

Original Article

The Prevalence of Chronic Fatigue Syndrome in Emergency Healthcare Professionals and the Associated Factors

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Abstract

Purpose: The purpose of this study is to investigate the status of emergency healthcare professionals of a public hospital in terms of chronic fatigue syndrome, to evaluate the factors taking part in the formation of this syndrome, and to shed light on measures to be taken to overcome chronic fatigue syndrome based on the obtained data.

Method: The population of this descriptive study consisted of a total of 67 individuals including 8 physicians and 59 non-physician healthcare professionals working in the Emergency Department. In the collection of data, a questionnaire consisting of two parts was used. The first part of the questionnaire prepared and applied by the researcher based on the literature included questions about demographic characteristics, working conditions, daily habits, nutrition, and physical activity status. In the second part, CFS evaluation criteria (International CFS Case Definition, 1994) index of CDS was added into the questionnaire.

Findings: When the correlation between chronic fatigue and gender was examined, it was observed that 68.3% of the men and 73.1% of the women had chronic fatigue. Chronic fatigue had no significant correlation with age, BMI, and smoking ($p>0.05$). More chronic fatigue was observed in those having moderate level of physical activity, drinking less than 3 cups of tea, and consuming 1-2 cups of coffee compared to the others but the differences were not statistically significant ($p>0.05$).

Conclusion: In conclusion, we found chronic fatigue syndrome in emergency health care professionals. In order to maintain quality emergency services that are highly of vital importance, it is essential for emergency service personnel to have no fatigue. For this purpose, it will be proper to determine the risk factors for chronic fatigue, to take measures to prevent chronic fatigue in working conditions, and to monitor emergency healthcare professionals periodically for chronic fatigue.

Key words: Chronic fatigue syndrome, Emergency staff, socio-demographic features.

Introduction

Chronic fatigue syndrome (CFS) is an acquired, multi-systemic and highly complex disease that can develop in sporadic or epidemic forms is characterized by the presence of at least four symptoms such as deep fatigue which does not get well with bed rest and has been present for at least six months, cognitive disorders such as memory and concentration problems, sensitive lymph nodes, common myalgia, arthralgia, headache, sleep disorders and frequent or recurrent throat ache (Buchwald & Garrity, 1994). CFS is a complex, severe, multi-systemic,

and disabling condition that is not congenital. Although its prevalence in the adult population is reported in the rates of 0.02% and 2.8%, its actual prevalence is thought to be several times higher (Jason et al. 1993).

CFS, which has significant disabling feature and no specific diagnostic test yet is a possibly heterogeneous syndrome diagnosed symptomatically or on a clinical basis. It was first named as "Chronic fatigue syndrome" in 1988 in the USA (Holmes et al. 1988). Since too many definitions were established, Center for Disease Control (CDC) formed an international

study group in 1994 and developed descriptive criteria which are still in use at the present time. It is mostly seen in stressful professions, healthcare personnel (doctor, nurse, midwife, health staff, etc.) are the primary among them (Fukuda et al. 1994).

It is extremely important to know to what extent healthcare professionals are affected by CFS, a disease which has a lot of the unknowns. It is reported that healthy healthcare professionals in a work environment increase the health and quality of life of those receiving healthcare service (Ceylan, 2009). Providing effective and continuous healthcare services for healthcare professionals is possible if they are healthy (Kilic & Cetinkaya, 2011).

It is known that especially emergency medical service workers among the healthcare professionals face with intense stress factors due to the intensity of the work environment, severity of the patients receiving care, time pressure, and the program of working with shifts.

The purpose of this study is to investigate the status of emergency healthcare professionals of a public hospital in terms of chronic fatigue syndrome, to evaluate the factors taking part in the formation of this syndrome, and to shed light on measures to be taken to overcome chronic fatigue syndrome based on the obtained data.

