Impact of functional disability on lifestyle for patients with arthritis

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الخلاصة

اجريت دراسة وصفية استخدم فيها اسلوب التقييم لتحديد تاثير العوق الوظيفي لمرضى التهاب المفاصل الرثوي والتهاب المفاصل العظمى على نمط حياتهم. اقيمت الدراسة في العيادات الخارجية لامراض المفاصل في مستشفى الكرامة التعليمي ومستشفى بغداد التعليمي ومستشفى الكندي التعليمي ومستشفى الجراحات التخصصية للفترة الواقعة ما بين ١٥ اكتوبر ٢٠٠٢ ولغاية ١٣ مايو ٢٠٠٤ في مدينة بغداد. اختيرت عينة غرضية (غير احتمالية) تكونت من (٢٤٥) مريض مصاب بالتهاب المفاصل (١١١) مريض مصاب بالتهاب المفاصل الرثوي و (١٣٤) مريض مصاب بالتهاب المفاصل العظمى. تكونت استمارة جمع المعلومات من جزئين رئيسين الاول خاص بالمعلومات الاجتماعية الديموغرافية (كالعمر، الجنس، الحالة الاجتماعية والمستوى التعليمي)، اما الجزء الثاني فتضمن مؤشرات نمط الحياة الجسمية والمهنية والاجتماعية، البيئية العاطفية والروحية. بينت نتائج الدراسة بان العوق الوظيفي لهولاء المرضى له اثر كبير على نمط حياتهم فيما يتعلق وفعاليتهم الحياتية اليومية مثل ارتداء الملابس والنظافة والمشي واداء العمل هذا بالإضافة الى مؤشرات التفاعل العائلي والتفاعل البيئي والاضطرابات العاطفية. أوصت الدراسة الى امكانية تقديم برنامج صحي تثقيفي مصمم ومعد لهولاء المرضى بما يتعلق بالمواضيع الوقائية والعلاجية والتاهيلية والتي من خلالها يمكن تقليل وطأت المضاعفات وتحسين الحالة الصحية والمحافظة عليها من خلال التمارين والسيطرة على الادوية والمتابعة وتثقيف المرضى حول المرض والتأثيرات الجانبية للأدوية.

Abstract

A descriptive study, which was using an assessment approach, was conducted for the determination of the impact of rheumatoid arthritis and osteoarthritis patient's functional disability upon their life style. The study was carried out at the Rheumatology and outpatients clinics of AL-Karama Teaching Hospital, Baghdad Teaching Hospital AL-Kindey Teaching Hospital and Specialized surgeries Teaching Hospital for the period of October 15th 2003 through May 13th 2004 in Baghdad City. A purposive (non-probability) sample of (245) arthritis patients which was comprised (111) rheumatoid arthritis patients and (134) osteoarthritis patients, was selected out of the early stated settings. The questionnaire was comprised of two main parts. Part one dealing with sociodemographical data like (age, sex, marital status, education level) and part two was including lifestyle domains of physical, occupation, social, environmental emotional and spiritual.

The findings of the study presented that these patients functional disability had great impact upon their lifestyle with regard to their daily living activities, such as dressing, cleaning, walking and working, as well as the domains of family interaction, environmental interaction and emotional disorders. The study recommended that well designed and structured health education program can be presented to these patients with respect to preventive, curative and rehabilitative issues by which complications can be reduced and health status can be promoted and maintained through the exercise program, drugs montoring and follow-up and patients education about the disease and drugs side effects.

Introduction

Arthritis is still a major and a growing world wide health problem. It is a chronic disease with serious medical, physical, psychological and economic reason. The estimated total economic cost to the united states of arthritis is over $65 billion annually [1,2].

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Arthritis is considered as a general condition which is characterized by inflammation and degeneration of the joints, and affects other connective tissues including muscles tendons and ligaments as well as the protective covering of internal organs [3] and can take a very heavy toll in terms of disfigurement and loss of mobility[4].

