

Clinical Paper

An Assessment of Psychological Need in Emergency Medical Staff in the Northern Health and Social Care Trust Area

McAleese, Aisling¹ Diamond, Aisling² Curran, David³

Accepted: 20th September 2015

Provenance: externally peer-reviewed.

ABSTRACT

Setting: Psychological stress is increasingly recognised within emergency medicine, given the environmental and clinical stressors associated with the specialism. The current study assessed whether psychological distress is experienced by emergency medical staff and if so, what is the expressed need within this population?

Participants: Participants included ambulance personnel, nursing staff, doctors and ancillary support staff within two Accident and Emergency (A&E) departments and twelve ambulance bases within one Trust locality in NI (N = 107).

Primary and secondary outcome measures: The General Health Questionnaire (GHQ-12, Goldberg, 1972, 1978), Secondary Traumatic Stress Scale (STSS, Bride, 2004) and an assessment of need questionnaire were completed and explored using mixed method analysis.

Results: Results showed elevated levels of psychological distress within each profession except ambulance service clinical support officers (CSOs). Elevated levels of secondary trauma symptomatology were also found; the highest were within some nursing grades and junior doctors. Decreased enjoyment in job over time was significantly associated with higher scores. Analysis of qualitative data identified sources of stress to include low morale. A total of 65% of participants thought that work related stressors had negatively affected their mental health. Participants explored what they felt could decrease psychological distress including improved resources and psychoeducation.

Conclusion: There were elevated levels of distress and secondary traumatic stress within this population as well as an expressed level of need, on both systemic and support levels.

Keywords: Psychological need, occupational stress, secondary traumatic stress

INTRODUCTION

The psychological impact of occupational stressors has been widely acknowledged within high risk populations such as the armed forces and firefighting services. This has resulted in improved understanding and awareness of the impact on mental health and wellbeing following repeated exposure to occupational stress.¹⁻⁴ Among professions considered to be at risk, emergency medical staff are vulnerable to psychological distress given daily occupational demands.^{5,6}

Research has identified high stress clinical scenarios, felt helplessness and insufficient recovery time as factors leading to stress.⁷ Emergency departments have also experienced increased demand and limited resources.⁸ Resource factors have been found to impact on job satisfaction, which has been inversely associated with stress, depression and anxiety.⁹

In a study of occupational stress in doctors, Burbeck discussed A&E as a specialty with unpredictable workload, limited resources, violent situations and critical decision making.¹⁰ Limited resources correlate with aggression from patients

leading to poor job satisfaction and increased stress.¹¹

Through screening for psychiatric disorders, Alexander and Klien found poorer mental health in ambulance staff who had experienced a particularly distressing incident in the previous 6 months.⁷ Within Northern Ireland, Rodgers found a disproportionately high incidence of mental health disorders in paramedics eligible for early retirement on medical grounds.¹²

Of significant concern is the development of subclinical PTSD, more commonly conceptualised as secondary traumatic stress. Secondary traumatic stress responses

¹ Clinical Psychology 2nd Floor Royal Belfast Hospital for Sick Children, 180 Falls Road, Belfast BT12 6BE ² Consultant and Clinical Lead in Emergency Medicine, Emergency Department, Causeway Hospital, 4 Newbridge Road Coleraine BT52 1HS. ³ Assistant Course Director, DClinPsych, David Keir Building, 18 – 30 Malone Road, Belfast BT9 5AG

Correspondence to: Dr Aisling McAleese

E-mail: amcaleese09@qub.ac.uk

include symptoms of PTSD along with elevated levels of anxiety, depression, significant impairment in daily functioning and poorer physical health.^{5,13} Although PTSD relates to individual, personal experience of a traumatic event, it has been established that such events can affect those who come in contact with the distressed victim.¹⁴ In a survey of emergency medical personnel, Mishra found high levels of post-traumatic stress symptoms and in a similar study, 30% of participants reported symptoms associated with PTSD.¹⁵ Emergency personnel have great resilience, however this may not exclusively protect against the effects of regular exposure to critical incidents and recurrent stressors.^{7,16}

Both employees and employers have a great deal to gain from detection of difficulties and early intervention.⁶ Given these potential gains, we explored the level of need in Emergency Medicine in a Trust in Northern Ireland.

METHOD

Within the Trust, there were two A&E departments and 12 ambulance bases. The study was open to all ambulance personnel, A&E nurses and doctors and support staff (receptionists and porters). Ethical approval was granted from the School of Psychology Research Ethics Committee, on behalf of Queen’s University Belfast.

