DOI: https://doi.org/10.53350/pjmhs22163295

ORIGINAL ARTICLE

Effect of Cognitive Behavioral Therapy (CBT) Based Intervention on Resilience and Burnout among Staff Nurses Working in Critical Care Departments

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ABSTRACT

Objective: The purpose of this study was to evaluate the effect of cognitive behavioral therapy (CBT) based intervention on resilience and burnout variables among staff nurses working in critical care department of the healthcare setting.

Background: In the healthcare setting, emergency department is extremely risky unit where atmosphere frequently becomes unpredictable. In this environment emergency staff nurses most of the time taking persistent stress effect on mental well-being which lead to exhaustion. In critical care department's nurses have potentially affected by anxiety due to stressful environment and workload which is the leading factor of negative outcome and result in burnout. Cognitive behavior therapy-based intervention (CBT) is one of the effective intervention to decrease self-reported burnout, as well as increased resilience

Methods: A convenient sampling technique was performed collecting the demographic data and information during the face to face interview of 50 working nurse's staff. The educational interventions, consisted of 08 manualized weekly 60-minute sessions. Data were collected at baseline and after intervention that measured stress, depressive symptoms, anxiety, healthy lifestyle beliefs and behaviors, and job satisfaction. Simple descriptive, paired sample T-test and Wilcoxon signed Rank test was applied for data analysis.

Results: The intervention group scored significantly better with moderate to large positive effects on the burnout and resilience variables as well as healthy lifestyle behaviors after the 08 weeks of interventional sessions.

Conclusions: The CBT including direct educational sessions has excellent potential as evidence-based interventions for improving the mental health, healthy lifestyle beliefs and behaviors related to job satisfaction in working staff nurses of emergency department.

Keywords: Cognitive behavior, interventions, Burnout, Resilience, Nurses.

INTRODUCTION

Nurses are the heart in the health care providing systems which are involved in many crucial tasks like attending patients in emergency room where they present in minor to severe injury, taking medical and medication history. In the healthcare setting, the extremely risk departments are critical care department where atmosphere frequently unpredictable [(1)]. In this environment staff nurses most of the time taking persistent stress effect on mental well-being which lead to exhaustion.

Nurses provide care to their clients round the clock and they served them with great comfort and ease. Professional stress is the element that is faced by all the nurses during their workplace due to numerous social, environmental elements. They also faced severe psychological grievances such as stress and troubling complaint [(2)]. So they faced many episodes of anxiety, depression, and fatigue during their professional life.

According to Ramalisa, & Du Plessis, (2018) nursing career is considered to be difficult and adjustment with it is considered to be stressful. There are numerous contributing factors that lead to burnout situation among nurses. [(3)] These include, lengthy working hours, duty rotation round the clock as well as in other departments, facing and handling extreme emergency, compliance with the client expectation, sleeplessness and taking care of their own family along with job descriptions.

In critical care department nurses have potentially affected by anxiety due to stressful environment and work load which is the leading factor of negative outcome and result in burnout. Burnout in healthcare professionals has been linked to threats to patient safety and overall nurse's well- being. [(4)]

Nurses are exposed to the higher levels of occupational, physical, and mental stresses in critical care units than the nurses in other units of a hospital. [(5)] The consequence of this study is that nurses required cognition, competency, skills and behavioral expertise to manage day-to-day clinical setting issues and problem.

CBT based interventions have been recognized as suitable and reasonable components to reduce burnout and improve flexibility in staff nurses. Burnout is a psychosomatic disorder developing in response to continued long-lasting anxiety among staff nurses related to environment. [(6)].

Psychological pressures and job tiredness can have a negative impact on professional satisfaction and patients concerned. To reduce the psychological pressure, resilience is the more important source to make familiar in every kind of situation. [(7)] . Resilience allow the nurses to take decision to handling critical patients for the improved the quality of patient care which effect on departmental performance.

Increasing resilience significant area up-to-the-minute avoiding and handling psychosomatic harms, consequently the unique key of the management of the burnout is the resilience. Therefore, in critical care department the importance of resilience desired to accomplish organizational goal with also effectiveness of performance. [(8)] .

