Assessment of Quality of Life for Patients with Permanent Pacemaker in Baghdad City

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الخلاصـــة:

الهـــدف: تهدف الدراسة إلى معرفة نوعية حياة مَرضى ناظم القلب الاصطناعي الدائمي وإيجاد العلاقة ما بين نوعيّة حياة هؤلاء المرضى والخصائص الديموغرافيّة لكلٍ من العُمر، الجنس، المُستوى التعليمي والمهنة.

المنهجيّـــة: شملت عينة الدراسة (62) مريضاً من مرضى ناظم القلب الاصطناعي الدائمي. تمّ تطوير وتقديم استمارة مُصمّمة من أربعة أجزاء وشملت الاستمارة صفحة البيانات الديموغرافيّة، صفحة المعلومات الاجتماعيّة والإقتصاديّة، صفحة المعلومات ذات العلاقة بالمريض، واستمارة استبيان نوعيّة حياة مَرضى ناظم القلب الإصطناعي الدائميّ. تمّ تحديد الثبات والمصداقيّة لاستمارة الاستبيان من خلال إجراء الدراسة التجريبيّة. تمّ استخدام إجراءات الإحصاء الوصفيّ (التكرارات، النسبة المئويّة، الوسّط الحِسابيّ للقيّم) وإجراءات الإحصاء الإستدلاليّ (مُربّع كاي ومُعامل الإرتباط) في تحليل البيانات.

النتائـــج: أشارَت نتائج الدراسة إلى أنّ نوعيّة الحياة لِمَرضى ناظم القلب الإصطناعيّ الدائميّ قد تأثرّت بشكلٍ كبير فيما يتعلّق بجانب العلاقات الإجتماعيّة. وكذلك أشارت الدراسة إلى أنّ نوعيّة الحياة لهؤلاء المَرضى لم تتأثر فيما يتعلّق بكلٍ من (التعّب، التفكير بالإعتمادِ على الأدوية، الإستقلاليّة في إنجازِ العَمّل، الدعم الإجتماعيّ، المُتعّة وقضاء وقت الفراغ، البيئة المَنزليّة وبيئة العَمّل والجانب الروحيّ والذاكرة)، وهذا يدلّ على وجود ضَعفٍ في نوعيّة حياةِ هؤلاء المَرضى فيما يتعلّق بالفقرات أعلاه.

التوصيـــات: أوصت الدراسة بإتخاذ الإجراءات التي تعزز نوعية حياة مَرضى ناظم القلب الإصطناعيّ الدائميّ، وتشجيع تأسيس جمعيات تعنى بهؤلاء المَرضى وإجراء دراساتٍ مُستقبليّة تسلّط الضوء بصورةٍ أكبر على كل ما يرتبط بنوعيّة الحياة لهؤلاء المَرضى.

Abstract:

Objectives: To determine the (QoL) for patients with permanent pacemaker and to find-out the relationship between these patients' (QoL) and their sociodemographic characteristics such as age, gender, level of education, and occupation.

Methodology: A purposive "non-probability" sample of (62) patient with permanent pacemaker was involved in this study. The developed questionnaire consists of (4) parts which include 1.demographic data form, 2.disease-related information form, 3.socioeconomic data form, and 4.Permanent pacemaker patient's quality of life questionnaire data form. The validity and reliability of the questionnaire were determined through the application of a pilot study. A descriptive statistical analysis measures (relative frequency, percentage, mean of score) and inferential statistical analysis procedures (chi-square, Pearson correlation coefficient) were used for the data analysis.

Results: The findings of the study indicated that the sub-domain of personal relationship as part of the social relationship domain of the quality of life for these individual had greatly effected at severe level what means that the better quality of life is in this sub-domain.
The study concluded that most quality of life sub-domains of fatigue, thought, dependency on medication, independence in task management, social support, recreation and leisure, and home environment and spiritual domain were affected at the level of not effected. That means poor quality of life related to this sub-domain.

Recommendations: The study recommended that certain measures should be taken to improve quality of life for patients with permanent pacemaker for young adult and to encourage the establishment of a society for patients with permanent pacemaker to look after their social support and dependence on medication problem.

