

Awareness of Benha University Employees Regarding Fibromyalgia

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Abstract

Background: Fibromyalgia is a condition that causes pain and fatigue all over the body. **Aim of the study:** This study was to assess awareness of Benha University employees regarding fibromyalgia. **Setting:** The current study conducted at Benha University, Which include 16 Faculties, 25% (4) of the Faculties were chosen randomly to achieved the study, Faculties namely Faculty of Literature, Faculty of Physical Education, Faculty of Education and Faculty of Nursing. **Sample:** A convenient sample of employees working in the previous mentioned settings, the total number of employees were 200. **Tools of Data collection:** Was collected by using one tool: An interviewing questionnaire divided in to three parts. **First part: A:** Concerned with socio-demographic characteristics of employees. **B:** Concerned with medical status of employees. **Second part:** Concerned with employees knowledge regarding fibromyalgia. **Third part:** Assess reported practices for employees. **Results:** 20.0% of the studied employees have good level of total knowledge regarding fibromyalgia and 43.0% of them have average level of total knowledge regarding fibromyalgia while, 37.0% of them have poor level of total knowledge regarding fibromyalgia. 46.5% of the studied employees have satisfactory level regarding their total reported practices while 53.5% of them have unsatisfactory level regarding their total reported practices. **Conclusion:** The present study revealed that there were no statistically significant relation between the studied employees' socio-demographic characteristics and their total knowledge level, also there were no statistically significant relation between employees' socio demographic characteristics and their total reported practices level. **Recommendations:** Educational program for employees to raise their awareness about fibromyalgia related factors should be a priority to ensure early diagnosis of the disease.

Key words: Awareness, Benha University employees, Fibromyalgia.

Introduction

Occupational health is an area of work in public health to promote and maintain highest degree of physical, mental and social well-being of workers in all occupations. Globally, there are 136 million workers in the health and social work sector, approximately 70% of whom are women. All these workers have the right to decent work, including protection of health and safety risk at work. Providing occupational health and safety measures for

protecting health workers and is also fundamental for well-functioning and resilient health systems, quality of care and maintaining a productive health workforce (World Health Organization (WHO), 2017).

Awareness is essential for prevention, early detection, targeted therapy and is key to ensuring effective treatment. Being aware of a disease and symptoms means employee are more likely to take preventative action, and go for screenings, tests and check-ups. A lack

of awareness of diseases or knowledge of options for screening and treatment is a serious barrier to good health now that employee educated more about this challenging condition, can be a bright healing light in the life of an affected employee by validating pain and offering to help Providing appropriate treatments to employees .On May 12 of each year, the International Day for Awareness of Fibromyalgia (IDAFs), and on this day, the National Council for Women (NCW), in cooperation with one of the Egyptian National Companies working in the pharmaceutical industry, launched a national campaign to raise awareness regarding Fibromyalgia(FMS), "Butterfly Touch" **(Chaiklieng et al., 2020).**

Fibromyalgia is a condition that causes pain all over the body (also referred to as widespread pain), sleep problems, fatigue, and often emotional and mental distress. Employees with FMS may be more sensitive to pain than employees without FMS. This is called abnormal pain perception processing. FMS is a disorder characterized by widespread musculoskeletal pain accompanied by fatigue, sleep, memory and mood issues. Researchers believe that FMS amplifies painful sensations by affecting the way patient brain and spinal cord process painful and non-painful signals **(Gavrilova et al., 2022).**

The worldwide prevalence of FMS ranges from 0.2% to as high as 8%. FMS, according to American College of Rheumatology (ACR) 1990 of classification criteria, includes a history of widespread pain in all four quadrants of the body for a minimum duration of three months, has a prevalence of 3-5% in females and 0.5-1.6% in males. Because the ACR criteria are insensitive, the actual prevalence of fibromyalgia is higher, particularly in men **(Benlidayi, 2020).**

