Quality of Life of Diabetic Patients Type -2- in Urban and Rural Areas in Kirkuk City (Comparative Study)

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ABSTRACT

Background and Objectives: Diabetes mellitus has become representing one of the most challenging public health problems of the 21st century. It is a metabolic disease characterized by high blood glucose levels (hyperglycemia) which may arise from defects in the secretion of insulin, defects in insulin action, or both. Diabetic patients suffering from worse quality of life in rural and urban area. Aims of the study were to assess quality of life Type-2- of diabetic patients in rural and urban area , to identify the relationship between some characteristics of diabetic patients and quality of life and comparison of quality of life of diabetic patients between urban and rural area in Kirkuk city.

Material and Method: The non- experimental approach and descriptive design was used in this study . The study was conducted at Azadi Teaching Hospital in Kirkuk city and Al-Hawija General Hospital at Al-Hawija district during the period from 15th November 2012 to the 20th of June 2013 .Purposive sample consists of (110) clients from urban area who visited Azadi Teaching Hospital and (110) clients from rural area who visited Al-Hawija General Hospital . In order to collect the study information, a questionnaire was constructed depending on the criteria of World Health Organization scale (WHO) format that modified by researcher and related literature. It composed of two parts , part one included (5) items which focused on the client demographic characteristics such as (age, gender, marital status, residence , occupation , level of education .Diabetes Mellitus Quality of life questionnaire is the instrument that consists of (5) domains. The domains are Independence , daily physical activities , Psycho-social , beliefs , environmental and circumstances. The overall questions includes (80) items. The questions were rated on (3) point- likert scale. The score ranges between (0-240), never (1), sometimes (2), always (3).content validity was determined by presenting the questionnaire to a panel of (10) experts.

Results: The data analysis shows that most of the type -2- diabetic patients were male in urban and rural area and constituted (75.3%) and (61.8 %) respectively . In relation to the age , high percentage of the sample were between age (55-64) years in urban and rural area and constituted (32.7%) and (34.5 %) respectively .Also the data analysis showed that there is a significant statistical association between health related quality of life (HRQoL) items that are related to independency, daily physical activities, psycho-social aspects ,beliefs and environmental circumstances. Also the study concluded that health problems of diabetic patients related to quality of life differs in sub domains have mild effects on the quality of life of patients with diabetic in rural than urban area .

Conclusions: The socio demographic characteristic of quality of life of type 2- diabetic clients (age, gender, marital status, level of education, jobs) are different in effects on independency, daily physical activities, psycho-social aspects, beliefs and environment Quality of life of diabetic patients type -2- more impact in rural than urban area.

Key words: Quality of Life, Diabetic Patients Type -2-, Urban, Rural

INTRODUCTION

Diabetes Mellitus is defined as a group of heterogeneous disorders with the common elements of chronic hyperglycemia and glucose intolerance due to insulin deficiency, impaired effective of insulin action, or both (Davidson, 2005).

People with diabetes have a worse quality of life than people with no chronic illness, but a better quality of life than people with most other serious chronic diseases. Duration and type of diabetes are not consistently associated with Quality of Life. Complications of diabetes are the most important disease- specific determinant of quality of life. Numerous demographic and psychosocial factors influence quality of life and should be controlled when comparing subgroups. Studies of clinical and educational interventions suggest that improving patients' health status and perceived ability to control their disease results in improved quality of

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life (Zeliha and Pelin, 2007). The objectives of the study were to assess Quality of Life of diabetic patients Type-2- in rural and urban area and to identify the relationship between some socio demographic characteristics of Type-2- diabetic patients and Quality of Life. Finally, to compare quality of life of diabetic patients between urban and rural area in Kirkuk city.

MATERIALS AND METHOD

To achieve the objectives of the study a non-experimental approach using descriptive design (comparative study) was applied in the present study from 15th November 2012 to the 20th of June 2013 . The study was conducted at Azadi teaching hospital(Consultation Clinic of internal medicine) for urban area , and Alhawija general hospital (Consultation Clinic of internal medicine) for rural area in Kirkuk city**.** Patients interview was done in the Consultation Clinic of internal medicine at Azadi teaching hospital for urban area and in the Consultation Clinic of internal medicine in Alhawija general hospital for rural area of Kirkuk city .A Purposive sample consisted of (110) client's from Azadi teaching hospital which represented urban area and (110) client's from Alhawija general hospital which represented rural area , they were chosen according to the following criteria: Males and females patients who diagnosed with type 2 diabetes. Age ranges between (25 -75 and more) years. The clients without chronic disease . The clients who diagnosed with type -2- diabetes from one or more years . Agreed to participate in the study .