Material and Method

The population of this descriptive study consisted of a total of 67 individuals including 8 physicians and 59 non-physician healthcare professionals working in the Emergency Department of Bingöl State Hospital. Before the study, ethics approval from the department of Scientific Research and Publication Ethics Committee in Bingöl University Rectorate and administrative permissions from Provincial Directorates of Health were obtained. The study was conducted between 01.08.2016 - 31.12.2016 after the necessary written permissions were obtained from the related institutions. The study was conducted in accordance with the principles of Declaration of Helsinki. The healthcare professionals participating in the study were informed about the purpose of the study, their verbal consents were taken, and attention was paid on them to be voluntary.

In the collection of data, a questionnaire consisting of two parts was used. The first part of the questionnaire prepared and applied by the

researcher based on the literature included questions about demographic characteristics, working conditions, daily habits, nutrition, and physical activity status. In the second part, CFS evaluation criteria (International CFS Case Definition, 1994) index of CDS was added into the questionnaire (Fukuda et al. 1994).

CFS diagnostic criteria: In general, there are two criteria a patient needs to meet in order to get a CFS diagnosis:

A- **Chronic fatigue** (lasting at least 6 months or longer and cannot be explained with known other medical conditions)

B-Also, **having at least 4 of the following criteria:**

1. Memory and concentration loss,
2. Throat ache,
3. Sensitive lymph nodes,
4. Painful-rigid muscles,
5. Pain in many joints,
6. Incipient headache,
7. Non relaxing sleep,
8. Pain after exercise (Klonoff, 1992, Sharpe et al. 1991).

Basically, patients with CFS were classified as follows according to the onset of fatigue:

1. **Prolonged fatigue (PF):** fatigue prolonging for a month or longer or repeating,
2. **Idiopathic chronic fatigue (ICF):** lasting 6 months or longer but not fully meeting the fatigue severity and the number of criteria.
3. **Chronic fatigue syndrome (CFS):** fatigue having no other medical explanation and holding at least four of the other symptoms, prolonging for 6 months or more or repeating.

Patients with chronic diseases (thyroid, depression, etc.) were not evaluated as CFS. The cases whose fatigue lasted for less than one month and did not repeat were excluded from the fatigue classification.

The limitation of the study is that the study was conducted on the emergency healthcare professionals in Bingöl province. The data obtained from the study were transferred to the computer environment. SPSS Statistics 17 package program was used in statistical evaluation of the data. Categorical data were

presented as number (n) and percentage of patients (%). Chi-square test was used in analyzing the categorical data. In all analyses, the value of $p < 0.05$ was accepted as statistically significant.

Results

Table 1 shows the distribution of the personnel working in the emergency department in terms of general characteristics. Accordingly, 61.2% of the participants were male and 38.8% were female. 74.6% of the participants were under 40 years of age. 75.6% of the male individuals and 61.5% of the females were married. Of the individuals, 34.3% were high school graduates, 31.3% had associate degree, and 31.3% had bachelor's degree. While 63.4% of the males were overweight, 73.1% of the females were in normal BMI group. Half of the individuals participating in the study were smoker, and 92.3% of them had alcohol addiction.

When the correlation between chronic fatigue and gender was examined, it was observed that 68.3% of the men and 73.1% of the women had chronic fatigue (Table 2). Chronic fatigue had no significant correlation with age, BMI, and smoking ($p > 0.05$). More chronic fatigue was observed in those having moderate level of physical activity, drinking less than 3 cups of tea, and consuming 1-2 cups of coffee compared to the others but the differences were not statistically significant ($p > 0.05$).

Table 3 shows the distribution of some characteristics according to the chronic fatigue condition. Accordingly, along with the complaint of fatigue, 72.2% of those who have no decrease in their individual, social, professional and educational activities and 67.7% of those who had decreases in their activities, 72.2% of the individuals who did not have memory and concentration difficulties, and 69.4% of those who had those difficulties were observed to have chronic fatigue. It was found that the chronic fatigue was more in those without throat ache, lymph node, muscle stiffness, and sleep disorder than those with throat ache, lymph node, muscle stiffness, and sleep disorder; it was at the similar rates among those with and without joint pain; the syndrome of chronic fatigue was less in those having no headache, non-exercise pain, and post-exercise pain than those having these pains. Differences except for the lymph node were not statistically significant ($p > 0.05$).