Occupational Health Nursing (OHN) providing community health services play key roles in disease and injury prevention, disability alleviation and health promotion as well as managing and providing care and follow-up to employee with FMS. OHN give education about causes, signs, risk factor and how to relieve effect to employee and high risk group .Before encountering an employee with FMS, nurses must assess their feelings and any possible biases regarding FMS. Any unrecognized biases toward FMS could affect the nurse-employee relationship. OHN also need to be well informed about the disease and symptom management. This knowledge will contribute to nurses' ability to establish trusting relationships with employees diagnosed with FMS. A trusting relationship is crucial because many employees may have felt abandoned in their search for treatment by many healthcare providers **(Gavrilova et al., 2022).**

Significance of the study:

The prevalence of FMS pain syndrome in Western countries is estimated at 2-3% of the general population. This syndrome can be diagnosed at different ages, geographical locations and social classes. Most employees are between 20 and 50 years of age. The worldwide prevalence of FMS ranges from 0.2% to as high as 8%. In Egypt, the prevalence of FMS was assessed in cohorts of patients with concomitant illnesses and was found that 1.9% of patients with chronic liver disease had FMS. females have a significantly higher prevalence of fatigue, cognitive dysfunction, sleep disturbance, headache, and abdominal pain ($p < 0.05$) **(Moshrif et al., 2022).**

Aim of the study:

This study aimed to assess awareness of Benha University employees regarding fibromyalgia through:-

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1. Assessing the knowledge of Benha University employees regarding Fibromyalgia.
2. Determining the practice Benha University employees regarding Fibromyalgia.
3. Developing preventive guidelines for fibromyalgia.

Research questions

1. Is there relation between socio-demographic characteristics of Benha University employees and their knowledge regarding Fibromyalgia?
2. Is there relation between socio-demographic characteristics of Benha University employees and their practice regarding Fibromyalgia?

Subjects and method:

Research design:

A descriptive research design was utilized in this study (a research method that describes the characteristics of the population or phenomenon that is being studied. This methodology focuses more on the "what" of the research subject rather than the "why" of the research subject was used to conduct this study.

Setting:

The current study conducted at Benha University, Which include 16 Faculties, 25% (4) of the Faculties were chosen randomly to achieved the study, Faculties namely Faculty of Literature, Faculty of Physical Education, Faculty of Education and Faculty of Nursing.

Sampling:

A convenient sample of employees working in the previous mentioned settings, the total number of employees who 200 filling the following criteria:

1. Age (20: 50).
2. On the job.
3. Accepted to participate to the study.

Tools of Data Collection:

The data was collected through the following tools:

Tool I: An interviewing questionnaire: It was developed by the investigator based on reviewing the related literatures, and it was written in simple clear Arabic language, it was comprised of three main parts:

First Part: It was concerned with Socio-demographic characteristics of the studied employees. It included seven closed ended questions about age, sex, marital status, educational level, family income, family type & place of residence.

Second part: Concerned with employees knowledge regarding fibromyalgia which consisted of nine closed end questions included definition of fibromyalgia, causes, manifestations, high risk people, diagnosis, preventive measures, treatment medications, home measures treatment and complications of fibromyalgia syndrome.

Scoring system

The scoring system for employees' knowledge was calculated as follow: (2) for complete and correct answer, while (1) for incomplete and correct answer, and (0) for do not know or wrong answer .

The total knowledge score= 18 marks.

The total knowledge score was considered good if the score $\geq 75\%$ (≥ 13 points), while considered average if it equals was $50 < 75\%$ ($9 < 13$ points), and when the total score was considered poor if it equals $< 50\%$ (< 9 points).

Third Part: Concerned with reported practices of employees regarding fibromyalgia through asking questions which consisted of: **Exercise** included seven questions as follows: Do tai chi slow flowing exercises to improve health and quality sleep and to improve mental health, Massage in certain ways by applying pressure on muscles and nerves to relieve pain, relax by tensing and relaxing different muscle groups while doing concentration exercises, do breathing exercises to relax and relieve stress and

anxiety, do walking exercises for at least half an hour every day, do meditation and yoga to reduce stress, do aerobics, toning and stretching.