In order to collect the study information, a questionnaire was constructed depending on the criteria of WHO scale (formate and modify by researcher) and related literature .It is composed of Two parts :-

DMQoL questionnaire is the instrument that investigation constructed consists of (5) domains and (17) sub-domains. The domains and sub-domains are: A- Independence (20) items distributed according of (5) categories : sleep and rest, diet, medication, performance, leisure and recreation. B-Daily physical activities (16) items distributed according (2) categories: movement and mobility and daily body care. C- Psycho-social (28) items distributed according(6) categories: relation with family and friends, mood emotional behavior, concentration and perception, self actualization and symptoms of anxiety and fear. D-Beliefs (12) items distributed according (3) categories each includes: spiritual, hope and future. E-Environmental and circumstances (4) items distributed according .The questions were rated on (3) point-Likert response scale. The score ranges between (0-240), never (1), sometimes (2), always (3). Content validity was determined by presenting the questionnaire to a panel of (10) experts in different specialties :Internal physicians (5) experts in medicine , pediatric health nursing (1) , adult health nursing (2) , physician psychological medicine (1) and statistics, (1) .Those experts were asked to review the questionnaire for content clarity, relevancy , and adequacy .Their responses indicated that minor changes should be performed on few items. All modifications were made relative to their recommendations . Data were collected through the use of the constructed questionnaire via interview technique throughout as a means of such collection, The data was collected between 20th November 2012 to the 10th of January 2013 . Data were analyzed in several steps. First, descriptive statistics, which include frequency and percentages. The second step, which includes inferential statistics (Chi-Square test, Independent Sample T test and ANOAV), data were prepared, organized and entered into the computer file; Statistical Package for Social Science (SPSS) version (17) is used for data analysis at (P.value $\leq$ 0.05) and use Mean of Score for comparison between quality of life of diabetic patients in urban and rural area .

RESULTS

Table (1): Demographic Characteristics of the Study Subjects for Urban and Rural Area of (110)

Variable	Urban area		Rural area	
Gender	**No**	**%**	**No**	**%**
Male	63	57.3	68	61.8
Female	47	42.7	42	38.2
Total	110	100%	110	100%
Age				
25-34	4	3.6	6	5.5
35-44	13	11.8	15	13.6
45-54	35	31.8	38	34.5
55-64	36	32.7	38	34.5
65-74	15	13.6	8	7.3
75 and more	7	6.5	5	4.5
Total	110	100%	110	100%
Marital status				
Single	5	4.5	3	2.7
Married	97	88.2	99	90.0
Widowed	8	7.3	8	7.3
Total	110	100%	110	100%
Occupation				
Retired	2	1.8	4	3.6
Free work	41	37.3	42	38.2
jobless	28	25.5	25	22.7
Housewife	39	35.5	39	35.5
Total	110	100%	110	100%
Educational level				
Can't read and write	25	22.7	35	31.8
Primary school graduate	37	33.6	42	38.2
Secondary school graduate	14	12.7	12	10.9
Intermediate school graduate	4	3.6	5	4.5
Institutes graduate	15	13.6	7	6.4
University and higher graduate	15	13.6	9	8.2
Total	110	100%	110	100%

Table (2): Diabetic Client's Responses on Independency Domains within 3-level Scale by Total Frequencies, Percentages and Chi-Square in Urban and Rural Area

	Rural area						**Urban area**					
Sleep and Rest	**Never**		**Sometimes**		**Yes**		**Never**		**Sometimes**		**Yes**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Do you feel difficulty in sleeping?	2	25.5	36	32.7	46	41.8	28	25.5	37	33.6	45	40.9
Are you satisfied with your sleep?	4	41.8	32	29.1	32	29.1	44	40.0	27	40.5	39	35.5
Do you feel a change in your sleep with disease?	1	17.3	25	22.7	66	60.0	29	26.4	17	15.5	64	58.2
Do you need any drugs for sleeping?	6	60.0	23	20.9	21	19.1	54	49.1	23	29.9	33	30.0
Obs.X^2 = 63.828 D.F = 6 P Value = 0.05 Crit. X^2 = 12.592 MS=2.05							**Obs.X^2 = 32.253 D.F =6 P Value =0.05 Crit. X^2 = 12.592 MS=2.05**					
Diet	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Does your eating food decrease with disease?	3	28.2	23	20.9	56	50.9	30	27.3	25	22.7	55	50.0