Participants & procedure

Questionnaire packs were left within each department and completed packs returned to the researcher. There was a total sample N = 107 (see table 1).

TABLE 1:
Breakdown of N = 107 by profession and grade

Profession	Grade	N	%
Northern Ireland Ambulance Service (NIAS)	Paramedic	27	25.2%
	Clinical Support Officer (CSO)	4	3.7%
	Emergency Medical Technician (EMT)	4	3.7%
	Ambulance Care Assistant (ACA)	7	6.5%
	Total	42	39.3%
Emergency Medicine Nurses	Auxiliary	4	3.7%
	Nursing sister	5	4.7%
	Nurse Practitioner	1	0.9%
	Staff Nurse	21	19.6%
Total	31	29%	
Emergency Medicine Doctors	Junior grade	11	10.3%
	Middle grade	10	9.3%
	Consultant	6	5.6%
Total	27	25.2%	
Emergency Medicine Support Staff	Receptionists	4	3.7%
	Porters	3	2.8%
	Total	7	6.5%
Total Sample	107	100%	

Each questionnaire pack contained a General Health Questionnaire (GHQ), Secondary Traumatic Stress Scale (STSS) and an Assessment of Need Questionnaire.

General Health Questionnaire (GHQ-12)

The GHQ-12 is a screening tool used to measure common mental health domains.^{17,18} The potential score range is 0 – 36, with higher scores indicative of distress. The current study used mean and standard deviation score findings from Shevlin and Adamson’s large NI study (N = 4,633) that administered the GHQ-12 to a non-clinical population. Clinical significance was taken as 2SDs above the mean (22.68).

Secondary Traumatic Stress Scale (STSS)

The STSS is a questionnaire designed to measure intrusion, avoidance and arousal symptoms associated with indirect exposure to traumatic events through professional contact.¹⁹ Higher scores are indicative of greater secondary traumatic stress. Although a recently developed measurement tool, there is evidence of sound psychometric properties of the scale.^{19,20,21}

Assessment of Need Questionnaire

This questionnaire was developed by the authors. It aimed to gather demographic information and to both quantitatively and qualitatively assess participant’s experience and personal opinion of psychological need. It incorporated Likert scales to allow for comparison and open ended questions to obtain qualitative data.

Participants were asked to use a Likert scale to rate job enjoyment when they first started in emergency medicine, at the current time and also estimate future enjoyment. This was used to explore if job satisfaction has an impact on psychological distress. Open ended questions asked about occupational stressors, manifestations of stress and ways to alleviate or support any difficulties.

Data analysis

Quantitative data was analysed using SPSS (version 20). As there was a small number of support staff who responded to the study (N = 7), their data was removed from statistical analysis due to low representation. Each participant obtained a total GHQ-12 score and a measure of intrusion, avoidance, arousal and a total secondary trauma score. Regression analysis was conducted to assess whether occupation was predictive of outcome. As the independent variable (profession) is categorical, dummy variables were coded.

The assessment of need questionnaire asked participants a number of yes/no questions which were analysed descriptively. New variables were coded from the data rating job satisfaction to represent changes in job enjoyment over time. Data was then compared to the standardised measures of GHQ-12 and STSS using a Kruskal-Wallis test, to explore differences in scores across levels of job enjoyment.

TABLE 2:
Showing Means & Standard Deviations for scores on GHQ-12 & STSS
(*No SD available for Nurse Practitioner due to low N)