Sleep quality include eight questions as follows: Better to sleep at night than to sleep in the day, avoid stimulants and caffeine at least 6 hours before bed, stay away from electronic devices and modern phones at least two hours before bedtime, sleep in a quiet, dark and comfortable place, sleep 6 to 8 hours straight, Maintain the body's biological clock, that is, we do not exceed ten o'clock in the evening, avoid drinking water at least an hour before bed to maintain a consistent sleep, avoid drinking juices and sweeteners at least four hours before bed time.

Nutrition include thirteen questions as follows: Drink enough water to relieve headaches, reduce or eliminate all kinds of processed sweets and candies to prevent infections, reduce or eliminate salt from food to keep cells from water retention, avoid all kinds of processed meat and fast food to keep heart healthy, avoid soft drinks, energy drinks and sweetened juices to maintain a healthy heart, reduce or eliminate baked goods, flour and pasta to avoid irritating the colon, eat a complete meal with protein, healthy fats and carbohydrate, take supplements that contain vitamin D, vitamin C and some minerals to raise the immune system, eat vegetables and their juices to cleanse the body of toxins, eat fresh fruits 3 times a day, only eat protein mixed with healthy fats and starchy vegetable with simple starches as any (a piece of meat fried in butter with a vegetable salad only) to maintain the digestive process, eat vegetables that are steamed without adding fat to them.

Scoring system

Each step of employees reported practices has two level of answer: done or no done. These were respectively the scores of the items were summed- up and the total divided by the number of the items, giving by the

number of the part. These scores were converted into a present score.

The total practices score = 28 steps

The total practices score was considered satisfactory if the score of the total practices > 60% (>16 points) and considered unsatisfactory if it < 60% (< 16 points).

Content validity of the tools:

Content validity of the tools was done by three of Faculty's staff nursing experts from the Community Health Nursing Specialists who reviewed the tool for clarity, relevance, comprehensiveness, applicability, and give their opinion.

Reliability of the tool:

The reliability of the tool applied by the investigator for testing the internal consistency of the tool, by administration of the same tools to the same subjects under similar condition on one or more occasion. Answers from reported testing were compared (test-re-test reliability). The reliability was done by Chronbach's alpha coefficients test which revealed that which of the two tools consisted of relatively homogenous items as indicated by the moderate to high reliability of each tool. The moderate to high reliability of each tool. The internal consistency of the knowledge was 0.858 and reliability of practices was 0.705.

Ethical consideration

All ethical issues were assured; an oral consent has been obtained from each employees before conducting the interview and given them a brief orientation to the purpose of the study. They were also reassured that all information gathered would be kept confidentially and used only for the purpose of the study. Employees had the right to withdraw from the study at any time without giving any reasons.

Pilot study

The pilot study was carried out on (20) employee who represented 10% of the total sample size (200). The pilot study was aimed

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to assess the tools clarity, applicability and time needed to fill each sheet identify any possible obstacles that may hinder the data collection. The pilot study was included in the study sample as no modifications were done.

Field work

The data was collected from employees who attended in the previously selected faculties through the interview with them. The study was conducted at 3 months from the beginning of January 2022 up to the end of March 2022. The investigator visited the Faculty of Literature, Faculty of Physical Education, Faculty of Education and Faculty of Nursing, respectively each Faculties were visited by investigator, two days per week (Sunday and Wednesday) from 9 am to 12.30 pm respectively to collect data and distribute guideline about fibromyalgia the average number interviewed employees was 7-8 employees/day The average time needed to fill the tool was around 30- 45 minutes, to fill the sheet depending upon their understanding and response as well as distribute the questionnaire.

Statistical analysis:

All data collected were organized, tabulated and analyzed using appropriate statistical test. The data were analyzed by using the Statistical Package for Social Science (SPSS), which was applied to calculate frequencies number and percentages mean Standard Deviation (SD) as well as test statistical significance and associations by using chi-square χ^2 to detect the associations between the variables for (p value).The observation difference and associations were considered as the following (p-value)

- Highly significant (HS) $P \leq 0.001^{**}$
- Significant (S) $p \leq 0.05$
- No significant (NS) $P > 0.05$

Results:

Table (1): Shows that, 40.5 % of the studied employees their age 30 <40 years with Mean

$\pm SD = 36.24 \pm 7.89$, 55.0 % of them were male. 64.0% of the studied employees have enough family income, 68.0 % of them their family are nuclear and 50.5% are from urban area.

