

## Factors Associated With Fatigue Among Geriatric Patients

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### **Abstract**

**Background:** Fatigue is a complex phenomenon that is poorly discovered and treated in geriatric patients. It has a negative impact on physical, emotional and social aspects of older adult's life. **Objective:** This study aims to determine the factors associated with fatigue among geriatric patients. **Settings:** The study was carried out in geriatric outpatient clinic at Alexandria Main University Hospital, Egypt. **Subjects:** A convenient sample of 220 geriatric patients aged 60 years and above and able to communicate. **Tools:** four tools namely; socio-demographic and clinical data structured interview schedule, the FACIT fatigue scale, geriatric depression scale short-form and mini-cognitive scale (mini-cog) were used to collect the necessary data. **Results:** About 53.6% of the studied geriatric patients had fatigue. There was a significant relation between fatigue, level of depression, cognitive function, some types of chronic diseases such as cardiovascular diseases, cancer and neurological disorders such as stroke and Parkinson's disease, also medications such as cardiovascular, anti-inflammatory and over-the-counter medications, presence of hearing or visual problems, last year hospitalization. **Conclusion:** fatigue was prevalent among half of the study subjects, especially among those who were young-old, had low income, socially isolated, depressed, had hearing or visual deficits, cognitive impairment and using over-the-counter medications. **Recommendations:** Gerontological nurses should design educational sessions for geriatric patients and their families to increase their awareness regarding fatigue and its associated factors and how to deal with.

**Keywords:** Fatigue, Factors associated, Geriatric patients.

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### **Introduction**

Fatigue is one of the most common complaints experienced by older adults. A study carried out in Switzerland revealed that between 27% and 50% of older adults who live in the community and aged 65 years or older reported feeling fatigue (Zengarini et al., 2015). A study done by Pandey et al. (2019) revealed that 50% of older adults who aged 60 years and older and suffer from chronic comorbidities reported fatigue. In **Egypt**, a study carried out in Ain shams stated that fatigue was the most common complaint

among geriatric patients represented 66% (Aly & Saber, 2021). Fatigue can be defined as extreme tiredness as a result of physical and mental exertion, or a need for sleep. The Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) provided a definition that was thought to be more thorough, fatigue is defined as a state that include impairment in individual's physical and mental abilities that ranges from lethargy to burning sensation in muscles that impairs one's ability to move normally and sleep well (American Psychiatric Association (APA), 2013). In other words, Fatigue is

considered a multidimensional phenomenon. Unpleasant, devastating, excessively exhausted, and a loss of control were all adjectives used to describe fatigue and there is no definite definition for fatigue (Sparto et al., 2018). The most common causes of fatigue among geriatric patients are viral or upper respiratory tract infection, iron deficiency anemia, pharmaceutical side effects, depression, or other mental disorders. In other terms, fatigue can emerge as a result of the accumulation and interplay of numerous physical, biochemical, psychological, social, and environmental factors during a lifetime. Physical and biochemical factors include a variety of biological alterations associated with normal aging process or an alteration in skeletal muscle function, circulatory dysfunction, inflammatory mediators and nutritional inadequacies. Psychologically as mood disorders. Social factors such as different life events older adults going through such as retirement, widowhood and changes in life roles may precipitate fatigue. While, environmental factors causing fatigue involves the surroundings that not fit the abilities of older adults as they experiencing decline in performance as they age (Menting et al., 2018). Based on these causes of fatigue, it can classify fatigue in aging into either physical, psychological, mental, cognitive, motivational, or emotional fatigue. Physical fatigue referred to fatigability in which the older adults are unable to maintain muscle activity, includes inability of older adults to tolerate physical activity, feeling exhausted, and a lack of energy that is not alleviated by resting (Elsais et al., 2013). Psychological fatigue is defined as a complicated syndrome that including physical and psychological symptoms that impair older adults' capacity to engage in activities related to various facets of life (Antoniou & Ungureanu, 2015). On the other side, mental fatigue is the type of fatigue caused by sensory stimulation after engaging in demanding activity causes mental exhaustion (Papakokkinou et al., 2015). It is also a self-reported emotion following difficult cognitive tasks that need

