Original Research Article

Burnout among nurses working in critical care settings: a case of a selected tertiary hospital in Rwanda

Emeline U. Cishahayo[1]*, Evelyne Nankundwa[1], Ruth Sego[2], Busisiwe R. Bhengu[2]

[1]School of Nursing and Midwifery, College of Medicine and Health Sciences (CMHS), University of Rwanda (UR), Kigali, Rwanda
[2]Rory Meyers College of Nursing: New York University, New York, USA

Received: 25 September 2017
Accepted: 31 October 2017

*Correspondence:
Emeline U. Cishahayo,
E-mail: emelicis@yahoo.fr

ABSTRACT

Background: Intensive Care Unit (ICU) and Emergency Department are more stressful areas therefore nurses in those areas are prone to high level of burnout than others. In Rwanda, studies on burnout among nurses are limited and there is no research targeting specifically nurses working in ICU and Emergency Department. Therefore, this study aimed to determine the level of burnout among nurses working in ICU and Emergency Department in a selected referral hospital of Kigali.
Methods: A quantitative approach was adopted. The descriptive cross-sectional design was used. Sixty nurses were involved in the study and they were selected using a total population sampling strategy. A self-administered questionnaire and Maslach Burnout Inventory Human Service Survey were used to collect data. Data were analysed using SPSS version 21.0.
Results: The study found high level of burnout among 61.7% of the participants under study. High workload and intention to leave were associated with burnout (P<0.05). Burnout was measured by high Emotional Exhaustion (EE) 29 (48.3%), high Depersonalization (DP) 15 (25%) and low Personal Accomplishment (PA) 30 (50%).
Conclusions: The high level of burnout identified among ICU and emergency department nurses is mainly associated with high workload and intention to leave the work within the next 12 months.

Keywords: Burnout and ICU nurses, Burnout and emergency nurses, Level of burnout among nurses, Level of burnout among nurses in ICU and emergency department

INTRODUCTION

Burnout is characterized by loss of emotional strength, not valuing human beings living together with or offering service and decreased in job performance and success due to lack of interest related to occupational stressors.1Burnout was recognized as work related danger among human oriented professionals including health care professionals since they are required to work many hours to help humans and face a challenge of high demand and low resources.[1] Burnout is due to prolonged work related stress that is not managed. In a work environment this leads to high worker turnover, absenteeism, compromise of interpersonal relationships, reduced productivity and low personal achievement.[2]

High level of burnout was identified among nurses working in ICU (Intensive Care Unit) and Emergency Department. A systematic review on burnout among ICU health professionals found the prevalence to range from 6% to 47%.[3] Moreover, this systematic review found the following risk factors: age, gender, work experience,

work load, ethical issues, shift work and making decision on patient at end stage. In addition, a study conducted in China among critical care nurses from 14 ICUs found that sixty-eight nurses equivalent to 16% had high level of burnout and those who worked in ICU from 5-10 years were the majority to have high level of burnout.[4] Another study conducted in a regional general hospital in the Republic of Ireland found high level of burnout among emergency nurses with high level of depersonalization 20 (46%) comparing to nurses working in medical unit.[5]

In Sub-saharan Africa, a study conducted in Malawi referral Hospital among maternal health staff revealed moderate to high level burnout among both physicians and nurses; 72% had Emotional Exhaustion (EE), 43% had Depersonalization (DP) and 74 % experienced low Personal Accomplishment(PA).[6] A study conducted in Nigeria on the prevalence of burnout and risk factors among nurses working in a Nigerian hospital, found factors associated with high level burnout in all dimensions of burnout as old age (P<0.01), female gender (P<0.01), being single (P<0.01), job title (P<0.01) and prolonged night duties (P< 0.01).[7]

In Rwanda there is no such studies done and as it is fast developing country, it needs evidence to base development decisions. This study aims to assess the level of burnout among nurses working in ICU and Emergency Department, to assess factors associated with burnout among nurses working in ICU and Emergency Department and to determine associations between burnout, sociodemographic characteristics and factors associated with burnout among nurses working in ICU and Emergency Department in a selected referral hospital in Kigali.

