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RESEARCH ARTICLE

STRESS AND BURNOUT AMONG RED CRESCENT PARAMEDIC AMBULANCE WORKERS IN RIYADH

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ABSTRACT

Background: Work-related stress is a serious problem that affects the health and well-being of employees as well as the productivity of organisations. Stress has a huge impact on the performance and productivity of emergency health workers. Paramedics are routinely exposed to a range of highly stressful incidents, as they have to deal with unpredictable and non-specific threats.

Objective: The objective of the study was to explore the factors associated with stress and identify the effects of stress and burnout on Red Crescent ambulance workers.

Method: A cross-sectional study was conducted among ambulance workers in Riyadh, Saudi Red Crescent centres across four regions of the Ar-Riyadh province of Saudi Arabia. Structured Questions about sociodemographic information, working conditions, the level of burnout, and job stress were included in the questionnaire.

Result: A total of 627 employees participated in the study, 95% participant were Emergency medical technician, 46.7% participants had worked for their present employer from 3 years to less than 6 years and 2.6% worked more than 12 years. Full - time permanent employee was 41.6%, and rotating 12-hours shift 64.6%. Corresponding with the result found in this study, the risks of stress, anxiety, and depression faced by a paramedic were usually associated with long working hours, unpredictable emergencies, and changing sleep patterns.

Conclusion: Stress level and work-related burnout was a leading cause of poor performance and resulted in the inability of employees to perform assigned tasks.

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INTRODUCTION

Ambulance services in Saudi Arabia are organised through the Red Crescent, the organisation that is responsible for ensuring adequate ambulance service for all communities in Riyadh. Paramedics are the first responders among the healthcare providers responsible for saving patients live outside hospital settings. They often experience the highest occupational stress due to exposure to trauma, including post-traumatic Stress Disorder, which is associated with the work-related stress experienced by paramedics while they provide care in potentially life-threatening environments (Cheng-Sheng Chen, 2005). Work-related stress is a serious problem that affects the health and well-being of employees as well as the productivity of organisations. Stress has a huge impact on the performance and productivity of emergency health workers. An employee might feel less efficient, irritable, and not motivated to work. It has been noted that ambulance paramedics are the most stressed employees among healthcare providers (Dr Ananya Mandal, 2010). They are routinely exposed to a range of highly stressful incidents (Lowery, 2005), as they have to deal with

unpredictable and non-specific threats, such as the possibility of contracting diseases from patients or being attacked by violent patients (Dr Ananya Mandal, 2010). Work-related stress and frequent exposure to life-threatening situations may lead to post-traumatic Stress Disorder, anxiety, and depression among employees, which can have negative effects on paramedics' behaviour towards patients (de Boer, 2011). The job requirements of paramedics differ dramatically in terms of tasks and working circumstances (Janet Turner Parish, 2007).

Stress and burnout

The levels of stress and burnout are very high in healthcare facilities. Although many studies have discussed the stress and burnout of physicians and nurses, there has not been sufficient research on the stress experienced by paramedics in many countries (Dr Ananya Mandal, 2010). Despite the fact that they are subjected to considerable stress and that they work in stressful working environments, the paramedics in Saudi Arabia have not been examined with regard to their levels of stress and burnout. However, several studies with a similar focus have been conducted in other countries. Paramedics are at risk of stress, anxiety, and depression (Dr Ananya Mandal, 2010 and Brenda, 2006). Long working hours, unpredictable

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emergencies, and changing sleep patterns have all been identified as factors that contribute to burnout, compassion fatigue, and increased symptoms of anxiety and depression (Dr Ananya Mandal, 2010; Brenda M Sabo, 2006; Farquharson, 2012; Crystal Hooper, 2009; Killian, 2008). Moreover, researchers have become increasingly aware that ambulance personnel, like other healthcare providers, may be at risk of developing work-related health problems (Sedigheh Iranmanesh, 2013). One systematic review concluded that ambulance personnel have more health problems than not only other healthcare providers but also than other working people (Tom Sterud, 2006). Unfortunately, this study had several limitations, such as the size and non-representativeness of its sample. Moreover, none of the 49 studies included in the systemic review was conducted in Saudi Arabia. On the other hand, this seems to be more connected with the place of work rather than to individual differences (Tom Sterud, 2008). Indeed, work environment might be the major contributing factor to an increase in the level of stress of healthcare providers (Farquharson, 2012).

