The Effectiveness Of A Self-Care Instructional Program On The Health-Related Quality Of Life For Patients With Permanent Pacemaker In Baghdad Teaching Hospital

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Abstract

Objectives: To evaluate the effect of the instructional program on the satisfaction for patients with permanent pacemaker implementation in Baghdad Teaching Hospital
 a pre experimental design was used with the application of pre and post-tests approach for one group carried out in Baghdad center for cardiology and catheters in Baghdad teaching hospital from 28th January 2020 to Ist June 2021

A non-probability (purposive sample) has been selected to obtain representative and accurate data. One group pretest-posttest approach consisted of (50) patients as study group. The study group was exposed face to face to an instructional program concerning self-care

The results of the study revealed that in mobility domain, patient in pre-test amounted to (1.2400 ±..43142), whereas patient at post test after one month of the instructional program amounted 2.9400 ±.23990) where p = 0.000000. In self-care domain, patient in pre –test obtained (1.4400±..50143), whereas patient at post test after one month of the instructional program amounted(2.7400 ±.44309)) where p = 0.000000. In pain and discomfort domain, patient at pre test obtained (2.9400 ±.23990), whereas patient at post test after one month of the instructional program obtained (1.6800 ±..47121) where p = 0.000000. while the lowest mean was anxiety and depression at pre test (2.9200 ± .27405) to (1.5200± .50467) at post test after one month of the instructional program where p = 0.000000

Conclusion from the study: These findings can be explained as after exposing the study sample to the self-care program , their self-care practice improved, which affect positively on patient outcomes

Recommendation of the study : Pamphlets and simple booklet should be available for patients to illustrate and simply explain how to live with such life-saving device safely.

Keywords: *Effectiveness, Instructional Program, permanent pacemaker implantation;, Self-care*

Introduction.

Cardiovascular disease is one of the most prevalent chronic diseases, despite great advances in their prevention, diagnosis, treatment, and rehabilitation. Statistical indicators suggest cardiovascular disease is a leading cause of mortality worldwide

(1). Heart stimulation is a widely accepted treatment method of heart rhythm disorders and a routine procedure applied in many countries(2).Along these lines,(3) reported that still lacking on the knowledge expectations of heart failure patients undergoing permanent pacemaker treatment, and little is known about their self-care behavior or health complaints before the

implantation and if those factors affect patients' knowledge expectations. Patients with implanted cardiac devices constitute a growing segment of contemporary healthcare practice. There are about 3 million people worldwide with a pace Self-management based on nursing-sensitive patient

(4). Regarding the actual a permanent pacemaker is indicated in patients with bradycardia; second- or third-degree atrioventricular block, significant sinus node dysfunction, tachycardia-bradycardia syndrome, bundle branch block with a history of syncope(5). Since the majority of pacemaker patients are elderly, information should be individualized. The nurse's educational material should be delivered in small increments so that it becomes an integral part of the elderly patient's self-care since cognitive efficiency declines when people grow old (6).According to another study (7) patient education is an essential component of self-care promotion and is the primary domain of nursing. nurses encounter clients during times of major health changes and are in critical positions to help them make decisions and adopt behaviors that significantly alter health. to assist others effectively in making healthy decisions and changes, nurses must teach about healthy behaviors, function as role models, and understand the concept of motivation

Methodology:

To achieve the aims of this study, A non-probability (purposive sample) has been selected to obtain representative and accurate data. One group pretest-posttest approach consisted of (50) patients as study group. The study group was exposed face to face to an instructional program concerning self-care. This study applied in in Baghdad center for cardiology and catheters in Baghdad teaching hospital from 28th Jenuary 2020 to Ist June 2021

The program and instruments were constructed and development by the researcher for the purpose of the study. accurate data. The study instrument is composed of three parts: first part dealing with the demographic and socio-demographic characteristics of patients permanent pacemaker implantation second part dealing with clinical characteristic of patients with permanent pacemaker implantation, while the third part Satisfaction of Patients With Permanent Pacemaker

To evaluated the effective of the self-care instructional program on the satisfaction for Patients With Permanent Pacemaker Implantation. the researcher a adopt seven-item questionnaire (Magnusson and Liv(2018) The scale was translated from English to Arabic by three experts and retranslated from Arabic to English.   It consisted of (7)items First items: How they satisfied are overall with their pacemaker? (Very satisfied, Very dissatisfied). Second items :How much pain related to their pacemaker do they experience? (No pain, Considerable pain). Third items: How much are they bothered by soreness's/ discomfort from the pacemaker? (No soreness/ discomfort, Considerable soreness/discomfort).Fourth items questions: How do they feel about the cosmetic appearance of your pacemaker? (Very Good, Very bad).Fifth items: Do they experience any restrictions of movement of shoulder/arm/chest related to your pacemaker? (No restriction of movement, Considerable restriction of movement).