Arthritis pain was described as slight, sever, nagging, crippling and disabling. It can attack people of all ages the old as well as the young, and it most causes of disability and costly ones, and these conditions don't usually cause death, but they do worsen health related to daily life and serious systemic complications that may lead to morbidity and mortality like heart disease[5,6].

Several risk factors have been linked to the development of arthritis, some of them can't be modified, such as female sex, older age, and genetic predisposition and the other risk factor are modifiable, such as obesity joint injury and infection that controlled and prevention by making change in the lifestyle[7,8].The objective of this study was , to assess the patients sociodemographic characteristic at duration of the disease ,sex ,age, body mass index , educational level , martial status , occupation ,monthly income and residential area .and the second objective was to deterimine the impact of those patients functional disability upon their life style .

Methodology

A descriptive design was carried throughout the present study to assess the impact of functional disability on lifestyle for patients with arthritis who were attended to Rheumatology Clinics in Baghdad Governorate.

The setting of the study was conducted at the Rheumatology outpatients clinics at AL-Karama Teaching Hospital, Baghdad Teaching Hospital, AL-Kindey Teaching Hospital and Special Surgeries Hospital. Each clinics has equipments, instruments, specialized physician, physio-therapists and nurses.

A non probability (purposive) sample was selected. The sample consisted of (245) patients; (88) male and (157) female, According to the following criteria, the sample was selected:

1. Patients with rheumatoid and osteoarthritis who were undergone chronic and interactive disease for at least two years as they were diagnosed by the Rheumatologist.
2. Both genders (males and females).
3. Patients who were (20) years old and greater.
4. Patients who were free from other chronic diseases which were not related to arthritis complications.
5. Female patients who were not pregnant.

A questionnaire interview format was designed and developed by the investigator for the purpose of the study.

Data were collected by using structured interview technique and the review of patients records.

Internal consistency reliability was employed for the determination of the study questionnaire reliability. Coronbach alpha correlation coefficient was calculated for the reliability and contact validity of the questionnaire was determine through panal of (20) experts from different specialist. The range of experts experiences was (19) years and their opinions and suggestion was taken in consideration and done to be in the final draft of the questionnaire.

Data were analyzed through the application of two statistical approaches as the following:

1- Descriptive data analysis (frequency, percent and mean of score).
2- Inferential data analysis (Alpha correlation coefficient and Anova).

Results

The findings of the data analysis were presented according to the objectives of the study.

Table (1): Sociodemographic characteristics of the sample

Factors	*Groups*	*RA*		*OA*	
		F	*%*	*F*	*%*
1- Duration of the disease	1-5	54	48.6	48	35.8
	6-10	33	29.7	44	32.8
	11-15	12	10.8	42	31.3
	16-20	4	3.6	0	0
	21-25	8	7.2	0	0
2- Sex	Male	24	21.6	64	47.8
	Female	87	78.4	70	52.2
3- Age	20-30	33	29.7	0	0
	31-40	11	9.9	0	0
	41-50	42	37.8	26	19.4
	51-60	25	22.5	48	35.8
	61-70	0	0	26	19.4
	71-80	0	0	34	25.3
4- Body Mass Index	Underweight	22	19.8	0	0
	Normal	33	29.7	12	9
	Overweight	12	10.8	71	53.0
	Obesity grade I	30	27	30	22.4
	Obesity grade II	14	12.6	17	12.7
	Extreme obesity	0	0	4	3
5- Education Level	Unable to read and write	33	29.7	104	77.6
	Able to read and write	4	3.6	20	14.9
	Primary school graduate	20	18	2	1.5
	Intermediate school graduate	17	15.3	8	6
	Secondary school graduate	21	18.9	0	0
	University graduate	16	14.4	0	0
6- Martial status	Single	28	25.2	4	3
	Married	66	59.5	68	50.7
	Widowed	17	15.3	62	46.3
7- Occupation	Employee	34	30.6	33	24.6
	Retired	4	3.6	28	20.9
	Unemployed	9	8.1	24	17.9
	Housewife	64	57.7	49	36.6
8- Monthly income	Insufficient	84	75.7	44	32.8
	Somehow sufficient	17	15.3	41	30.6
	Sufficient	10	9	49	36.6
9- Residential area	Rural	20	18	36	26.9
	Urban	91	82	98	73.1