METHODS

A descriptive cross-sectional design was used. A sample of sixty nurses was selected of whom thirty (30) were from Intensive Care Unit and thirty (30) from Emergency Department. The study was conducted in one referral Hospital in Kigali. Data were collected using a self-administered questionnaire to gather characteristics of nurses and an adopted tool, Maslach Burnout Inventory Human Service Survey (MBI-HSS) on the level of burnout.[8] The questionnaire had 2 parts: Part I was about participants' characteristics comprising of questions on socio demographic factors, personal risk factors and job-related characteristics of participants.

Part II concerned MBI-HSS that comprises questions on the three dimensions of burnout, namely, Emotional Exhaustion (EE), Depersonalization (DP) and Personal Accomplishment (PA). The MBI-HSS tool is a 22 items questionnaire that relates to three components of burnout, namely, Emotional Exhaustion (EE):9 items, Depersonalization (DP):5 items and Personal Accomplishment (PA):8 items.[9] Moreover, every feature of the MBI is measured on a 7-point Likert-type scale

showing the extent to which the feeling is 0=Never to 6=every day.[9] Each dimension score is considered separately for each participant and scores are not combined into a single total score.[8]

MBI-HSS convergent and discriminant validity was established in various previous studies.[9] The content validity was established by matching the objectives with the conceptual framework and the questionnaire items to establish if all the objectives were addressed. The internal consistency was measured and the following Cronbach's coefficient alpha for the three MBI components were reported 0.90 for EE, 0.79 for DP and 0.71 for PA and the standard error of measurement was 3.80 for EE, 3.16 for DP and 3.73 for PA.[9]

Furthermore, a test retest reliability of the MB was found to be significant at less than <0.001 level and it extended between 0.50 to 0.82 for the three dimensions.[9] The factorial stability was evaluated in different cultures and countries and it was identified that it is useful in different nations with different languages and within different professions and occupations.[6] Therefore, this tool was used in this study without much rigorous testing especially because a translated version to French was also provided when permission was granted. Only a pilot study that involved three critical care nurses was conducted to exclude contextual issues. The pilot study did not show any discrepancy.

Data were analysed using SPSS package version 21.0. A significance was considered at P<0.05 level. Descriptive statistics in terms of frequencies and percentages which were presented in tables and secondary were used. Inferential statistics were used to analyze the association between variables. Fisher's exact test was used to examine associations between categorical variables. High scores on EE and DP subscales correspond with high level of burnout, however, for PA subscale low scores correspond to high degree of experienced burnout.[6]

The study was conducted according to the ethical guidelines of the College of Medicine and Health Sciences (CMHS) and the ethics clearance to conduct the study was offered by the Institutional Review Board of the same university and participating institution. Participants participated voluntary and provided informed consent in a written form and their right to withdraw from the research at any time were explained.

The instruments were in both French and English to ensure better understanding and informed consent. Confidentiality was observed through anonymity on questionnaires, not using names but codes. Participants were promised not to disclose their information. Only the researchers had access to collected data. Privacy was observed by allowing participants to fill the questionnaire individually. Data storage, management and data safety were strictly observed.

RESULTS

Sociodemographic characteristics of the participants

The majority of the participants [36 (60%)] were female and 24 (40 %) were male. In addition, this study revealed that the majority of the participants [42 (70%)] fell on the range 30-39 years, 10(17%) at a range 40-49 year and only 8 (13.3%) of them were in range 20-29 years. The majority of the participants [48 (80%)] were married, fewer [2 (3.3%)] of them were widowed and 10 (16.7 %) were single. Moreover, most of the participants [51 (85%)] held a diploma in nursing and 9 (15%) had a bachelor's degree in nursing (Table 1).

Table 1: Participants sociodemographic characteristics (n=60).

Sociodemographic characteristics	Frequency	(%)
Gender		
Female	36	60
Male	24	40
Age		
20-29 years	8	13.3
30-39 years	42	70.0
40-49 years	10	16.7
Marital status		
Single	10	16.7
Married	48	80
Widowed	2	3.3
Level of education		
Diploma	51	85
Bachelor's degree	9	15
Total	60	100

Level of burnout

Most of the participants [37 (61.7%)] had high level of burnout, 5 (8.3%) moderate level and 18 (30.0%) low level of burnout (Table 2).