Key words: Quality of Life, Permanent Pacemaker

Introduction

Implantation of cardiac pacemaker is the treatment of choice in severe and/or symptomatic bradycardia [(1)]. More than 40 years after the first pacemaker implementation, world-wide implantation rate exceeds (400,000) every year. With widespread use, pacemaker technology has greatly evolved and highly sophisticated devices have become available providing optimal support for treating any type of bradyarrhythmia [(1)].

Pacemakers are usually used when a patient has a slower than normal impulse formation or

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a conduction disturbance that causes symptoms. Permanent pacemakers are used most commonly for irreversible complete heart block [2].

Cardiac pacemakers are used for electrical stimulation of the heart in patients experiencing conduction abnormalities that result in impaired cardiac output. More than (250,000–300,000) permanent cardiac pacemakers are inserted annually throughout the world. Most cardiac pacemakers are implanted in patients older than (60) years. But, they are also implanted in children including infants [3,4].

Pacemakers are implemented in the general population as means of preventing or treating bradyarrhythmias and preserving a normal heart rate response to effort. To be considered effective, medical interventions must demonstrate improved survival rate or quality of life (QoL) [5]. Health promotion among that chronic illness has been proposed as a strategy to contain health care cost and enhance quality of life [6]. Health-related (QoL) is increasingly accepted as an outcome measure when considering the effectiveness of therapeutic interventions. Little is known about the health related quality of life of patients with different clinical circumstances before and after pacemaker implementation [7].

Implantation of a permanent pacemaker is often done on an outpatient basis, but many patients are kept overnight for observation. The procedure is done under local anesthesia in the cardiac catheterization laboratory or the operating room and may take only 1 to 2 hours to be completed [8].

Methodology

A descriptive study was carried out in order to achieve the early stated objectives. The study was initiated from December 1st, 2006 through July 31st, 2007. The Study was conducted on patients with permanent pacemaker who attended the outpatient clinics at Al-Kadhimiyia teaching Hospitals, and Ibn- Al–Bettar Hospital.

Table 1. Distribution of the patients with permanent pacemaker

	Setting	No.	%
1	Al-Kadhimiyia Teaching Hospitals	37	60
2	Ibn- Al – Bettar Hospital for cardiac surgery	25	40
	Total	62	100

No.= Number, %= percentage

A Purposive "non-probability" sample of (62) patient with permanent pacemaker. The sample was selected based on the following criteria: 1.Permanent pacemaker recipients who had the permanent pacemaker for at least (6) months before, patient who are (20) years of age and older, no other major illness such as psychiatric problems or other systemic diseases. The data were collected through the use of a questionnaire and by means of an interview with the subjects. The data collection process was performed from March 1st until the end of July 2007. Each patient spends approximately (20-25) minute to respond to the interview. The study questionnaire was adopted from the (WHOQoL, 1996) Scale. The developed questionnaire consists of (4) parts: (Demographic Data Form, Disease-Related Information Form, Socioeconomic Data Form and Permanent Pacemaker Patient's Quality of Life Questionnaire. The validity of the questionnaire was established through a panel of (11) expert. Data of the study were ordinal according to the three levels scale of (always, some times, never) which were scored as (1, 2, 3) for each level respectively. So, the cut off point was (2) and the mild limit for acceptance was (66.67%) as through the following formula:

$$\{\frac{2}{3}\} 100 = 66.67\%$$

Based on the early stated facts, there were several levels for evaluating the limits of acceptance starting from the mild limit (66.67%) through the severe limit (100%). So, the interval had ranged between (66.67%- 100%) that represented the state of meeting the problem according to the 3-level scale through which the critical point was used to evaluate the presence of the problem in its effective image.

Suggestion was made for classifying the early stated interval into the main categories as follows: Less than 66.67 (No effect), Low = 66.67–77.78 (Mild quality of life), Moderate=77.78- 88.89 (Moderate quality of life), High=88.89-100 (Better quality of life).

Pilot study was conducted by the researcher from January 2007 to February 2007. Ten patients with permanent pacemaker were selected randomly from Ibn- AL-Bettar Hospital according to the criteria that have been mentioned previously. Determination of reliability of the QoL was based on the test-retest method.

The descriptive and inferential statistical measures (chi-square, Pearson correlation coefficient) were applied for the data analysis and assessment of the results.