Table (1) has shown the following characteristics of the sample according to the sociodemographic data:

- In regard to the duration of the disease the majority of the rheumatoid and the osteoarthritis patients were having incidence within (1-5) years duration of the disease (48.6%) and (35.8%) respectively.
- In relation to sex and age the majority of the rheumatoid and the osteoarthritis patients were female who were accounted for (78.4%) and (51.2%) respectively, and the most of rheumatoid arthritis patients were (41-50) years old (37.8%) and the osteoarthritis patients were (51-60) years old (35.8%).
- Concerning to the body mass index the most of the rheumatoid arthritis patients had normal weight (29.8%) and obesity grade I (27%) and few had underweight

(19.8%) and obesity grade II (12.1%). The large number of the osteoarthritis patients had overweight (53%) some of them had obesity grade I (22.4%) and few of them had obesity grade II (12.7%). for overall subjects, some of them had over weight who were accounted for (33.9%).

- In regard to education level the most of the rheumatoid arthritis patients were unable to read and write (29.7%) but the majority of the osteoarthritis patients were unable to read and write (77.6%).
- In regard to marital status the majority of these patients were married and they were accounted for (59.5%) of the rheumatoid patients and (50.7%) of the osteoarthritis patients.
- Concerning to occupation the majority of these patients were housewife and they were accounted for (57.7%) of rheumatoid arthritis patients and (36.6%) of the osteoarthritis patients.
- In relation to monthly income the majority of the rheumatoid arthritis patients had an insufficient monthly income (75.7%) and regard to residential area the majority of the rheumatoid arthritis patients were living in the urban area (64%) and those of osteoarthritis too (62%).

Table (2a): One-way analysis of variance for the comparative difference between the rheumatoid arthritis patients relative to their functional disability and the life-style domains

Life-style domain	Functional disability	Mean	Standard deviation	df	F	Sig.
Occupation 1 . Work activity	Free of disability	21.5	0.5774	3	4.985	0.0028
	Mild	22.069	1.9182			
	Moderate	21.2821	2.7043			
	Severe	24.2	1.0328			
2. House hold activities	Free of disability	14	1.1547	3	5.491	0.0015
	Mild	8	5.6569			
	Moderate	11.8718	4.2623			
	Severe	11	6.1464			
Social 1. Social interaction	Free of disability	12	0	3	2.25	0.086
	Mild	11.0517	2.9937			
	Moderate	12.4359	2.3033			
	Severe	11.8	1.0328			
2. Family interaction	Free of disability	15	0	3	7.002	0.0002
	Mild	15.5172	2.3112			
	Moderate	17.4615	3.2594			
	Severe	18.6	1.8379			
Environmental and Weather interaction	Free of disability	24	0	3	8.775	0.0000
	Mild	20.2069	3.172			
	Moderate	22.3846	2.7493			
	Severe	24	1.1547			
Emotional 1. Stress and depression	Free of disability	21	1.1547	3	8.458	0.0000
	Mild	19.2414	2.8856			
	Moderate	21.6667	3.4361			
	Severe	23.4	2.1705			

Life-style domain	Functional disability	Mean	Standard deviation	df	F	Sig.
2. Fear and anxiety	Free of disability	13	0	3	1.008	0.002
	Mild	14.931	2.5878			
	Moderate	15.5897	4.278			
	Severe	15.6	1.2649			
Spiritual domain	Free of disability	24	0	3	1.113	0.347
	Mild	22.4655	1.9486			
	Moderate	22.8205	2.6544			
	Severe	21.8	2.6998			

The analysis of this table indicated that there was a highly significant difference between the rheumatoid arthritis patients functional disability and their life-style domains of occupation (work and household activities), sub-domain of family interaction, environment and weather interaction, emotion (stress and depression, fear and anxiety).

