

## Factors associated with fatigue in patients attending a family medicine health center in Erbil city

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### Abstract

**Background and objective:** Fatigue, is a common presenting symptom in primary care which negatively impacts work performance, family life, and social relationships. The aim of this study is to determine the causes of fatigue and to explore the relationship between fatigue and physical, mental, social and demographic factors among patients with special reference to gender.

**Methods:** A cross sectional study was carried out at the Brayati Family Medicine Center in Erbil city from 1<sup>st</sup> of July to the 31<sup>st</sup> of October 2011. We studied 320 patients of both genders attending the center for various reason complaining from fatigue. Formal consent was obtained. Demographic data in addition to two questionnaires were completed, Iowa fatigue scale and Hospital Anxiety and Depression Scale.

**Results:** 86 males (26.88%) and 234 females (73.12%). The age of the subjects varied from 16-74 years .The mean age was 29.2 years, 39.69% were in the age range 30-44 years. 58.12% were illiterate or read and write only; 65.63% were married and 57.19% reported their economic level as medium. 38.44% were fatigued according to Iowa fatigue scale. Higher level was detected among older age group, singles, and low economic and minimum educational status (51.16%, 45.31%, 41.80%, 41.18 and 42.57% respectively). Depression was significantly associated with fatigue, 70% of patients who were depressed complained from fatigue. Findings indicated that, in addition to increasing anxiety among the study sample, higher levels of fatigue were detected in 61.36% of them.

**Conclusion:** Fatigue as a symptom is very common both in community and health care settings but remains medically unexplained. The most important confounders in our studied population were depression and anxiety.

**Keywords:** fatigue, anxiety, depression, family medicine

### Introduction

Fatigue, a common presenting symptom in primary care, negatively impacts work performance, family life, and social relationships. The differential diagnosis of fatigue includes lifestyle issues, physical conditions, mental disorders, and treatment side effects <sup>1</sup>. A patient with Chronic Fatigue Syndrome (CFS) is described as one suffering unrelenting, debilitating fatigue (for a period of six months or more) which is unresolved by rest. This fatigue is not the result of normal physical activity and can cause both mental and physical impairment to the sufferer. Chronic Fatigue Syndrome

a poorly understood condition and still poses problems in terms of causality, diagnosis and management for clinicians and researchers alike <sup>2-4</sup>. Unfortunately, lack of specialised knowledge (within the health-care system) and scepticism on the part of some often leads to a breakdown in trust and confidence between patient and physician. This problem was highlighted in an investigation of perceptions in patients with CFS who had been referred to a specialised clinic <sup>2,5</sup>. Fatigue is a common problem seen in primary care. It is reported as the main presenting symptom in 5% to 10% of patients <sup>6-8</sup>. Both its nonspecific

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nature and its high prevalence make fatigue a challenging problem for general practitioners to manage. The symptom may indicate a wide range of conditions, including respiratory, cardiovascular, endocrine, gastrointestinal, hematologic, infectious, neurologic and musculoskeletal diseases, mood disorders, sleep disorders and cancer<sup>9-11</sup>. Patients with a chronic disease often report symptoms of fatigue<sup>12</sup>, and the prevalence of chronic disease is higher among patients presenting with fatigue than among other patients<sup>13</sup>. Regardless of the underlying pathology, fatigue is a phenomenon with social, physiologic and psychological dimensions<sup>14-15</sup>. Nijrolder et al (2009)<sup>16</sup>, recently described the diagnoses they found during follow-up of patients presenting with fatigue in primary care<sup>16</sup>. It was associated to acute infectious diseases of the respiratory tract, anemia, mental disorders, heart and circulation problems, and nephropathies. This is in accordance to results reported by others<sup>17</sup>. To our knowledge no previous similar study was carried out on fatigue in Erbil city. The aim of the study is to determine the causes of fatigue in a sample of patients attending a family medicine center, and to explore the relationship between fatigue and physical, mental, social and demographic factors among patients with special reference to gender, then to compare the results with other studies.

