

Research Article

THE RESILIENCE, PSYCHOLOGICAL FACTORS AND PERCEIVED BURDEN AMONG CRITICAL CARE NURSING PROFESSIONALS WORKING IN ICU, NATIONAL GUARD HOSPITALS, RIYADH, KSA

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Abstract: The aim of the study was to assess the levels of burden among nurses working in intensive care units and role of resilience among the staff nurses working in various areas of Intensive Care Units (ICUs), at the National Guard hospital, Riyadh, Saudi Arabia. **Objectives:** 1. To determine the demographic variables among nurses working in the ICUs with burden variables. 2. To assess the relationship between the resilience and burden level of ICUs nurses. 3. To compare the resilience scores among nurses across different areas. **Methodology:** A descriptive, and comparative design was used achieve the aim of the study. A convenience sample was used to collect data. The subjects of the study were nurses from all critical care areas of both King Abdulaziz Medical City (KAMC) and King Abdullah Specialized Children Hospital (KASCH) in Riyadh. **Results:** The results indicated that there were significant relationship between resilience and burden variables which is consistent with previous studies.

Keywords: Nurses, Intensive care units, Resilience, Burden and Stressors.

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INTRODUCTION

All health care professionals face many stressors within their everyday work, and they are continuously exposed to adverse environments. Specifically, critical care specialists are exposed to severe occupational stressors such as time pressure, reduced social support at work, excessive workloads, moral and spiritual distress related to ethical issues, uncertainty concerning patient treatment and high risk to develop negative emotional responses due to exposure to suffering and dying patients [1-5]. In fact, intensive care units (ICUs) can be considered as stressful workplace in which it is likely to develop burnout syndrome [6, 3, 7]. The estimated prevalence of burnout among critical care nurses and physicians ranges from 25% to 80%, and the average severity ranges from mild to severe [8].

There are already critical care societies that have made a call for action. As a result, critical care professionals are at high risk of suffering from this syndrome, which may, in turn, have a substantial influence on their health and the quality of care provided. Nursing stress is a problem that affects practice worldwide. The burden in the work setting is a harsh response physically and emotionally when nurses'

skills, resources, and needs could not fulfill the requirement of the job. Working in critical care areas is considered a challenging task both physically and psychologically, especially for nurses who are continuously faced with specific work demands as well as the risk of job stress [9].

Resilience is a concept that refers to an individual's ability to bounce back or positively respond to adversity [10, 11]. Resilience is also understood to be a psychological mechanism that can thwart post-traumatic stress disorder (PTSD) and is recognized as one of the most significant factors for a healthy adjustment after trauma [12, 13].

Although some personality traits promote resilience, resilience can also be learned through cognitive and behavioral interventions [14, 15]. Psychological characteristics of resilience that can be learned include positive coping skills, engaging the support of others, optimism, humor, and cognitive restructuring. The work environment influences the ability to maintain resilience in nursing, and the lack of this ability can result in negative psychological outcomes [16].

Resilience points to the dynamic process that results in the adaptation in the context of significant adversity [17]. Although the concept of resilience has been of interest for many years, it is somewhat new to the nursing profession. The capacity to transcend adversity and transform it into an opportunity for growth offers a valuable framework for working with diverse individuals and challenging situations [17].

ICU nurses with existing high levels of resilience are significantly less likely than those with low levels to experiencing PTSD, anxiety, depression, and burnout syndrome [18, 14] because resilience mediates in some manner the potential impact of the traumatic event. In contrast, ICU nurses with symptoms of PTSD have reported problems with relationships, general life satisfaction, and overall functioning in all areas of their life [16].

Additionally, the effect of burden in the working area has been considered an essential cause for declining health and reduction in the level of psychological well-being of nurses, decreasing nursing personnel in long-term critical care facilities, displaying higher levels of stress, lower job satisfaction, and a higher propensity to quit than providers working in other types of healthcare settings. Resilience is a key factor in nursing that may lead them to feel confident to perform well in complex situations. As nurses face stressful situations and master them, their confidence increases. If critical care nurses' psychological and physical health is not protected, they frequently experience burden, which may cause a negative influence on health care services.