Aim

The aim of the study was to explore the factors associated with stress and identify the effects of stress and burnout on Red Crescent ambulance workers.

MATERIALS AND METHODS

A cross-sectional study was conducted among ambulance workers employed at Saudi Red Crescent Centres across four regions of the Ar-Riyadh province of Saudi Arabia.

Study population and study area

A total of 55 Red Crescent centres were studied; 21. Proportionate samples of Red Crescent Centres from each district were randomly drawn, as shown below:

Table 1. Red Crescent Centres by district

Region	Centre distribution (%)	Sampling distribution (%)
North	21 (38.1)	5 (35.7)
East	9 (16.4)	2 (14.3)
South	11 (20)	3 (21.4)
West	14 (25.5)	4 (28.6)
Total	55 (100)	14 (100)

Data are presented as numbers (%).

Questionnaires were distributed to all paramedics on the ambulance services of these centres.

Questionnaire: The questionnaire used in the study included items on sociodemographic characteristics, working conditions, level of burnout from job stress, lifestyle-related behaviours, and medical history. The Job Stress Survey (JSS) measured general organisational stressors (Farquharson, 2012). The JSS consists of items that describe a core set of situations encountered in a wide variety of occupations. Each of the stressors was rated in relation to the last 6 months on a nine-point scale of perceived severity and frequency ranging from 0 to 9+. Twenty of the 30 items on the JSS constitute the two main dimensions: 1) job pressure, and 2) lack of support (Tom Sterud, 2008). Burnout was assessed by using Copenhagen Burnout Inventory question, permission to use the questions was obtained from the author.^[14] Burnout status was assessed

using three dimensions: personal burnout, work-related burnout, and client-related burnout. The Copenhagen Burnout Inventory consists of 16 items: accounts of personal burnout experiences (five items), accounts of work-related burnout experiences (five items), and accounts of client-related burnout experiences (five items). All items were rated on a five-point Likert-type scale. The responses were transformed into a 0–100 metric. A burnout score ≥ 50 indicated a high level of burnout (Tage, 2005). In addition, coping strategies were assessed by asking participants about the activities in which they engaged to reduce work-related stress (Robin, 2013). A list of 12 activities were presented (physical activity; relaxation exercises; social support from family, friends, or co-workers; meditation; comfort-related eating; alcohol consumption; and support through counselling), and additional space was provided to list other activities. Participants were also asked about support, changes, or resources that helped to reduce stress.

Statistical methods

The data analysis was conducted using Statistical Package for the Social Science (SPSS), and the results were calculated in terms of the following:

1. Percentages and averages.
2. Cronbach's alpha coefficient was used to determine the reliability of the questionnaire.
3. Pearson's correlation coefficient was used to measure the validity of the statements.
4. Range equations were used to calculate the arithmetic mean of the responses to each statement.

Several questions relied on the following scale: (5) = "strongly agree", (4) = "agree", (3) = "agree to some extent", (2) = "disagree" and (1) = "strongly disagree". The responses were grouped as follows for purposes of analysis:

- From 1 to less than 1.80 = a very low response.
- From 1.80 to less than 2.60 = a low response.
- From 2.60 to less than 3.40 = a middle response.
- From 3.40 to less than 4.20 = a high response
- From 4.20 to less than 5 = a very high response.

Ethical Considerations: Ethical committee clearance obtained and written informed consent was obtained from the participants.

RESULTS

All 627 questionnaires (100%) were returned for evaluation of data. The distribution of responses to:

How long have you worked with your present employer?"

A majority of participants (46.7%) responded that they had worked for their present employer from 3 years to less than 6 years, 35.2% for less than 3 years, 9.1% from 6 to less than 9 years, 6.4%, from 9 to less than 12 years, and 2.6% worked more than 12 years.

What is your current job title?"

Only 1.0% were working as emergency medical nurses, 95.6% emergency medical technicians, and 3.4% flight physicians.

How long have you worked in this job?"

A total of 35.4% of participants had worked less than 3 years in their job, 47.0% had worked from 3 years to less than 6 years, 7.8% had worked from 6 years to less than 9 years, 6.5% had worked from 9 years to less than 12 years, and 3.2% had worked for more than 12 years.

The most appropriate description of your job situation

Of the study sample, 41.6% responded that the most appropriate description of their job was "full-time permanent employee", 49.3% was "full-time temporary employee", 5.9% part-time permanent employee", 2.6% casual employee, and only 0.6% felt that the most appropriate description of their job was not provided.