Sixth items: (No sleep disturbance, Considerable sleep disturbance).Seventh items: How much concern do you feel that your pacemaker will stop working or malfunction? (No concern, Always concerned).The questionnaire to be answered on a 100 mm visual analog scale (VAS) with wording and pictures at each end A higher score indicates worse outcome .Score satisfaction ,bad (100) , week (75), Acceptable (50), good (25) , very good (0) . This satisfaction test was covered relevant points from the major contents area of the instructional program. For the purpose of this study, the number of correct responses was used to measure of the improved of level satisfaction of each patient about (10-15) minutes were given for the test completion.

The test is performed pre-operative and pre discharge day and follow-up one month after permanent pacemaker implantation .The researcher obtained their telephone number for follow up Items were tested for internal consistency reliability in the current study and the results revealed that Cronbach's α coefficient was 0.86, prior to permanent pacemaker implantation the self-care instructional program took approximately 1-hour educational session consisting of a 30-minute lecture that was conducted by the researcher, a booklet and brochure, that summarized the material provided by an investigator and a 30-minute interactive group discussion. The Statistical Package for the Social Science (SPSS) software, version 20 was used to analyze the study data .Descriptive statistics were used to describe the sample characteristics. Independent sample t-test was used to assess whether or not there were statistically significant differences in the level of knowledge scores between study and control group after the permanent pacemaker implantation of the self-care instructional program

Results and finding

This chapter presents the findings of the data analysis systematically in tables and these correspond with the objectives of the study as follows:

Table(1.): Socio demographic of The Study Sample

Demographic Data	Rating and Intervals	Freq	%	SE	SD
Gender	Male	22	44.0	0.709	0.501
	Female	28	56.0		
	Total	50	100.0		
Age Groups	30-39	3	6.0	2	14.14
	40-49	3	6.0		
	50-59	13	26.0		
	60-69	17	34.0		
	70-79	14	28.0		
	Total	50	100.0		
	Mean and SD	61.5 -14.14			
Education level	Illiterate	11	22.0	0.22	1.55
	Read&write	18	36.0		
	Primary school	9	18.0		
	Secondary school	5	10.0		
	Institute	4	8.0		
	Collage	3	6		
	Tot al	50	100		
Occupation	Housew ife	24	48.0		
	Self-Employee	9	18.0	0.16	1.17

	Governmental employment	8	16.0	6	
	Retired	9	18.0		
	Total	50	100.0		
Marital statues	Single	1	2.0	0.63	0.451
	Married	38	76.0		
	Widowed	11	22.0		
	Total	50	100.0		
Smoking	Smoking	30	60.0	0.71	0.50
	None Smoking	20	40.0		
	Total	50	100		
Alcohol	Drinking	10	20.0	0.57	0.40
	No-drinking	40	80.0		
	Total	50	100		

Freq=Frequency;%= percentage; SE=Standard Eerier ;SD=Standard Deviation

Table(.1) presented that 28 (56%) of patients in the e group were female .On the other hand, table (.1) showed that 17 (34%) of patients with age group (60-69) years, with mean age was (61.5±14.14). Regarding educational level, the table (4.1) demonstrated that 18 (36%) in the Read&write . In addition to the table demonstrated 24 (48%) of patients were Housewife.   Concerning marital status; the majority of the patients 38 (76%), were married. Regarding smoking; more than half of the patients 30 (60%) of patients had active smoking and the majority of patients 40 (80%) non drinking alcohol

Table(.2.):Distribution of The Study Sample According to TheClinical characteristic

Variables		Study			
		Freq	%	SE	SD
Indication for implantation	2nd degree heart Block	25	50.0	0.160	1.13
	Complete heart Block	11	22.0		
	Sick Sinus Syndrome	6	12.0		
	Sinus bradycardia	8	16.0		
chief complaints of patient on admission	Dyspnea	26	52.0	0.115	0.81
	Dizziness	13	26.0		
	Palpitations	11	22.0		
Mode of Pacemaker	VVI	11	22.0	0.22	1.59
	VVIR	12	24.0		
	VDD	2	4.0		
	DDDR	15	30		

Freq=Frequency;%= percentage; SE=Standard Eerier ;SD=Standard Deviation

The table (.2) demonstrated that 25 (50%) patients of had 2nd degree heart Block in Indication for implantation While26 (54%) of chief complaints of patient on admission patient with dyspnea . Regarding Mode of Pacemaker 15(30%)had DDDR