Figure (1): This Figure show that 20.0% of the studied employees have good level of total knowledge regarding fibromyalgia and 43.0% of them have average level of total knowledge regarding fibromyalgia while, 37.0% of them have poor level of total knowledge regarding fibromyalgia.

Figure (2): This figure Illustrates that 46.5% of the studied employees have satisfactory level regarding their total reported practices while 53.5% of them have unsatisfactory level regarding their total reported practices.

Table (2): Shows that, there were no statistically significant relation between of the studied Employees socio-demographic characteristics and their total knowledge level, $p > 0.05$.

Table (3): Shows that there were no statistically significant relation between employees' socio demographic characteristics and their total reported practices level, $p > 0.05$.

Table (4): Shows that, there were a highly statistically significant between the studied employees total knowledge level and total reported practices, $p < 0.001^{**}$.

Table (5): Clarifies that there were a highly statistically significant relation between studied employees' total practices level and presence of chronic diseases among them $p < 0.001^{**}$.

Table (1): Frequency distribution of the studied employees regarding to their socio demographic characteristics (n=200).

Socio demographic characteristics	No	%
Age		
From 20- < 30 years old	51	25.5
From 30- < 40 years old	81	40.5
From 40- < 50 years old	47	23.5
From 50-or more	21	10.5
Min-Max	25-53	
Mean ±SD	36.24±7.89	
Sex		
Male	110	55.0
Female	90	45.0
Family income		
Enough	128	64.0
Enough and saved	47	23.5
Not enough	25	12.5
Family type		
Nuclear	136	68.0
Alone	15	7.5
Extended	49	24.5
Residence		
Urban	101	50.5
Rural	99	49.5

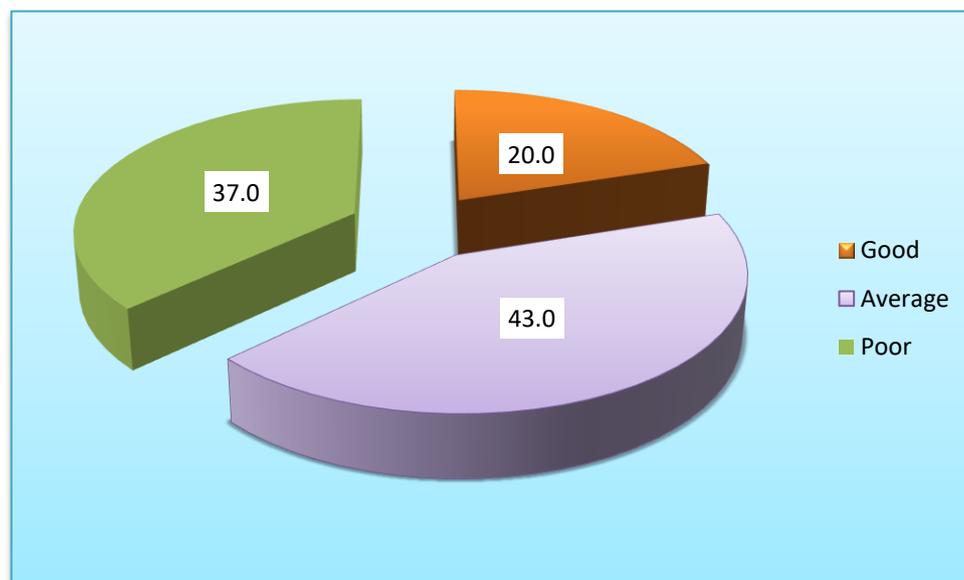


Figure (1): Percentage distribution of the studied employees total level of knowledge regarding fibromyalgia (n=200).