Statement that comes closest to describing your present work shift

Of the study sample, 11.6% reported that the statement that came closest to describing their present work shift was a rotating 8-hour shift, 64.6% a rotating 12-hour shift, 14.0% a permanent day shift", 5.9% a permanent evening shift, and 3.8% a permanent night shift.

How long have you worked the shift you indicated above?

The study revealed that 37.3% of the staff had worked their current shift for less than 3 years, 45.1% had worked their shift from 3 years to less than 6 years, 6.1% had worked their shift from 6 years to less than 9 years, 6.7% had worked their shift from 9 years to less than 12 years, and 4.8% had worked their shift for more than 12 years

If you work on a rotating shift, what rotation pattern do you follow?

Of the study sample, 18.0 working an 8-hour shift (day to evening to night), 27.4% working an 8-hour shift (night to evening today), 15.2% working an 8-hour shift (no set pattern), 34.6% working a 12-hour shift (day to night), 2.6% working a 12-hour shift (night to day), and 2.2% working a 12-hour shift (no set pattern).

How many times a week do you change shifts?

We found that 25.5% of subjects did not change shifts, 34.6% changed shifts twice per week, 23.4% changed shifts more than twice per week, 8.6% were on call, 4.6% were on standby, and 3.2% had non-standard work weeks.

How many hours do you normally work per week in your job?

Of the study sample, 6.9% of employees worked less than 40 hours per week, 25.7% worked from 40 hours to less than 45 hours per week, 64.0% worked from 45 hours to less than 50 hours per week, 64.0% worked from 45 hours to less than 50 hours per week, and 3.5% worked more than 50 hours per week.

How many hours per week do you work at any other job?

The data showed that 60.6% of the subjects did not work at any other jobs, 19.9% worked less than 10 hours per week at other jobs, 9.7% worked from 10 hours to less than 20 hours

per week at other jobs, and 9.7% worked 20 hours per week or more at other jobs.

What kind of support, changes, or resources do you believe would help you in reducing work-related stress or feelings of burnout?

We found that 25% of subjects wanted to reduce the time travelling from place to place, 25% wanted more opportunities for connecting with co-workers, 25% wanted changes in the organisational structure, and 25% wanted a reduced caseload.

Type of support

We found that 25% of subjects wanted to reduce the time travelling from place to place, 25% wanted more opportunities for connecting with co-workers, 25% wanted changes in the organisational structure, and 25% wanted a reduced caseload. The overall mean for all items was 3.09, with a standard deviation of 1.02. The standard deviation values ranged between 1.24 and 1.32, and these high values demonstrate the divergent views of the study sample regarding these statements. This means that respondents were satisfied with their job to some extent, but increased levels of cooperation and understanding could help to enhance the flow of work and help employees perform their daily tasks. "There is friendliness among the members of my group" garnered the highest arithmetic mean, 3.26, with a standard deviation of 1.32. This may be attributed to the importance of interpersonal intimacy and cordiality among Red Crescent paramedic ambulance workers as they facilitate the flow of work, especially in cases of emergency. Such a process also enhances the spirit of understanding. Friendliness is regarded as an important attribute, and these workers help one another in a coordinated manner to improve the quality of the services they deliver. "There is harmony within my group" garnered an arithmetic mean of 2.75 and a standard deviation of 1.24. This may be attributed to the fact that there is a culture of understanding among Red Crescent paramedic ambulance workers, and this culture tends to prevent bickering or disputes. Unfortunately, this attitude needs to be enhanced to help the employees make full use of this culture.

Personal burnout level

A high degree of personal burnout in the surveyed ambulance workers was observed, based on an overall mean score of (3.76, standard deviation 0.485). It reflects the homogeneous viewpoints of the study sample and the nature of the participants' work environment, which is consistently demanding, with few breaks. Moreover, the job requires constant awareness, as paramedics must be prepared to act at any moment without delay or hesitation. Responses to the statement "How often do you feel weak and susceptible to illness?" ranked first (mean and standard deviation of 3.77 and 0.600, respectively), followed by "How often do you feel worn out?" (3.77 and 0.565). The arithmetic mean and standard deviation for the statement "How often do you feel tired?" (3.77 and 0.525, respectively) may be due to the long daily hours and few breaks, leading employees to easily become mentally exhausted. The low arithmetic mean (3.75; standard deviation 0.596) of the responses to the statement "How often do you think: 'I can't take it anymore?'" is indicative of the psychological strengths of the Saudi Red Crescent centers, which despite the above-cited problems, encourages employees to deal with the demanding workload.