Table (3): Statistical Differences Between Pre-Test and One Month after an Instructional

Variable		Pre- Test		One Month after an Instructional Program		DF	T-test	P-Value
		Mean	SD	Mean	SD			
	Mobility	1.2400	.43142	2.9400	.23990	49	25.968	.000
	self-care	1.4400	.50143	2.7400	.44309	49	14.212	.000
Quality of life	usual activity	1.1600	.42185	2.2400	.47638	49	-10.549 -	.000
	pain and discomfort	2.9400	.23990	1.6800	.47121	49	18.296	.000
	anxiety and depression month	2.9200	.27405	1.5200	.50467	49	20.004	.000

Program Regarding Their Total Score of Quality of Life

SD=Standard devation; df= degree of freedom

Table-3- showed that The results of the study revealed that in mobility domain, patient in pre-test amounted to (1.2400 ±..43142), whereas patient at post test after one month of the instructional program amounted 2.9400 ±.23990) where p = 0.000000. In self-care domain, patient in pre –test obtained (1.4400±..50143), whereas patient at post test after one month of the instructional program amounted(2.7400 ±.44309)) where p = 0.000000. In pain and discomfort domain, patient at pre test obtained (2.9400 ±.23990), whereas patient at post test after one month of the instructional program obtained (1.6800 ±..47121) where p = 0.000000. while the lowest mean was anxiety and depression at pre test (2.9200 ± .27405) to (1.5200± .50467) at post test after one month of the instructional program where p = 0.000000

Table (4.)Quality of Life   for Patients With Permanent Pacemaker Implantation at Pre-Test Period

Variable		Pre-Test		Chi-square		
		F	%	X2	FD	P-value
Mobility	No problem			38.720a	1	.000
	Some problem	3	6.0			
	Extreme problem	47	94.0			
Self-Care	No problem			11.520	1	.001
	Some problem	13	26.0			
	Extreme problem	37	74.0			
Usual Activities	No problem	43	86.0	63.160[a]	2	.000
	Some problem	6	12.0			
	Extreme problem	1	2.0			
Pain/Discomfort	No problem			38.720	1	.001
	Some	3	6.0			

	problem					
	Extreme problem	47	94.0			
Anxiety/ Depression	**No problem**			**35.280a**	**1**	**.001**
	Some problem	4	8.0			
	Extreme problem	46	92.0			

Freq=Frequency;%= percentage ;df=degree of freedom;X2= Chi-square

Table (4) showed that there were highly-significant difference between the some problem and extreme problem in mobility level ; self-care; usual Activities; pain and anxiety/ depression related to HRQoL for patients with permanent pacemaker implantation in pre -test period

Table (5)Quality of Life   for Patients With Permanent Pacemaker Implantation at One Month after an Instructional Program

Variable		One Month after an Instructional Program		Chi-square		
		F	%	X2	FD	P-value
Mobility	No problem	38	76.0	13.520	1	.000
	Some problem	12	24.0			
	Extreme problem					
Self-Care	No problem	28	56.0	.720	1	.396
	Some problem	22	44.0			
	Extreme problem					
Usual Activities	No problem	1	2.0	37.960	2	.000
	Some problem	36	72.0			
	Extreme problem	13	26.0			
Pain/Discomfort	No problem	16	32.0	6.480a	1	.011
	Some problem	34	68.0			
	Extreme problem					

Anxiety/ Depression	No problem	24	48.0	.080	1	.777
	Some problem	26	52.0			
	Extreme problem					

Freq=Frequency;%= percentage ;df=degree of freedom;X2= Chi-square

Table (5) showed that there were highly-significant difference between the some problem and no problem in mobility level ; self-care; usual Activities; pain and anxiety/ depression related to HRQoL for patients with permanent pacemaker implantation at one month after an instructional program

Table-6- The Relationship Between Sociodemographic (Gender; Age and Mode of Pacemaker) and Quality of Life for Patients with Permanent Pacemaker Implantation at One Month after an Instructional Program

Variable	Mobility		self care		usual activities		pain and discomfort		anxiety and depression	
Gender	Mean	SD	mean	SD	mean	SD	mean	SD	mean	SD
Male	1.1818	.39477	1.4091	.50324	2.3182	.47673	1.7273	.45584	1.6818	.47673
Female	1.2857	.46004	1.4643	.50787	2.1786	.47559	1.6429	.48795	1.3929	.49735
P. Value	.404 (N.S)		.703 (N.S)		.309 (N.S)		. 535 (N.S)		.043(S)	
Mode										
VVI\R	1.2174	.42174	1.4783	.51075	2.2174	.42174	1.6957	.47047	1.3043	.47047
DDD\R	1.2593	.44658	1.4074	.50071	2.2593	.52569	1.6667	.48038	1.7037	.46532
p.value	736(N.S)		.623(N.S)		.760(N.S)		.831(N.S)		.004(H.S)	
Age										
>65	1.2917	.46431	1.4583	.50898	2.2917	.46431	1.6250	.49454	1.5417	.50898
<65	1.1923	.40192	1.4231	.50383	2.1923	.49147	1.7308	.45234	1.5000	.50990
P.Value	.422(N.S)		.807(N.S)		.467(N.S)		.433(N.S)		.774(N.S)	

