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Original Article

The examination of symptoms of mental disorders in firefighters and their spouses

Orchide Sharifian and Ali Nik Bakht*

University of Hormozgan, Minab Street, Bandar Abbas, Iran

*Corresponding author' email: nikbakht472@yahoo.com

ABSTRACT

Occupational hazards of firefighting profession display with the divulging and aggravation of physical and mental diseases types. The purpose of this study was the examination of symptoms of mental disorders in firefighters and their spouses. Therefore, all firefighters working in the operational section of Bandar Abbas (80 persons) and their spouses (54 persons) were selected and with using the MMPI questionnaire 71 questionnaire were tested. Correlation method was used to analyze the data. Results of study were showed that more than half of the firefighters had symptoms of mental disorder and 44percent of their spouses also had symptoms of mental disorder. Howe scale, and paranoia scale of depression in their spouses of firefighters, had the highest frequency. The most common colons code in firefighters was 24.42 and in their spouses was 16.61 respectively. Another finding of this study was that there was the positive and significant relationship between the personality profile of firefighting and their spouses. The conclusion of this study is that about half of the firefighters and their spouses are at risk of mental disorders that this amount is more than normal levels of normal society and is needed that be more attention to mental health in this group.

Keywords: Mental disorder, Firefighting, MMPI, Personality profile.

INTRODUCTION

Firefighting organizations are formed with the main aim of saving of lives and property of people, therefore, a firefighter is capable of in the most critical environmental conditions and prejudicial of working conditions helps accident victims. According to the statistics of fires and accidents, the number of injuries and deaths of those firefighters in recent years is worrying, because the firefighters is doing work in hazardous environments, including explosions, so their susceptibility is the upper limit, in addition to this, accidents and risks of occupation in firefighting display with incidence and severity of physical and mental diseases types (Firefighting organization, 2011).

People working in occupations such as firefighting have great stress and are exposed to anxiety (Lesan and colleagues, 2010). Studies show that the highest disease and mortality firefighters are related to directly or indirectly to the nature of stress their work, so this job in the United States because of the stressful and dangerous from an occupational mortality point if view, has the fifth rank (Bernard, 1975).

Firefighters in each mission typically are exposed to numerous accidents including driving and traffic, smoke effects and complications of toxic gases in the areas of operations, complications of an audible sound, Loudspeaker light and rotary, side effects of hormones defense and disaster preparedness in the body, effects of heat on fire, effects of contact or absorption of chemicals through skin, physical injury in the line of duty of complications, receiving of ionizing radiation and radioactive radiation mechanism (Beaton et al, 1997).

Meanwhile, firefighters in doing of rescuing operations are exposed of accident such as seeing of tragic and grievous scenes, the occurrence of explosion in the event scene, the complication of arising from ergonomic equipment and machinery, the complications from serving as a shift, complications resulting from lack of proper nutrition and appropriate with job, the complications of stress after accident, the complications of working in contaminated environments, as the complications of working in wet environments (Beaton et al, 1997).

Research findings on criminal polish officers and firefighters (Toin and Foa, 1999), doctors and medical students (Mills and Mills, 2005) and nurses in emergency and intensive care unit (Laposa, Alden, and Fullerton,

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2003) showed that in such jobs because of facing with the most important sources of stress such as dealing with risky events or death in patients and their struggle with death, are experiencing traumatic stress syndrome after accident.

Up to now so many different studies have been conducted in the field of mental health. The results of these studies all suggest that the study of mental health of people could be present valuable information in the field of educational programs, treatment and prevention of mental disorder to planners and managers of enterprises and service providers. The high prevalence of mental disorders and their chronic long term disability has caused problems in all communities be considered as a health priority (Noorbala et al, 2002). Looking at the statistics published in the field of mental disorders in different countries and Iran, the importance and necessity attention to mental health will be more specific. According to World Health Organization estimates in 2002, about 500 million people in worldwide are suffering from mental disorders that about half of them are formed slight disorders such as mild depression and anxiety (World Health Organization, 2001).