Table 2. Distribution of responses to The General Job Information questionnaire: Arithmetic averages, standard deviations, frequencies, and percentages can be found in page 19

	Statement	Response						Average	Standard deviation
		Strongly Disagree	Moderately Disagree	Neither Agree Nor Disagree	Moderately Agree	Strongly Agree			
1	There is harmony within my group	f 114 % 18.2	202 32.2	79 12.6	192 30.6	40 6.4	2.75	1.24	
2	In our group, there is lots of bickering over who should do what job.	f 99 % 15.8	178 28.4	145 23.1	170 27.1	35 5.6	2.78	1.16	
3	There is a difference of opinion among the members of my group.	f 76 % 12.1	144 23.0	149 23.8	190 30.3	68 10.8	3.05	1.20	
4	There is dissension in my group	f 80 % 12.8	134 21.4	148 23.6	204 32.5	61 9.7	3.05	1.19	
5	The members of my group are supportive of one another's ideas	f 72 % 11.5	128 20.4	142 22.6	213 34.0	72 11.5	3.14	1.20	
6	There are clashes between subgroups within my group.	f 72 % 11.5	143 22.8	129 20.6	152 24.2	131 20.9	3.20	1.31	
7	There is friendliness among the members of my group	f 69 % 11.0	133 21.2	134 21.4	145 23.1	146 23.3	3.26	1.32	
8	There is a "we" feeling among members of my group	f 65 % 10.4	144 23.0	135 21.5	201 32.1	82 13.1	3.15	1.21	
9	There are disputes between my group and other groups	f 71 % 11.3	150 23.9	137 21.9	173 27.6	96 15.3	3.12	1.25	
10	There is agreement between my group and other groups	f 60 % 9.6	123 19.6	158 25.2	177 28.2	109 17.4	3.24	1.22	
11	Other groups withhold information necessary for the attainment of our group tasks	f 68 % 10.8	175 27.9	117 18.7	181 28.9	86 13.7	3.07	1.24	
12	The relationship between my group and other groups is harmonious in attaining the overall organisational goals	f 73 % 11.6	148 23.6	132 21.1	175 27.9	99 15.8	3.13	1.26	
13	There is a lack of mutual assistance between my group and other groups	f 75 % 12.0	142 22.6	134 21.4	199 31.7	77 12.3	3.10	1.22	
14	There is cooperation between my group and other groups	f 59 % 9.4	168 26.8	137 21.9	175 27.9	88 14.0	3.10	1.21	
15	There are personality clashes between my group and other groups	f 63 % 10.0	157 25.0	139 22.2	200 31.9	68 10.8	3.08	1.18	
16	Other groups create problems for my group	f 55 % 8.8	135 21.5	160 25.5	193 30.8	84 13.4	3.19	1.17	
Total arithmetic average of the first question [General Job Information questionnaire]							3.09	1.02	

Work - related burnout

The overall mean score and standard deviation were 4.03 and 0.608 respectively. The standard deviation values were between 0.562 and 0.904 and reflect the homogeneity in the viewpoints of the study sample, indicative of a consensus regarding the many challenges faced by participants, leading to possible work-related burnout. The statement "Does your work frustrate you?" elicited the strongest affirmative response, with a high arithmetic mean of 4.57 (standard deviation of 0.904) suggesting that confrontations occur between employees and the people they interact with, including clients, or that the employees are dissatisfied when they feel that they cannot do their jobs as required or expected. The low ranking of the responses to the statement "Do you feel burnt out because of your work?" (arithmetic mean and standard deviation of 3.77 and 0.562, respectively) suggests that the work environment itself may be a source of stress on employees to the extent that they feel that they cannot cope with the requirements of the job and therefore experience burnout.

Client-related burnout

Client-related burnout had an overall mean score of 3.35 and a standard deviation of 0.396 (range of 0.410–0.613) The homogeneous viewpoint of the study population can be attributed to the nature of the interactions between employees and their various clients, which may cause burnout.

Responses to the statement "Do you find it hard to work with clients?" ranked highest, with an arithmetic mean score of 3.73 and a standard deviation of 0.613. One interpretation of this result is that there are certain kinds of clients who are insensitive and rough in their dealings with others, such that the paramedics find it difficult to satisfy them because of their unexpected and repeated demands. However, responses to the statement "Do you find it frustrating to work with clients?" had the lowest arithmetic mean score (2.97; standard deviation of 0.410). Thus, the difficulties of working with clients apparently do not lead to frustration and employees remain committed to helping their clients as much as possible.