As cited by Jafarizadeh et.al (2017) despite the career opportunity and noble recognition among community, the health care professional (HCPs) faces many hardships at their workplace. All the HCPs need to be vigilant and watchful during their work shift therefore they may face physical, emotional and psychological disturbances. Continuous and restlessness duty hours can cause stress, anxiety and sleep disturbances among them. Moreover, the management of these critical care department, circumstances, and every day changing path physiology of the prevalent diseases also put them in trouble. [(9)]

For the purpose of improving quality patient's care with departmental performance is essential to provide suitable working environment, counseling sessions, and psychological intervention. Cognitive behavior therapy-based intervention (CBT) is one of the effective interventions to decrease self-reported burnout, as well as increased resilience. [(10)]

Therefore, there is a need to conduct an interventional study to evaluate the effect of CBT based educational intervention on burnout and resilience of nurses working in critical care areas of city District Hospital in Pakpattan, Punjab. There is a dearth of literature and limited data is available from Pakistani population regarding the interventional study based on cognitive behavioral therapy among staff nurses working in critical care department. Therefore, this study was designed to explore to assess the level

of burnout and resilience among staff nurses working in critical care department and to assess the effectiveness of cognitive behavior therapy based educational intervention on burnout and resilience among staff nurses working in critical care department.

METHODOLOGY

Quasi-experimental study design was adopted enrolling working staff nurses of a tertiary healthcare of Punjab; this study was conducted in City Medical Hospital District Pakpattan, Province Punjab. This tertiary healthcare setting is a 150 bedded hospital that care's referral patients of adjacent territories of this district. It has a state of the art emergency department that is highly equipped and very well supported by doctors, staff nurses and paramedical staff. A convenient sampling technique was performed collecting the demographic data and information during the face to face interview of working nurse's staff.

Inclusion criteria: Female nurses, aged between 20-50 years of age, with any level of nursing education (e.g diploma or generic nursing), who had at least one-year experience of working in trauma/ emergency, intensive care unit, and cardiac care department were included in the study. Additionally nurses of general surgery critical care unit, cardiac surgery, and neuro intensive care unit were included to complete sample size. Preferably nurses who were working in morning shift and who were willing to attend additional educational session related to topic of research during research period were included.

Exclusion Criteria: Nurses with expectant date of delivery, who were already certified in coping strategy, stress management and nurses who are teaching psychology to BSN student were excluded from the study.

Data variables, interventions and data collection: The demographic form consisted of 4 items, (age, qualification, total years of service, years in recently working unit and income per month). Data were collected from participants through personally distributed structure questionnaire. The survey questionnaire was related to burnout rating scale and resilience rating scale assessment among staff nurses working in critical care department.

Interventions were given during morning shift in auditorium of selected research setting. Participants were reminded for not to attend any additional educational session regarding specialty of practice to avoid the interference of confounding factors.

Questionnaires were distributed to participants for pre knowledge assessment. Then primary investigator assessed participants for burnout and resilience competences by using burnout and resilience observation checklist. Eight week CBT based educational intervention were provided to participants by primary investigator under the supervision of an expert of relevant field.

Eight-week sessions consisted of face-to-face PowerPoint lecture, audio-visual (AVD) demonstration and role modeling. Lecture and AV demonstration was consisted of components of the CBT techniques focused reduce the burnout. After completion of CBT based educational session and audio-visual demonstration, lectures, home assignments and also role modeling participants was taught for reduction of burnout and enhance self-competences skill. After eight weeks of CBT based educational sessions, participants' was reassessed to effect of CBT on burnout and resilience.

Data analysis/ statistics: The data was entered and analyzed in SPSS V.20. For quantitative variables mean + SD was computed. Histogram was made. For qualitative variables frequency and percentage were calculated. Pie chart or bar chart was made. Paired sample T-test, / Wilcoxon signed rank test were applied to compare burnout and resilience score. A P-value <0.05 was considered statically significant.

RESULTS

A total of 100 participants were approached, of those 68 responded voluntarily and of those 50 met to the inclusion criteria. All the respondants were females, majority 23(46%) were aged between 20-35 years. The details are given in table 1.Results showed that 27(54%) were having Diploma in nursing as qualification, 11(22%) had Bachelor degree holders and 12(24%) were having Generic nursing AS terminal degree. Upon acquiring the information pertaining to Job Experience of participants 26(52%) had less than 3 year experience and 20% (10/50) had more than 05 year experience. The details are provided in table 1.

Table 1:

Variable	Category	n(%)
Gender	female	50(100%)
Age	20-35	23(46%)
	36-50	14(28%)
	> 50	13(26%)
Eexperience	0-2	26(52%)
	3-5	14(28%)
	>5	10(20%)
Qualification	Post RN	27(54%)
	Generic Nursing	17(34%)
	Diploma in nursing	27(54%)
Marital status	Single	17(34%)
	Married	33(66%)
Income	40-50	23(46%)
	51-65	17(34%)
	More than65	10(20%)

*All the respondant were female, Post RN= Degree in advance nursing after diploma of nursing.