Table 2: Level of burnout among nurses working in ICU and Emergency Department (N=60).

Level of burnout	Frequency	(%)
Low level	18	30.0
Moderate level	5	8.3
High level	37	61.7
Total	60	100

Maslach Burnout Inventory (MBI) subscale scores

The study revealed that the majority of participants [29 (48.3%)] had higher level of Emotional Exhaustion (EE); the lower level of Depersonalization (DP) [32(53.3%)] and low level of Personal Accomplishment (PA) [30 (50%)]. According to Maslach and Jackson (1981) "high level of burnout is reflected in high scores on EE and DP subscales and in low PA subscale". Moderate scores on the three subscale shows moderate degree of burnout, low degree of burnout is reflected in low scores on Emotional Exhaustion and Depersonalization subscales and high scores on the Personal Accomplishment subscale (Table 3).

Table 3: Maslach Burnout inventory subscales scores (N=60).

Burnout dimensions		Count	(%)
Emotional Exhaustion (EE)	Low	13	21.7
	Moderate	18	30.0
	High	29	48.3
Depersonalization (DP)	Low	32	53.3
	Moderate	13	21.7
	High	15	25.0
Personal Accomplishment (PA)	Low	30	50.0
	Moderate	16	26.7
	high	14	23.3

High EE, high DP and Low PA = high level of burnout

Factors associated with burnout

These include personal risk factors and work-related factors.

Personal risk factors

Table 4 shows that the majority of the participants [46(76.7%)] had 1-5 living children. Twenty-two (36.7%) of the participants were pursuing studies. This study found that 22 (36.7%) of participants had a plan to leave the current work within the next 12 months (Table 4).

Table 4: Personal risk factors of participants (N=60).

	Frequency	(%)
Pursuing studies currently		
Yes	22	36.7
No	38	63.3
Plan to leave the work within the next 12 months		
Yes	22	36.7
No	38	63.3
Number of living children		
1-5 children	46	76.7
More than 5	3	5
None	11	18.3

Work related characteristics

In this study, the majority of the participants [20(33,3%)] had work experience of 3-5 years, followed by 19 (31.7%) with 6-10 years' work experience, then 16(26.7%) working experience of 2 years or less, 4 (6.7%) working experience of more than 15 years and 1 (1.7%) of them had 11- 15 years' experience. Most of the participants [58(96.7%)] were bedside nurses and only 2 (3.3%) were unit managers. In this study, the majority of

the participants [50 (83.3%)] reported to work night and day duty. Moreover, the majority of the participants [56 (93.3%)] reported the presence of high workload in their work (Table 5).

Table 5: Work related characteristics (N=60).

	Frequency	(%)
Working experience		
2 years or less	16	26.7
3-5 years	20	33.3
6-10 years	19	31.7
11-15 years	1	1.7
Greater than 15 years	4	6.7
Job title		
Bedside nurse	58	96.7
Unit manager	2	3.3
Duty shift		
Day duty	5	8.3
Night duty	5	8.3
Both	50	83.3
Presence of high workload		
Yes	56	93.3
No	4	6.7

Association between level of burnout and sociodemographic characteristics

Table 6 shows that high level of burnout was identified among female 19 (51, 4%) than male. Females were in the majority than males in this study (Table 1).

However, the association between gender and the level of burnout was not statistically significant as the P value was >0 .05. Furthermore, this study revealed that 13.5 (70.3%) of the participants who had high level of burnout had age ranging from 30-39 years old. The statistical test did not show any association between age and the level of burnout (P >0.05) (Table 6).

The majority of the participants [32 (86.5%)] with diploma in nursing were found to have high level of burnout.

However, this study did not find any association between the levels of education and burnout (P >0.05). Moreover, high level of burnout was identified among married participants 31(83.8%) but this was not statistically significant as P >0.05.

Table 6: Association between level of burnout and sociodemographic factors (P <0.05).