concentration (Falup-Pecurariu, 2013). Specifically, if fatigue affects cognitive processes of older adults causing impaired concentration and memory is called cognitive fatigue (Papakokkinou et al., 2015). Motivational fatigue is another type of fatigue described as an unpleasant experience that affects older adults' capacity to manage life, particularly their ability to manage their social and familial lives. While, emotional fatigue is referred to an uncomfortable feeling that is linked to depression and has an impact on older adults' quality of life.

Older adults feel emotionally spent and depleted due to accumulated stress from their personal or professional lives, or a mix of both (Kessing et al., 2016). Feeling of fatigue in older adults can affect their physical, emotional, and social aspects of their quality of life. Fatigue can result in feelings of frustration, incompetence, hopelessness, and being a burden to others (Zengarini et al., 2015). Fatigue might impede older adults from carrying out their normal daily tasks, necessitating their care and support. Also, when geriatric patients are fatigued, it is difficult for them to maintain concentration over time; learning and memory are usually inefficient; judgment and problem solving are affected; irritability and a short temper appear, and social competency is lowered (Knoop et al., 2021). Fatigue is a self-reported indicator of frailty in older adults. It may serve as a standalone predictor of death in the older adults. Additionally, when fatigue coexists with chronic diseases, which is frequent in geriatric patients, it becomes more debilitating and restrictive. However, fatigue is frequently considered to be a typical element of the ageing process rather than a symptom of an underlying disease. Additionally, depression, pain, sleep disturbance, and cognitive dysfunction can co-occur with fatigue (Hofer et al., 2018). However, fatigue is frequently considered to be a typical element of the ageing process rather than a symptom of an underlying disease. So, it can be neglected and misdiagnosed.

A gerontological nurse should be aware of the

factors associated with fatigue in geriatric patients in order to develop a management strategy to improve their quality of life.

### ***Aim of the Study***

This study aims to determine the factors associated with fatigue among geriatric patients.

### ***Research question***

- What are the factors associated with fatigue among geriatric patients?

### ***Materials and Method***

#### ***Materials***

**Design:** A descriptive research design was used in this study.

**Settings:** This study was conducted in the geriatric outpatient clinic at Alexandria Main University Hospital.

**Subjects:** A convenient sample of 220 geriatric patients attended the previous setting and aged 60 years or above and able to communicate were included in the study. The sample size was calculated using G power analysis (Epi-info7) program based on the following parameters: population size = 360/6months, confidence level=95%, margin of errors=5%, prevalence of problem=50% and minimum sample size=186.

**Tools:** four tools were used to collect the necessary data:

**Tool one: Socio-demographic and clinical data structured interview schedule.** This tool was developed by the researcher after reviewing related literature. **It consists of three parts:**

**Part I: Geriatric Patients' socio-demographic characteristics:** Socio-demographic data such as age, sex, marital status, occupation before retirement, income and place of residence.

**Part II: Geriatric patients Health profile and Clinical data:** it included types of chronic diseases and prescribed medications, physical condition, previous hospitalization, previous history of infection and its type.

**Part III: Geriatric patients Life style and risk behaviors:** it included sleeping hours,

number of naps and sleeping problems, nutritional habits and risk behaviors including smoking pattern, caffeine intake and the use of over-the-counter medications.

**Tool two: Functional assessment of chronic illness and therapy (The FACIT fatigue scale version 4):** This tool was adopted from Webster et al. (2003) and translated into Arabic by the researcher. It is a self-reported questionnaire of 13-items that used to assess older adult's level of fatigue over the course of previous week during their typical daily activities. Scoring done on four-point Likert scale (0 = extremely fatigued to 4 = not at all fatigued). **Scoring system:** total score is 52 classified into Equal or <30 considered fatigued and >30 considered Not fatigued.