Table (2b): One-way analysis of variance for the comparative difference between the osteoarthritis patients relative to their functional disability and the life-style domains

Life-style domain	Functional disability	Mean	Standard deviation	df	F	Sig.
Occupation 1. Work activities	Mild	15.1413	4.2571	1	12.396	0.001
	Moderate	17.7619	3.3482			
2. House hold activities	Mild	5.2717	3.8804	1	40.715	0.001
	Moderate	1.0476	2.6955			
Social 1. Social interaction	Mild	9.337	3.0965	1	0.438	0.509
	Moderate	9.7143	2.9819			
2. Family interaction	Mild	13.5978	3.4324	1	2.185	0.142
	Moderate	19.6667	2.1261			
Environmental & weather interaction	Mild	19.2935	3.5162	1	0.405	0.026
	Moderate	19.6667	2.1261			
Emotion 1. Stress and depression	Mild	16.6522	4.1706	1	4.492	0.036
	Moderate	18.1905	3.21			
2. Fear and anxiety	Mild	13.7609	3.9318	1	0.795	0.374
	Moderate	12.0952	3.3042			
Spiritual	Mild	22.0217	4.5015	1	0.795	0.374
	Moderate	21.3333	3.2209			

The analysis of this table revealed that there was a highly significant difference between these patients functional disability relative to the domains of occupation (work and household activities) and significant relative to the domain of environmental and weather interaction and the sub-domain of stress and depression.

Discussion

Interpretation and discussion of the study findings are presented with supportive evidences which are available in the literature through this chapter.

Part I: Discussion of the arthritis patients socio- demographic characteristics.

1. Duration of the disease:

Analysis of these characteristic indicated that most of arthritis patients had duration of disease between (1-5) years (table 1). This time period represented the usual ones through which the disease initiated its absolute effect upon the human body. Support for this finding was reported by [9] who stated that over a number of years arthritis can lead to increasing deformity, pain and disability. [10] presented additional support when they reported that after 10-15 years arthritis can be a crippling disorder. Further support founded that inflammation contributes much more to the level of disability during the first years of the disease course, whereas radiographic progression contributes more strongly after about (10) years of disease duration.

2. Sex:

Relative to their sex, the majority of them were females (table 1). This can be interpreted that females are at greater risk due to discrepancies in the sex hormone. Support for this finding was reported as with most autoimmune disease, sex preponderance was clearly shown in females, with (2.5) time higher than males[12]. Additional support reported that the ratio of women with rheumatoid arthritis to men is 3:1 suggesting that hormonal factors may play a role in the disease[13]. Further support also when they reported that the disease is most prevalent in women and the prevalence is about (2.5) times higher in women than in men[14]. Arthritis affects women disproportionately more than men[15].

3. Age:

According to their age, it was reported that rheumatoid arthritis patients developed the disease early while the osteoarthritis patients late (table 1). This can be explained that rheumatoid arthritis (RA) is an autoimmune disease which characterized by the disorder of connective tissues that can occur at any time of human life, and the osteoarthritis (OA) can occur due to advanced age which causes wear and tear of joint cartilage (degeneration of the joint) as a type of primary osteoarthritis. Support for this fact was available in the work of Lipsky who stated that the onset of rheumatoid arthritis may occur at any age, though its prevalence increases with age and its peak is between the fourth and sixth decades with (80%) of patients developing the disease between the age of (35-50) years[16]. While other study reported that some younger people get osteoarthritis from joint injuries as secondary osteoarthritis, but osteoarthritis most often occurs in older people and its prevalence increases up to (65) years of age[17].

