

Stress Levels of Doctors working in Critical Care Units in a North Indian State

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ABSTRACT

Introduction: Critical care units are demanding, both emotionally and physically challenging for doctors which can lead burnout in them. Aim: The aim of the study was to assess stress levels in doctors working in critical care units in a conflict ridden state.

Material and methods: A cross-sectional survey was conducted in critical care units across Kashmir valley. Assessment of stress was done by distributing a questionnaire based on GHQ-12 among doctors. Answers were scored from 0-3 scale, 0-not at all, 1-slightly, 2-moderately and 3-extremely. Mean score >2 was considered to have moderate to severe stress.

Results: 64 doctors responded to questionnaire. 41 were from anesthesia speciality and 23 were from other specialities. 42 were males and 22 females while as 22 were married, 42 unmarried. Number of working hours per week were 56.46±14.14. Prevalence of moderate to severe stress was 43.75%. Females were slightly more stressed (45.5%) compared to males (42.9%). Managing VIP patients was the most stressful condition. Accountability and responsibility with compromised resources and standards were next most stressful condition. There was no reported incident of sexual harassment in our setup.

Conclusion: Despite working in resource and standard constrained environment with added factor of conflict, stress levels of doctors working in ICU in Kashmir Valley was comparable to stress levels prevalent in other states of the country.

Keywords: Critical Care Doctors, GHQ, ICU, Stress

INTRODUCTION

Exposure to violence has potentially important implications for mental health.¹ High levels of violence has resulted in higher prevalence (33%) of mental health issues in Kashmiri population.² The already overburdened victims of conflict zone are subject to various stress associated disorders which has led to review the available literature on burnout syndrome in ICU health care workers across various hospitals in Kashmir.² Burnout syndrome has become a common worldwide phenomenon, especially among members of high stress professions like firefighters, teachers, customer service representatives, army and all types of health care professionals.³ Burnout comprises emotional exhaustion, depersonalisation and a diminished sense of personal accomplishment.⁴ Between 22-46% of UK doctors working in ICU have high stress levels.⁵ High prevalence (40%) of moderate to severe stress was also shown in ICU doctors in an Indian study.⁶ Burnout in ICU healthcare providers is attributable cause of high morbidity and mortality in patients, challenging daily work routines, frequent encounters with traumatic and ethical issues. This study was conducted to evaluate stress levels in ICU doctors and their etiological factors in a conflict zone.

Study aimed to assess the stress levels of doctors working in

critical care units in Kashmir and their contributing factors.

MATERIAL AND METHODS

A cross-sectional study was carried out among 64 doctors working in critical care units of the tertiary care hospitals across Kashmir valley. A well validated questionnaire GHQ scale (General Health Questionnaire)⁷ was used in the study. The questionnaire had 28 easily understandable questions to evaluate stressors and level of stress in ICU doctors. Scoring for questions was from 0-3 scale, 0-not at all, 1-slightly, 2-moderately and 3-extremely. Questionnaire were distributed and collected manually. Intensive care units involved in the study included surgical, medical, paediatric and cardiac ICU's. A mean score >2 for 28 questions was considered to be moderate to severe stress. Individual stressors were also analysed.

STATISTICAL ANALYSIS

The statistical data analysis was done using two sided difference t- test by SPSS software (SPSS Inc, Chicago, IL). The conclusions were charted and results expressed in percentages, mean and standard deviation (SD) at 95% confidence interval (CI). Mean stress level for each respondent were calculated on 28 questions. *P*- value less than 0.05 was considered statistically significant.

RESULTS

A total of 64 doctors working in ICU responded to questionnaire. 42 (65.6%) were males and 22 (34.4%) were females. 22 (34.4%) were married and 42 (65.6%) unmarried. 17 (40.5%) males were married while only 5 (22.7%) females were married (Table-1).

Age: The mean age of male doctors was 31.5±5.9 years and mean age of female doctors working in ICU was 27.82±2.15 years. 41 (64.1%) doctors were from anesthesia background, 23 (35.9%) belonged to other specialities. 8 were from general medicine and 15 from paediatric/neonatology. Hospitals involved in the study were tertiary care institutes with critical care facilities with SKIMS having 700 beds, SMHS 250 bedded and paediatric hospital having 125 beds. Mean years of experience in ICU was

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		Gender		Specialty	
		Male	Female	Anesthesia	Others
Total (%)	64 (100%)	42 (65.6%)	22 (34.4%)	41 (64.1%)	23 (35.9%)
Age in yrs (SD)	30.28 ± 5.3	31.5± 5.99	27.82± 2.152	31.46± 6.079	28.17± 2.498
Married (%)	22 (34.4%)	17 (40.5%)	5 (22.7%)	15 (36.6%)	7 (30.41%)
Single (%)	42 (65.6%)	24 (59.5%)	17 (77.3%)	26 (63.4%)	16 (69.6%)
Total working hrs/week (SD)	59.46±14.14	61.04±14.68	56.45±12.83	58.65±12.01	60.91±17.51
No. of night shifts/week (SD)	1.75± 0.623	1.678±0.731	1.90±0.29	1.58±0.65	2.08±0.417
Years of ICU experience (SD)	2.68±3.62	3.24±4.28	1.61±1.29	3.27±4.38	1.50±0.80

