Correlation Between Self-esteem, Body image and Sleep Quality among Patients with Fibromyalgia

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Abstract

- **Background**: Fibromyalgia (FM) is a clinical entity characterized by the combination of ill-defined symptoms including chronic widespread pain, with concomitant fatigue, sleeping disorders, and cognitive disturbances. Also, disturb the body image perception and affect the quality of life negatively by lowering self-confidence **Aim**: Study was to assess the correlation between self-esteem, body image and sleep quality among patients with fibromyalgia. **Design**: A descriptive correlational research design was utilized to fulfill the aim of the study. **Setting**: This study was carried out in out - patient Rheumatology, Rehabilitation and Physical medicine clinic in Benha University Hospital in Benha city, Qalyubia Governorate. **Sample**: A convenient sample of 95 patients with FM, were included in the study. **Tools**: Four tools were utilized to collect data; **Tool I**: structured interview questionnaire sheet, **Tool II**: Self-esteem scale. The scale was developed by Rosenberg, (1965). It aimed to measure self-esteem of patients with FM, **Tool III**: Body Image Scale (BIS). The scale was developed by Gamal, (2016), It aimed to measure fibromyalgia patient's perception of their body image), **Tool IV**: -Sleep Quality Scale(SQS). Sleep quality scale was developed by Yi et al., (2006). It aimed to assess the characteristic of sleep quality of patients with FM. **Results**: Findings reflected that less than half of the studied patients had moderate self-esteem. More than half of the studied patients had moderate negatively body image. More than half of the studied patients had poor sleep quality. **Conclusion**: based on the results of this study, it was concluded that there was a positive statistical significant correlation between total self-esteem score and total (body image & sleep quality), and there was a positive statistical significant correlation between total body image score and total sleep quality score. **Recommendations**: stress management and assertiveness training program should be given to patients with fibromyalgia patients.

Key words: Fibromyalgia; Self-esteem; Body image; Sleep quality.

Introduction

Fibromyalgia is a complex disorder characterized by persistent widespread somatic pain which is strongly associated with a constellation of somatic symptoms. These include poor sleep, fatigue, impaired cognition, headache, abdominal pain and discomfort, and altered mood. Of these, chronic widespread pain is a pre-requisite for the condition. In addition, fatigue and sleep disturbance are highly prevalent among this population **(Erdrich et al.,2025)**.

The variegated clinical picture of this syndrome sometimes has led clinicians to doubt its real existence to the extent of being considered a

reflection of patients' anxiety or attention-seeking behavior **(Viceconti et al.,2022)**. As well as, patients appear to perceive themselves as victims of an undiscovered disease and continue to seek medical help in anticipation that symptoms will be validated by a diagnosis discovered via medical tests **(Montesó-Curto et al.,2023)**.

Individuals affected by chronic pain as in patients with FM are vulnerable to stigmatizing the reaction of others. Stigma of chronic pain is therefore pervasive, weaving its way in multiple dimensions of life. Its impact on personal well-being is very variable. Some individuals are more resilient and seem not to be affected, while others show psychological distress, especially those with chronic musculoskeletal pain in head and neck regions, depressive symptoms, social withdrawal, decline in self-esteem, failed attempts at self-realization and insomnia **(Perugino et al.,2022)**.

The sensation of ownership of our (real) body is, under physiological conditions, a stable experience that is critical for sensorimotor interactions with the environment, while in case of some FM patients a disruption in their body perception, leading to disembodiment, as a result of the body in FM being painful and 'problematic. **(Świdrak et al.,2023)**.

Sleep is an important physiologic process to maintain homeostasis and function of the body. Over 65% of chronic pain patients report having trouble sleeping, making it one of their main complaints. Sleep problems include difficulty falling asleep, sleep insufficiency, and low sleep quality, which can lead to a wide range of physical and mental problems. There is a direct relationship between the degree of sleep issues and the intensity of pain. For instance, FM can significantly alter the architecture of sleep **(Duo et al.,2023)**.

Management of FM must be interdisciplinary, addressing the physical, emotional and social aspects that make up the pain. In this context, it is emphasized that nurses have an essential role in an interdisciplinary team, in pain control. It is up to the nurse to carry out an evaluation, prepare nursing diagnoses, implement therapeutic measures, as well as evaluate the results of the implemented treatment. Therefore, it is essential that the nursing team, at all levels of health care, have access to tools that facilitate the understanding and assessment of the pain of the user of the healthcare system **(Oliveira et al.,2023)**.

Understanding the concept of sleep quality is relevant to nursing as nurses are critical in promoting adequate sleep and helping their patients avoid sleep problems, which can adversely affect health outcomes **(Nelson et al.,2022)**. Nurse helps patients to gain confidence and improve their ability to interact with others, learn how to recognize and change negative thoughts about their body and develop skills to help them to gain confidence **(Rostiano et al.,2021)**.