Profession	GHQ-12	STSS (Intrusion)	STSS (Avoidance)	STSS (Arousal)	STSS (Total)
	(Shevlin & Adamson, 2005 mean 11.26)	(Bride et al., 2004 mean 8.11)	(Bride et al., 2004 mean 12.49)	(Bride et al., 2004 mean 8.89)	(Bride et al., 2004 mean 29.49)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Junior Dr.	16.64 (7.325)	12.45 (4.547)	17.73 (4.941)	13.18 (3.710)	43.36 (11.483)
Middle Grade Dr.	15.40 (5.060)	11.60 (4.648)	18.00 (5.831)	12.10 (3.900)	41.70 (13.309)
Consultant Dr.	13.50 (6.317)	8.83 (4.167)	14.83 (7.083)	10.00 (5.292)	33.67 (16.096)
Auxiliary	17.75 (8.302)	11.25 (4.031)	19.00 (5.831)	12.25 (4.349)	42.50 (13.916)
Clinical Sister	14.60 (3.715)	11.40 (2.608)	16.80 (2.387)	14.2 (2.950)	42.40 (6.229)
Nurse Practitioner	13.00 *	11.00 *	18.00 *	14.00 *	43.00 *
Staff Nurse	17.57 (6.882)	12.24 (3.780)	16.81 (5.724)	13.00 (4.416)	42.05 (13.313)
Paramedic	13.04 (17.547)	8.22 (3.130)	13.22 (5.618)	9.78 (4.022)	31.22 (11.927)
Clinical Support Officer (CSO)	9.75 (1.258)	9.75 (2.363)	14.00 (1.633)	9.75 (2.500)	33.50 (6.245)
Emergency Medical Technician (EMT)	14.25 (9.50)	13.00 (6.055)	18.00 (9.309)	11.50 (6.807)	42.50 (21.947)
Ambulance Care Assistant (ACA)	14.0 (3.697)	10.14 (3.185)	15.14 (4.059)	11.57 (3.645)	36.86 (10.123)
Total	14.90 (6.708)	10.60 (4.020)	15.86 (5.641)	11.63 (4.247)	38.09 (13.061)

Qualitative data obtained from the assessment of need questionnaire was analysed using thematic analysis, utilising the six phased principles as detailed by Braun and Clarke.²²

RESULTS

General Health Questionnaire (GHQ-12)

The reliability for the scale in the current sample was high (Cronbach's alpha = .85). The mean score for GHQ-12 was 14.9 ($SD = 6.708$); the highest mean obtained by staff nurses ($M = 17.57$, $SD = 6.822$) compared to the lowest mean score which was seen within the CSOs ($M = 9.75$, $SD = 1.258$, see table 2).

No group in the study obtained a clinically significant range (defined as 2 standard deviations from the NI mean) however just under a third (31%) of the total sample obtained a score one standard deviation above this norm.

Multiple regression was used to see if profession predicted distress as measured through the GHQ-12. All levels of the independent variable showed at least some relationship with the dependent variable ($r \geq .3$) and no level of profession within the study showed high bivariate correlation. The regression showed that profession explained only 10.6% of the variance ($R^2 = .106$, $F(11, 95) = 1.029$, $p = .428$). Staff nurses made the strongest unique contribution to explaining the dependent variable, however this was not statistically significant ($\beta = .328$, $p = .062$, see table 3).

Secondary Traumatic Stress Scale (STSS)

The highest mean for the intrusion sub-scale was obtained by junior doctors ($M = 12.45$, $SD = 4.547$), avoidance sub-scale was obtained by auxiliary nurses ($M = 19.00$, $SD = 5.831$), arousal sub-scale was obtained by clinical sisters ($M = 14.2$, $SD = 2.950$) and highest mean for total scale score was seen within the sample of junior doctors ($M = 14.36$, $SD = 11.483$).

TABLE 3:

Showing β values and levels of statistical significance for scores on GHQ-12 & STSS

Profession	GHQ-12	STSS (Intrusion)	STSS (Avoidance)	STSS (Arousal)	STSS (Total)
	\square (Sig)	\square (Sig)	\square (Sig)	\square (Sig)	\square (Sig)
Junior Dr.	.208 (.161)	.318 (.025)	.319 (.029)	.218 (.138)	.306 (.035)
Middle Grade Dr.	.144 (.318)	.242 (.078)	.320 (.025)	.134 (.347)	.256 (.070)
Consultant Dr.	.048 (.712)	.032 (.795)	.123 (.332)	-.008 (.951)	.060 (.632)
Auxiliary	.162 (.177)	.141 (.214)	.242 (.040)	.094 (.425)	.178 (.126)
Clinical Sister	.079 (.525)	.165 (.163)	.187 (.127)	.202 (.102)	.197 (.105)
Nurse Practitioner	.013 (.903)	.066 (.503)	.106 (.297)	.088 (.392)	.094 (.349)
Staff Nurse	.328 (.062)	.394 (.019)	.352 (.041)	.268 (.122)	.359 (.035)
Paramedic	.059 (.750)	-.077 (.968)	.106 (.559)	-.037 (.838)	.031 (.862)
Clinical Support Officer (CSO)	-.69 (.563)	.070 (.538)	.073 (.534)	-.018 (.882)	.047 (.686)
Emergency Medical Technician (EMT)	.061 (.611)	.224 (.049)	.209 (.077)	.061 (.607)	.178 (.126)
Ambulance Care Assistant (ACA)	.070 (.599)	.115 (.360)	.145 (.265)	.083 (.526)	.125 (.333)

Multiple regression was used to see if profession predicted score on the scales on secondary traumatic stress scale. Within 'intrusion', profession explained 20.2% of the variance in scores ($R^2 = .202$, $F(11, 95) = 2.183$, $p = .022$). Staff nurses made the strongest unique contribution, which was also statistically significant ($\square = .394$, $p = .019$). Junior doctors ($\square = .318$, $p = .025$) and EMTs ($\square = .224$, $p = .049$) also made statistically significant contribution.