Results:

Table 2. Distribution of the sample (62) permanent pacemaker patients according to the demographic characteristics

No.	Demographic characteristics of patients with permanent pacemaker	f	(%)
1.	**Gender**		
	Male	25	40.32
	Female	37	59.68
2.	**Age**		
	18-27	2	3.23
	28-37	2	3.23
	38-47	3	4.83
	48-57	13	20.97
	58 >	42	67.74
3.	**Marital status**		
	Un married	2	3.23
	Married	43	69.35
	Divorce	0	0
	Widowed	17	27.42
	Separated	0	0
4.	**Educational status**		
	Unable to read and write	34	54.84
	Read and write	9	14.52
	Primary school graduate	5	8.06
	Intermediate school graduate	3	4.84
	Secondary school graduate	3	4.84
	Institute graduate	0	0
	College graduate	7	11.29
	Post graduate	1	1.61

Table 2. (continued)

No.	Demographic characteristics of patients with permanent pacemaker	f	%
5.	**Occupational Status**		
	Still work		
	Governmental employee	3	4.84
	Self-employed	10	16.13
	Quit work		
	Retired	14	22.58
	House wife	34	54.84
	Others	1	1.61

f= frequency, %= percentage

Table (2) indicated that the majority of the study samples was female who were accounted (59.68%) and the remaining was male. Most of them was aged more than (58) years, and accounted for (67.74 %) and they were married.

The educational status showed that most of them was not able to read and write and who accounted for (58.84%). Concerning their occupational status, after having permanent pacemaker the majority of the sample (54.84%) quit working (housewife), while only (16.13%) was still working (Table 2).

Table 3. Physical domain effect among patients with permanent pacemaker

Level Of Effect	Never 3		Sometimes 2		Always 1		Total	χ^2	RS*	Grades
Sub-domain	f	%	f	%	f	%				
Pain and Discomfort	21	33.87	28	45.16	13	20.97	62	5.468 (NS)	70.69	Moderate
Fatigue	15	24.19	29	46.78	18	29.03	62	5.275 (NS)	65.033	No effect
Energy and Weakness	37	59.68	14	22.58	11	17.74	62	19.643 (s)	80.63	Moderate
Bodily Symptoms Related to Respiratory and Circulatory Symptoms	28	45.16	25	40.32	9	14.52	62	10.129 (s)	76.86	Moderate

f= frequency, *RS= Relative sufficiency, χ^2= chi-square, %= percentage

Table (3) indicates that there is a significant relationship at ($p< 0.05$) between the level of effect and the sub-domains, except that of pain and discomfort and fatigue which is not significant. Furthermore, the results indicated that pain and discomfort, and bodily symptoms and energy and weakness affected at moderate level, while fatigue was not effected by using comparative sufficiency.

Furthermore, the results indicated that pain and discomfort, and bodily symptoms and energy and weakness affected at moderate level, while fatigue was not effected by using comparative sufficiency.

Table 4. Psychological domain effect among patients with permanent pacemaker

Level of Effect	Never 3		Sometimes 2		Always 1		Total	χ^2	RS*	Grades
Sub-domain	f	%	f	%	f	%				
Negative Feeling	25	40.32	29	46.78	8	12.90	62	12.07 (s)	75.8	Moderate
Thought	3	4.84	30	48.39	29	46.77	62	22.75 (s)	52.66	No effect
Memory	20	32.26	22	35.48	20	32.26	62	0.129 (NS)	66.66	No effect
Self-concept and Self-confidence	25	40.32	31	50	6	9.68	62	16.536 (s)	76.86	Mild

f= frequency, *RS= Relative sufficiency, χ^2= chi-square, %= percentage

Table (4) indicates that there is a significant relationship at ($p<0.05$) between the level of effect and the sub-domains, except that of memory which is not significant.

The findings have revealed that negative feeling and self-concept and self-confidence affected at mild level, thought not affected, and memory effected at mild level.

Table 5. Level of independent effect among patients with permanent pacemaker

Level of Effect	Never		Sometimes		Always		Total	χ^2	RS*	Grades
Sub-Domain	f	%	f	%	f	%				
Mobility	20	32.26	23	37.10	19	30.64	62	0.42 (NS)	67.20	Mild
Activity of Daily Living	29	46.77	27	43.55	6	9.68	62	15.76 (S)	79.03	Moderate
Dependency on Medication	0	0	15	24.19	47	75.81	62	55.955 (S)	41.39	No effect
Independence In task Management	14	22.58	19	30.65	29	46.77	62	5.663 (NS)	58.60	No effect

f= frequency, *RS= Relative sufficiency, χ^2= chi-square, %= percentage

Table (5) revealed that that there is a significant relationship at ($p<0.05$) between the level of effect and the sub-domains, except that of mobility and independence in task management which were not significant.