Significance of the study:

FM with a global incidence of 2.7%-4.7%, with women accounting for an estimated 70 % to 90 % of diagnosed cases. While the pooled regional prevalence of FM in the Eastern Mediterranean region is 4.43%. In Egypt, the prevalence of FM was evaluated in patient cohorts with concurrent illnesses, revealing that 1.9% of individuals with chronic liver disease also had FM.

Patients with FM often have a long journey to correct diagnosis and management. FM is a poorly understood condition of widespread pain, fatigue, multiple somatic symptoms, and associated comorbidities. Accumulating data suggest that FM incurs a high clinical and economic burden on both patients and societies, comparable with other chronic diseases such as diabetes and hypertension. **(Gharibpoor et al.,2021)**.

In addition, FM patients frequently report feeling neglected by the healthcare system due to the condition's uncertain etiology. As a consequence, they often obtain a definitive diagnosis several years after the onset of symptoms, while receiving inadequate or insufficient treatment **(Varallo et al.,2024)**. Therefore, it became necessary to assess self-esteem, body image and sleep quality among patients with FM.

Aim of the study:

This study aims to assess the correlation between self-esteem, body image and sleep quality among patients with fibromyalgia.

Research Questions:

1-What are the levels of self-esteem and sleep quality among patients with fibromyalgia?
2-What is the perception of body image among patients with fibromyalgia?
3-What is the correlation between self-esteem, body image and sleep quality among patients with fibromyalgia?

Subject and Methods:

The subject and methods of the current study were designed under the following main four designs:

1. Technical Design
2. Operational Design
3. Administrative Design
4. Statistical Design

1- Technical design

Technical design for this study included research design, research setting, study subjects and tools of data collection.

Research design:

Adescriptive correlational design was be utilized to fulfill the aim of this study.

Research setting:

This study was conducted at outpatient Rheumatology, Rehabilitation and Physical medicine clinic at Benha University Hospital, Qalubia Governorate, which is affiliated to the Ministry of High Education. The selected hospital consists of four building, (administrative building, abdominal building, surgery building, and ophthalmology building). Total number of outpatient's clinics are 22, The outpatient Rheumatology, Rehabilitation and Physical medicine clinic is located in the ground floor of the abdominal building of Benha University Hospital.

. **Research subject:**

Sample size:

The study sample was included (95) patients medically diagnosed with FM who aged from 20-60 years. The sample was taken from the above mentioned setting during six months.

Sample technique:

The study sample was included (95) patients medically diagnosed with FM from the above setting during the period of study.

Tools of data collection:

The data was collected using the following tools:

Tool (I): A structured interview questionnaire sheet: It was developed by the researcher based on scientific review of literature, it was consisted of two parts: Socio- demographic data and clinical data.

Part one: Socio- demographic data that included (age, sex, marital status, educational level, occupation, residence and family income).

Part two: ***Clinical data that included*** (age during onset of disease, duration of disease, family history of fibromyalgia, seasons in which fibromyalgia symptoms increase in, number of patient's visits to outpatient clinic in hospital monthly, suffering from any other diseases, symptoms that patients suffer from, factors that increase pain, methods that decrease pain and symptoms of fibromyalgia, regularity of taking medications, effects of fibromyalgia on job performance).

Tool (II): Rosenberg self-Esteem scale:

Rosenberg self-Esteem scale was developed by **Rosenberg, (1965).** It was used to measure self-esteem of fibromyalgia patients. The statements are rated on a 4-point Likert scale, as following, strongly disagree = (1), disagree = (2), agree = (3), strongly agree = (4) for positive items and vice versa for negative items.

Scoring system:

Scoring ranged from 10 to 40, with 40 indicating the height score. Scoring for a negative answer was reversed, i.e., (1) for strongly agree and (4) for strongly disagree, and so on. Total scores were graded to total scoring system for self-esteem as follows:

- **Low self-esteem (10–20)**
- **Moderate self-esteem (21–30)**
- **High self-esteem (31–40)**

Tool (III): Body Image Scale:

Body Image Scale adopted by **Gamal, (2016)**, to measure fibromyalgia patient's perception of their body image. It consisted of 21 items such as (I feel that my body parts are different from others; I am sad when I look at my shape in a mirror). Each

question is answered from 0 to 3 grade where never = 0, scarcely = 1, sometimes = 2, much = 3. A higher score indicates a greater degree of negative body image.

Scoring system:

- **Positive body image (0–21)**
- **Moderate negatively body image (22–42)**
- **Negative body image (43–63)**

Tool IV: -Sleep Quality Scale(SQS):

Sleep quality scale was developed by **Yi et al., (2006).** It aims to assess the characteristic of sleep quality of patients with fibromyalgia. It consists of (28) items grouped under six subscales: daytime dysfunction (12) items, restoration after sleep (4) items, difficulty in falling asleep (4) items, difficulty in getting up (3) items, satisfaction with sleep (3) items, difficulty in maintaining sleep (2) items. using a four-point, Likert-type scale, respondents indicate how frequently they exhibit certain sleep behaviors from ("Rarely" = 0, to "almost always" =3).