4. Body mass index:

Concerning their body mass index, it was determined that osteoarthritis patients were overweight while rheumatoid arthritis patients are represented by normal and under weight (Table 1). That result can be interpreted in a way that weight difference emerges when the rheumatoid arthritis patients develop inflammation due to the process of the disease and due to such a problem they loss their appetite and so far

they loss their weight. In contrast, the osteoarthritis patients do not develop similar problem. As matter of fact the patients with rheumatoid arthritis have persistent anemia resulting from the effect of the disease on the blood[3].

5. Education:

Regarding their education, the present study revealed that the large proportion of the arthritis patients accounted for those who were unable to read and write (table 1). This finding is due to the fact that the majority of the patients were women who had lost their opportunity of being educated. As a matter of fact, education is considered the cornerstone for any disease awareness which may have impact upon the patients understanding of the disease process, treatment and prognosis [12]. In addition. Most of the studies indicated that poor clinical status was associated with low education as compared to those with high education[19]. Also, the importance of education for patients with arthritis is to understand the disease, control its pain and other symptoms, as well as decrease complications[20].

6. Marital status:

With regard to the marital status, the majority of patients were married (table 1). The disease can usually affect individuals between the age (40-60) years at which these individuals were already married. As a matter of fact the onset of the illness is later in life, marital and family relationship may be less vulnerable to disruptions caused by the illness positive effects on the marriage are as likely to be experienced as negative ones[21]. Additional support that the living with chronic arthritis can have a major impact on a marriage[22].

7. Occupation:

Relative to their occupation, the most predominant occupation for these patients was being housewives (Table 1). This finding is due to the nature of the sample when females were the highest percentage than males. (4) presented support about this fact when it reported that the prevalence of arthritis is greater among women than among men, and for women aged greater than (45) years, arthritis is the leading cause of activity limitation.

8. Monthly income:

With respect to their monthly income, the study findings depicted that the majority of the rheumatoid arthritis patients had low or insufficient income (table 1). These patients may be driven out of families with low socioeconomic status, support for this findings reported that percentage of arthritis is highest among Kansans whose annual income is insufficient, and also presented the same results on Indian arthritis patients whose annual income is low[24]. Also, additional support for this finding stated that in chronic crippling disease a lot of costs were spent for medical and social care[25].

9. Residential area:

Regarding their residential area, the findings indicated that a large number of these patients were living in urban areas (table 1). Wang stated that the increased prevalence of arthritis in country areas could be associated with the occupations of country dwellers that tend to be more physical in nature, such as farming and mining. And other researcher reported that the overall prevalence of arthritis in the metropolitan area was (20%) and in the country (23.1%)[26]. The difference was not statistically significant. There is however a tendency for people in the country areas of South Australia within each group to have a higher prevalence of arthritis up to the age of (60) years old. Carmon reported that arthritis may be less frequent in rural setting and the ratio of women to men and urban to rural was both 4:1[28].

Part II: Discussion of the impact of patients' functional disability upon their life style:

Through the course of data analysis for such magnitude, it was realized that the disease had a greater impact upon the patient's life-style domains. Such an impact was noted to create more influence on the rheumatoid arthritis patients as having severe functional disability to some-extent than the osteoarthritis patients who developed moderate functional disability relative to their life-style (Table 2a and b).

1. Impact of functional disability upon the occupation (work and household) activities and the social domain (social and family interaction) of life-style:

Concerning the relationship between the patients functional disability had an impact upon their occupation (work and household activities) with different degrees, such as severe for work activities and moderate for household activities for rheumatoid arthritis patients while it was moderate for work activities and mild for household activities of osteoarthritis patients (Table 2a and b). Regarding to the social domain (social and family interaction), the impact of functional disability also was with different degrees, such as moderate for social interaction and severe for family interaction for rheumatoid arthritis patients and for osteoarthritis patients, the degree of impact for social interaction and family interaction was moderate (Table 2a and b). This finding emerged due to the severity of pain, loss of movement (stiffness and deformity of the joints) and the disease created burden upon these patients that may generate limits in their involvement in work, in social events and being active family member in terms of initiating sexual relationship and household role. Support for this finding was presented by Meyer who stated that physical limitations can greatly affect the usual role of the client in the family, the ability to work gainfully, the ability to participate in family events, and the ability to be an active sexual partner[10]. Additional support for this finding was presented by Valovanis who reported that limitation of function occurred when there was loss of body part or change in the functional capacity of the entire body or a part of it[29]. Additional support when they stated that a disabled family member had the potential to upset usual family pattern, the balance in role delineation may be upset and the family's daily routine at home and outside the home may be altered[30].