Does the kind of food change with disease?	1	10.9	19	17.3	79	71.8	16	14.5	19	17.3	75	68.2
Do you Keeps you more health diets?	1	17.3	45	40.9	46	41.8	13	11.8	27	24.5	70	63.6
Do you Take diet according to doctor order?	3	29.1	44	40.0	34	30.9	7	6.4	42	38.2	61	55.5
Obs.X^2 =49.410 D.F =6 , P Value = 0.05 Crit. X^2 =12.592 MS=2.26							**Obs.X^2 = 31.113 D.F = 6 , P Value = 0.05 Crit. X^2 = 12.592 MS= 2.43**					
Performance	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Do you feel difficulty in fulfilling your home tasks?	2	21.8	39	35.5	47	42.7	25	22.7	39	35.5	46	50.8
Do you feel that the disease prevents daily performance?	2	24.5	3	3	46	4	23	20.7	40	36.4	47	42.7
Do you have enough energy to practice your daily life?	3	32.7	35	31.8	39	35.5	38	34.5	26	23.6	46	41.8
Do you have the ability as a husband ?	3	30.9	33	30.0	43	39.1	26	23.6	27	24.5	57	51.8
Obs.X^2 = 4.640 D.F = 6 , P Value = 0.05 Crit. X^2 = 12.592 MS=2.11							**Obs.X^2 = 168.991 D.F = 6 P Value = 0.05 Crit. X^2 = 12.592 MS=2.19**					

Total MS for urban area= 2.14 / Total MS for rural area = 2.19

Table (3): diabetic client's responses on daily physical activities domains with in 3-level scale by total frequencies, percentages and Chi-Square in urban and rural area.

Urban area							**Rural area**					
Movement and Mobility	**Never**		**Some times**		**Yes**		**Never**		**Some times**		**Yes**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Is there difficulty as you put on your clothes?	58	52.	31	28.2	21	19.1	67	60.9	24	21.8	19	17.3
Is there difficulty as you walk and move in long distances?	22	20.	32	29.1	56	50.9	21	19.1	20	18.2	69	62.7
Do you have the ability to practice athletic activities?	66	60.	22	20.0	22	20.0	56	50.9	29	26.4	25	22.7
Are you able to wander easily?	33	30.	31	28.2	46	41.8	45	40.9	25	22.7	40	36.4
Do you have a difficulty when you have a bath?	61	55.	20	18.2	56	50.9	62	56.4	22	20.0	26	23.6
Do you have slow motion?	34	30.	20	18.2	56	50.9	34	30.9	27	24.5	49	44.5
Going up do you need help during stairs?	52	47.	18	16.4	40	36.4	44	40.0	22	20.0	44	40.0
Is there difficulty as you move at home?	63	57.	27	24.5	20	18.2	62	56.4	26	23.6	22	20.0
Obs. X^2 =92.497 D.F = 14 P Value = 0.000 **Crit . X^2 = 23.685 MS =1.94**							Obs.X^2 = 94.063 D.F = 14 , P Value = 0.000 **Crit. X^2 = 23.685 MS=1.91**					

Table (4): diabetic client's responses for Environment and Circumstances domains with in 3-lev calby total frequencies, percentages and Chi-Square in urban and rural area.

Environment and Circumstance	Urban area						Rural area					
	Never		Some times		Yes		Never		Some times		Yes	
	F	%	F	%	F	%	F	%	F	%	F	%
Do you feel that your environment is healthy?	46	41.8	33	30.0	31	28.2	41	37.3	28	25.5	41	37.3
Are you satisfied with your residency conditions?	17	15.5	12	10.9	81	73.6	16	14.5	19	17.3	75	68.2
Do you try to make your own healthy environment?	25	22.7	28	25.5	57	51.8	29	26.4	21	19.1	60	54.4
Do you feel that individuals around you try to maintain your healthy environment?	19	17.3	28	25.5	63	57.3	33	30.0	22	20.0	55	50.0
Obs.X^2 = 51.835 D.F = 6 , P Value = 0.05 **Crit. X^2** = 12.592 MS=2.28							Obs.X^2 = 23.213 D.F = 6 , P Value = 0.05 **Crit. X^2** =12.592 **MS=2.25**					

Table (5 A): Comparison of the Difference between Diabetic Client's QoL Domains regarding to their Gender in Urban Area.