Scoring system:

- **Good sleep quality (0–28)**
- **Average sleep quality (29–56)**
- **Poor sleep quality (57–84)**

2- Operational Design

Preparatory phase:

A reviewing of related literature and collecting theoretical data about various aspects of the study using books, articles, and internet periodicals were done to acquire the needed knowledge to conduct this study and to develop tools for data collection. The researcher found that stigmatization due to unclear cause of fibromyalgia beside to various symptoms led to disturbance in self-esteem and body image and finally majority of patients had poor sleep quality due to chronicity nature of the disease. In light of what was reviewed, this review helped the researcher develop a comprehensive plan for the study.

Validity of tools:

The tools were revised by a Jury of five experts from the psychiatric nursing field to ensure the validity of the tools and check the relevancy, comprehension clarity and applicability of the questions and modifications were done according to their opinions such as adding questions (do you take medications regularly and does fibromyalgia affect your job performance).The researcher made modifications to sleep quality scale as divided the tools to 6 subdomains to be more well understood by the patients. According to their opinion, some modifications were done and the final form was developed. The modification in the Arabic form of the four tools was modification of some words to give the right meaning of the phrases.

Pilot study:

Before staring of data collection pilot study was carried out after the development of the tools and before embarking the field work on 10% of the total sample to ascertain the clarity and applicability of the study tools and identifying time needed for each patient to fill the tools and to find out any problems that might interfere with data collection. According to the result of pilot study no modification was done. Therefore, the pilot study sample was included in the total sample.

Field Work

Before starting data collection an official permission was obtained from the director of the Benha University Hospital. Next the researcher started the process of data collection, by including patients to fill the questionnaire according to the following:

-The researcher started the process of data collection by introducing herself to the patients.
-An oral consent was obtained from each patients.
-A brief description for the purpose of the study and the type of questionnaires required to fill was given to each patients.
-Data collection was done through interviewing with the patients in out-patient Rheumatology, Rehabilitation and Physical medicine clinic.
-The researcher collected data from patients two days/ week every (Saturday and Monday) from 9 Am to 1 PM.
- The average number of interviewed of the studied patients was between 4-6 patients / weak.

-The data collection was completed within 6 months, within range 16 patients / month.
-The collecting data started from 1/2 / 2024 to 31/7/ 2024 after taking acceptance of permission from Director of Benha University hospital.

III-Administrative Design

Administrative approval:

An official permission letter will be obtained from the dean of the faculty of nursing, Benha university and official permission will be obtained from the director of Benha University Hospital to conduct the study. A full explanation about the aim of the study will be explained to the administrative team of the study setting to gain their cooperation during data collection**.**

Ethical consideration:

An informed consent for participation in the study will be taken from the patients after complete explanation of the purpose of the study. Before data collection, the participant will be informed that the participation in the study is voluntary and no name will be included in the questionnaire sheet. They will be given an opportunity to refuse to participate and they will be notified that they can be withdrawn at any time. Moreover, they will be assured that the information will remain confidential and will be used for the research purpose only.

IV. Statistical design:

Upon completion of data collection, the collected data were organized, tabulated; statistically analyzed by Computerized data entry and statistical analysis were fulfilling scored using Statistical Package for Social Science (SPSS), version (22). Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage.

The following tests were done: Chi-square (x2) test of significance was used in order to compare proportions between two qualitative parameters. Spearman's rank correlation coefficient (r) was used to assess the degree of association between two sets of variables if one or both of them was skewed. The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant as the following: Probability (P-value): P-value <0.05 was considered significant, P-value <0.001 was considered as highly significant, and P- value >0.05 was considered insignificant.

Results: -

Table (1): Shows the socio-demographic data of the studied patients, in which that less than half (43.2%) of the studied patients their age with a mean of 41.60±8.33 years and that all (100.0%) of the studied patients are females. Also, less than two-thirds (66.3%) of them married. Regarding educational level, more than half (53.7%) of patients have intermediate education.

In addition; regarding occupation, the results show that less than two-thirds (60.0%) of studied patients are working. According to residence, less than three-quarters (72.6%) of patients live in rural areas. finally, more than two-thirds (68.4%) of studied patients have non-sufficient family income.

Table (2): Illustrate the clinical data of the studied patients, in which that there is less than one half (48.4%) of the studied patients are in the age group of 30 < 40 years at onset of disease. As well as, more than half (57.9%) of them have disease duration less than 5 years; and the majority (80.0%) of them didn't have family history of fibromyalgia. Furthermore, near two-thirds (63.2%) of them visit the outpatient hospital one visit monthly. Increasingly, the majority (89.5%) of them suffered from some diseases such as obesity and rheumatoid arthritis (49.5%, 35,8%) respectively.