## Methods

A cross sectional study was carried out at the Brayati Family Medicine Center in Erbil city from 1<sup>st</sup> of July to the 31<sup>st</sup> of October 2011. The sample size was 400 of various age groups (16 years and over) of both genders who presented to the center complaining from fatigue. A random sample of male and female patients who attended the center for any reason each day was recruited into the study. Eligible patients were informed about the study by their general practitioner and invited to participate. If interested, they were asked to complete baseline questionnaire (part 1). Patients

were enrolled in the study signed a consent form and the baseline questionnaire.

### Study Instruments:

**Part 1:** We collected demographic data and past medical history which included any association with infection at the onset of fatigue, regular medications and pregnancy. A social history detailing marital status, number of children, stress at home or at work, smoking and exercise habits. Education level was categorized into primary, secondary and higher education while literacy was assessed as 'read and write', 'read only' and 'completely illiterate'. The physical examination included weight, height, pulse and blood pressure and systemic examination looking for evidence of chronic illness, and a minimum battery of laboratory screening tests.

**Part 2:** two scales used, first scale aimed to detect the presence of fatigue. A valid eleven item Iowa Fatigue Scale (IFS)<sup>18</sup> was derived by combining and condensing many existing scales. Clinically it is a useful device for improved screening and monitoring of idiopathic chronic fatigue. For each of the items, clients asked to circle a number of responses which best indicate how the patients have felt in the past month. In addition, a 14 item Hospital Anxiety and Depression (HAD) scale<sup>19</sup> was chosen to detect psychological morbidity which has seven items for each of anxiety and depression (maximum score 21). A Random sample of both male and female patients who attends the health center complaining from fatigue each day recruited in the study. The physician performed physical examination and requested baseline laboratory tests.

### Data collection and analysis:

We extracted data from the participants; patient files concerning diagnoses made during the follow-up period and selected diagnoses that could provide an explanation for the presented fatigue. We also extracted data on pre-existing chronic diseases at the time of presentation. The data were transferred onto the SPSS statistical program. diagnoses that could provide

an explanation for the presented fatigue. We also extracted data on pre-existing chronic diseases at the time of presentation. The data were transferred onto the SPSS statistical program. Fatigue score was categorized into 'non fatigue' and 'fatigue'. Chi-square was used to detect the association between variables and fatigue, and p value is considered significant when it is equal or less than 0.05.

### Results

Four hundred patients were asked to participate in the present study. Thirty six refused to consent, thirty two did not complete all required parts, and twenty two were pregnant. Therefore 320 patients were included in the study, 86 males (26.88%) and 234 females (73.12%). The age of the subjects varied from 16-74 years and the mean age was 29.2 years. 39.69% were in the age range 30-44 years; 58.12% were illiterate or read and write only; 65.63% were married and 57.19% reported their economic level as medium, Table 1. The fatigue level are shown in Table 2, 32.56% of males and 40.60% of females were fatigued according to lowa fatigue scale. The scores for fatigue in relation to age in the studied sample are shown in Table 3, higher level of fatigue was detected among older age group (60-74 years) which was 51.16%. High levels of fatigue were observed among singles, low economic status and minimum educational status (45.31%, 41.80%, 41.18 and 42.57% respectively) Table 4. Depression was significantly associated with fatigue, 70% of patients who were depressed complained from fatigue Table 5. Findings indicated that, in addition to increasing anxiety among the study sample, higher levels of fatigue were detected in 61.36% of them Table 6.