Categories	Sex	No.	X	S.D	T.obs	P≤ 0.05
Independency	Male		8.7619	1.62356	0.058	NS
	Female		8.7447	1.49591		
Daily physical activities	Male		18.0000	2.68208	0.545	NS
	Female		18.2766	2.59349		
Psycho-social aspects	Male		7.2857	2.43250	1.592	NS
	Female		8.0000	2.24577		
Beliefs	Male		7.3175	1.51152	0.206	NS
	Female		7.3830	1.75144		
Environment and circumstances	Male		9.0476	2.00345	0.517	NS
	Female		9.2553	2.14139		

T:- 1.9 Df:-108

Table (5 B): Comparison of the difference between Diabetic Client's QoL Domains regarding to their Gender in Rural Area

Categories	Sex	No.	X	S.D	T.obs	P≤ 0.05
Independency	Male		8.0735	1.51919	1.129	NS
	Female		8.5000	1.62676		
Daily physical activities	Male		18.5000	2.73452	0.502	NS
	Female		18.7875	3.00029		
Psycho-social aspects	Male		7.7500	2.71191	1.370	NS
	Female		8.4524	2.54905		
Beliefs	Male		7.6471	1.49392	0.623	NS
	Female		7.8571	1.84221		
Environment and circumstances	Male		8.7941	2.18242	1.409	NS
	Female		9.3810	2.08306		

T:- 1.9 Df:-108

Table (5 B) represented that there were not significant differences between diabetic client's QoL domains according to gender at P value ≤ 0.05 in rural area

Table (6 A): One-way analysis of variance for the difference between Diabetic Client's QoL domains and their Age in Urban Area.

Categories	S.O.V	S S	M S	F.Obs	Sig
Independency	Between Groups	76.920	12.820	1.261	NS
	Within Groups	1046.980	10.165		
	Total	1123.900			
Daily physical activities	Between Groups	41.172	6.862	0.987	NS
	Within Groups	716.292	6.954		
	Total	757.464			
Psycho-social aspects	Between Groups	33.417	5.569	0.990	NS
	Within Groups	57S9.174	5.623		
	Total	612.591			
Beliefs	Between Groups	29.181	4.864	1.975	NS
	Within Groups	253.691	2.463		
	Total	282.873			
Environment and circumstances	Between Groups	14.111	2.352	0.542	NS
	Within Groups	446.844	4.338		
	Total	460.955			

F critical = 209 DF=109

Table (6 B): One-way analysis of variance for the difference between diabetic Client's QoL domains and their Age in Rural Area.

Categories	S.O.V	S S	M S	F.Obs	Sig
Independency	Between Groups	34.492	6.898	3.154	S
	Within Groups	227.472	2.187		
	Total	261.964			
Daily physical activities	Between Groups	90.666	18.133	2.413	S
	Within Groups	781.525	7.515		
	Total	872.191			
Psycho-social aspects	Between Groups	148.990	12.964	4.501	S
	Within Groups	622.973	2.880		
	Total	771.964			
Beliefs	Between Groups	13.640	2.728	1.027	NS
	Within Groups	276.179	2.656		
	Total	289.818			
Environment and circumstances	Between Groups	25.748	5.150	1.115	NS
	Within Groups	480.216	4.617		
	Total	505.964			

F critical = 2.09 DF=109

DISCUSSION

Part I: Discussion of QoL of diabetic patients Type-2- in rural and urban area

1. Independency domains:

The data analysis in table (2-5 A and B) shows that there is a significant statistical association of quality of life of diabetic patients type -2- that are related to independency domains for both urban and rural area .

The diabetic patients suffered from sleep disorder, diet imbalance, difficulty in performance of their duties, medication compliance as well as recreation. Also, it was noticeable that the diabetic patients didn't gain the appropriate care that leads to the improvement of their quality of life .

Letassy (2003) mentioned that sleep disorder is a problem with some patients which reflects the underlying reaction to their physical problem in the form of anxiety and depressive illness. Letassy stated that some people who have had diabetic patients have difficulty in sleeping in rural than urban . This is due to change in environment from urban to rural and may be part of getting used to their night time routine and bed again. It may also be due to worry that diabetes mellitus will increase during the night a recent study explored the level and type of perceived barriers to healthy lifestyle activities in a sample of 46 midlife and older