Caring for patient in critical care areas is especially crucial for specialized nurses; thus, their roles have continued to grow over the years, in association with increases in the mental health services supplied by psychiatric departments [19, 20].

The imbalance between demands of the task and workers' skills and characteristics can cause mental work overload or under load. Work overload is understood to be a situation in which the worker is faced with more demands that he or she is capable of confronting. Mental underload, however, is produced in positions with few tasks and little cognitive demand (qualitative underload) and simple tasks with sufficient time for execution (quantitative under load).

Mental demands are one of the main sources of mental load, negatively affecting perception and resulting in damaging effects on both the health of the workers and the achievement of the organization's objectives [3, 21]. Although some evidence maintains the effects of individual resilience on the psychological effects of ICU nurses [18], factors that may considerably contribute to personal resilience and

subsequent development of PTSD are relatively unknown.

A person's ability to recover from illness, or adjust quickly to change is better known as resilience. People who are resilient can utilize their skills and strengths to cope and recover from problems and challenges. Those who lack this resilience may instead become overwhelmed and dwell on the issues while using unhealthy coping mechanisms to deal with these issues and challenges.

A review of literature from several disciplines revealed that health is a multidimensional concept. Nursing aims to restore, maintain, and advance the health of individuals, groups, or entire communities. The nurses' responsibilities are challenging as they primarily work with the health, grief, suffering, and death of people. Consequently, it is obvious that nurses, in general, be liable to give a lot of themselves to help others. They work long hours in physically and psychologically very tiring duties that may affect their well-being, therefore, resilience of nurses plays a vital role in nursing care outcomes.

OBJECTIVES OF THE STUDY

1. To determine the demographic variables among nurses working in the ICUs with burden variables.
2. To assess the relationship between the resilience and burden level of ICUs nurses.
3. To compare the resilience scores among nurses across different areas.

RESEARCH METHODOLOGY

A descriptive, and comparative design was used achieve the aim of the study. The setting for this study was at a hospital and specialized Children Hospital, Saudi Arabia. The study was carried out at all the Intensive Care Units situated in two different hospitals. The subject of the study were the nurses from all critical care areas of both hospitals. A convenient sampling technique was used to collect data from nurses at both hospitals. The sample size was calculated using the sample size calculator. With a confidence level of 95%, a confidence interval of 5 and a population of 500 ICU nurses, a minimum of 217 participants was required. The final sample size included 333 nurses.

Tool 1: Intensive care Units Nurses bio-socio-demographic questionnaire

This tool developed by the researchers to collect data about the following information: Age, Gender, educational level, marital status, total years of clinical experience, total years of experience in ICUs, attendance to conferences/workshops, and current working area.

Tool 2: Copenhagen Burnout Inventory (CBI)

Copenhagen Burnout Inventory (CBI) developed by Kristensen *et al.*, [22], is a 19-item questionnaire with three sub-dimensions: Personal burnout, work-related burnout, and client related burnout. The three separate parts of the questionnaire were designed to be applied in different domains. The questions on personal burnout were formulated in a way so that all human beings can answer them (a truly generic scale). The work-related burnout questions assume that the respondent has paid work of some kind. Finally, the client-related burnout questions include the term “client” (or a similar term when appropriate such as patient, student, inmate, etc.). The questions are easy to understand and to answer, and the scales have high face validity. The Cronbach’s alphas for internal reliability are high (.85-.87). For the current study the Cronbach’s alpha was 0.86

Tool 3: Brief Resilience Scale (BRS)