Sociodemographic factors	level of burnout			Exact sig. (2-sided)
	Low level (%)	Moderate level (%)	High level (%)	
Gender				
Female	13 (72.2)	4 (80.0)	19 (51.4)	0.250
Male	5 (27.8)	1 (20.0)	18 (48.6)	
Age				
20-29 years	2 (11.1)	1 (20.0)	5 (13.5)	0.902
30-39 years	12 (66.7)	4 (80.0)	26 (70.3)	
40-49 years	4 (22.2)	0 (0.0)	6 (16.2)	
Marital status				
Single	5 (27.8)	1 (20.0)	4 (10.8)	0.423
Married	13 (72.2)	4 (80.0)	31 (83.8)	
Widowed	0 (0.0)	0 (0.0)	2 (5.4)	
Level of education Diploma	14 (77.8)	5 (100)	32 (86.5)	0.525
Bachelor's degree	4 (22.2)	0 (0.0)	5 (13.5)	

Association between the level of burnout and personal risk factors

High level of burnout was found among both participants pursuing and not pursuing any study as shown in (Table 7). This study did not show any association between burnout and pursuing any study while working (P >0.05). High level of burnout was mostly identified among participants having 1-5 living children [31(83.8%)] but this was not significant as P value = 0.291. This study found high level burnout to be associated with a plan to leave the current work within the next 12 months and this

was statistically significant P <0.05. The majority of the participants [18 (48.6%)] with a plan to leave within the next 12 months had high level of burnout (Table 7).

Association between the level of burnout and work-related characteristics

This study found high level of burnout among the participants who reported the presence of high workload. The association between burnout and presence of high workload was statistically significant as P<0.05. Moreover, this study revealed high level of burnout

among the participants who had working experience of 3-5 years and 6-10 years and each was 13 (35.1%). This study did not find any association between burnout and working experience (P>0.05). The participants who worked both night and day duty [33 (89.2%)] had high level of burnout than others. However, the association between the level of burnout and duty shift was not statistically significant (P <0.05). Moreover, Table 6 depicts that the majority of the participants [19 (51.4%)] who had high level of burnout worked in Emergency Department. However, this study did not find any association between burnout and service area (P>0.05) (Table 8).

Table 7: Association between the level of burnout and personal risk factors (p<0.05).

Personal risk factors	level of burnout			Exact sig. (2-sided)
	Low level	Moderate level	High level	
Pursuing studies currently				
Yes	6 (33.3)	2 (40.0)	15 (40.5)	0.917
No	12 (66.7)	3 (60.0)	22 (59.5)	
Number of living children				
1-5 children	11 (61.1)	4 (80.0)	31 (83.8)	0.291
More than 5 children	2 (11.1)	0 (0.0)	1 (2.7)	
None	5 (27.8)	1 (20.0)	5 (13.5)	
Plan to leave the current work within the next 12 months				
Yes	2 (11.1)	2 (40.0)	18 (48.6)	
No	16 (88.9)	3 (60.0)	19 (51.4)	0.016*

*Significance= (P<0.05)

Table 8: Association between level of burnout and work-related factors (P<0.05).

Work related factors	Burnout			Exact sig. (2-sided)
	Low level	Moderate level	High level	
Presence of high workload				
Yes	14 (77.8)	5 (100)	37 (100)	0.011*
No	4 (22.2)	0 (0.0)	0 (0.0)	
Work experience				
2 years or less	6 (33.3)	2 (40.0)	8 (21.6)	
3-5 years	4 (22.2)	3 (60.0)	13 (35.1)	
6-10 years	6 (33.3)	0 (0.0)	13 (35.1)	0.583
11-15 years	0 (0.0)	0 (0.0)	1 (2.7)	
Greater than 15 years	2 (11.1)	0 (0.0)	2 (5.4)	
Duty shift				
Day duty	3 (16.7)	0 (0.0)	2 (5.4)	
Night duty	1 (5.6)	2 (40.0)	2 (5.4)	0.095
Both	14 (77.8)	3 (60.0)	33 (89.2)	
Service area				
Emergency department	9 (50.0)	2 (40.0)	19 (51.4)	1.000
Intensive care unit	9 (50.0)	3 (60.0)	18 (48.6)	

*Significance= (P<0.05)