**Tool three: Geriatric Depression Scale – Short Form (GDS-SF):** This tool was used to assess presence and degree of depression in geriatric patients, this tool consists of 15 statements that measure feeling happy, feeling bored and acceptance of life. The Arabic version translated by El Husseini (2013) was adopted in this study. **Scoring system:** scores of 0–4 are regarded as normal or no depression; 5-8 suggests mild depression; 9–11 indicates moderate depression; and 12–15 indicate severe depression.

**Tool four: Mini-Cognitive scale (Mini-Cog):**

This tool developed by Borson et al. (2003) This tool used to identify presence of cognitive impairment through assessing a variety of cognitive domains, including cognitive function, memory, language comprehension, visual-motor skills, and executive function. **Scoring system:** scoring divided into two steps; step one including word registration as older adult try to recall the three words the nurse told him (one point for each word) and step two including clock drawing (normal drawing two points and zero for refusing and inability).

### ***Method***

- Approval from the Research Ethics Committee of the Faculty of Nursing,

Alexandria University was obtained before carrying this study.

- Tool I Geriatric patients' Socio-demographic and Clinical data structured interview schedule was developed by the researcher based on through review of literature.
- Tool II Functional assessment of chronic illness and therapy (FACIT-fatigue scale) and tool IV (Mini-cognitive scale) were translated into Arabic language by the researcher.
- Tools II and IV were tested for their content validity by five experts of jury members in the fields of gerontological and medical-surgical nursing departments.
- Reliability of tool II and tool IV were done on 20 geriatric patients who attended outpatients' clinics and were excluded from the study by measuring the internal consistency of their items using Cronbach's Coefficient Alpha test the reliability were, 0.87 for tool II and 0.85 for tool IV.
- A pilot study was carried out on 20 geriatric patients to test clarity and feasibility of the tools at geriatric outpatient clinic, Main University Hospital. Accordingly, necessary modifications were done. These geriatric patients were excluded from the study subjects.
- Every geriatric patient was interviewed individually to collect the necessary data related to their health condition including illnesses and medication taken, social activities and life style pattern, demographic and Clinical Data Structured Interview Schedule.
- The time elapsed for each interview with geriatric patient was approximately ranged from 30 to 40 minutes.
- Fatigue was measured to all studied geriatric patients using Tool II.
- After completing data collection, the necessary statistical data was done to assess factors associated with fatigue among geriatric patients. - Data was collected over a period of six months extended from June 2022 to November 2022.

### **Ethical considerations:**

- Oral informed consent was obtained from each geriatric patient after explaining the aim of the study. Their participation was on voluntary base and they had the right to withdraw from the study at any time.
- Privacy of each geriatric patients was maintained during process of data collection and confidentiality of the collected data and anonymity were considered.

### **Statistical Analysis**

#### **The used tests were**

##### **1- Spearman coefficient**

To correlate between two distributed abnormally quantitative variables.

##### **2- Chi-square test**

For categorical variables, to compare between different groups

##### **3- Fisher's Exact or Monte Carlo correction**

Correction for chi-square when more than 20% of the cells have expected count less than 5.

### **Results**

According to socio-demographic characteristics, the study revealed that 90.5% were young-old geriatric patients and 9.5% were middle-old geriatric patients, 56.4% of them were males. About 69.5% of the studied geriatric patients were married and 39.5% of them were highly educated. Almost 51.4% had job before retirement and 56.8% of those geriatric patients did not get enough income. Nearly 73.2% of the studied geriatric patients lived in urban areas

**Table 1** shows the distribution of the studied geriatric patients according to their level of fatigue. About 53.6% of the studied geriatric patients were suffered from fatigue with a mean of  $30.43 \pm 12.44$ .