Within 'avoidance', profession explained 14.6% of the variance in scores ($R^2 = .146$, $F(11, 95) = 1.417$, $p = .155$). Staff nurses made the strongest unique contribution, which was also statistically significant ($\square = .352$, $p = .041$). Junior doctors ($\square = .319$, $p = .029$), middle grade doctors ($\square = .320$, $p = .025$) and auxiliary nurses ($\square = .242$, $p = .040$) also made statistically significant contribution.

Within 'arousal', profession explained only 12.8% of the variance ($R^2 = .128$, $F(11, 95) = 1.266$, $p = .526$). Again, staff nurses made the strongest unique contribution, however this was not statistically significant ($\square = .268$, $p = .122$). Within the total STSS score, profession explained 16.2% of the variance ($R^2 = .162$, $F(11, 95) = 1.665$, $p = .093$). Once again, staff nurses made the strongest unique contribution, which was also statistically significant ($\square = .359$, $p = .035$). Junior doctors also made statistically significant contribution

($\square = .306$, $p = .035$).

Assessment of need questionnaire

Relationship between standardised scores and job enjoyment

Analysis found a significant impact of job enjoyment on GHQ-12 in that those who enjoyed their job when they started but do not currently, obtained higher median scores than those who showed consistency in job satisfaction ($\square^2(7, N = 100) = 18.930$, $p = .008$).

The same was found within STSS total and sub-scale scores, in that scores of intrusion $\square^2(6, N = 100) = 18.855$, $p = .003$, avoidance ($\square^2(7, N = 100) = 25.910$, $p = .001$), arousal $\square^2(7, N = 100) = 24.641$, $p = .001$ and total STSS score $\square^2(7, N = 100) = 26.010$, $p = .001$) showed statistically significant increases for those who enjoyed their job more compared with other groups.

No significant difference was found between scores on any scale when compared with how participants enjoy their job currently and whether they look forward to their job in the future.

Perceived impact of occupational stress on mental health

When asked about the mental health impact of occupational

stress, 69.2% stated that they thought occupational stress (either in the past or currently) has caused them psychological distress.

Thematic analysis

Q1. Briefly describe what you feel are your main sources of stress in the work place?

Among the data, stressors were identified in 7 main themes. Some professions did not identify with a theme, and some themes were unique to certain professions.

The 7 dominant themes were; patients, resources, daily & long-term job concerns, other people & services, managerial issues and morale. Within these, sub themes related to more specific stressors. Some issues, such as 'upsetting clinical issues' were described consistently by all professions as bereavement, serious medical traumas and emergencies involving children. Some sub-themes however emerged as unique to a profession. Some doctors within the sample spoke for example of feelings of isolation;

'... others abuse the service offered by the emergency department... the lack of social interactions with other colleagues throughout the shift makes me feel isolated.'

Some nurses spoke of the impact of stress on morale and group dynamics:

'Negative comments from the press has lead to low morale among my colleagues...'

Personnel from the ambulance service spoke of training needs and communication difficulties and how this is thought to contribute to stress within the workplace:

'Lack of training in certain areas such as communication, paediatrics and maternity... There is no feedback from management on how I performed at the scene if any query or investigation takes place'

Table 4: Showing dominant and sub-themes by profession from 'stressors' questions

Q2. Do you think work related stress affects your mental health? (Yes/No) If yes, how do you think that these stressors affect you?

Through analysis, five themes emerged: low mood, anxiety/agitation, somatic difficulties, impact on relationships and poor self-care.

Participants discussed a decrease in mood often characterised through poor motivation, lethargy and thoughts of self-harm. Participants also frequently mentioned disturbed sleep including distressing, work related dreams. Anxiety was discussed, characterised through worries and feeling frequently 'on edge'. In relation to somatic difficulties, some participants discussed the presentation of physical pain which has presented 'without any reason other than stress.' Many reflected on the impact of their work on relationships with

several participants stating that work stress has impacted negatively on marital relationships. The main theme emerging through self-care was related to maladaptive coping behaviour such as social withdrawal and increased alcohol consumption.