Allaire found that work disability was a common outcome of arthritis and a serious problem for the individual; because of the large number of people with arthritis[31]. Further support was presented by Mili who revealed that patients with

rheumatoid arthritis experienced difficulty in the number of household chores, working, shopping and errands, social relations, religious activities, leisure, pursuits, transportation and public service activities foregone[1]. Additional support was presented by Lefevre who reported that loss or limitation of hand and arm functions may lead to a need for help during the day. In the early stage of the condition, manual dexterity may be impaired leading to difficulty in handling common utensils. It may also make household tasks difficult or dangerous depending upon the degree of loss of function and reduced manual dexterity[32].

2. Impact of functional disability upon the environmental and weather interactions of life-style

Relative to the impact on the environment and weather domain, the degree of impact of functional disability was severe in rheumatoid arthritis patients and it was moderate in osteoarthritis patients with a highly significant relationship (Table 2a and b). Such an impact was manifested due to the nature of the disease as unbalance of musculoskeletal of the body and as climate-affected ones. Support for this evidence was presented by Gitling who reported that a combination of conditions included demographic and functional disability place older people at risk for problems with the home environment that impeded performance of daily living activities[33].

Supportive evidence to the effect of the weather when they stated that many people with arthritis feel very strongly that changes in the weather affect the level of pain which was experienced in their joints, particularly cold and damp[34].

3. Impact of functional disability upon the emotional domain (stress, depression, fear and anxiety) of life-style:

Arthritis patients' functional disability had further affected the domains of their life style of emotion (stress and depression). In rheumatoid arthritis the degree of functional disability was severe relative to stress and depression with a highly significant relationship and severe too in fear and anxiety. While in osteoarthritis patients the functional disability degree was moderate relative to stress and depression and it was mild relative to fear and anxiety (Table 2a and b) and such a dilemma existed due to the persistent of pain by repeated of the affected joints and the sequence of functional difficulties during the patient life, and also the effect of the arthritis manifestations as chronic condition, emotional impacted was emerged. The daily joint pain and functional restriction are an inevitable consequence of the disease and most patients also experience some degree of depression, anxiety, and feeling of helplessness[35]. More support was presented by Wolf who revealed that change in fine motor skills and decrease strength can cause routine functional tasks which result in frustration, anxiety, loss of self-steam and feeling of incompetence and lack of control. Additional support for this fact found that mood disturbance, particularly depression, is an inevitable association of disability through loss of pleasure and role[36]. Furthermore, Revenson found that spouses may feel frustrated about a reduction in shared pleasurable activities, helpless in response to seeing their wife or husband in pain, functional disability and fearful regarding their future[31].

4. Impact of functional disability upon the spiritual domain of life-style:

Concerning the relationship between the patient's functional disability and the spiritual domain of life style, the disease was noted to have no significant impact upon

the arthritis patient's spirituality, by virtue, that rheumatoid arthritis. Spiritually was moderately affected and that of osteoarthritis had mild effects (Table 2 a and b).

Recommendations

1- Well designed and structured health education program can be presented to these patients with respect to prevention, cure and rehabilitation issues by which complications can reduce and health status can be promoted and maintained through exercise, drugs monitoring, educated the patients about his / her disease.
2- Published materials can be generated and distributed throughout health authority to increase population's a wareness towards the consequences of the disease.
3- Furthers studies can be conducted on large sample of arthritis patients.

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