The results showed that Burnout scale behavior among nurses who were working in emergency department providing direct patient care, 70 percent (n=36) of nurses reported 16-25 score which represent "**some attention needed, you may be a candidate**" during their work in hospital (table 2) after interventions compared to 07(14%) pre-interventional. Similarly,14(30%) reported the behavior as "**You are on the road to burnout, make changes now**" post-end of interventions compared to 31(62%) of pre-interventional score. An overall mean (SD) remained 23.94(4.1) of post-interventional compared to 32.14 (5.3) of pre-interventional score with a p-value of <0.05 showing a significant difference. Table 2 shows the detailed results of Burnout scale.

Table 2: Burnout questionnaire domain ranges, score and analysis.

Burnout Domains	Burnout Score	PRE N(%)	POST N(%)	PRE Mean(SD)	POST Mean(SD)	*P-value
You are doing well.	0-15	00(00)	00(00)			
Some attention needed, you may be a candidate.	16-25	07(14.0)	36(70.0)	32.14± 5.32	23.96± 4.06	0.000
You are on the road to burnout. Make changes now.	26-35	31(62.0)	14(30)			
You need to take action immediately your health and well-being are threatened	36-50	12(24)	00(00)			

Burnout score ranges: 0 – 15: You are doing well, 16 – 25: Some attention needed, you may be a candidate, 26 – 35: You are on the road to burnout. Make changes now, 36 – 50: You need to take action immediately - your health and well-being are threatened. SD= Standard deviation. * Paired sample T-test.

Wilcoxon signed-rank test: (W-SR) for Burnout variables, showed higher mean rank (27.96) of Post-intervention vs lower rank (14.28) of Pre-interventions with; **Z**=-4.860 and **p**=0.000. The sum of ranks for Post-interventions was 11.46.50 compared to 128.50 of Pre-interventions.

Resilience variables: Results pertaining to resilience variables describe that the staff nurses were found specifically variation regarding their job experience and incoming status effected on their level of resilience. Staff nurses who were working in critical care department show strong level of resilience after educational intervention. Large proportions of hospital (n=49) showed "**developing of resilience**" resilience in pre-interventional group vs post-interventional (n=09) nurses who provide direct patient care were dissatisfied with their health care benefits. A total of 41 nurses reported "**strong level of resilience**" in post-interventional group compared to 00 nurses of pre-interventional results. An overall, mean (SD) of post-interventional group remained 38.16(4.59) compared to 25.40(3.83) of pre-interventional group (P-value< 0.05) (Table 3).

Table 3: The questionnaire domain ranges, score and analysis of resilience

Resilience domain	Score	Pre n(%)	Post n(%)	Pre mean(SD)	Post mean(SD)	*P-value
Developing resilience	0-18	01	00			
Established resilience	19-34	49	09	25.40(3.83)	38.16(4.59)	0.000
Strong level of resilience	35-50	00	41			

Resilience scale ranges: 0 – 18: Developing resilience, 19-34: Established resilience, 35-50: You are on the road to burnout. Make changes now, 36 – 50: Strong level of resilience. SD= Standard deviation. * Paired sample T-test.

Wilcoxon signed-rank test: (W-SR) for Resilience variables, showed lower mean rank (0.00) of Post-intervention vs lower rank (25.50) of Pre-interventions with; **Z**=-6.9 and **p**=0.000. The sum of ranks for Post-interventions was 0.00 compared to 1275 of Pre-interventions.

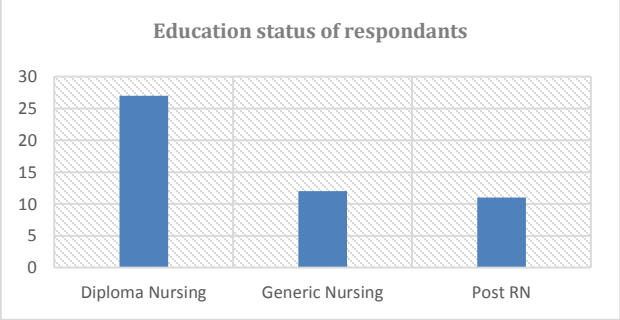

Figure 1: Educational/ Qualification status of respondents

DISCUSSION

This research was intended to assess the impact of cognitive behavioral therapy (CBT) based intervention on resilience and burnout variables related to nurses working in emergency department of a tertiary healthcare setting. The results are encouraging that shows that short training sessions of cognitive behavioral therapy based educational interventions was effective in reducing burnout and increase level of resilience among staff nurses working in emergency department. In emergency and other critical care department nurses have potentially affected anxiety due to stressful environment. Burnout in healthcare professionals has been linked indirectly to the patient safety and overall nurses' well-being. In this research positive impact was found in the decrease the level of burnout as well as increase resilience.

One similar survey based study has concluded that techniques of mindfulness behavior had an impact in reducing burnout and increase resilience among staff nurses [11] The target population of this study comprised of staff nurse currently working in critical care department in City Hospital Pakpattan. The sample was taken from all critical care departments. The total number of respondents comprising the sample was 50 staff nurses ranging between 1-10 years of experience. The effect of cognitive behavior therapy education was computed through paired sample t-test and Wilcoxon-sign rank test.