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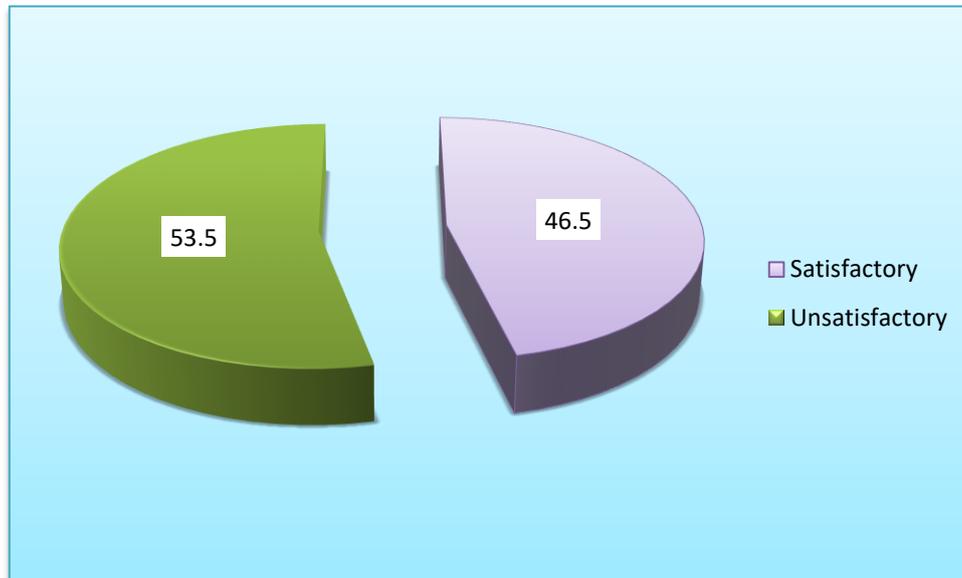


Figure (2): Percentage distribution of the studied employees to their total reported practices items regarding fibromyalgia (n=200).

Table (2): Statistically relation between socio-demographic characteristics of the studied employees and their total knowledge level regarding fibromyalgia. (n=200).

Socio demographic characteristics	Poor (n=74)		Average (n=86)		Good (n=40)		X ²	p-value
	No	%	No	%	No	%		
Age								
From 20- < 30 years old	20	27.0	20	23.3	11	27.5	2.818	0.831
From 30- < 40 years old	32	43.2	33	38.4	16	40.0		
From 40- < 50 years old	14	18.9	25	29.1	8	20.0		
From 50-or more	8	10.8	8	9.3	5	12.5		
Sex								
Male	40	54.1	43	50.0	27	67.5	3.421	0.181
Female	34	45.9	43	50.0	13	32.5		
Family income								
Enough	47	63.5	53	61.6	28	70.0	2.706	0.608
Enough and saved	20	27.0	19	22.1	8	20.0		
Not enough	7	9.5	14	16.3	4	10.0		
Residence								
Urban	30	40.5	49	57.0	22	55.0	4.704	0.095
Rural	44	59.5	37	43.0	18	45.0		

Table (3): Relation between socio demographic characteristic of employees and their total reported practices items regarding fibromyalgia. (n=200).

Socio demographic characteristics	Unsatisfactory (n=107)		Satisfactory (n=93)		X ²	p-value
	No	%	No	%		
Age						
From 20- < 30 years old	25	23.4	26	28.0	1.309	0.727
From 30- < 40 years old	42	39.3	39	41.9		
From 40- < 50 years old	28	26.2	19	20.4		
From 50-or more	12	11.2	9	9.7		
Sex						
Male	56	52.3	54	58.1	0.66	0.417
Female	51	47.7	39	41.9		
Family income						
Enough	71	66.4	57	61.3	0.616	0.735
Enough and saved	23	21.5	24	25.8		
Not enough	13	12.1	12	12.9		
Residence						
Urban	54	50.5	47	50.5	0.00	0.992
Rural	53	49.5	46	49.5		

Table (4): Relation between total reported practices and total knowledge level of the studied employees regarding fibromyalgia (n=200).