Discussion Chronic fatigue syndrome (CFS) is a

systemic disease that exhausts the person and limits considerably his/her daily activities. Symptoms and signs of this syndrome more often develop due to immunologic, autonomic, neurological and endocrinological dysfunctions (Manu et al. 1991). Studies conducted to determine the prevalence of CFS are recent and it is thought that the prevalence of the disease is more frequent than the supposed. In addition, data of the related literature concerning healthcare personnel who have CFS and are working in the emergency departments are quite limited.

Of the individuals participating in the study and the personnel working in the emergency department, 61.2% were male and 38.8% were female. 74.6% of the individuals participating in the study were under 40 years of age. 75.6% of the males and 61.5% of the females were married. Of the individuals, 34.3% had high school education, 31.3% had associate degree, and 31.3% had bachelor's degree. While 63.4% of the men were overweight, 73.1% of the women were in normal BMI group. Half of the individuals who participating in the study were smoker and 92.3% had no alcohol addiction.

When the correlation between chronic fatigue and gender was examined, it was observed that 68.3% of the men and 73.1% of the women had chronic fatigue. This syndrome can get people from both genders, every socio-economic class and every race (Taylor et al. 2003). There are also studies indicating that CFS affects women more than men (Farmer et al. 1999).

Chronic fatigue had no significant correlation with age, BMI, and smoking ($p > 0.05$). In the study by Sayın et al., there was no significant difference among the fatigue groups in terms of average age, smoking habits and mean BMI values (Sayın et al. 2013). In another study, it was found that CFS was seen more often under the age of 35 (Kara et al. 2008).

Patients with CFS often mention about exercise intolerance. Some patients complain that their fatigue and other symptoms increase with a very mild exercise (Vercoulen et al. 1996). As a result, CFS patients cannot show maximal heart rate appropriate to the age and their measurable effort capacities are lower than those of people having a

sedentary life (Riley et al. 1990, Montague et al. 1989).

Table.1 Distribution of general characteristics of the participants

Characteristics	Male (n:41)		Female (n:26)		Total (n: 67)	
	n	%	n	%	n	%
Gender	41	61.2	26	38.8	67	100.0
Age						
Under 40 years of age	27	65.9	23	88.5	50	74.6
40 years of age and older	14	34.1	3	11.5	17	25.4
Marital Status						
Single	10	24.4	10	38.5	20	29.9
Married	31	75.6	16	61.5	47	70.1
Educational Level						
High School	14	34.1	9	34.6	23	34.3
Associate Degree	14	34.1	7	26.9	21	31.3
University	11	26.8	10	38.5	21	31.3
Master of Science and higher	2	4.9	0	0,0	2	3.0
Income Level						
750-1500 TL	14	34.1	2	7.7	16	23.9
1501-2250 TL	5	12.2	2	7.7	7	10.4
2251-3000 TL	13	31.7	8	30.8	21	31.3
3001 TL and higher	9	22.0	14	53.8	23	34.3
BMI groups						
Slim	0	0.0	0	0.0	0	0.0
Normal	15	36.6	19	73.1	34	50.7
Overweight	26	63.4	7	26.9	33	49.3
Cigarette smoking						
Yes	21	51.2	13	50.0	34	50.7
No	20	48.8	13	50.0	33	49.3
Alcohol Usage						
Yes	4	10.3	1	3.8	5	7.7
No	37	89.7	25	96.2	62	92.3
Total	41	100.0	26	100.0	67	100.0

*Chi-square analysis was performed. The value of $P > 0.05$ is statistically significant.