DISCUSSION

Sociodemographic characteristics

In this study, the participants were predominantly female in keeping with dominance of females in the nursing profession.[10] This is similar to the findings of other studies conducted among nurses where female were also preponderating.[11,12] In this current study nurses were predominantly younger below 50 years. This is in line with the findings of Rwanda demographics survey that revealed the age range of 15-49 years reflecting that the Rwandan population is young.[13] Conversely, in America 53% of nurses are mostly aged over fifty years.[14]

The majority of the participants [51(85.0%)] in this study were holding diploma in nursing. In Rwanda, the majority of nurses held diploma in nursing which has been the form of training until recently when a degree was introduced.[15]

The findings of this study found high level of burnout among married participants, female, aged 30-39 years, and holding diploma in nursing; however, it was not statistically significant (P >0.05). This is similar to the findings of a study where no difference was found between gender in relation to burnout.[16] However, other various studies found age, gender, level of education, marital status to be associated with burnout.[3,17,18] Conversely, in this study high level of burnout was found among married participants but there was no significant association between marital status and burnout (P >0.05). In addition, it was found that having a partner to share with, helps to overcome psychological issues which explains low level of burnout among married individuals.[19] High level of burnout is associated with advanced level of education due to their high expectations which will cause distress if expectations are not achieved.[20] Similar to this, a systematic review revealed that master's in nursing is a risk factor of burnout P=0.003.[3] However the majority of the participants [51(85%)] in the current study held diploma in nursing qualification which may explain the lack of association between the level of education and level of burnout.

Level of burnout among ICU and emergency department nurses

The findings of this study revealed high level of burnout [37(61.7%)] among ICU and Emergency Department nurses. In addition, all dimensions of burnout were affected as follows: The majority of the participants [29(48.3%)] had higher level of Emotional Exhaustion (EE); twenty five percent had high level of Depersonalization (DP) and low level of Personal Accomplishment (PA) was experienced by 30 (50%). According to Maslach and Jackson (1981) "high level of burnout is reflected in high scores on EE and DP subscales and in low PA subscale". Similar to this, various studies identified high level of burnout among ICU nurses.[3,4,21-25]

However, a census report on risk factors on burnout and fatigue among nurses revealed a low level of burnout (14.5%) in the ICU comparing to other units; oncology 21.9%, theatre 17.2% and 15.9% in the Emergency Department. Therefore, ICU was not proven to be a stressful working environment than other working units. Furthermore, high level of burnout was identified among nurses working in emergency department.[5,26-28]

High level of burnout was identified among nurses working in ICU and Emergency Department in this study due to the fact that these nurses work in a stressful working environment as it was proven by various studies that ICU is a stressful work place and Emergency Department as well.[3,5,29,30] In this study, only nurses working in ICU and emergency department were targeted which made the sample to be small. This might have contributed also to the high level of burnout.

Factors associated with burnout

Personal risk factors

The findings of this study revealed that most of (36.7%) of the participants had a plan to leave within the next 12 months and this was statistically significant (P<0.05). This may be due to the fact that high level of burnout 37 (61.7%) was found among participants in the current study and various studies revealed that burnout causes turnover among nurses.[31,32] This assertion is similar to the findings of many studies.[9,23,24,33,34] This study found high level of burnout among participants who have 1-5 living children. However, the current study did not find any association between the level of burnout and number of living children (P>0.05). Conversely, in a systematic review having children was found to be associated with burnout (P=0.03).[3]

Work related factors

The findings of this study revealed that the majority of participants [56(93.3%)] reported the presence of high workload and it was associated with high level of burnout (P<0.05). This is similar to the findings of other studies which found high workload to be a predictor of burnout.[32,35-38] Working many hours in a week, long shifts, inadequate nurses staffing and job demands were found to contribute to high workload.[34] Contrary to this, a study conducted in ICU on prevalence of burnout and risk factors did not find correlation between burnout workload (that included working hours per week(p =0.330), number of night shifts per month (p=0113) and no compensation for overtime) was not correlated to burnout.[33] According to this study, the participants in the area of the study have high level of burnout 61.7% which predominantly related to high workload and intention to leave the job within the next 12 months. The findings of this study did not reveal burnout to be associated with working experience, duty shift and area of work (P>0.05).