Also, more than one half (56.8%) of them took their medications regularly. Additionally, the majority (84.2%) of employed patients, their job performance affected by fibromyalgia.

Table (3): Clarifies that, there is a positive statistical significant correlation between total self-esteem score, total body image and total sleep quality scores ($p \leq 0.001$).

Figure (1): illustrates that, all (100.0%), the majority (86.3%), more than two-thirds (68.4%) and more than half (54.7%) of the studied patients suffered from widespread pain, mood swings or depression or anxiety and fear, disturbances in concentration and attention and disturbance in digestive system respectively.

Figure (2): Illustrates that, less than half (42.1%) of the studied patients have moderate level of self-esteem, and more than one third (34.7%) have high

self-esteem level, while less than one-quarter (23.2%) of the them have low self-esteem.

Figure (3): Illustrates that, more than half (50.5%) of the studied patients have moderate negatively body image while, more than one quarter (29.5%) have positive body image and one-fifth (20.0%) of the them have negative body image.

Figure (4): Illustrates that, more than one half (60.0%) of the studied patients have poor sleep quality, and less than nearly one quarter (21.1%) have average sleep quality, while less than one-fifth (18.9%) of the them have good sleep quality.

Table (1): Distribution of the studied patients according to their socio-demographic data (N=95).

Socio- demographic data	No	%
1- Age in (years):		
- 20 < 30	6	6.3
- 30 < 40	33	34.7
- 40< 50	41	43.2
- 50 – 60	15	15.8
Mean ± SD = 41.60 ± 8.33		
2.Sex		
- Male	0	0
- Female	95	100
3- Marital status:		
- Single	15	15.8
- Married	63	66.3
- Widow	6	6.3
- Divorced	11	11.6
4- Educational level:		
- Illiterate	5	5.3
- Basic education	12	12.6
- Intermediate education	51	53.7
- University education	27	28.4
5- Occupation:		
- Housewife	38	40.0
- Worked	57	60.0
In case of work, type of work: (n=57)		
- Public sector	37	64.9
- Private sector	18	31.6
- Free works (clothes seller)	2	3.5
6- Residence:		
- Rural	69	72.6
- Urban	26	27.4
7- Family income:		
- Non- sufficient	65	68.4
- Sufficient	21	22.1
- Sufficient & save	9	9.5

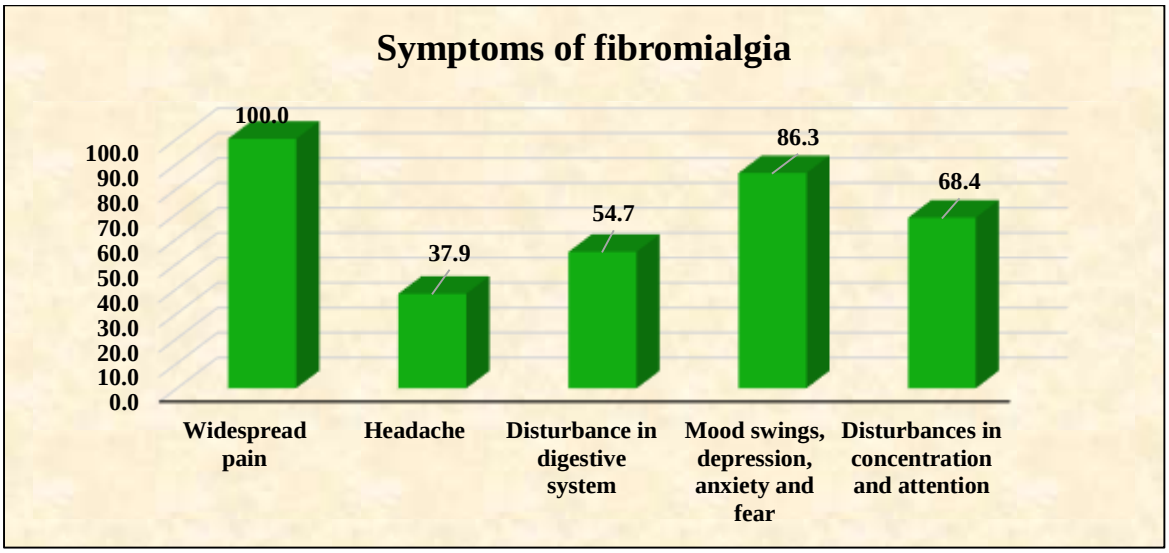
(*) statistically significant correlation at P-value <0.05 (**) Highly statistically significant correlation at P-value <0.01

Table (2): Distribution of the studied patients according to their clinical data (N=95):