**Table 1:** Demographic characteristics of the study sample

Variables	No.	percentage
<b>Gender</b>		
Male	86	26.88%
Female	234	73.12%
<b>Age</b>		
15-29 ys	60	18.75%
30-44 ys	127	39.69%
45-59 ys	90	28.12%
60-74 ys	43	13.44%
<b>Economic status</b>		
Low	122	38.13%
Medium	183	57.19%
High	15	04.68%
<b>Education</b>		
Illiterate	85	26.56%
Read and write	101	31.56%
Primary graduate	72	22.50%
Secondary graduate	48	15.00%
Higher graduation	14	4.37%
<b>Marital status</b>		
Single	64	20.00%
Married	210	65.63%
Divorced	12	3.75%
Widowed	34	10.62%
<b>Total</b>	<b>320</b>	<b>100%</b>

**Table 2:** Fatigue among the study sample according to gender

Gender	Fatigue		No fatigue		Total	
	No.	%	No.	%	No.	%
Male	28	32.56%	58	67.44%	86	26.88%
Female	95	40.60%	139	59.40%	234	73.12%
Total	123	38.44%	197	61.56%	320	100%

**P- Value= 0.190****Table 3:** Relationship between fatigue and age group of the study sample

Age group	Fatigue		No fatigue		Total	
	No.	%	No.	%	No.	%
15-29	17	28.34%	43	71.66%	60	18.75%
30-44	53	41.73%	74	58.27%	127	39.69%
45-59	31	34.45%	59	65.55%	90	28.13%
60-74	22	51.16 %	21	48.84%	43	13.43%
<b>Total</b>	123	38.44%	197	61.56%	320	100%

**P value= 0.081****Table.4-** Relationship between fatigue and some socio-demographic information.

Socio-demographic Variables	Fatigue (No. 123)		No fatigue (No. 197)		Total	
<b>Economic status</b>						
Low	51	41.80%	71	58.20%	122	38.125%
Medium	68	37.16%	115	62.84%	183	57.19%
High	4	26.67%	11	73.33%	15	46.87%
P- value= 0.452						
<b>Education</b>						
Illiterate	35	41.18%	50	58.82%	85	26.57%
Read and write	43	42.57%	58	57.43%	101	31.55%
Primary graduate	29	40.28%	43	59.72%	72	22.50%
Secondary graduate	13	27.08%	35	72.92%	48	15.00%
Higher graduation	3	21.43%	11	78.57%	14	4.38%
P- value= 0.246						
<b>Marital status</b>						
Single	29	45.31%	35	54.69%	64	20.00%
Married	74	35.24 %	136	64.76%	210	65.63 %
Divorced	5	41.67 %	7	58.33%	12	3.74%
Widowed	15	44.12%	19	55.88%	34	10.63%
P- value= 0.445						
<b>Total</b>					320	100%

**Table 5:** Relationship between fatigue and depression among study sample:

Depression	Fatigue		No fatigue		Total	
	No.	%	No.	%	No.	%
No depression	19	14.28%	114	85.72%	133	41.56%
Borderline case	34	39.08%	53	60.92%	87	27.19%
Depression	70	70.00%	30	30.00%	100	31.25 %
<b>Total</b>	<b>123</b>	<b>38.44%</b>	<b>197</b>	<b>61.56%</b>	<b>320</b>	<b>100%</b>

**P-value<0.001****Table 6:** Relationship between fatigue and anxiety among study sample:

Anxiety	Fatigue		No fatigue		Total	
	No.	%	No.	%	No.	%
No anxiety	37	23.56%	120	76.44%	157	49.06 %
Borderline case	32	42.66%	43	57.33%	75	23.44%
Anxiety	54	61.36 %	34	38.64%	88	27.50 %
<b>Total</b>	<b>123</b>	<b>38.44%</b>	<b>197</b>	<b>61.56%</b>	<b>320</b>	<b>100%</b>