Items	Unsatisfactory (n=107)		Satisfactory (n=93)		X ²	p-value
	no	%	no	%		
Poor (n=74)	48	44.9	26	28.0	20.03	0.000**
Average (n=86)	50	46.7	36	38.7		
Good (n=40)	9	8.4	31	33.3		

Table (5): Relation between total reported practices and presence of chronic diseases among studied employees regarding fibromyalgia. (n=200).

Items	Unsatisfactory (n=107)		Satisfactory (n=93)		X ²	p-value
	no	%	No	%		
Not having (n=77)	63	58.9	14	15.1	40.35	0.000**
Having(n=123)	44	41.1	79	84.9		

Discussion:

According to socio demographic characteristics of the studied of Benha University employees the finding of the present study shows that; more than two fifth of the studied employees aged from 30 to less than 40 years with mean \pm SD=36.24 \pm 7.89. Also, the study illustrated that more than half of employees were male, the study was supported by **Alzabibi et al., (2021)** who studied “Fibromyalgia: epidemiology and risk factors, a population-based case-control study” in Damascus (n= 2966) and revealed that more than half of their studied sample were aged from 18-29 years old (58%) and nearly half of them were male (44.3%).

Conversely, the study was incongruent with **Shih et al., (2018)** who studied “ The Lived Experiences of Fibromyalgia in Taiwanese Women” in Taiwan (n=19) who revealed that the average age of the participant was 47.3 years (range from 22 to 62 years). Also the study was incongruent with **Javed, et al., (2021)** who studied “Increased frequency of fibromyalgia among patients with chronic pain presenting to internal medicine clinics of a tertiary care hospital: A cross sectional study” in Indus Hospital, Karachi (n=267) and illustrated that nearly three quarters of (73.8%) participants were females. This might be due to working condition and most of people depend on their fathers.

Concerning the family income, the result of the current study revealed that more than three fifth of employee had enough income. Also the study revealed that more than half of employees were from urban. The study was in the same line with **Cardenas-Rojas et al., (2021)** who studied “Recruitment characteristics and non-adherence associated factors of fibromyalgia patients in a randomized clinical trial” Study data were collected and managed using electronic data capture tools, a secure, web-based application

(n=524) who illustrated that nearly half of participants (48.0%) had sufficient income. This could be due to living at Benha City beside their work place.

Regarding studied employee total knowledge, slightly more than two fifth of them have average level of total knowledge while, more than one third of them have poor level of total knowledge regarding fibromyalgia, the study was agreed by **Koca et al., (2019)** who founded the minority of participants (15.7%) had correct knowledge regarding fibromyalgia. In the same line the study was supported by **Zeid & Ibrahim (2021)** who studied “Assessment of Family Physicians’ Knowledge about Fibromyalgia in Egypt” (n=108) and revealed that more than one third of participants (39.8%) had low level of knowledge about clinical presentation and (37.0%) had low knowledge level about treatment modalities regarding fibromyalgia and nearly one third of (31.2%) them had moderate level of knowledge regarding fibromyalgia. This could be related to false believes and no attendance of any educational program about fibromyalgia.

Regarding studied employees total reported practices level, the results of the present study illustrated that more than half of studied employee had unsatisfactory level regarding their total reported practices, The study was agreed with **Compennolle et al., (2019)** who studied “Effectiveness of interventions using self-monitoring to reduce sedentary behavior in adults: a systematic review and meta-analysis” collected from Four electronic databases (PubMed, Embase, Web of Science, and The Cochrane Library) and revealed that there were significant improvement in participant base line practice which was low before the intervention. This might be due to lack of awareness about the importance of healthy nutrition, adequate exercises and good sleeping quality.

Regarding the relation between studied employees socio-demographic characteristics, the current study illustrated that, there were no statistically significant relation between of the studied employees socio-demographic characteristics and their total knowledge level, the study was supported by **Kvæl et al., (2021)** whose results illustrated that, there was no significant relation between participants' characteristics and their total knowledge except for educational level. Also, the study was congruent with **Koca et al., (2019)** who illustrated that there was significant correlation between studied participants' total knowledge level and their education as higher educated participants had more knowledge than employees with lower level of education. This might be due to that knowledge may be affected by other contributions regardless demographic characteristics such as previous exposure to information or having training or education about the related topic.