The review of studies in the field of mental health status of persons 15 years and older in Iran indicates that on average about 21 percent of the population suffer from mental disorders, and women are more vulnerable than men (Hosseini, 2000).

In the research by Nazari Hashemi and colleagues (Hashemi nazari, 2005), for the examination of mental health of firefighters in Tehran, concluded that the 15.2 percent of firefighters who were suspected of mental disorder, also mental disorders outbreak suspected shows with increasing of age of 5.2 percent in the group under 24 years to 33.4 percent in the group increased over 55 man.

Since the function of firefighters, in addition to their own health, has a direct effect on health of other people health of the population and mental disorders caused Conflicts and negative effect on the health of our community partners, given the poor record of survey studies about mental health of firefighting personnel, we decided to investigate the prevalence of psychological disorders in each of the firefighters and their spouses.

MATERIALS AND METHODS

This study is a descriptive and cross-sectional study. Statistical community of study, including all fire fighting personnel of Bandar Abbas (86 persons) and their spouses (57 persons) was a total 143 persons that because of limitation, sampling of them has not been performed, so the sample is equal to society. These people in seven fire stations operating were employed in the city of Bandar Abbas. In this study, the required information is collected by Minnesota multifaceted personality questionnaire, short form with 71 questions. So after explanation about study method, the method of completing of questionnaire, the arrest of collaboration, trust about classified answers, the questionnaires were completed. The questionnaires after collecting were investigated that 9 questionnaires because of lack of facing were eliminated. So134 persons were entered in study. MMPI questionnaire is one of the most famous and valid of tests that are performed in recent years about the examination of mental test in the world. This test distinct the personality structure of person. The Minnesota test for the first time was presented in 1943 by R. Stark Hathaway and J. McKinley Charnly at the University of Minnesota. Short form for this test consisted of 71 questions, prepared and released by Kinkaen in 1968. Form 71-question test was prepared by Iranian cultural conditions, and finally by Barahani, okhovat, Shamloo and Noe Parast. The statistical properties of this test have been confirmed by Iranian researchers in numerous studies for the Iranian society (Amiri and Salim, 2008). Today, in most medical and research centers of this type of test used. Short form includes eleven scales that have three validity scales and eight clinical scales (Sharafi, 2001).

The clinical scales include:

1. HS or hypochondria -scale: refers to the characteristics that are related to person.
2. D or depression scale: a score of person in this scale indicates a person's depression.
3. Hy or hysteria scales: shows the desire to attract attention and display reactions.
4. Pd or psychopathy scale: shows anti-social and testable reactions.
5. Pa or paranoia scale: shows the level of trust or distrust a person to others. People who have high scores in this scale, they are people who have the general trust to others and their thoughts and behavior is indicated by the intense suspicion.
6. PT or Psych asthenia Scale: refers to mental fatigue and weakness.
7. SC scales or schizophrenia: examines the psychotic symptoms.
8. Ma or mania Scale: This scale measured symptoms is reversed of depression. Those with higher scores on this scale are happier and energetic that at high degree is known as a disorder.

SPSS 18 software and descriptive statistics methods and Pearson correlation were used to analyze data and the results of present study.

RESULTS

The purpose of this study was the examination of the signs and symptoms of mental disorder in firefighters and their spouses. This study has been performed for 80 persons of firefighters and 54 persons of their spouses. In this section, the results of this study are presented separately for firefighters and their spouses.

Firefighting age range was between 26 years to 60 years their age average was about 39 years. Age range of their spouses was 20 years to 60 years and their age average was about 35.9 years. In terms of marital status, 3 of firefighting were married and 77 were single. In terms of education level, most of the firefighting (66 percent) had high school education. Most of their wives also had high school education (67 percent) respectively. Education situation of them are presented in Table 1.

Table 1. Education level of firefighting and their spouses

Education	firefighting		spouses	
	Frequency	percentage	Frequency	percentage
junior and high school	53	66.2	36	7.66
the diploma	25	31.2	10	18.5
associate of art	2	2.6	5	9.3
Bachelor of science	-	-	2	3.7
uncertain	-	-	1	1.8

To investigate the signs and symptoms of mental disorder, a personality profile and the level of T scores were used, thus individuals who have T scores 65 and higher than it, as people suspected of having mental disorders were identified. Based on the results, 58.8 percent of firefighting and 44.4 percent of their spouses were suspected of having a mental disorder (Table 2).