The Brief Resilience Scale developed by Smith *et al.*, [23] is a six items scale. Items 1, 3, and 5 are positively worded, and items 2, 4, and 6 are negatively worded. The BRS is scored by reverse coding items 2, 4, and 6 and ending the mean of the six items. The following instructions are used to administer the scale: “Please indicate the extent to which you agree with each of the following statements by using the following scale: 1 =strongly disagree, 2 =disagree, 3 =neutral, 4=agree, 5 =strongly agree”. For the current study, the Cronbach’s alpha was 0.70

After obtaining approval for the study from the Institutional Review Board (IRB) of the KAIMRC, all contact with the study participants and data collection were carried out by the researchers. Study materials included an informed consent form, a debriefing form, the demographic questionnaire, and CBI and BRS instruments. Participants were asked to answer the questions as directed on the cover page that was attached to the survey package. Data was analyzed using the Statistical Package for the Social Sciences (SPSS) program version 22.

Analysis and interpretation of data

Analysis is the process of organizing and synthesizing the data to answer research question. It’s a process of breaking a complex topic into smaller parts to gain better understanding of it. This section deals with the analysis and interpretation of data collected to assess the resilience and burden of ICU nurses and the relationship between the two variables. The data analysis was done according to the study objectives using descriptive and inferential statistics.

The data has been organized and presented in following sections.

SECTION I: Demographic variables of Critical Care Nurses.

SECTION- II: Correlation between Resilience and Burden Levels of ICU Nurses

SECTION III: Comparisons of resilience scores among nurses across different areas.

Table-1: Frequency and Percentage Distribution of Critical Care Nurses According to age, gender, marital status, educational qualification, hospital experience, ICU experience, physical exercise/activities, conference/workshop attended and working unit, n=333

Sl. No	Demographic variables	Categories	Frequency (f)	Percentage (%)
1.	Age	21 - 30 years	105	32
		31 - 40 years	148	44
		41 - 50 years	68	20
		51 - 60 years	12	4
2.	Gender	Male	36	11
		Female	297	89
3.	Marital Status	Married	164	49
		single	159	48
		Divorced	4	1
		Widowed	5	2
		others	1	0.3
4.	Educational Qualification	Diploma	102	31
		Baccalaureate	187	56
		PhD	14	4
		Others	30	9
5.	Hospital Experience	1-5 years	96	29
		5-10 years	125	38
		10-20 years	95	29
		>20 years	16	5
		others	1	0.3
6.	ICU Experience	1-5 years	62	19
		5-10 years	149	45
		10-20 years	107	32
		>20 years	14	4
		others	1	0.3

7	Physical exercise/activities	yes	300	90
		No	33	10
8	Workshop/Conferences Attended	Yes	301	90
		No	32	10
9	Working Unit	ICU2 (Adult)	59	18
		IMCU (Adult)	36	11
		MCICU (Adult)	20	6
		NCCU(Adult)	11	3
		ACICU(Cardiac Adult)	16	5
		SICU(Surgical Adult)	21	6
		ICU10(Oncology Adult)	39	12
		PCU (Progress care Unit)	2	1
		NICU (neonatal)	69	21
		BICU (Burn Adult)	12	4
		PICU (Pediatrics)	25	8
PCICU (Cardiac Pediatrics)	23	7		

Table-1 shows that 44% (n=148) of critical care nurses belongs to age group of 31- 40 years. The majority (89%, n=297) were females, and 49% (n=164) were married, About 56% (n=187) completed baccalaureate degree in nursing, 38% (n=125) had 5-10 years of hospital experience, 45% (n=149) had 5- 10 years of ICU experience, 90% (n=300) of the critical care nurses perform physical exercise/activities, and

around 90% (n=301) of them attend workshops/conferences in regular basis. Neonatal ICU nurses participated in higher percentage compared to other areas (n=69, 21%).