**Table 2** shows the relationship between level of fatigue of the studied geriatric patients and their socio-demographic characteristics. It was found that geriatric patients who aged 75 to less than 85 had high levels of fatigue compared to other age group  $P=0.008$  **Also**, Divorced, widow and single geriatric patients group had high levels of fatigue than married

patients  $P=0.001$ . There is a statistical significant relation between monthly income and level of fatigue of the studied geriatric patients  $P<0.001$ .

**Table 3** shows the relationship between level of fatigue of the studied geriatric patients and their health problems. Presence of chronic diseases can enhance the occurrence of fatigue, fatigue was high among geriatric patients who suffered from cardiovascular diseases  $P<0.001$ , neurological disorders  $P=0.032$  and cancer  $P=0.002$ . Intake of medications such as cardiovascular medications and anti-inflammatory drugs had a statistical significant relation with high levels of fatigue,  $P<0.001$ ,  $P=0.005$  respectively. Previous hospitalization of geriatric patients last year had a statistically significant relation with the presence of fatigue  $P<0.001$  as well as those geriatric patients suffered from recurrent infection  $P<0.001$

**Table 4** shows Relation between level of fatigue of the studied geriatric patients and their physical status, life style and risk behaviors. Regarding physical condition, a statistically significant relation was noted between presence of hearing, visual problems and fatigue  $P=0.002$ ,  $P<0.001$  respectively. Also, the use of hearing aids, wearing eye glasses and level of fatigue  $P=0.003$ ,  $P<0.001$  respectively. Geriatric patients used mobility aids as cane and walkers reported high levels of fatigue  $P<0.001$ . In relation to life style of geriatric patients, it was noted in the present study that sleep disturbance had a significant relation with the occurrence of fatigue  $P<0.001$ . Also, the use of the over-the-counter drugs associated with occurrence of fatigue  $P<0.001$ . But no significant relation between caffeine intake and smoking.

**Table 5** shows the relationship between level of fatigue of the studied geriatric patients and their social network, psychological support, depression and cognitive function. Living alone had a statistically significant relation with presence of fatigue  $P=0.001$ , as well as no visits by family members and lack

of psychological support  $P<0.001$  for both parameters.

**Table 6** shows the relationship between the level of fatigue of the studied geriatric patients, their level of depression and cognitive function. It illustrates that presence of depression and cognitive impairment were strongly associated with high levels of fatigue as  $P<0.001$  for both parameters.

### Discussion

Fatigue is a common phenomenon among older adults, it is often overlooked and neglected because it is considered as a normal part of ageing and has negative consequences on geriatric patients' health and their quality of life. Studying the factors associated with fatigue among geriatric patients, can help in minimizing these negative effects on geriatric patients and improving their health. The main findings of the current study revealed that about 53.6% of the studied geriatric patients suffer from fatigue and 81% of those studied patients were aged from 75 to less than 85 years old (Table 1). This result is supported by other study carried out in Amsterdam and revealed that about 77% of geriatric patients who aged 70 years and above reporting fatigue (van Seben et al., 2019). **In Egypt**, a study carried out in Ain- Shams stated that fatigue was the most common complaint among geriatric patients represented 66% (Aly & Saber, 2021). Regarding factors associated with fatigue, socio-demographic characteristics may influence fatigue experienced in geriatric patients. The present study illustrated that there is a significant relation between age, marital status, income and level of fatigue among studied geriatric patients. As middle-old geriatric patients (ranges from 75 years to less than 85 years) reported fatigue than young-old. This might be related to the role change that occurs at this time of life, as well as life events experienced in this stage of life such as retirement and the problems that older individuals face in adjusting to their new life role, which cause them to be riskier for psychological fatigue. This result of the present study is at the same line with the study conducted at