Table 2. Firefighting situation and their wives of having the symptoms of mental disorders

Education	firefighting		spouses	
	Frequency	percentage	Frequency	percentage
Having the Symptoms of mental disorder	47	58.8	24	44.4
without Symptoms of mental disorder	33	41.2	30	55.6

In the study of clinical scales, it was found that depression scale of the firefighting has the highest frequency and for the 18.8 percent of firefighting this scale is the highest scale. Then, the psycho - social deviation scale (Pd) and depression, with 10 percent, are the next rank. Scale of mental weakness (Pt) without frequency is in the last category. For firefighting spouses, suspicion scale (Pa) with 13 percent is in the first category and (Hs) is the next category. The scale of mental weakness is last category (Table 3).

Table 3. Frequency and percentage of MMPI scales

Education	firefighting		spouses	
	Frequency	percentage	Frequency	percentage
hypochondria	6	7.5	6	11.1
depression	15	18.8	2	3.7
hysteria	2	2.5	3	5.6
psychopathic	8	10	2	3.7
paranoia	5	6.2	7	13
Psych asthenia	-	-	-	-
schizophrenia	8	10	3	5.9
mania	3	3.8	1	1.9
without disruption	33	41.2	30	55.6

Also, when the psychological profile of people were investigated based on the two-point codes, the following results were obtained. Two frequent two-point codes in the firefighting were code 24.42 with 11.2 percent and code 68.86 with 8.8 percent, respectively. Then, code 12.21 and code 23.32 with 5 percent is the next rank. Also codes 13.31, 16.61, 18.81, 29.92, 38.83, 49.94, 89.98 with 1.2 percent had the lowest frequency.

The following results were obtained for the spouses of firefighting: The most frequent two-point codes were code 16.61 with 9.3 percent, Code 68.86 with 7.4 percent and code 13.31 to 5.6 percent. Codes 26.62, 28.82, 78.87, 89.98 with 1.9 percent had the lowest frequency. In order to determine whether there is relationship between the personality profile of firefighting and their wives, the Pearson correlation was used. The results showed that between the personality profiles of the two groups, there is positive and significant relationship (Sig: 0.18, $P<0.05$). Correlation coefficient was 0.32, which indicates the relationship between the two groups in MMPI clinical scales.

DISCUSSION AND CONCLUSION

Since, certain segments of society (firefighters, nurses, military, etc.) because of their occupation are exposed to stressful stimuli, expected to mirror the effect of stress on them and their families even more than the normal population. Thus, in this study try to evaluate the symptoms of mental disorders, particularly firefighters

and their spouses to determine what their spouses how are under the influence of job conditions and psychological pressures.

As was mentioned in the Results section, 58.8 percent of firefighting at least at one of the clinical scales had T scores above 65 that cab to be said, they are suspected of having mental disorders. Also 44.4 percentof the spouses of firefighting at least at one of the clinical scale had T scores higher than 65 that indicate the effect of husbands' job stress. Obtained results are consistent with the theoretical results of Hashemi et al (2005). Based on these results, about 15 percent of firefighters were suspected of having mental disorders that with increasing with age, increase to 33.4percent. Also, the difference between these results with Hashemi is because of this that this is done for operational firefighting, while the theoretical Hashemi et al study was performed on all firefighting. Also, the results of this study and results of Beaton Hmaran (Beaton & et al, 1997) who believe that fire job due to full of stress and deaths has fifth rank, is aligned. To determine people have more problems in which subjects, test profile has evaluated that basis of this, about 19 percent of firefighting at the depression scale and 10percent of them at the variation of psychosocial and schizophrenia scale had the highest scare. These results indicate that firefighting suffer from depression and due to work pressure and stress is more likely to be depressed in the future. Also, the mental fatigue scale (psych asthenia) in none of the cases was the highest one although in many cases T scores was higher than 65.