Q3. Do you think there is anything that would decrease the potential for psychological distress and if so, do you think that there is anything that Psychological Therapies could provide?

Four themes emerged: resources, working conditions, training and management/support. Within themes of *working conditions* and *management and support*, the most frequently expressed thoughts related to the need for protected breaks, reassurance and affirmation. When asked about potential input from psychological therapies, one respondent stated that:

'Staff here feel anxious and isolated, anything that can reduce that would be beneficial'

There were three emergent themes regarding what may be needed or wanted from psychological therapies; accessibility, talking therapies and psychoeducation. Within the dominant theme of talking therapies, three sub-themes emerged: Group therapeutic sessions, direct therapeutic support and critical incident de-brief.

DISCUSSION

Psychological distress

In the current study, although no professional group obtained scores within a clinically significant range, each profession (except CSOs) scored an elevated mean. These results suggest elevated levels of distress with potential differences between emergency medical professions.

Secondary trauma experiences

The mean scores obtained for the STSS total and sub-scaled scores in the current study were higher than expected norms, suggestive of elevated levels of secondary trauma. Results found high levels of secondary trauma symptomatology across professions, with highest elevations in nursing and junior medical staff. These findings highlight the need for intervention.

Job enjoyment and psychological wellbeing

Findings show a significant correlation between job enjoyment and distress. When participants enjoy their job less than when they first started, they were more likely to have increased scores on GHQ-12 and STSS. The direction of this relationship however is unclear; do people have higher psychological distress because they do not enjoy their job as much as they used to, or do people enjoy their job less because they are experiencing higher levels of distress? As reflected by the themes generated, it is likely that this is an individual experience based on a multitude of factors such as personal resilience, morale and environment.

Exploring experience of stress and need

Themes identified by participants as their main sources of stress resembled previous studies.^{6,8,12} Participants discussed ways in which they felt stressors affected them including low mood and anxiety. The majority of the sample engaged in regular shift work and the impact of this on physical and psychological health is well recognised.²³ With regard to the theme of self-care, many reported maladaptive patterns of coping, mirroring the findings of Roger's study.¹²

There were four areas identified as having potential for positive change. These related to improved resources, managerial changes and better working conditions. When discussing a potential role for psychological therapies, participants had varied ideas of what could be useful. The request for psychoeducation could be linked to the hypothesised high levels of resilience within the population. A dominant theme in the analysis was low morale and the need for group support and open discussion. Professional socialisation, social support and humour have been shown to enhance resilience in emergency medicine.²⁴

LIMITATIONS

The directional and causal implications of the relationship between enjoyment of work and psychological distress cannot be fully explored in the current study. Also, to allow for varied analysis and exploration of the whole data set, GHQ-12 was not analysed in relation to the sub-scales contained within the measure. Although the sample was representative for each profession, more ancillary and support staff would have been beneficial.

IMPLICATIONS

A population with varying levels of psychological and systemic need has been identified within the current study. Some participants asked for an easily accessible service from psychological teams which they can use if needed

The participants in the study suggested psychoeducation as a form of support that could take on the role of normalisation for staff working within emergency settings. It could be beneficial to highlight these experiences as a group experience and as a normal reaction to an abnormal or persistent level of stress. Emotional responses such as secondary trauma are not unusual, they arise frequently among those who care for victims of trauma and as such, should be made more aware to the caring professions.²³

CONCLUSION

Staff in emergency medicine have voiced their opinions on several issues related to their experience of occupational stressors. The elevated levels of psychological distress and secondary trauma point to the need for support on both remedial and preventative levels. The shape and structure of this support may be therapeutic, educational, communicative or consultative.

ACKNOWLEDGEMENTS

The authors would like to thank all the staff in the Northern Health and Social Care Trust for their participation. Special thanks are given to the academic and practical support offered by Psychological Therapies Services, especially from Dr Adrian Boyd, Dr Petra Corr and Dr Martin Dempster at Queens University, Belfast for statistical advice.

The authors would like to acknowledge support from Dr Orlaith Scullion in the A&E department of Antrim Area Hospital and multifaceted support and advice from Dr Daniel McAleese.