Sick leave

Nearly one-fourth (24.2%) of the study sample did not take any days of sick leave, whereas about half (49.4%) took from 1 day to less than 3 days and 21.9% took between 3 and 6 days. Only 4.5% of the study sample took more than 6 days of sick leave.

The Pearson correlation coefficient between stress level, general health and psychological symptoms

This study found statistically significant positive, correlation between stress level, general health and psychological symptoms, with a correlation coefficient of 0.729, which indicates that more psychological stress is associated with

more general health and psychological symptoms among ambulance workers at the Saudi Red Crescent Centres due to the negative effect of such stress.

Correlation between stress level and personal burnout

This study found a positive, statistically significant correlation between stress level and personal burnout, with a correlation coefficient of 0.239. This shows that higher levels of psychological stress are associated with personal burnout among ambulance workers at the Saudi Red Crescent centres due to the negative effect of such stress. As a result, workers feel bored and tired.

Correlation between stress level and work-related burnout

A significant positive correlation was found between stress level and work-related burnout, with a correlation coefficient of 0.247. 'As the level of psychological stress increases, work-related burnout among ambulance workers will definitely increase. Due to this negative effect, staff may not want to stay at their job and may want to switch jobs to reduce their stress'. However, one might equally speculate that rather than leaving the—job to reduce stress, they opt to practice variety of strategies to accommodate the additional stress in their lives, and thus the longer they stay in the job, the more they are able to cope.

DISCUSSION

This study found a positive, statistically significant correlation between stress level and personal burnout, with a correlation coefficient of 0.239. This shows that higher levels of psychological stress are associated with personal burnout among ambulance workers at the Saudi Red Crescent centres due to the negative effect of such stress. This may be explained by staff shortages at the facility, resulting in overwork on the parts of the paramedics. This finding is consistent with previous studies that revealed that the workload of demanding jobs can lead an employee to experience emotional and physical fatigue (Janet Turner Parish, 2007). The risks of stress, anxiety, and depression faced by a paramedic are commonly associated with long working hours, unpredictable emergencies, and changing sleep patterns. Corresponding with the result found in this study, it was statistically significant positive correlation between stress level and psychological symptoms, with a correlation coefficient of 0.729, which indicates that more psychological stress is associated with more psychological symptoms among ambulance workers at the Saudi Red Crescent Centres due to the negative effect of such stress.

These values reflect the consistent viewpoints of the participants. Because of the constant demand for their service to the community, it is rare for employees to rest or get a break. Indeed, employees are forced to be constantly vigilant, prepared for unpredictable emergencies, and able to act immediately, without delay or hesitation. The jobs of paramedics differ dramatically with regard to tasks and working conditions. Furthermore, stress has a huge impact on the performance and productivity of emergency health workers (Janet Turner Parish, 2007). Also significant positive correlation was found between stress level and work-related burnout, with a correlation coefficient of 0.247. As the level of psychological stress increases, work-related burnout among

ambulance workers will definitely increase. Due to this negative effect, staff may not want to stay at their job and may want to switch jobs to reduce their stress. The same results have been reported with regard to the relationship with job satisfaction, intention to leave, absences due to sickness, and performance; all of which are associated with work-related stress and burnout (Farquharson, 2012). Indeed, it should be noted that 21.9%% of subjects in this study took 3–6 days of sick leave.

Conclusion

Stress level and work-related burnout are leading contributors to the reduced well-being of employees and their inability to perform assigned tasks, which in turn affects the health of the employees and patients service.

Suggestions

Further studies are needed to measure levels of stress and burnout among other paramedics from other regions within Saudi Arabia.

List of abbreviations: SPSS- Statistical Package for the Social Science.

Declarations

Ethical Considerations: Approval for this study was obtained from the Institute Board of Research at King Fahad medical City Institution Review Board. Log number 14-105.

Informed consent: Written consent was obtained from participants before administering questionnaires. Participants were informed that they had the right to withdraw from the study at any time and that their employment would not be affected.

Consent for publication: Approval for study publication was obtained from the Institute Board of Research at King Fahad medical City Institution Review Board.

Availability of data and material: The data that support the findings of this study are available from [JSS and CBI] but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available.

Competing interests: The authors declare that they have no competing interests.

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Author's contribution – † Equal contribution

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