Connor-Davidson Resilience Scale (CD-RISC): In this research, the results showed that there was a greater chance of developing resilience due to the stressful/ life-threatening atmosphere related to critical and accidental patient's care. It also influenced self-care among critical care staff nurses contrary to the study of Gillman, Adams, Kovac, Kilcullen, House, and Doyle (2015) concluded that resilience was not an opportunity to deal with harmful situation for emergency nurses.

There was an overall significant difference (p-value <0.05) in resilience parameters pre and post interventions. Now a day's resilience is the power of nurses that enables them to prevent life threatening condition and also thoughtful resilience can raise the ability of nurses to recognize and avoiding harmful situation. Moreover, resilience can improve self-awareness to accomplish individual and proficient progress, increase internal asset.

Burnout variables: This study shows that the burnout variables' score after cognitive behavioral therapy were slightly lower compared to another research's findings of Moss.et al(2018) which was the score of burnout after mindfulness intervention was a significant difference. Burnout syndrome most probably found in all types of healthcare workers and prominent staff nurses working in critical care department. All the HCPs needs to be vigilant and watchful during their work shift therefore they may face physical, emotional and psychological disturbances [11]

Despite the career opportunity and noble recognition, the staff nurses working in critical care department face many hardships at their workplace. Continuous and restlessness duty hours can cause stress, anxiety and sleep disturbances among them. Moreover the management of emergency circumstances and every day changing pathophysiology of the prevalent diseases also put them in trouble. Infectious diseases such as COVID-19 further deteriorate the ongoing management of the patients due to fear of being contracted by the HCPs.

Strengths of the study: A meaningful strength of this study was that the design was adapted based on the needs of the ICU, CCU, and emergency nurses and the use of educational intervention group. This study conducted face to face interviews following audio/ video educational interventions including the demonstrations/ lectures for a period of continuous08weeks.Studies that use intervention group with exposures are more likely to report a burnout syndrome and low resilience level according to predate survey. This research was a based on voluntarily participations of the respondents. It may be considered a voluntary trial that required informed consent for participation. Finally, we used self-report surveys to measure Resilience and Burnout rating scales.

Limitations of the study: This research was conducted within one healthcare organization include a small group of staff nurses who were working in critical care departments. Participants were only female nurses. Consequently, the results of this study may not be

representative of the other healthcare organizations. Insufficient resources, short period/ time and also included the difficulties in performing job responsibilities to unsure the progressive organization outcome. Therefore, there is a need to adopt policies include intervention to decrease stress and improve resilience among staff nurses working in critical care department. Advanced Practice Professionals and nurse managers have been included in previous studies along with registered nurses, limiting the ability to associate results specifically to populations of RNs. Unique studies involving these populations need to be explored. Improvement in resilience scores from a sample of RNs enduring the impact of a pandemic cannot go unnoticed. Most studies cannot assess the relationship between interventions and outcomes in the time of crisis.

Implication and future research: To lessen nurse burnout efficiently and increase resilience, in charge of the critical care department should active assessment and communicate in proper memorandum. Furthermore, initiation a constructive working situation and encouraging a healthy lifestyle are also suggested. On the other hand also need to take steps like educational activity, practical attending conferences related to such techniques for reducing burnout and establishing resilience through administration. Reward technique stimulates to the critical care department staff nurses to cope harmful environment. Working environment should be improved. There should be proper dieting plan. There should be some motivational session for health professionals. Management must to provide sources to health professionals for improving their professionalism.

CONCLUSION

This study conclude that shorts educational sessions of cognitive behavioral therapy (CBT) shows a positive impact on improving the self-care behavior of nurses that enhanced knowledge related to reduction of burnout and resilience. Resilience allow the nurses to take decision to handling critical patients for the improved the quality of patient care which effect on departmental performance. This awareness fuels a response. This project achieved a statistically significant decrease in Burnout scores and increase in resilience score among a small population of critical care department nurses and there exist a significant difference between burnout and resilience score pre and post-interventional behaviors.

Ethical permission: The guidelines and protocols established by the ethical committee of The University of Lahore were followed while conducting the research and the rights of the research participants were respected. A written informed consent (appendix) was obtained from all the participants. All information and data collection were kept confidential. The participants remained anonymous for skill observation throughout the study. The subjects were informed that there are no disadvantages or risks of participation in study. They were also informed that they were free to withdraw at any time during the process of the study.

Acknowledgement: Research was done at city medical complex hospital Pakpattan, province Punjab. This article derived from MScN thesis at The University of Lahore. The author wishes to thank the supervisor and all representative of research committee along with principle of the University of Lahore.

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