This may be that there are other factors causing them to burn out that were not explored in this current study like personality trait reported to be the best predictor of burnout.[3] However, a systematic review among ICU professionals work experience in ICU, work environment and type of shift were associated with burnout (P<0.05).[3] The reason is that the experienced in the career are stable, become skilled and competent and become more familiar with the profession and they know how to deal with stressors faced at work.[16]

CONCLUSION

According to this study, the participants in the area of the study have high level of burnout (61.7%) which is predominantly related to high workload and intention to leave the job within the next 12 months. High level of burnout is reflected in high scores on Emotional

Exhaustion (EE) and high Depersonalization (DP) and low Personal Accomplishment (PA). The majority of the participants [29 (48.3%)] experienced high EE; twenty five percent had high DP and 30 (50%) low PA. This paper hopes to contribute to evidence based interventions to prevent burnout and knowledge base for educational substance on care of the careers.

REFERENCES

1. Maslach C, Leiter MP. Understanding the burnout experience: Recent research and its implications for psychiatry. World Psychiatry. 2016;15(2):103-11.
2. Tucker SJ, Weymiller AJ. Stress Ratings and Health Promotion Practices Among RNs A Case for Action. JONA. 2012;42(5):282-92.
3. Chuang C, Tseng P, Lin C, Lin K, Chen Y. Burnout in the intensive care unit professionals. Medicine (Baltimore). 2016;95(50):1-12.
4. Zhang X, Huang D, Guan P. Job burnout among critical care nurses from 14 adult intensive care units in northeastern China: a cross-sectional survey. BMJ. 2014;4:1-8.
5. Harkin M, Melby V. Comparing burnout in emergency nurses and medical nurses. Clin Nurs Stud. 2014;2(3):152-63.
6. Thorsen VC, Tharp ALT, Meguid T. High rates of burnout among maternal health staff at a referral hospital in Malawi: A cross-sectional study. BMC Nurs. 2011;10(May2011):9.
7. Lasebikan VO, Oyetunde MO. Burnout among Nurses in a Nigerian General Hospital: Prevalence and Associated Factors. ISRN Nurs. 2012;2012:1-6.
8. Maslach C, Jackson SE. The measurement of experienced burnout. J Ocup Behav. 1981;2:99-113.
9. Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory. In: The Maslach Burnout Inventory Manual. 3rd ed. Palo Alto;1997:191-218.
10. Rappleye E. Gender ratio of nurses across 50 states. Becker's Hospital Review. 2015.
11. Liu Y-E, While A, Li S-J, Ye W-Q. Job satisfaction and work-related variables in Chinese cardiac critical care nurses. J Nurs Manag. 2015;23(4):487-97.
12. Ayala E, Carnero AM. Determinants of Burnout in Acute and Critical Care Military Nursing Personnel: A Cross-Sectional Study from Peru. PLoS One. 2013;8(1).
13. NIS, MOH, DHS. Rwanda Demographic and Health Survey,2015. Available from: http://moh.gov.rw/fileadmin/templates/Narattive_Report/Rwanda_DHS_2014-15_KIR.pdf.
14. ANA. The Nursing Workforce 2014 Growth, Salaries, Education, Demographics and Trends. American Nurses Association. 2014. Available at http://www.nursingworld.org/MainMenuCategories/ThePracticeofProfessionalNursing/workforce/Fast-Facts-2014-Nursing-Workforce.pdf.
15. Harelimana A, Mtshali N, Mukamana D, Kimonyo J, Kayihura C, Mugarura JN. Historical Overview of Nursing and Midwifery Education and Nursing Workforce in Rwanda. BJMHR. 2015;2(12):1-10.
16. Myhren H, Ekeberg Ø, Stokland O. Job Satisfaction and Burnout among Intensive Care Unit Nurses and Physicians. 2013;2013.
17. Losa Iglesias ME, Vallejo RB de B, Fuentes PS. The relationship between experiential avoidance and burnout syndrome in critical care nurses: A cross-sectional questionnaire survey. Int J Nurs Stud. 2010;47(1):30-7.
18. Tavares KFA, Souza NV, Silva LD, Kestenberg CC. Prevalence of burnout syndrome among resident nurses. 2014;27(3):260-5.
19. Franco GP, Lúcia A, Leite B, Nogueira-martins LA. Burnout among resident nurses. Rev Esc Enferm USP. 2011;45(1):1-18.
20. Maslach C, Schaufeli WB, Leiter MP. Job burnout. Annual Review Psychol. 2001;52(1):397-422.
21. Teixeira C, Ribeiro O, Fonseca AM, Carvalho AS. Burnout in intensive care units-a consideration of the possible prevalence and frequency of new risk factors : a descriptive correlational multicentre study. BMC Anesth. 2013;13(38):1-15.
22. Poncet MC, Toullic P, Papazian L, Kentish-barnes N, Timsit JF, Pochard F, et al. Burnout Syndrome in Critical Care Nursing Staff. Am J RESPIR Crit Care Med. 2007;175:698-704.
23. Liu K, You L-M, Chen S-X, Hao Y-T, Zhu X-W, Zhang L-F, et al. The relationship between hospital work environment and nurse outcomes in Guangdong, China: a nurse questionnaire survey. J Clin Nurs. 2013;21(9-10):1476-85.
24. Embriaco N, Papazian L, Kentish-Barnes N, Pochard F, Azoulay E. Burnout syndrome among critical care healthcare workers. Curr Opin Crit Care. 2007;13(1070-5295).
25. Raftopoulos V, Charalambous A, Talias M. The factors associated with the burnout syndrome and fatigue in Cypriot nurses: a census report. BMC Public Health. 2012;12(1):457.
26. Hooper C, Craig J, Janvrin DR, Wetsel MA, Reimels E. Compassion satisfaction, burnout, and compassion fatigue among emergency nurses compared with nurses in other selected inpatient specialties. J Emerg Nurs. 2010;36(5):420-7.
27. Hunsaker S, Chen HC, Maughan D, Heaston S. Factors that influence the development of compassion fatigue, burnout, and compassion