women with type 2 diabetes attending community health clinics with an average age of 66 years (McGuire 2011).Much of the research has been conducted in the USA, where studies have explored the perceived barriers for well African American women with evidence that barriers of time, fatigue, family responsibilities, physical exertion, and motivation are significant (Williams et al 2006). Sukwatjanee and others (2009) that enhancing Self-care Ability and Quality of Life among Rural-dwelling Rural dwelling Thai elders with type 2 diabetes, the focal group of interest in this study; faced many barriers in self-care including low education, poverty, lack of family support, and limited access to health and continuing care services that put them at great risk for poor health and quality of life. Tyrovolas and others (2009) mentioned that the Diabetes Mellitus is one of the major contributors of metabolic syndrome due to its pathophysiological link to other cardiovascular risks, such as hypertension, dyslipidemia, obesity, unhealthier diet, sedentarity lifestyles and smoking habits. Loveman (2003)mentioned that In spite of that it is widely accepted that diabetes education is not only required in the first few months following diagnosis but is an important component of ongoing diabetes care due to the numerous requirements for self-care that demands multiple daily decisions in order to balance diet, physical activity and medications. In Australian indigenous women with type 2 diabetes attending a diabetes cooking course, barriers to dietary change included lack of family support, social isolation caused by dietary change, poor oral health, depression, cost of food and generational food preferences (Abbott et al 2010).A recent study of African American women with type 2 diabetes found evidence that physical environmental barriers were negatively correlated with exercise self-efficacy and a decreased sense of community (Komar et al 2012).

Thommasen and others (2005) mentioned their study about understanding relationship between diabetes mellitus and quality of life in rural and urban community and found Rural diabetic experience significant impairment in their health related quality of life especially in physical activity and psychological aspect in comparison with Urban Diabetic patients

Part II: The impact of some factors on diabetic patients Type-2- such as: gender and age .

1-Diabetic patients age (in urban and rural area) :-

Table (1 and 6 A ,B) the analysis of the results in regard to socio-demographic the characteristics of sample . In relation to the age there were two groups of the same highest percentage which were (45-54) years and (55-64) years that constituted (34.5 %) respectively

Bisiriyu(2004) found that most of the patients between (50-59) year age group.

Sayeed et, al in(2000) conducted their study in rural Bangladesh and found the prevalence of type 2 diabetes was adjusted (30-64 years of age)

The prevalence of type 2 diabetes increases markedly after the age of 45 years (AIHW 2008).

Unlike type 1 diabetes, type 2 is commonest in adults, with onset typically over 40 years of age (Diabetes Australia, 2002) .The current study is agreement with my study . `Colford (2012) conducted their study about prevalence and treatment of diabetes in rural area and shows The average age was 60 (42.2, 78.8).Another study among the rural, urban and sub urban population of Bangladesh showed that the combine prevalence among the rural and urban populationwas 5.2% of which rural prevalence was 3.8% and urban prevalence was 7.8%. Age adjusted (30-64 years) prevalence urban 8.0% and rural 3.8%. (Abdur Rahim , 2002)

2-Diabetic patients gender (in urban and rural area)

Table (1 and 5 A and B) revealed that the majority of sample were male in urban and rural area and constituted (57.3%) (61.8 %) respectively

The current study is in agreement with the study of Bisiriyu(2004) mentioned their study with of the 104 participants in urban area and found , 59% were female and 41% were male. Sayeed et, al in(2000) conducted a study in rural Bangladesh and found the prevalence of type 2 diabetes was (male 3.1% and female 1.3%). According to a report in 2000, the prevalence of DM in rural Tanzania for males and females was 1.7 percent and 1.1 percent respectively (Aspray, 2000).

CONCLUSION

Health problems related to quality of the life of diabetic clients different according to (independency, daily physical activities, psycho-social aspects, beliefs and environment) domains in urban and rural area. The socio demographic characteristic quality of life type -2- of diabetic patients (age and gender) has direct affect on independency, daily physical activities, psycho-social aspects, beliefs and environment. Quality of life of type -2- diabetic patients more impact in rural than urban area .highly relationship between age and quality of life domains (independency, daily physical activities, psycho-social aspects)

RECOMMENDATIONS

Depending on the findings and conclusions of the study, the researcher recommends further studies could improve the instrument developed in this study from aspects of validity, reliability, quality of questions and Employment of WHO format for managing diabetic patients in all rehabilitation centers .Constructing specialized diabetic center to dealing with diabetic patients especially in rural area and increasing the number of physicians and nursing teams to deal with physical, psychological and social problems of diabetic patients because suspecting increasing number of patients affected in future. providing posters , booklet to improve patients knowledge about diabetic control .Increase diabetic patients awareness through the mass media to take medication regularly and prevent complications of diabetes mellitus .

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