This table indicated also that mobility effected at mild level, activities of daily living affected at moderate level, while dependency on medication and independence in task management was not effected by using relative sufficiency.

Table 6. Social relationship domain effect among patients with permanent pacemaker

Level of Effect	Never		Sometimes		Always		Total	χ^2	RS	Grade
Sub-domain	f	%	f	%	f	%				
Personal Relationship	51	82.26	10	16.13	1	1.61	62	68.964 (S)	93.54	Severe
Social Support	1	1.61	24	38.71	37	59.68	62	32.265 (S)	47.31	No effect
Recreation and Leisure	21	33.87	16	25.80	25	40.32	62	1.973 (NS)	64.5	No effect

f= frequency, RS= Relative sufficiency, χ^2= chi-square, %= percentage

Table (6) indicated that there was significant relationship at $p<0.05$ between the level of effect and the sub-domains, except that of recreation and leisure which was not significant.

Personal relationship effected at severe level, while social support and recreation and leisure not effected by using relative sufficiency.

Table 7. Environmental domain effect among patients with permanent pacemaker

Level of Effect	Never 3		Some Times 2		Always 1		Total	χ^2	RS	Grade
Sub-domain	f	%	f	%	f	%				
Home Environment	20	32.26	11	17.74	31	50	62	9.74	60.75	No effect

f= frequency, RS= Relative sufficiency, χ^2= chi-square, %= percentage

Table (7) shows that there was no significant relationship at ($p<0.05$) between the level of effect and this domain, furthermore there was no effect for environmental domain through the use of relative sufficiency.

Table 8. Spiritual domain effect among patients with permanent pacemaker

Level of Effect	Never 3		Sometimes 2		Always 1		Total	χ^2	RS	Grade
Sub-domain	F	%	F	%	F	%				
Spiritual Domain	1	1.61	33	53.23	28	45.16	62	28.77	52.15	O.C

f= frequency, RS= Relative sufficiency, χ^2= chi-square, %= percentage

Table (8) showed that there was a significant relationship at ($p< 0.05$) between the level of effect and this domain, furthermore spirituality domain was not affected through the use of relative sufficiency.

Table 9. Relationship between the gender of the sample and the QoL domain by the level of effect

Gender / QoL	Male*25 F**	Female 37 F	Total	χ^2 obs.	C.S.
Physical Domain					
Low	6	10	16	0.364	NS
Moderate	16	21	37		
High	3	6	9		
Total	25	37	62		
Psychological Domain					
Low	5	8	13	0.53	NS
Moderate	18	24	42		
High	2	5	7		
Total	25	37	62		
Level of Independence Domain					
Low	3	5	8	3.741	NS
Moderate	19	20	39		
High	3	5	15		
Total	25	37	62		
Social Relationship Domain					
Low	3	6	9	0.299	NS
Moderate	21	29	50		
High	1	2	3		
Total	25	37	62		
Environmental Domain					
Low	7	13	20	3.020	NS
Moderate	7	4	11		
High	11	20	31		
Total	25	37	62		

Table 9. (continued)

Gender / QoL	Male*25 F**	Female 37 F	Total	$\chi^{2\ obs.}$	C.S.
Spiritual Domain					
Low	1	0	1	5.928	NS
Moderate	17	16	33		
High	7	21	28		
Total	25	37	62		

F=frequency for female, F=frequency for male, χ^2 obs.= observed chi-square**

Table (9) showed that there was no significant relationship between physical domain (χ^2=0.364, p<0.05), psychological domain (χ^2=0.53, p<0.05), level of independence domain (χ^2=3.741, p<0.05), social relationship domain (χ^2=0.299, p<0.05), environmental domain (χ^2=3.020, p<0.05), and spiritual domain (χ^2=5.928, p<0.05) and the gender.