Table-1: Demographic Data

Category		Mean score 2 or more than 2 (n)	Mean score less than 2 (n)	Total
Gender	Male	18 (42.9%)	24 (57.1%)	42
	Female	10 (45.5%)	12 (54.5%)	22
Specialty	Anesthesia	18 (43.9%)	23 (56.1%)	41
	Others	10 (43.5%)	13 (56.5%)	23

Table-2: Stress Levels

2.68±3.6 years. Males had 3.24±4.28 years experience while females had 1.61±1.29 years experience. Anesthetists had 3.27±4.38 years in ICU while doctors from other specialities had 1.5±0.8 years experience.

Mean working hours in ICU was 59.46±14.14. Male doctors worked 61.04±14.68 hours compared to females who had slightly less working hours per week 56.45±12.83. Working hours per week for anesthetists was 58.65±12.01 hours, while doctors from other specialities worked for 60.91±17.51 hours per week.

Number of night shifts per week was 1.75±0.6. It was 1.67±0.73 in males, females had more night shifts per week 1.9±0.29. ICU doctors from other specialities also had more night shifts 2.08±0.47/week compared to anesthetists 1.58±0.65/ week.

Out of 64 doctors, 28 (43.75%) had score ≥ 2. 18 males (42%) had score ≥2. 10 females (45.5%) had score ≥ 2.

Specialty distribution: 18 (43.9%) doctors from anesthesia had score ≥2 while 10 (43.5%) doctors from other specialities had score ≥2 (Table 2).

Each stressor was scored from from 0-3. Total score of each question by 64 respondents were added together and divided by total number of respondents to obtain a mean. The mean score of individual question was then ranked from 1 to 28. Managing VIP patients was the most stressful condition for ICU doctors with a score of 2.6±0.69. Accountability and responsibility with compromised standards and limited resources were next most stressful situations (mean 2.53±0.66). There was no reported incident of sexual harassment in our setup (Table 3).

DISCUSSION

64 doctors working in critical care units responded to questionnaire. 4 did not respond or could not be contacted. The hospitals involved in the study were all government owned with heavy workload. The mean age of doctors was 30.28±5.3 years which was lower than the mean age of participants in a European study (41.8yrs)⁷ and which is also less than the mean age of critical care doctors working in Indian ICU's (38yrs).⁶ Majority were males 42 (65.6%) and 22 (34.4%) females. Rest of the

country males comprised 85% of ICU doctors while females were only 15%.⁶ European data showed predominantly (83%) male doctors in ICU.⁷ Only 22 (34.4%) out of 64 participants were married. Out of 22 married people 17 were males and 5 females. Rest were single while as no one was divorcee.

Total working hours per week in our study was 59.46 hours with males having more (61.04 hours) working hours than females (56.45hours). Generally accepted limits of working hours per week are 48 hours with a maximum of 8 hours in a day as per ILO standards.⁸ Although Honorable Supreme court in its judgement for medical professionals laid down limit of 48 hours per week with a shift exceeding not more than 12 hours.⁹ Mean hours of work per week is much higher than recommended. This can be one of the cause of poor efficiency, poor job satisfaction and poor outcomes in our critical care units. Number of night shift per week was 1.75, with females having more night shifts (1.9) than males (1.67).

Mean years of working experience in ICU was 2.68 years with females having comparatively less experience (1.61 years) than males (3.24 years). Mean years of experience in ICU was comparatively less. Hilde Myhren et al found mean experience of physicians in ICU was 7.6 years.¹⁰ Out of 64 respondents 41 belonged to anesthesia specialty, 15 were from paediatrics and 8 from general medicine.

43.75% of doctors were having score >2 (moderate to severe stress). Rahul Amte et al in their study of stress in ICU doctors across Indian found 40% doctors having moderate to severe stress.⁶ Emmbrico N et al found 46.5% doctors in French ICU's were stressed.¹¹ Teixeira reported high risk of burnout in 22% doctors and 9% were experiencing burnout.¹² Other UK study showed stress levels as high as 50.5%.⁷

45.5% females had score ≥2 compared to males who were slightly less stressed at 42.9%.