Clinical Data	No	%
1- Age during onset of disease (years):		
- 20 < 30	2	2.1
- 30< 40	46	48.4
- 40< 50	36	37.9
- 50-60	11	11.6
Mean ± SD = 27.3 3± 5.01		
2- Duration of disease:		
- < 5 years	55	57.9
- 5<10 years	30	31.6
- ≥ 10 years	10	10.5
3- Family history of fibromyalgia:		
- Yes	19	20.0
- No	76	80.0
In case of yes: (n=19)		
- First degree relatives	16	84.2
- Second degree relatives	3	15.8
4.Number of patient visits to outpatient hospital clinic monthly:		
-One visit monthly	60	63.2
-Two visits monthly	12	12.6
-Three visits monthly	2	2.1
-Irregular monthly follow-up	21	22.1
5.Suffering from any other diseases:		
Yes	85	89.5
No	10	10.5
If the answer is yes: (n=85*****)		
Osteoporosis	5	5.3
Rheumatoid arthritis	34	35.8
Lupus erythematosus	2	2.1
Ankylosing spondylitis	6	6.3
Obesity	47	49.5
Hypertension disease	9	9.5
Heart diseases	3	3.2
Diabetes	11	11.6
6- Do you take medications regularly:		
- Yes	54	56.8
- No	41	43.2
If the answer is yes, to what extent getting better (n=54)		
- No improvement	18	33.3
- Improvement with a slight degree	24	44.5
- Improvement with a moderate degree	12	22.2
7- Does fibromyalgia affect your job performance: (n=57)		
- Yes	48	84.2
- No	9	15.8

If the answer is yes, to what extent affecting (n-48)		
- It affects to a moderate degree	33	68.8
- It affects to a high degree	15	31.3

(*) statistically significant correlation at P-value <0.05 (**) Highly statistically significant correlation at P-value <0.01



*responses aren't mutually exclusive

Figure (1): Percentage distribution of studied patients according to the symptoms of fibromyalgia (N = 95).

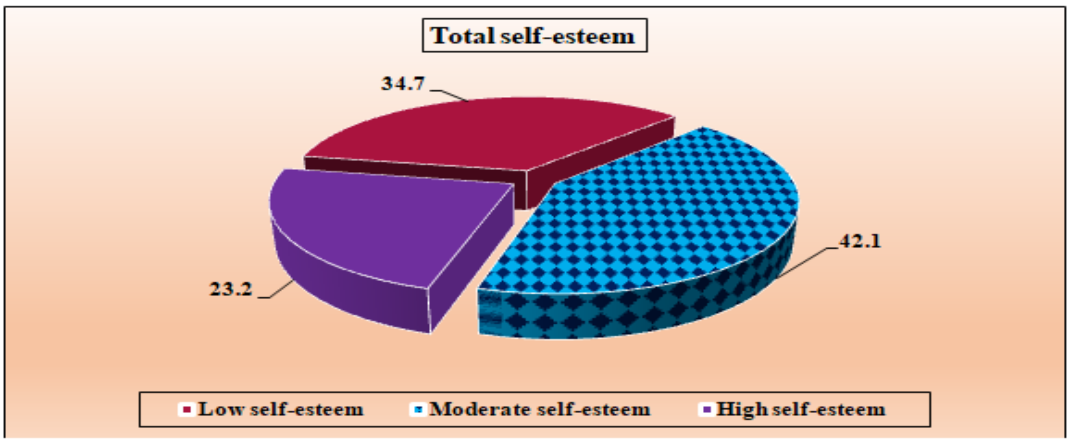


Figure (2): Percentage distribution of studied patients according to their total self-esteem score (N=95).