## Discussion

Fatigue is a disabling and familiar complaint in primary care settings which is commonly associated with additional somatic symptoms many of which may have physical or psychological origins. The aim of the study is to determine the causes of fatigue in a sample of patients attending a family medicine center, and to explore the relationship between fatigue and physical, mental, social and demographic factors. In our sample, the estimated rate) of fatigue disorders was 38.44 % (32.56% among males and 40.60% among females) was congruent with similar study conducted in UAE to patients attended family medicine clinic<sup>20</sup>. While it was too high compared with western studies," David *et al.* Found the prevalence of fatigue to be 10% in a study of GP attendees by using a different

form of questionnaire<sup>21</sup>. In an early study from Texas, Kroenke et al. found that 24% of patients attending two primary care clinics identified fatigue as a 'major problem'<sup>22</sup>. In a group of studies from South London showed that 10.2% of men and 10.6% of women complained of feeling tired all the time throughout the previous month.<sup>21</sup> It is important to realize that these were surveys of fatigue as a symptom in primary care attendees and do not necessarily study fatigue as the presenting complaint. In fact, Wessely et al<sup>23</sup> conclude in their review of the epidemiology of fatigue that while fatigue is a common symptom, it is not a common reason for medical consultation. Fatigue is considered as a diagnosis in only 1–2% of primary care attendees<sup>24</sup>. The wide disparity in the prevalence of fatigue in various studies is probably due to differences in methodology rather than a

true difference in its prevalence. It seems apparent that a random community based samples with an extensive search for a medical abnormality and restrictive case definitions result in lower prevalence figures. Most studies of gender differences reports higher rates in women as in our study (male 32.56%, female 40.60%). It has been suggested that the gender difference is an artifact of recruiting samples from centers and reflect differences in illness behaviour and referral patterns. Many community-based studies confirm this finding<sup>20, 21, 25, 26</sup> these studies suggest that there may be a true gender difference and various predisposing vulnerabilities have been proposed such as endocrine and stress-related factors. In the present study higher rate of fatigue were encountered among low socioeconomic patients (41.80%). Community-based studies of fatigue, found fatigue to be commoner in the lower socio-economic classes this finding is consistent with The Health and Life Survey, a large Population-based study from the UK which showed that fatigue is commoner in lower socio-economic classes<sup>27</sup>. A study from French primary care also showed that the group with the highest socio-economic status was the least fatigued<sup>28</sup>. This may reflect the fact that low social class is a proxy for social adversity, and more frequent visitors of PHC for management as it is cheap and easily obtained. We detect significance relationship between fatigue and both depression and anxiety disorders in our study (70%, 61.36% respectively). Iraq has a higher rate of social development in comparison to the rest of the world in addition to long period of instability; such an environment makes the population more prone to develop anxiety. This could explain the high incidence of anxiety and depression in the studied group. In females, depression and stress at home are also important influential factor. Much of the debate in chronic fatigue circles about whether it is a physical or psychiatric disorder has revolved around the issue of psychiatric co-morbidity. Studies from primary

care and specialist clinics point to a general pattern: psychiatric disorders, particularly depressive disorders, somatoform disorders and anxiety disorders are common<sup>23</sup>. A recent meta-analysis of the association of anxiety and depression with functional somatic syndromes confirmed that patients with CFS suffer from major depression or anxiety disorder at rates higher than healthy controls or patients with similar medical diseases<sup>29</sup>. It was also reported by a group analyzing data from a WHO study of psychological problems in primary care that patients with stricter definitions of CFS requiring more additional symptoms had higher rates of depression and anxiety<sup>30</sup>. The epidemiological studies in chronic fatigue have so far largely concentrated on estimating the prevalence and associations. Probably due to the unhealthy physical versus psychological debate that has raged within this field and the heterogeneous nature of the samples. There is also a need to include biological variables and study their interactions with psychosocial factors. Some emerging research also suggests that genetic epidemiology will be another fertile area of research in the future<sup>31</sup>. Unavailability of proper laboratory investigations and small studied sample was among the limitations of the present study. We do recommend further studies on the subject to clarify the physical and psychological causes and consequences of fatigue.

## Conclusion

Fatigue as a symptom is very common both in community and health care settings but medically unexplained. The most important variables associated in our studied population are depression and anxiety.

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