department of geriatrics, Torun University, Poland (Muszalik et al., 2016). In contrast, other study carried out at Henan University, China contradicts the result of the present study and revealed that old-old geriatric patients were five times more fatigued than young-old and middle-old (Jing et al., 2015). This contradictory may be related to that no old-old geriatric patients participated in the study. It was noted in the present study that marital status plays a crucial role in the occurrence of fatigue, as widowed, unmarried, and divorced geriatric patients experienced higher levels of fatigue than married patients (Table 2). This might be linked to feeling of loss of companionship and its associated negative feelings. This loss may be considered a stressor which may impair immune system of geriatric patients leading to fatigue. In addition to, widowhood accelerates the feeling of lack of support either instrumental or psychological. This is supported by the result of the present study stated that living alone, no visits to family and lack of psychological support were significantly associated with fatigue (Table 5). Other studies carried out by Choi et al. (2015) and Trevisan et al. (2019) supported this finding of the present study. Also, income plays a vital role in the experience of fatigue among geriatric patients. The present study revealed that geriatric patients with insufficient income reporting fatigue. This may be explained by geriatric patients with multiple chronic diseases and more drug consumption may struggle to meet their necessities or seek medical services when needed. A similar finding was reported by study carried out at department of medical and clinical psychology, Tilburg university, Netherland stated that older adults with low income experiencing fatigue. Health condition of geriatric patients is a contributing factor in occurrence of fatigue among geriatric patients. According to the present study's findings, there was a significant relation between fatigue and cardiovascular diseases, this may be explained by changes-related disease process such as decrease blood supply to all

body parts, shortness of breath, decrease physical ability to perform tasks and increase need to rest. This was with the same line with the findings of a study carried out at University of North Carolina, United States of America (Crane et al., 2016). Also cancer had a significant relation with fatigue as side effect of therapies such as chemotherapy and changes related to disease process. A study done by Berger et al. (2015) illustrated that geriatric patients with cancer are more liable to severe fatigue that may exist more than six months. Recent studying China, Shantou University found that geriatric patients diagnosed with cancer were more liable to had severe fatigue related to therapeutic maneuvers which cause insomnia and mood disorders (Remelli et al., 2022). The current study found that geriatric patients who diagnosed with stroke had high levels of fatigue. This may be related to neurovascular compromised associated with stroke as post stroke manifestations such as limb impairment and loss of sensation that may affect physical mobility and level of performance of geriatric patients. The result of the current finding is supported by other studies conducted by De Doncker et al. (2018), Aarnes et al. (2020), and Varas-Diaz et al. (2020). stated that stroke associated with higher level of fatigue due to negative outcomes, brain injury, balance disorders and risk for fall caused by the disease process. Regarding physical condition of geriatric patients and its effect on the occurrence of fatigue, it was noted in the present study that there was a significant relation between sensory impairment including visual and hearing impairment and presence of fatigue. This result may be interpreted as hearing or visual impairment may restrict geriatric patients to be engaged in social relation and interaction. In addition, to the effect of sensory deficits on perception of geriatric patients to their environment and their adjustment. A study of Wouter et al. (2017) confirm this finding of the current study reported that there is a significant relation between sensory impairment and fatigue. geriatric patients who using assistive

devices experienced fatigue as proved in the current study. This maybe justified as assistive devices do not meet the disabilities of geriatric patients. This is the same line with the study stated that there was a significant relation between fatigue and usage of assistive devices (De Doncker et al., 2018; Soares et al., 2018). Regarding risky behaviors, geriatric patients who took over-the-counter drugs for every ailment were fatigued(Tang et al., 2017). This supports the result of the present study noted that there isa significant relation between level of fatigue and intake of over-the-counter drugs. This may be due to an interaction between these drugs and others currently prescribed causing adverse drug reactions. This result of the present study is in the same line with another study discovered that geriatric patients who take over-the-counter drugs reported greater levels of fatigue (van Seben et al., 2019). On the other hand, smoking as a risk behavior didn't appear to have a significant relation with fatigue among geriatric patients. Contrary to this result of the current study, study of Al-Obaidi et al. (2014) indicated that smoking was highly linked to high levels of fatigue. This difference in both results may be claimed to limited number of geriatric patients who are smokers to conclusively demonstrate this relationship. This study discovered a substantial correlation between fatigue and depression, which may be related to depressive symptoms in geriatric patients who feel disinterested in their surroundings, lack the energy to engage in physical activity, are distracted easily, and have decreased social skills (**Table 6**). This was in accordance with the findings of another study, which showed a strong correlation between depression and presence of fatigue (Barak et al., 2020).This study illustrated that elderly individuals with cognitive impairment experienced fatigue, which might be caused by a loss in concentration brought on by the impairment, which made it take them a long time to complete tasks and easily got fatigued(**Table 6**).Another study finding agreed with the present study result demonstrated that geriatric patients who had

