showed that the imparting educational programme regarding soft skills development, communication, interpersonal relationship, organisation of work environment, time management and development of coping mechanism.

**Nursing Education:** Education is a key component to update and improve the knowledge of an individual, make a healthy personality with a positive attitude. Education in nursing has a vital role to play. Since; today's nursing students are tomorrow's staff nurses, educators, administrators and supervisor. The nurse educators have the additional responsibility not only in imparting of knowledge and skills, but also making them psychologically strong to work in different settings of hospital areas and face the challenges of professional as well as personal life. During student life teaching of yoga, developing a habit of exercises and certain sports activities that will help to maintain healthy Neuro-endocrine system of the body.

**Nursing administration:** Nursing administration has a big role to keep the nurses free from stress at certain levels. A periodically survey of nurses regarding their work related issues and also resolving in a given due time frame.

A job rotation policy can be framed for all the staff nurses, in which everyone will work in a different unit for a period of 2 months. This will improve knowledge and skill, social relationship and a break from working in the same environment.

This strategy can help in manpower management, staff nurse those who got experience of working in a different units can be posted in that unit to manage sudden manpower crisis. It will also improve the coping strength of non-critical unit staff nurses, when they will get posting in critical units.

**Nursing research:** This topic has great relevance to the present day complexities of the healthcare system. The Psycho-behavioral is a dynamic subject, it changes person to person, and each situation of life event can change psychological health of nurses. So ongoing research with different strategies for keeping a healthy level of psycho-behavioral aspect and better quality of life of nurses can be conducted which will help in achieving institutional goal.

## **Recommendation**

The results support that staff nurses working in critical areas had higher level of stress which results in different psycho-behavioral outcomes in terms of burnout, poor quality of life and impaired physiological parameters which includes heart rate, GSR and skin temperature. Keeping in view the findings of the present study, the following recommendations are proposed for future research:

1. A comparative study to assess the level of PBD and QOL in different units of hospital among health care workers.
2. A prevalence study of nursing error related to burnout at work place among health care workers.
3. A comparative study can be conducted with different strategies to prevent burnout among health care workers.
4. An experimental study can be conducted to find out the effectiveness of cross over posting and quality of work outcomes.
5. A quantitative study can be carried out to identify different stressors at work place among nurses.
6. An experimental study can be conducted to find the effectiveness of biofeedback among nurses experiencing stress.
7. In present study Psycho-neuro-physiological component was measured to assess the effects of working in critical and non-critical units, but one more component, i.e. immune system which is also get affects when an individual work in a stressful atmosphere. So, research study can be taken to assess the impact of working in such situation on the immune system.

8. Research study can be performed on bio-chemical and hormonal changes while working in critical and non-critical units. In the present study, washout period was not taken as this study was mainly based on psycho-physiological parameters. In future studies along with psycho-physiological, bio-chemical & hormonal as a main variable can be used.
9. In the present study, it was observed that staff nurses after a change in posting to critical units from non-critical units has raised in burnout level and their quality of life was reduced from baseline, so it will be recommended to add some strategies to maintain their psycho-behavioral variable at baseline level. Diaphragmatic breathing, yoga, which have been scientifically proved method to reduce psycho-behavioral variables at a healthy level.
10. The present study was with main objective to find out the difference in psycho-behavioral determinant affecting quality of life and the effect of change in posting of staff nurses from the critical unit to non-critical unit and vice a versa. In future, study can be planned to find the relationship between PBD, QOL of staff nurses and personal variables.
11. One of the determinants of health is personality, in the present study the type of personality assessment was not done. A study to assess the effects and relation of personality traits can be performed on PBD and QOL of staff nurse.
12. An exploratory study can be conducted to measure existing communication channel and its impact on PBD and job satisfaction and job outcome.
13. A human being cannot stop the influence of effect of personal life on the occupational life and vice a versa. Nowadays, the main source of communication is a cell phone and social networking. The PBD can be



measured by the case control method, staff nurses with cell phone on duty and without Cellphone on duty.

14. Present study was carried out with three months of duration which included, two months of change in posting and 1 month of follow-up in the original unit. A longitudinal study can be conducted to assess long term impact of change in the posting on PBD and QOL of staff nurses.