SECTION- II: CORRELATION BETWEEN RESILIENCE AND BURDEN LEVEL OF ICUS NURSES

Table-2: Correlation between resilience and Personal burden level of ICUs nurses, n=333

S. No	Variables	Mean	SD	r Value	P Value
1	BRST	3.16	0.63	-0.24	0.0001
2	Personal Burden	65.59	10.71		

S = Statistically Significant (p value <0.01)

Table-2 shows that the mean resilience score of critical care nurses was 3.16 ± 0.63 SD and the mean of Personal burden was 65.59 ± 10.71 SD. Pearson’s correlation was used to correlate the resilience and personal-burden of critical care nurses. The results

showed that there was a weak negative correlation between the resilience and Personal burden of critical care nurses with the p-value of 0.0001 which was statistically significant.

Table-3: Correlation between resilience and Work related burden level of ICUs nurses

S. No	Variables	Mean	SD	r Value	P Value
1	BRST	3.16	0.63	-0.11	0.037
2	Work-related Burden	64.80	10.69		

S = Statistically Significant (p value <0.05)

Table-3 shows that the mean resilience of critical care nurses was 3.16 ± 0.63 SD and the mean of work-related burden was 64.80 ± 10.69 SD. Pearson’s correlation was used to correlate the resilience and work-related burden of critical care nurses. The results

showed that there was a weak negative correlation between the resilience and work-related burden of critical care nurses with the p-value of 0.037 which was statistically significant.

Table-4: Correlation between resilience and Client related burden level of ICUs nurses, n=333

S. No	Variables	Mean	SD	r Value	P Value
1	BRST	3.16	0.63	-0.20	0.0001
2	Client related Burden	63.46	11.05		

S = Statistically Significant (p value <0.01)

Table-4 shows that the mean resilience of critical care nurses was 3.16 ± 0.63 SD and the mean of client-related burden was 63.46 ± 11.05 SD. Pearson’s correlation was used to correlate the resilience and client-related burden of staff Nurses. The results

showed that there was a weak negative correlation between the resilience and Client-related burden of Critical Care Nurses with the p-value of 0.0001 which was statistically significant.

SECTION III: COMPARE THE RESILIENCE SCORES AMONG NURSES ACROSS DIFFERENT AREAS.

Table-5: Compare the Resilience Scores Among Nurses Across Different Areas, n=333

S. No	Working Unit	df	F ratio	P Value
1	Between Groups	11	2..393	0.007
2	Within Groups	321		S

S = Statistically Significant (p value <0.01)

Table-5 shows that there was a significant association between resilience scores among nurses across different working units ($p=0.007$).

DISCUSSION

The study was done to assess the resilience, psychological factors and perceived burden among critical care nursing professionals working in ICU at the National Guard Hospitals. Non-experimental descriptive approach was used. The study was conducted on 333 nurses in critical care units (ICU2, IMCU, MCICU, NCCU, ACICU, SICU, ICU10, PCICU, NICU, BICU, PICU & PCICU). The ethical permission was obtained from King Abdullah International Medical Research Center (KAIMRC). Individual written informed consent was obtained from the study subjects before data collection. The data collection period was from March to April 2019.

The collected data was computerized and analyzed by using Statistical Package for the Social Sciences (SPSS) version 22. Demographic data was analyzed using frequency tables, means, and standard deviations. Descriptive statistics was used to describe the mean scores of resilience and burnout among the nurses in each unit. To determine if there is any statistically significant difference between the means of three or more independent groups, the one-way analysis of variance (ANOVA) was used. For interval data, the mean and standard deviation calculated. To test for significance, one sample t-test was used. ANOVA test was used to compare the scores of the instruments (BRS and CBI) between nurses working in different ICU units. Also, Pearson correlation coefficient test was used to assess the relationship between burden and resilience of ICUs nurses.

Caring for people who are unwell or injured, as well as addressing the needs of their family and friends place considerable demands on professional caregivers. Nurses are expected to manage their feelings and emotions so that they appear professionals all times. Finding a balance between showing empathy and compassion while ensuring strong reactions that may arise from these circumstances remain under control [24]. Caring for a patient and particularly critically ill ones may place a burden on the nurses and therefore they are imposed to regulate their lifestyle and coping skills during a potentially stressful period. This stressful experience can be recognized as a crisis. To beat a

crisis, it is believed that the nurses should regulate, adapt and be a resilient. The results of this study showed that there was a negative relationship between the resilience and burden level of ICUs nurses in KAMC.