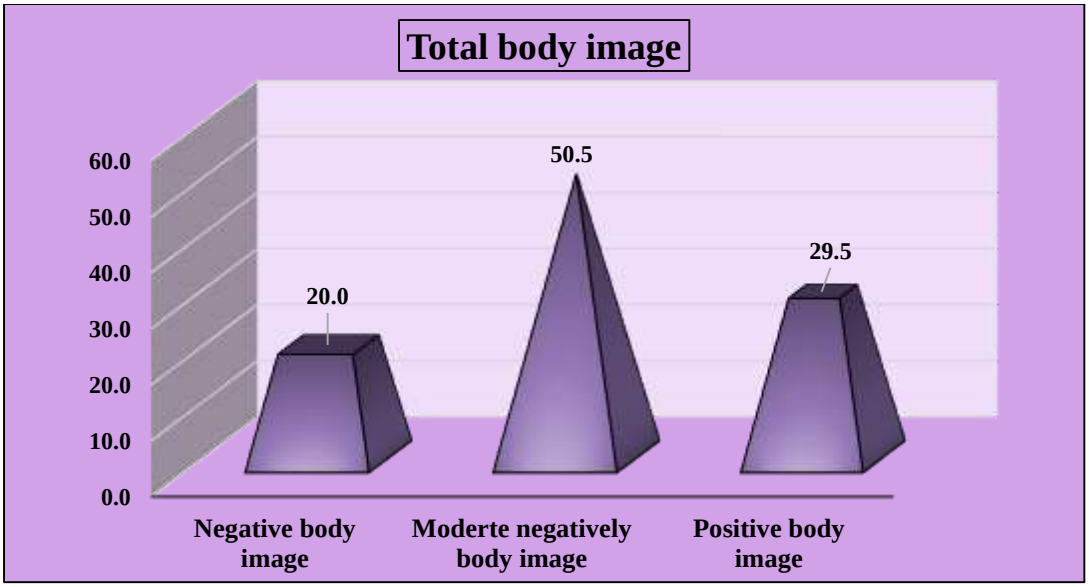


Figure (3): Percentage distribution of studied patients according to their total body image score (N = 95).

Figure (4): Distribution of studied patients according to their total sleep quality score (N = 95).

Table (3): Matrix correlation between total self-esteem, body image and sleep quality among studied patients.

Variables	Total body image		Total sleep quality		Total self-esteem	
	R	P value				
Total body image	1	----	0.412	0.000**	0.696	0.000**
Total sleep quality	0.412	0.000**	1	----	0.473	0.000**
Total self-esteem	0.696	0.000**	0.473	0.000**	1	----

*A Statistically significant $p \leq 0.05$ **A Highly Statistical significant $p \leq 0.001$.

Discussion

Part I: Socio-demographic of the studied patients:

Fibromyalgia is a complex, multifactorial, chronic rheumatic disorder characterized by widespread body pain, commonly accompanied by stiffness, fatigue, sleep disturbances, cognitive impairments, and psychiatric signs. All these complex symptoms deeply affect daily life activities and quality of life and cause changes in living habits and daily routines in a considerable proportion of patients **Kocyigit & Akyol., (2022)**.

Furthermore, FM can disturb the body image perception and affect the quality of life negatively. So that, affecting individuals' perceptions of self-identity, self-esteem, and mood, and consequently affect their response to disease, and their likelihood to engage in self-care measures **Rios Andreghetti et al., (2024)**. In the light of the previous, the current study was conducted to determine the correlation between self-esteem, body image and sleep quality among patients with fibromyalgia.

Regarding to age, the result of the current study revealed that less than half of the studied patients were in the age group of 40 < 50 years with a mean age of 41.60±8.33 years. From the researcher point view, this may because fibromyalgia is common in the middle aged women. These results were similar to a study conducted by **Yang et al., (2023)** who found that the mean age of participants ranged from 36 to 59. **Regarding to sex**, the result of the current study revealed that all of the studied patients were female. From the researcher point view, men and women differ in their responses to pain, with greater pain sensitivity and higher risk of clinical pain commonly observed among women. Also, the difference between men and women in the prevalence and diagnosis of FM appears to be related to the social stigma related with it being a mostly female illness and to the social and cultural characteristics of Western countries, where men are less likely to go to a specialist for chronic pain symptoms, which limits the formulation of a correct diagnosis.

These results were similar to a study conducted by **Campos et al., (2024)** mentioned that most of the sample were women.

Regarding to marital status, the results of the present study showed that less than two-thirds of patients were married. From the researcher point of view, this could be due to the fact that studied sample reached to the age of maturation and productivity especially that the percentage of the studied patients were in the middle age. This result was in accordance with **El-afandy, A. (2024)** who found that, slightly more than one half of the patients were married. This result was disagree with **Külekçioğlu ,S. (2022)** who mentioned that majority of fibromyalgia patients were married.

Regarding to educational level, the results of the present study showed that more than half of patients have intermediate education. From the researcher point of view, this may be due to two potential explanations. First, lower educational status may be related to lower income. Second, this may be due to the study was hospital based, which may be biased toward patients with lower educational status who have poorer access to healthcare facilities.

This result was in accordance with **El-afandy,A. (2024)** who found that, slightly more than one half of the patients had secondary school education.

Regarding to occupation, the results of the current study represented that less than two-thirds of patients were employed. From the researcher point of view, work is thought to be beneficial because it enhances financial security and offers access to high-quality health care, which in turn improves health status, social provisions, mental health, and quality of life. Also it enables patients to

afford the medication and life style modifications.

These results were come in the same line with a study conducted by **Mohabbat et al., (2023)** who reported that more than two-thirds of the sample was employed.

According to residence, less than three-quarters of them live in rural areas. From the researcher point of view, this may be related to the sample taken from Benha University Hospital which serves many rural areas. As well as, due to the lack of awareness and health services in rural areas to detect symptoms of FM. This result was in harmony with **Sauch Valmaña et al., (2024**), who reported that most cases of FM were detected in rural areas.