Table 10. Relationship between the age of the sample and the QoL domain by the level of effect

Age	28-37 *2	38-47 *3	48-57 *13	58≥ *42		Total	$\chi^{2\ obs.}$	C.S
QoL	**F	F	F	F				
Physical Domain							5.35	NS
Low	0	1	1	2	12	16		
Moderate	2	1	2	10	22	37		
High	0	0	0	1	8	9		
Total	2	2	3	13	42	62		
Psychological Domain								
Low	0	0	1	1	11	13	7.349	NS
Moderate	1	2	2	9	27	41		
High	1	0	0	3	4	8		
Total	2	2	3	13	42	62		
Level of Independence Domain								
Low	1	1	1	1	5	9	8.453	(NS)
Moderate	1	1	2	10	24	38		
High	0	0	0	2	13	15		
Total	2	2	3	13	42	62		

C.S= significance, F=frequency for female, F=frequency for male, χ^2 obs.= observed chi-square**

Table (10) shows that there was no significant relationship between physical domain (χ^2=5.35, p<0.05), psychological domain (χ^2= 7.349, p<0.05), level of independence domain (χ^2=8.453, p<0.05), environmental domain (χ^2= 8.335, p<0.05), and spiritual domain (χ^2= 2.752, <0.05) and the subjects' ages. Whereas, significant relationship between social relationship domain (χ^2= 15.544, p<0.05) and the subjects' age.

Table 11. Relationship between the age of the sample and the QoL domain by the level of effect

Social Relationship Domain								
Low	1	0	1	2	5	9	15.544	(S)
Moderate	1	2	2	8	37	38		
High	0	0	0	3	0	15		
Total	2	2	3	13	42	62		
Environmental Domain								
Low	0	0	2	5	13	20	8.335	(NS)
Moderate	0	0	1	1	9	11		
High	2	2	0	7	20	31		
Total	2	2	3	13	42	62		
Spiritual Domain								
Low	0	0	0	0	1	1	2.752	(NS)
Moderate	1	2	1	7	22	33		
High	1	0	2	6	19	28		
Total	2	2	3	13	42	62		

F=frequency for female, F=frequency for male, χ^2 obs.= observed chi-square**

Table (11) shows that there was no significant relationship between physical domain (χ^2=3.001, p<0.05), psychological domain (χ^2=7.353, p<0.05), level of independence domain (χ^2=8.012, p<0.05), environmental domain (χ^2= 10.497, p<0.05), and spiritual domain (χ^2=12.797, p<0.05) and the subject's educational level. Whereas significant relationship between social relationship domain and the subject's educational level.

Table 12. Relationship between the education level of the sample and the QoL domain by the level of effect

Education level	* 34 Unable to read and write	*9 read and write	*5 Primary School	*3 Intermediate school	*3 Secondary school	*0 Institute	*7 College	* 1 Post graduate	Total	$\chi^{2\ obs.}$	C.S
QoL domain	**F	F	F	F	F	F	F	F			
Physical Domain											
Low	8	2	1	0	0	0	3	1	15	9.191	(NS)
Moderate	20	5	4	3	2	0	4	0	38		
High	6	2	0	0	1	0	0	0	9		
Total	34	9	5	3	3	0	7	1	62		
Psychological Domain											
Low	8	1	0	0	0	0	3	1	13	11.788	(NS)
Moderate	21	7	4	3	2	0	4	0	41		
High	5	1	1	0	1	0	0	0	8		
Total	34	9	5	3	3	0	7	1	62		
Level of Independence										21.284	(NS)
Low	4	0	2	0	0	0	2	1	9		
Moderate	17	8	3	3	2	0	4	0	38		
High	13	1	0	0	1	0	1	0	15		
Total	34	9	5	3	3	0	7	1	62		
Social Relationship											
Low	6	0	1	0	0	0	2	0	9	10.932	(NS)
Moderate	26	9	4	2	3	0	5	1	50		
High	2	0	0	1	0	0	0	0	3		
Total	34	9	5	3	3	0	7	1	62		
Environmental Domain											
Low	13	3	1	`1	2	0	2	0	22	6.322	(NS)
Moderate	5	2	1	0	1	0	3	0	12		
High	16	4	3	2	0	0	2	1	28		
Total	34	9	5	3	3	0	7	1	62		
Spiritual Domain											
Low	0	0	0	0	0	0	1	0	1	20.064	(NS)
Moderate	17	2	2	3	2	0	6	1	33		
High	17	7	3	0	1	0	0	0	28		
Total	34	9	5	3	3	0	7	1	62		

F=frequency for female, F=frequency for male, χ^2 obs.= observed chi-square**

This table shows that there was no significant relationship between the physical domain (χ^2 =3.001, p<0.05), psychological domain (χ^2=7.353, p<0.05), level of independence domain (χ^2= 8.012, p<0.05), environmental domain (χ^2=10.497, p<0.05), and spiritual domain (χ^2=12.797, p<0.05) and the subject's occupation. Whereas significant relationship between social relationship domain (χ^2=23.078, p<0.05) and the subject's occupation.