cognitive impairment could not complete mental tasks, and had fatigue(Zhang et al., 2023).

### **Conclusion**

Based on the findings of the current study it can be concluded that there are many factors that contribute to fatigue in geriatric patients Depression and cognitive impairment were contribute to fatigue among geriatric patients Additionally, socio-demographic factors such as age especially middle-old geriatric patients, marital status including divorced and widowed geriatric patients and low income were correlated to fatigue. The existence of chronic diseases such as cardiovascular diseases, as well as hearing, vision and mobility impairment are significantly correlated with the occurrence of fatigue. fatigue is significantly related to social isolation and lack of psychological support. Risk behaviors such as use of over-the-counter medications influence the occurrence of fatigue

### **Recommendations**

In line with the findings of the study, the following recommendations are suggested:

- In-service educational programs should be provided by the gerontological nurse to the nurses who give direct care to the geriatric patients in all settings about fatigue and different aspect of fatigue inducing factors.
- Family education program should be conducted especially to older adults' care giver to increase their awareness about fatigue phenomenon and the importance of older adults' psychological support and engagement to social life.
- Fatigue as a new topic should be included in under and post graduate students' curriculum.

**Table (1): Distribution of the studied geriatric patients according to their level of fatigue**

Level of fatigue	No.	%
≤30 or equal ( fatigue)	118	53.6
>not fatigue	102	46.4
<b>Total score</b>	<b>(0–52)</b>	
Mean ± SD.	30.43 ± 12.44	
<b>% score</b>		
Mean ± SD.	58.48 ± 23.86	
<b>Total</b>	<b>220</b>	<b>100.0</b>

**Table (2): Significant relation between level of fatigue of the studied geriatric patients and their Socio demographic characteristics**

First: General information about the elderly	Level of fatigue				Total (n=220)		$\chi^2$	p
	≤30 Fatigue (n=118)		>30 Not fatigue (n=102)					
	No.	%	No.	%	No.	%		
<b>Age</b>								
60–<75	101	50.8	98	49.2	199	100.0	6.966*	0.008*
75–<85	17	81.0	4	19.0	21	100.0		
85+	0	0.0	0	0.0	0	0.0		
<b>Marital status</b>							16.298*	MC p=0.001*
Married	69	45.1	84	54.9	153	100.0		
Widow	39	75.0	13	25.0	52	100.0		
Single	5	55.6	4	44.4	9	100.0		
Divorced	5	83.3	1	16.7	6	100.0		
<b>Income</b>							54.127*	<0.001*
Not enough	94	75.2	31	24.8	125	100.0		
Enough	24	25.3	71	74.7	95	100.0		