According to family income, more than two-thirds of studied patients have non-sufficient family income. From the researcher point of view, FM entails a high cost for the social and health system, since patients with FM attend more consultations both at the level of general medicine and specialized cohort in pain medicine and psychology and are subjected to more prescriptions and neuroimaging and laboratory tests than the rest of the population.

This result was in harmony with a study by **Oliva-Moreno & Vilaplana-Prieto., (2024)** who reported that the economic burden associated with this disease is heavy.

Part II: Clinical data of the studied patients:

Concerning to age during onset of disease, the result of the current study found that there is less than one half of the studied patients are in the age group of 30 < 40 years at onset of disease. From the researcher point of view, this may be related to in this age there are increasing responsibilities of life and stressful life events that may be triggers for developing FM. This result was in harmony with **Di Carlo., (2022)** who reported that although it can occur at any age, it is more common between the ages of 30 and 35. Also, this results were disagreed with a study by **Alciati et al., (2021),** who found that age at onset of FM (years), mean ± SD 42.8 ± 12.43.

As regard to duration of disease, the result of the present study illustrated that more than one half of patients have disease duration less than 5 years. From the researcher point of view, this may be due to chronicity of the disease. This result was consistent with **Mohamed et al., (2024)** who confirmed that one half of patient's experience disease duration less than 5 years.

Regarding to Family history of FM, the majority of patients didn't have family history of FM. From the researcher point of view, this may be due to other factors may play a role in the etiopathology of FM such as physical trauma, surgery, infection or significant psychological stressors, these results contradicted with **Romeo et al., (2024)** who mentioned that more than half have family history of FM.

Regarding to number of patients visits to outpatient hospital clinic monthly, near two-thirds of them visit the outpatient hospital one visit monthly. From the researcher point of view, this may be due to the patient's visit to the hospital may be due to the regulations and policies of the hospital. These results contradicted with **Mohamed et al., (2024)** who mentioned that more than three quarter have Erratic follow up.

Regarding to suffering from any other diseases, the results of the present study showed that, the majority of patients suffered from some diseases such as obesity and rheumatoid arthritis. From the researcher point of view, this may be due to that the purported risk factors for FM is the presence of musculoskeletal disorders and increase body mass index (obesity). These results were come in the same line with a study conducted by **Weinstein et al., (2024)** who found that more than two third had obesity.

These results were disagreed with a study conducted by **Mezhov et al., (2021)** who found that FM occurs in approximately less

than one third of various rheumatological condition.

Concerning to regularity of taking medications, more than one half of patient took their medications regularly. From the researcher point of view medication adherence is limited by insufficient symptom relief, side effects, satisfaction and costs, also given the disease's lack of understanding, patients report poor adherence to medication and mistrust of medical services. These results were in disagreement with the study result that conducted by **Prikhodkina & Melnikov., (2024)** who found that showed that above half of the participants reported a low adherence to medications.

Regarding to effects of fibromyalgia on job performance, the majority of employed patients, their job performance affected by FM. From the researcher point of view People suffering from FM are affected in various dimensions of their daily life, suffering physical and cognitive limitations, a low health-related quality of life, thus there are a significant impact on their productivity at work.

These results were come in the same line with a study conducted by **Mohamed et al., (2024)** who found that Approximately two-thirds of the patients reported that pain interfered with their regular work, encompassing both work outside the home and household chores.

Regarding to symptoms that patients suffer from, almost all patients with FM have widespread pain. From the researcher point of view, this may be due to pain and sensory processing alterations in the central nervous system are present in fibromyalgia. Patients often become hypersensitive to the perception of pain.

These results were come in the same line with a study conducted by **Kaltsas & Tsiveriotis., (2023)** who found that the main presenting complains of patients with fibromyalgia include chronic widespread pain.

In addition, more than two-thirds and more than half of the studied patients suffered from mood swings or depression or anxiety and fear, disturbances in concentration and attention and disturbance in digestive system respectively. From the researcher point of view, these findings can be seen to account for the specific challenges facing these women which generate anxiety and distress, such as distrust and non-acceptance of the body, significant functional impairment and disability .Also, the experience of chronic pain has significant effects on a person's life roles and routines, forcing changes in the person's everyday life. Moreover, an individual's beliefs are significant in these altered life roles and routines.

These results were come in the same line with a study conducted, **Cetingok et al., (2022)** mentioned that FM patients have also been shown to experience cognitive dysfunctions such as attention problems, problems in planning, difficulty in remembering, concentration difficulties, decreased vocabulary, poor verbal fluency, mental slowness, difficulty in thinking and making decisions and patients tend to experience high levels of stress, anger, and pain catastrophizing.

Part III: Level of self-esteem among the studied patients.