REFERENCES

- 1 Haslam C, Mallon K. A preliminary investigation of post-traumatic stress symptoms among firefighters *Work and Stress*. 2003;**3**: 277-285.
- 2 Iversen AC, Fear NT, Ehlers A, Hacker Hughes J, Hull L, Earnshaw M, et al. Risk factors for post-traumatic stress disorder among UK Armed Forces personnel. *Psychol Med*. 2008;**38**(4):511-22.
- 3 Vinokur AD, Pierce PF, Lewandowski-Romps L, Hobfoll SE, Galea S, et al. Effects of war exposure on air force personnel's mental health, job burnout and other organizational related outcomes. *J Occup Health Psychol*. 2011;**16**: 3-17.
- 4 Chung YK, Park CY. The effects of injury and accidents on self-rated depression in male municipal fire-fighters. *Safe Health Work*. 2011;**2**(2):158-68.
- 5 Mishra S, Goebert D, Char E, Dukes P, Ahmed I. Trauma exposure and symptoms of post-traumatic stress disorder in emergency medical services personnel in Hawaii. *Emerg Med J*. 2010;**27**(9):708-11.
- 6 McFarlane AC, Bryant RA. Post traumatic disorder in occupational settings; anticipating and managing the risk. *Occup Med*. 2007;**57**:404-10.
- 7 Alexander DA, Klien S. Ambulance personnel and critical incidents; impact of accident and emergency work on mental health and emotional well-being. *Br J Psychiatry*. 2001;**178**(1):76-81.
- 8 Rondeau KV, Francescutti LH. Emergency department overcrowding: the impact of resource scarcity on physician job satisfaction. *J Healthc Manag*. 2005;**50**:327-40.
- 9 Boudreaux E, Mandry C, Brantley PJ. Stress, job satisfaction, coping and psychological distress among emergency medical technicians. *Prehosp Disaster Med* 1997;**12**(4):9-16.
- 10 Burbeck R, Coomber S, Robinson SM, Todd C. Occupational stress in consultants in accident and emergency medicine: A national survey of levels of stress at work. *Emerg Med J*. 2002;**19**(3):234-8.
- 11 Gillespie M, Melby V. Burnout among nursing staff in accident and emergency and acute medicine: a comparative study. *J Clin Nurs*. 2003;**12**(6):842-51.
- 12 Rodgers LM. A five year study comparing early retirements on medical grounds in ambulance personnel with those in groups of other health service staff. *Occup Med*. 1998;**48**(2):119-32.
- 13 Yehunda R, McFarlane AC, Shalev AY. Predicting the development of posttraumatic stress disorder from the acute response to a traumatic event. *Biol Psychiatry*. 1998;**44**(12):1305-13.
- 14 Tehrani N. Managing trauma in the workplace. Oxford: Routledge Press; 2011
- 15 Mills LD, Mills TJ. Symptoms of post-traumatic stress disorder among emergency medicine residents. *J Emerg Med*. 2005;**28**(1):1-4.
- 16 Garrosa E, Moreno-Jimenez B, Liagn Y, Gonzalez JL. The relationship between socio-economic variables, job stressors, burnout and hardy personalities in nurses; an exploratory study. *Int J Nurs Stud*. 2008;**45**(3):418-27.

- 17 Jackson C. The General Health Questionnaire. *Occup Med*. 2007;**57(1)**:79.
- 18 Shevlin M, Adamson G. Alternative factor models and factorial invariance of theGHQ-12: a large sample analysis using confirmatory factor analysis. *Psychol Assess*. 2005;**17(2)**:231-6.
- 19 Bride B, Robinson MM, Yegidis B, Figley CR. Development and validation of the secondary traumatic stress scale. *Res Soc Work Pract*. 2004;**14(1)**:27-35.
- 20 Shah SA, Garland E, Katz C. Secondary traumatic stress: prevalence in humanitarian aid workers in India. *Traumatol*. 2007;**13(1)**:59-70.
- 21 Quinal L, Harford S, Rutledge DN. Secondary traumatic stress in oncology staff. *Cancer Nurs*. 2009;**32(4)**:1-7.
- 22 Braun V, Clarke V. Using thematic analysis in psychology *Qual Res Psychol*. 2006;**3(2)**:77-101.
- 23 Sofianopoulos S, Williams B, Archer F. Paramedics and the effects of shift work on sleep: a literature review. *Emerg Med J*. 2010;**29(2)**:152-55.
- 24 Mildenhall J. Occupational stress, paramedic informal coping strategies: a review of the literature. *J Paramedic Pract*. 2012;**4(6)**:318-28.