The first objective was to determine the demographic variables among nurses working in the ICUs with burden variables.

The results of present study explained that the highest percentage of the sample were females $n=297$ (89%), $n=164$ (49%) married, and $n=187$ (56%) completed baccalaureate in nursing. The finding is consistent with the research findings of Yaxin Ren *et al.*, [25]. Yaxin Ren *et al.*, [25] analyzed resilience and influencing factors of 1356 hospital nurses and found that majority of the study participants were females who had completed baccalaureate ($n=637$) or associate degree ($n=632$) and more than half of the participants were married ($n=701$).

The current study also showed that 44% ($n=148$) of critical care nurses belongs to age group of 31-40 years, 38% ($n=125$) had 5- 10 years of hospital experience, 45% ($n=149$) had 5- 10 years of ICU experience, and 90% ($n=301$) attended workshop/Conferences. These findings contradict findings of Georgios *et al.*, [26]. Georgios *et al.*, [26] studied resilience in nursing and the role of internal and external factors among 1012 nurses and found that majority of the study participants (458) were in the age range between 40-49 years and most of them (389) had 11- 20 years of work experience. Meredith *et al.*, [21], evaluated the factors affecting resilience and development of PTSD in critical care nurses (744) in the US and found that majority of the nurses (262) work in Medical Intensive Care Unit.

This study result reveals that 90% ($n=300$) of the critical care nurses performed physical exercises/activities. The result of the current study is similar to the findings of Meredith *et al.*, [21], in which most of the respondents (458) perform exercises regularly.

The second objective was to assess the relationship between the resilience and burden level of ICUs nurses.

Mean and standard deviations of resilience and burden level of ICUs nurses. The findings of the present study revealed the mean total score and standard deviations of resilience and burden level of ICU Nurses was 3.16 (SD=0.63). The mean score of resilience and personal burden of Nurses was 3.20 (SD=0.63) and 66 (SD= 10.71) respectively. Mean scores of work related burden and client related burnout were 65 (SD= 10.69) and 63 (SD= 11.05) respectively. These findings are consistent with the study by Gerami Nejad *et al.*, [27].

Correlation between resilience and burden level of ICUs nurses

The correlation between resilience and personal burden level of ICUs nurses was analyzed using Pearson's correlation coefficient formula and it was -0.24, which shows that there was a correlation between the resilience and Personal burden of critical care nurses with the p-value of 0.0001 which was highly significant.

The Correlation between resilience and work related burden level of ICUs nurses was -0.11 which shows that there was a correlation between the resilience and work-related burden of critical care nurses with the p-value of 0.05 which was significant. Correlation between resilience and Client related burden level of ICUs nurses was -0.20, which shows that there was a correlation between the resilience and client-related burden of critical care nurses with the p-value of 0.0001 which was statistically significant.

The finding of the present study showed that there was a significant relation between the resilience and burden level of ICUs nurses. This findings are consistent with the research findings of Rushton *et al.*, [5]. Rushton *et al.*, [5] investigated the burnout and resilience among 114 nurses practicing in high-intensity settings in the US. Their results revealed that there was a significant association between burnout and resilience.

The third objective was to compare the resilience scores among nurses across different areas

To compare the resilience scores among nurses across different areas ANOVA was utilized. There was a significant association between resilience scores among nurses working in different areas of critical care units (p= 0.007).

CONCLUSION

Nurses working in critical care areas and ICUs are susceptible to burnout because of patients' intense needs, unpredictable patients' outcomes, and the highly stressed environment. Assessing nurses' resilience and its relationship to burnout is important to retain highly specialized nurses in their role and possibly provide them with strategies to augment their resilience and reduce their burnout levels. Our results confirmed the

relationship between these variables which signify the need for such interventions.

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