satisfaction in emergency department nurses. J Nur Scholar. 2015;47(2):186-94.

28. Van der Wath A, van Wyk N, Janse van Rensburg E. Emergency nurses' experiences of caring for survivors of intimate partner violence. J Adv Nurs. 2013;69(10):2242-52.

29. Chitura M, Chitura D. Burnout syndrome in intensive care unit nurses in Zimbabwe Diana Chitura. Eur Sci J. 2014;7881:436-57.

30. Mol MMC Van, Kompanje EJO, Benoit DD, Bakker J. The prevalence of compassion fatigue and burnout among healthcare professionals in intensive care units: a systematic review. 2015;1-22.

31. Qiao Z, Chen L, Chen M, Guan X, Wang L, Jiao Y, et al. Prevalence and factors associated with occupational burnout among HIV/AIDS healthcare workers in China: a cross- sectional study. BMC Public Health. 2016;16(335):1-7.

32. McHugh MD, Ma C. Wage, Work Environment, and Staffing: Effects on Nurse Outcomes. Policy Polit Nurs Pr. 2014;15(0):72-80.

33. Teixeira C, Ribeiro O, Fonseca A, Carvalho A. Ethical decision making in intensive care units: a burnout risk factor? Results from a multicentre study conducted with physicians and nurses. J Med Ethics. 2014;40(2):97-103.

34. Alexander L. Burnout: Impact on nursing. California: CME Resource. 2009:1-34. Available at https://www.netcegroups.com/827/Course_3143.pd.

35. Tucker SJ, Weymiller AJ, Cutshall SM, Rhudy LM, Lohse CM. Stress Ratings and Health Promotion Practices Among RNs A Case for Action. JONA. 2012;42(5):282-92.

36. Toh SG, Ang E, Devi MK. Systematic review on the relationship between the nursing shortage and job satisfaction, stress and burnout levels among nurses in oncology / haematology settings. Int J Evid based Heal care. 2012;10:126-41.

37. Wakim N. Occupational Stressors, Stress Perception Levels , and Coping Styles of Medical Surgical RNs. JONA. 2014;44(12):632-9.

38. Aiken LH, Cimiotti JP, Sloane DM, Smith HL, Flynn L, Neff DF. Effects of nurse staffing and nurse education on patient deaths in hospitals with different nurse work environments. Med Care. 2011;49(12):1047-53.