But the wives of firefighting, paranoia scale (Pa) with 13 percent and hypochondriasis scale, with 1.11percent were highest scales.

These results indicate that these people inhibit their stress as anger. They also have signs of hostility, suspicion, and they are not optimistic about the future. But for more accurate interpretation of results, must be two-point codes are investigated. Based on current research findings, more firefighting have code 24.42 that means in the scales of depression and psychosocial deviation, were achieved high scores.

Moreover, they have difficulty in controlling their behavior and also suffer from anxiety and depression. They probably have non active angrily that can be the reflex of the tensions and pressures. Code 68.86 was also one of the common code that indicates that they have Paranoia symptoms and can be described them as a shy person. One of the possible findings for this code is the anxiety that seems reasonable given the conditions of their employment.

The most common codes for wives of the firefighting were code 16.61 and 68.86, which shows almost the same conditions and indicates that most of the spouses suffer from symptoms, such as anxiety, depression and poor social relationships. These results are consistent with findings of Barnard & Duncan (1975) and Beaton et al (1997), that is indicating the great anxiety and stress of firefighting.

Also these results are aligned with the results from the World Health Organization that (2001) based on it, half of the society population suffered from disorders such as anxiety and depression.

One of other results of this study was that there is a significant and positive relationship between personality profile of firefighting and their spouses. Although the obtained ratio (0.32) does not show strong relationship, but about 44 percent of spouses had symptoms of mental disorder and this value were is higher rate than the normal population (Noorbala et al, 2002) and can indicate the effect of stress and disturbances on their spouses. Also, due to high mortality of firefighting (Beaton et al 1997) possibly their spouses are expecting at any moment for their adverse events and this could be explain their high rate of psychiatric disorders including anxiety, depression and symptoms such as pessimism. Overall, the results of this study indicate that operational firefighting are exposed more mental disorders and stress. In addition, their spouses also are affected by these disorders, pressures.

REFERENCES

Amiri, M., & Salami, S. H. (2008). Compare psychological profiles of employed wives spinal cord injured women working with a normal population. *Journal of daneshvar rafter. 22, 59-68.*

Barnard, R. J., & Duncan, H. W. (1975). Heart rate and ECG responses of firefighters. *Journal of Occupational Medicine, 12, PP 247-250.*

Beaton, R. D., Murphy, S. A., Pike, K. C., & Corneil, W. (1997). Social support and network conflict in firefighters and paramedics. *Western Journal of Nursing Research, 19, PP 297-313.*

Firefighting organization (2010). firefighters and hazards. Available at: http://www.ilo.org/encyclopedia/?doc&nd=857200213&nh=0

Hashemi nazari, S. S., Khosravi, J., Faghihzadeh, S., & Etemadzadeh, S. H. (2008). A survey of mental health among fire department employees by GHQ-28 questionnaire in 2005. *Journal of hakim, 2, 56-64.*

Hosseini, A. (2000). Spectrum of mental health problems. *Journal of mental health principles, 1, 4-6.*

Mills L. D., & Mills T. J. (2005). Symptoms of post-traumatic stress disorder among emergency medicine residents. *Journal of emergency medicine, 28(1): 1.*

Laposa J. M., Alden L. E., & Fullerton L. M. (2003). Work stress and posttraumatic stress disorder in ED nurses/personnel. *Journal Emerg Nurs.* 29(1): 23-8.

Lesan, S. & et al (2009). Application model (PRECEDE) deal with the increased anxiety behaviors in Tehran firefighters. *Journal of payesh, 2, 181-190.*

Nourballa, A. A., & et al (2002).The study of mental health for 15 years and older in the Islamic Republic of Iran. *Journal of hakim, 1, 1-10.*

Sharifi, H. (2001). *Theory and application of intelligence and personality tests.* Sokhan publishers.
The world health reports (2001). *Mental health: new understanding, new hope.* Geneva: World Health Organization; Available at: http://discovermagazine.com/2000/Oct/feat world/
Tolin DF, Foa EB (1999). Treatment of a police officer with PTSD using prolonged exposure. *Behavior therapy. 30(3): 527-38.*