**Table (3): Relation between level of fatigue of the studied geriatric patients and their Health problems**

Health problems	Level of fatigue				Total (n=220)		$\chi^2$	p
	≤30 Fatigue (n=118)		>30 Not fatigue (n=102)					
	No.	%	No.	%	No.	%		
<b>Type of chronic diseases #</b>								
Cardiovascular diseases	109	59.2	75	40.8	184	100.0	14.194*	<0.001*
Cancer	10	100.0	0	0.0	10	100.0	9.056*	FE p=0.002*
Neurological diseases	6	100.0	0	0.0	6	100.0	5.332*	FE p=0.032*
<b>Medications #</b>								
Cardiovascular medications	109	58.9	76	41.1	185	100.0	13.049*	<0.001*
Anti-inflammatory medications	14	87.5	2	12.5	16	100.0	7.957*	0.005*
<b>Hospitalization last year</b>								
<b>Yes</b>	86	86.0	14	14.0	100	100.0	77.218*	<0.001*
<b>No</b>	32	26.7	88	73.3	120	100.0		
<b>Recurrent infection</b>								
<b>Yes</b>	76	76.8	23	23.2	99	100.0	38.729*	<0.001*
<b>No</b>	42	34.7	79	65.3	121	100.0		



**Table (4): Relationbetween level of fatigue of the studied geriatric patients and their physical status, life style and risk behaviors.**

Physical condition	Level of fatigue				Total (n=220)		$\chi^2$	p
	≤30 Fatigue (n=118)		>30 Not fatigue (n=102)		No.	%		
	No.	%	No.	%				
<b>Hearing problems</b>								
No	91	49.2	94	50.8	185	100.0	9.248*	0.002*
Yes	27	77.1	8	22.9	35	100.0		
Using a hearing aid	21	80.8	5	19.2	26	100.0	8.729*	0.003*
<b>Vision problems</b>								
No	47	39.2	73	60.8	120	100.0	22.227*	<0.001*
Yes	71	71.0	29	29.0	100	100.0		
Wearing glasses.	69	70.4	29	29.6	98	100.0	19.990*	<0.001*
<b>Mobility</b>								
Cane or walker	74	67.9	35	32.1	109	100.0	48.215*	<0.001*
Needs Someone help	39	62.9	23	37.1	62	100.0		
Ambulant	5	10.2	44	89.8	49	100.0		
<b>Life style</b>								
<b>Sleep disturbance:</b>								
No	18	20.7	69	79.3	87	100.0	62.817*	<0.001*
Yes	100	75.2	33	24.8	133	100.0		
<b>Use of over the counter medication</b>								
No	39	34.8	73	65.2	112	100.0	32.478*	<0.001*
Yes	79	73.1	29	26.9	108	100.0		
<b>Risk behaviors</b>								
<b>Smoking pattern</b>								
No	70	50.0	70	50.0	140	100.0	2.047	0.152
Yes	48	60.0	32	40.0	80	100.0		
<b>Caffeine intake</b>								
No	16	51.6	15	48.4	31	100.0	0.059	0.807
Yes	102	54.0	87	46	189	100.0		

**Table (5): Relation between level of fatigue of the studied geriatric patientsand their social network,psychological support, depression and cognitive function.**

Social network	Level of fatigue				Total (n=220)		$\chi^2$	p
	≤30 Fatigue (n=118)		>30 Not fatigue (n=102)		No.	%		
	No.	%	No.	%				
<b>Living with</b>								
Alone	33	75.0	11	25.0	44	100.0	10.094*	0.001*
With a relative	85	48.3	91	51.7	176	100.0		
<b>Visiting family members</b>								
No	51	91.1	5	8.9	56	100.0	42.334*	<0.001*
Yes	67	40.9	97	59.1	164	100.0		
<b>Psychological support</b>								
No	46	78.0	13	22.0	59	100.0	19.191*	<0.001*
Yes	72	44.7	89	55.3	161	100.0		

$\chi^2$ : Chi square test

FE: Fisher Exact

p: p value for Relation between level of fatigue and different parameters

\*: Statistically significant at  $p \leq 0.05$

**Table (6): Correlation between level of fatigue, depression and cognitive function of the studied geriaric patients**

	Level of fatigue	
	$r_s$	p
Level of depression	-0.803*	<0.001*
Cognitive function	0.610*	<0.001*

$\chi^2$ : Chi square test

FE: Fisher Exact

p: p value for Relation between level of fatigue and different parameters\*: Statistically significant at  $p \leq 0.05$

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