Table.2 Examination of some characteristics based on chronic fatigue groups

Characteristics	Chronic Fatigue (+)		Chronic Fatigue (-)		Total	
	n	%	n	%	n	%
Gender						
Male	28	68.3	13	31.7	41	100.0
Female	19	73.1	7	26.9	26	100.0
Age						
Under 40 years of age	35	70.0	15	30.0	50	100.0
40 years of age and older	12	70.6	5	29.4	17	100.0
BMI groups						
Normal	23	67.6	11	32.4	34	100.0
Overweight	24	71.9	9	28.1	33	100.0
Smoking Status						
Yes	23	67.6	11	32.4	34	100.0
No	24	71.9	9	28.1	33	100.0
Physical activity level						
Mild-sedentary	33	70.2	14	29.8	47	100.0
Moderate	12	75.0	4	25.0	16	100.0
Vigorous	2	50.0	2	50.0	4	100.0
Tea consumption						
Less than 3 cups a day	8	72.7	3	27.3	11	100.0
3 cups a day and more	39	69.6	17	30.4	56	100.0
Coffee consumption						
Not drinking	18	69.2	8	30.8	26	100.0
1-2 cups of coffee	22	71.0	9	29.0	31	100.0
3 cups and more	7	70.0	3	30.0	10	100.0

* Chi-square analysis was performed. The value of $P > 0.05$ is statistically significant.

Table.3 Distribution of some characteristics according to chronic fatigue condition

Characteristics	Chronic Fatigue (+)		Chronic Fatigue (-)		Total	
	n	%	n	%	n	%
Activity						
No	26	72.2	10	27.8	36	100.0
Yes	21	67.7	10	32.3	31	100.0
Memory-concentration						
No	13	72.2	5	27.8	18	100.0
Yes	34	69.4	15	30.3	49	100.0
Throat ache						
No	29	74.4	10	25.6	39	100.0
Yes	18	64.3	10	35.7	28	100.0
Lymph node *						
No	42	89.4	5	10.6	47	100.0
Yes	5	25.0	15	75.0	20	100.0
Muscle stiffness						
No	21	80.8	5	19.2	26	100.0
Yes	26	63.4	15	36.6	41	100.0
Joint pain						
No	12	70.6	5	29.4	17	100.0
Yes	35	70.0	15	30.0	50	100.0
Headache						
No	16	61.5	10	38.5	26	100.0
Yes	31	75.6	10	24.4	41	100.0
Sleep disorder						
No	25	83.3	5	16.7	30	100.0
Yes	22	59.5	15	40.5	37	100.0
Pain not related to exercise						
No	36	39.2	16	30.8	52	100.0
Yes	11	73.3	4	26.7	15	100.0
Post-exercise pain						
No	19	55.9	15	44.1	34	100.0
Yes	28	84.8	5	15.2	33	100.0

* Chi-square analysis was performed. The value of $P > 0.05$ is statistically significant.

All of these results are explained by the fact that the exercise capacity is below the maximum level rather than physical inactivity (Yoshiuchi et al. 2007). In the present study, chronic fatigue was observed more in those who had moderate level of physical activity than the others but the differences were not statistically significant ($p>0.05$).

Chronic fatigue was seen in 72.2% of the participants who had no decrease in their individual, social, professional, and educational activities along with the fatigue complaint, 67.7% of those who had a decrease in their activities, 72.2% of the individuals who had no memory and concentration difficulty, and 69.4% of those who had those difficulties. It was found that chronic fatigue was more in those who did not have throat ache, lymph node, muscle stiffness and sleep disorder than those who did; chronic fatigue syndrome was in similar rates in those who had and did not have joint pain; chronic fatigue was less in those who did not have headache, non-exercise pain and post-exercise pain than those who had. Differences were not statistically significant except for lymph node ($p>0.05$).

In conclusion, we found chronic fatigue syndrome in emergency health care professionals. Chronic fatigue syndrome does not only cause problems in terms of personnel, but also cause negativities in terms of patients by decreasing the quality of treatment. In order to maintain quality emergency services that are highly of vital importance, it is essential for emergency service personnel to have no fatigue. For this purpose, it will be proper to determine the risk factors for chronic fatigue, to take measures to prevent chronic fatigue in working conditions, and to monitor emergency healthcare professionals periodically for chronic fatigue.

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