Table 13. Relationship between the Occupation of the Sample and the QoL Domain by the Level of Effect

Occupation	*3Govern-mental employee	* 10 Self-employed	*14 Retired	*34 House wife	*1 Others	Total	$\chi^{2\ obs.}$	C.S
QoL	**F	F	F	F	F			
Physical Domain								
Low	1	3	4	8	0	16	3.001	NS
Moderate	1	6	9	20	1	37		
High	1	1	1	6	0	9		
Total	3	10	14	34	1	62		
Psychological Domain								
Low	0	3	3	7	0	13	7.353	NS
Moderate	3	7	7	23	1	41		
High	0	0	4	4	0	8		
Total	3	10	14	34	1	62		
Level of Independence								
Low	0	2	2	5	0	9	8.012	NS
Moderate	3	8	9	17	1	38		
High	0	0	3	12	0	15		
Total	3	10	14	34	1	62		
Social Relationship								
Low	0	2	1	6	0	9	23.078	(S)
Moderate	3	8	13	26	0	50		
High	0	0	0	2	1	3		
Total	3	10	14	34	1	62		
Environmental Domain								
Low	2	4	2	12	0	20	10.497	NS
Moderate	0	4	3	4	0	11		
High	1	2	9	18	1	31		
Total	3	10	14	34	1	62		
Spiritual Domain								
Low	0	0	1	0	0	1	12.797	NS
Moderate	2	6	11	13	1	33		
High	1	4	2	21	0	28		
Total	3	10	14	34	1	62		

F=frequency for female, F=frequency for male, χ^2 obs.= observed chi-square**

Table (13) shows that there was no significant relationship between the physical domain (χ^2=3.001, p<0.05), psychological domain (χ^2=7.353, p<0.05), level of independence domain (χ^2=8.012, p<0.05), environmental domain (χ^2= 10.497, p<0.05), and spiritual domain (χ^2= 12.797, p<0.05) and the subjects' occupation. Whereas, significant relationship between social relationship domain (χ^2=23.078, p<0.05) and the subjects' occupation.

Discussion

The findings of the present study showed that the majority of the sample was female (59.68%). Most of them was (58>) years (Table 4). This result supported by Lopez and others who stated that pacemakers are implanted, in general, for elderly people as a mean of preventing or treating bradycardia and preserving a normal heart rate response to effort [5]. Relative to their marital status, most of them (69.35%) was married. Regarding educational status, the results revealed that the majority of the sample (54.84%) was illiterate. The result of present study indicated that (54.84%) of women was housewives (do not working).

Relative to the energy and weakness, more than the half of the subjects don't experience energy and weakness (Table 8). The results indicated that the energy and weakness were affected at moderate level. Concerning bodily symptoms, nearly half of the patients with permanent pacemaker don't suffer from body symptoms. This sub-domain was affected at moderate level.

Brunner and other stated that the nurse should watch the patient for any physical signs if the pacemaker is not performing properly, such as difficulty in breathing, dizziness or fainting, spells or prolonged weakness or fatigue, swelling of the legs, ankles, arms or wrists; and chest pain or prolonged hiccoughing [1].

Relative to the memory, one third of the patients with permanent pacemaker was unable to concentrate, suffering from amnesia and identify the recent events only (Table 9). In summary, the results of this study revealed that problem in concentration affected at mild level.

Concerning the self-concept and the self-confidence, the findings of the study indicate that less than the half of patients with permanent pacemaker has a feeling different from that in others, willing away from friends and relatives as a result of this problem (Table 9). This sub-domain was affected at moderate level.

The findings of the study indicate that only one third of the sample experiences problems in mobility (suffering from difficulties in bending, difficulties in walking and climbing stairs) (Table 10). This sub-domain is affected at mild level.

Recommendations

The study recommend that measures should be undertaken to improve the quality of life for patients with permanent pacemaker for young adult and to encourage the establishment of a society for patients with permanent pacemaker to look after their social support and dependence on medication problem.

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