Concerning to level of self-esteem, the result of the present study revealed that, less than half of the studied patients have moderate level of self-esteem, and more than one third have high self-esteem level, while less than one-quarter of the them have low self-esteem. From the researcher point of view, this may be due to experience of rejection, disbelief, misunderstanding, and non-acceptance could also be perceived by FM patients from other people sources such as spouse, family, or work environments.

These results were in harmony with a study carried out by **Galvez-Sánchez & Montoro., (2023)** who stated that FM

patients also tend to exhibit lower self-esteem, difficulties in pain-related self-efficacy, a negative self-image, higher levels of pain catastrophizing, and altered emotional processing.

Part IV: Level of body image among the studied patients.

Concerning to the studied patients' body image, the results of the present study illustrated that, more than half of the studied patients have moderate negatively body image while, more than one quarter have positive body image and one-fifth of the them have negative body image. From the researcher point of view FM is a syndrome of multifactorial etiology, the clinical presentation of which is mainly characterized by the occurrence of chronic physical pain unrelated to bodily injuries and the presence of changes in mood, memory, and sleep. Therefore, it can be assumed, that women with fibromyalgia will present a body image influenced by the way they relate to their body, experienced as a source of persistent pain and a vector of dissatisfaction and displeasure.

These results were in harmony with a study carried out by **Staud et al, (2022)** who found that FM patients seem to perceive their total body size as altered during exacerbations of pain, suggesting a relationship between distortions of their body and pain.

Part V: Level of sleep quality among the studied patients.

Regarding to the studied patients' sleep quality, the results of the current study illustrated that, more than one half of the studied patients have poor sleep quality, and less than nearly one quarter have average sleep quality, while less than one-fifth of the them have good sleep quality. From the researcher point of view experiencing pain prevents patients from finding a resting position that facilitates sleep, the inability to find a comfortable sleep position results in a constant movement that ends up impacting the quality of the sleep.

These results were consistent with a study conducted by **Navarro-Ledesma et al., (2024)** who stated that poor sleep quality is a key factor for individuals suffering from chronic pain, such as (FM).

Part VI: Correlation between total self-esteem, body image and sleep quality among the studied patients:

The results of the present study illustrated that there was a positive statistical significant correlation between total self-esteem and total body image among the studied patients at ($p \leq 0.001$). From the researcher point of view, this may be due to self-esteem is very important psychological factor and strongly linked to mental health where low self-esteem related to social, behavioral and health issues as poor body image and body dissatisfaction and anxiety.

Furthermore, positive body apperception perceptions can positively affect individuals' psychological well-being, life satisfaction, self-acceptance, healthy lifestyle choices and social relationships. However, negative body appreciation perceptions have been associated with psychological problems such as low self-esteem, depression and anxiety.

Also, these findings can be seen to account for the specific challenges facing these women which generate anxiety and distress, such as distrust and non-acceptance of the body, significant functional impairment, disability, and overweight and obesity.

These findings were consistent with a study carried out by **Levy et al., (2024)** who reported that in FM patients lower levels of body appreciation alongside lower levels of self-compassion were related to greater self-criticism.

The result of the present study illustrated that there was a positive statistical significant correlation between total body image and total sleep quality among the studied patients at ($p \leq 0.001$). Form the researcher point of view, this

may be due to women's body perception is in interaction with society's beauty standards, media and other environmental factors.These factors can create emotional and mental pressure on women's bodies and body appreciations. Sleep quality is an essential component of physical and mental health and can have profound effects on body appreciation perception.

This result supported by a study done by **Scandola et al., (2022)** who found that with regard to Disownership-like sensations, the FM participants reported both sensations that certain body parts did not belong to their body. In particular, these seem to occur during stressful or anxious moments, but also when they are half-asleep, tired or at the moment when the pain is exacerbated.

The result of the present study illustrated that there was a positive statistical significant correlation between total sleep quality and total self-esteem among the studied patients at ($p \leq 0.001$). From the researcher point of view, poor sleep quality causes negative effects on one's mood, and daytime function. Due to the poor sleep quality during the night, patient often feels tired and it is difficult for patients to focus on daily activities. Accordingly, physical activity is decrease and physiological performance is decreased and finally self-esteem is affected.

This result supported by a study done by **Climent-Sanz et al., (2021)** who found that poor sleep quality in patients with FM generates negative responses, such as feelings of helplessness, despair, and frustration.

Conclusion

Based on the findings of the current study, it can be concluded that less than one half of the studied patients had moderate self-esteem, while more than half of the studied patients had moderate negatively body image and more than half of the studied patients had poor sleep quality. Also, there was a positive statistical significant correlation between total self-esteem score and total (body image & sleep quality) and, there was a positive statistical significant correlation between total body image score and total sleep quality score.

Recommendations

- Counseling sessions can be planned at governmental clinics for fibromyalgia patients.
- Comprehensive health educational programs for all fibromyalgia patients that include psychological, social, rehabilitation and follow up.
- Provide awareness about the disease through social media, television and magazines.

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