The current study revealed that, there were no statistically significant relation between employees' socio demographic characteristics and their total reported practices level, the study was supported by **Kvæl et al., (2021)** who revealed that there was no statistically significant relation between participants practice and their demographic characteristics except for education there was highly statistically significant relation.

Relation between total knowledge level of and their total reported practices level of the studied employees regarding fibromyalgia. The study illustrated that there were a highly statistically significant between the studied employees total knowledge level and total reported practices, the study agreed with **Mendoza-Muñoz et al., (2021)** in Spain (n=49) who revealed that there was high significant relation between Fibromyalgia knowledge Questionnaire (FKQ) results and

Short Form Health Survey (SF12v2) practice. This could be due to that high knowledge level increase employees' awareness about healthy practices so that increasing their adherence to healthy practice such as healthy nutrition, high quality sleep and proper exercise.

Regarding the relation between total reported practices and presence of chronic diseases among studied employees, the result of the current study revealed that, there were a highly statistically significant relation between studied employees' total practices level and presence of chronic diseases among them, The study agreed with **Oliveira et al., (2019)** in Brazil (n=177) who studied "Association of the practice of physical activity and of health status on the quality of life of women with fibromyalgia" and revealed that there was significant relation between practice and presence of associated comorbid condition. This might be due to that presence of comorbid medical condition encourage the employees to adhere to healthy life style practices in order to reliving the disease manifestations, health maintenance and preventing disease complications.

Conclusion

There were no statistically significant relation between the studied employees' socio-demographic characteristics and their total knowledge level, also there were no statistically significant relation between employees' socio demographic characteristics and their total reported practices level. The present study revealed that there were a highly statistically significant between the studied employee's total knowledge level and total reported practices level.

Recommendations:

- Provide an educational brochure to employees to raise awareness regarding fibromyalgia.

- Perform health education program for employees regarding fibromyalgia
- Conduct further studies to investigate associated risk factors of employees with fibromyalgia and adequate intervention.

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وعي موظفي جامعة بنها فيما يتعلق بالألم العضلي الليفي

سارة عبدالعزيز البدر اوي- محبوبة صبحي عبدالعزيز- أحلام الاحمدي سرحان

متلازمة الألم العضلي الليفي هي مشكله صحية عصبية شائعة تسبب الما واسع النطاق في جميع انحاء الجسم ،واضطرابات في النوم والارهاق العام وغالبا تكون مرتبطة بمشاكل عاطفية وعقلية والأشخاص المصابون بمتلازمة الألم العضلي الليفي اكثر حساسية للألم من اى شخص عادى غير مصاب. لذلك هدفت هذه الدراسة الى تقييم وعي موظفي جامعة بنها فيما يتعلق بالألم العضلي الليفي. أجريت الدراسة في جامعة بنها والتي تضم 16 كلية ، 25% (4) من الكليات تم اختيارها عشوائياً لإنجاز الدراسة وهي كليات الآداب ، كلية التربية الرياضية ، كلية التربية ، كلية التمريض. كانت عينة الدراسة من الموظفين الذين تبلغ أعمارهم (20:50) وكانوا على رأس العمل وعددهم 200 موظف وقبلوا الاشتراك في الدراسة. حيث اسفرت نتائج الدراسة أن 20.0% من الموظفين الخاضعين للدراسة لديهم مستوى جيد من المعرفة الكلية و 43.0% منهم لديهم مستوى متوسط من المعرفة الكلية ، و 37.0% منهم لديهم مستوى ضعيف من المعرفة الكلية. 46.5% من الموظفين الخاضعين للدراسة لديهم مستوى مرضٍ فيما يتعلق بممارساتهم الإجمالية المبلغ عنها بينما 53.5% منهم لديهم مستوى غير مرضٍ فيما يتعلق بإجمالي ممارساتهم المبلغ عنها. كما أوصت الدراسة بان هناك حاجة الي توفير برامج التثقيف الصحي للموظفين فيما يتعلق بمتلازمة الألم العضلي الليفي