There was little difference in prevalence of moderate to severe stress in anesthesia speciality compared to other specialities. 43.9% anesthesia doctors in ICU were stressed and 43.5% doctors belonging to other specialities were stressed

The mean age of doctors working in ICU in our population was less as compared to doctors working in ICU at national and international level.⁶ This may be one of the reasons that our doctors did not have higher stress levels as there is rise in burnout with age and experience.¹³ The more the experience means more exposure to ICU environment and higher burnout.¹⁴ Among the individual stressors, managing the VIP patients was the most stressful condition perceived by the doctors. Resource constrained environment, overloaded medical facilities with little or no private institutions on ground together with socio-political instability in a conflict zone all contribute to managing

Rank	Stressor	Mean (SD)
1.	Do You Feel Stressed Managing VIP Patients?	2.640± 0.69
2.	Do You Feel Too Much Responsibility At Times?	2.531± 0.66
3.	Do You Feel Stressed Compromising Standards When Resources Are Short?	2.531±0.66
4.	Do You Feel Overstretched At Times?	2.484± 0.61
5.	Do You Feel Stressed For Allocating Beds In Icu When It Is Full?	2.421±0.75
6.	Do You Feel Stressed Making Time For Research?	2.328±0.75
7.	Do You Feel You Are Suffering From Sleep Deprivation?	2.171±0.88
8.	Do You Feel The Effects Of Stress On Your Personal Or Family Life?	2.171±0.84
9.	Do You Feel There Is Lack Of Recognition Of Your Contribution?	2.062±0.90
10.	Do You Feel Stressed Discussing Treatment Withdrawl Or End Of Life?	2.031±0.83
11.	Do You Feel You Are Not Given Appropriate Salary Or Remuneration?	2.031±1.06
12.	Do You Feel Stressed With The Threat Of Violence?	2.015±0.91
13.	Do You Feel Fear Of Making Mistakes?	1.984±0.89
14.	Do You Feel Stressed Informing Relatives About The Patient's Death?	1.828±0.91
15.	Do You Feel Stressed Having To Do Menial Or Repetitive Tasks?	1.812±0.88
16.	Do You Feel It Is Difficult To Maintain Relations With The Nursing Staff?	1.812±1.03
17.	Do You Feel Stressed Keeping Upto Date With Knowledge?	1.718±0.89
18.	Do You Feel Stressed Making The Right Decision Alone?	1.718±0.86
19.	Do You Feel Stressed Dealing With Individual Managers?	1.718±0.78
20.	Do You Feel Lack Of Professional Satisfaction As A Critical Care Doctor?	1.703±0.88
21.	Do You Feel Stressed Dealing With Individual Managers?	1.609±0.884
22.	Do You Feel Stressed Talking To Distressed Relatives?	1.562±0.88
23.	Do You Think You Sometimes Deal With Overzealous/Inapprropriate Treatment?	1.468±0.81
24.	Do You Feel Stressed Working With Inexperienced Juniors?	1.453±0.85
25.	Do You Feel It Is Difficult To Maintain Relations With Senior Colleagues?	1.234±0.98
26.	Do You Feel Stressed Making The Right Decision As A Team?	1.171±0.88
27.	Do You Feel You Being Under Utilized For Your Job?	1.062±1.08
28.	Have You Ever Experienced Sexual Harassement In Such An Environment?	0

Table-3: Evaluation of individual stressors:

VIP patients as most stressful condition in our setup. Feeling too much responsibility and compromised standards due to limited resources were next most stressful etiologies. Threat of violence was 12th in number as a stressor, which as expected was much higher etiological stressor compared to national studies. Prevalence of stress in our doctors was not much higher as compared to studies done at national level. In spite of being in conflict zone alongwith poor resources, higher workload, meagre remunerations, still our stress levels were comparable to national and lower than international data. Possible reasons could be

- (a) Limited accountability.
- (b) Minimal litigations.
- (c) Inadequate private sector.
- (d) Strong social structure in place.
- (e) Lesser years of exposure to ICU.
- (f) Lesser economic uncertainty in government sector as compared to private sector.

There were certain limitations in our study. The sample size was small. Most of the doctors were from anesthesia specialty (64.1%), only (35.9%) were from other specialities. We did not include other ICU staff in our study who probably are far more understaffed and stressed. Moderate to severe stress levels in ICU doctors were in accordance to what is prevalent in rest of the country and even lesser than international data available. There seemed to be no added effect of being in a conflict area. But worrisome picture is that even with less years of working in ICU, sizeable number of doctors have developed moderate to severe stress levels, which if not timely intervened may lead to

serious health issues with time and may even surpass burnout prevalent in doctors in rest of the country.

CONCLUSION

Moderate to severe stress levels are prevalent in sizeable number of critical care doctors working in Kashmir valley. As levels of stress increase with experience, timely interventions need to be taken before this blows out of proportion. Higher workload prevalent in government sector is to taken care of. Better ergonomics would possibly help in decreasing stress. ICU doctors should have better remunerations as working in ICU is a health hazard to them and their families. Poor resources in our hospitals is an added stress factor. Critical care units have to be better equipped and at par with other national institutes. Regular monitoring of stress levels at institutional should be done to identify and intervene in those doctors who are at risk or have developed moderate to severe stress levels.

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