SD=Standard deviation ;N.S=Non significant ;H.S=Highly significant

Table-6-showed that the men assessed their QoL higher than the women although there was no significant differences between male and female Concerning mode of pacemaker, table 4.16 also showed that there was no differences were observed between single chamber and dual chamber pacing Related to the age table 4.16 revealed that no significant association between QoL scores and age:

Discussion:

Discussion of The Socio-Demographic and Clinical Characteristics of Patients with Permanent Pacemaker Implantation

This study used a purposive clinical trial design to test the effective of a self-care instructional program and skill building training program in permanent pacemaker implementation .The study sample consists of 50 patients who were purposive allocated to the study sample (n=50) The mean age of the patients was (61.5 -14.14) years for the study sample which ranged from (30 to 79) years with somewhat male (28(56. %) than female for the study sample This sample assignment covered a wide variety of patients in the hospital. (table -.1.)

This result corresponding with (7), they reported that more than half of their study subjects were males. These findings may be due to that heart diseases, and hypertension are more prevalent in males than females, as well as men significantly have a more active life, and more stressed compared to women, this opinion is supported by (8) who revealed that, men's coping with stressful events could lead to physiologically.This study indicated that a high prevalence of patients with permanent pacemaker implementation were male because men had more stress from heavy physical activities or actions than women. Men also have more limited ways to express emotional stress in the workplace than women. Similar findings were obtained by (9) who said that pacemaker are implanted in individuals of all ages ,but the most in older adults, this is due to an increase in abnormalities of impulse generation and conduction with advancing age. Similar results was found by (10) with mean age ±SD= 65.7±5.7 of pacemaker study subjects. This Finding is agreement with that of (11) Who reported most of the study sample ages 40 to 50 years,(11) who study the effect of an educational program on quality of life of the patient with pacemakers. The mean age of the patients was 43.48±13.24. (12) also reported significant increases in the incidence of PPM implantation over 30 years old.

It can be explained by the increased incidence of cardiac diseases and persistent exposure to life stressors, smoking at a younger age which is a critical indicator for cardiac diseases. Regarding educational level, results of the present study showed that 11(22%) of patients were illiterate, 18 (36%) of patients were read and write (table 4.1) . This finding is inconsistent with what was reported by (12) who revealed that slightly less than two-thirds of their study patients were not educated. Educational attainment may affect health in several ways.

Individuals with less education tend to have an increased number of CVD risk factors (13) An analysis in the Netherlands by (13) demonstrated that a majority (56.6%) of CHD risk in individuals with low education was attributable to behavioral and biological risk factors.(14) determined that approximately half of the increased risk of incident AMI in low education groups was explained by traditional risk factors. Even with these estimates, the mechanisms underlying the remainder of the increased risk associated with low educational attainment remain to be determined.   The study indicated that the majority of patients had a low educational level, which could contribute to poorer health education and greater difficulty in using health resources. Relative to occupation status, the present study shows that 24(48%) of patients were Housewife and 8(16%) of patients were self-employee study group. These finding was supported to study done by(15) their study result shows (45% and 50% of the experimental and control group, respectively) were housewives. While (16) reported that the highest percentage (35.8%) were housewives. The majority of the patients (58.9%) were in rural areas. 53.55% were employed while the rest were students, housewives, or were retired. Most of the patients (87.2%) were married. (17) stated that 56% of the patients of permanent pacemaker implementation had college education or higher, 72% were retired, and 79% lived with a spouse or other person,   This study may be explained that the individuals who become self-employed report increased job satisfaction, but they also report more exhaustion than when they were ordinary employees. On the other hand; entering self-employment may be stressful.   Concerning marital status; the majority of the patients 38 (76%), were married. (table4.1).(18) stated that more than one third of the study sample undergoing permanent pacemaker implementation aged between 40 to 49 years. More than half of the sample (6o %) were male. Two third of the sample (70%) were married. half of the sample moderate education, (50%).(7) more than half of the sample (62%),   (18) who stated that marriage increase the patients responsibility about the family and children in addition it increase the stressor . This finding goes in the same line with (19) and (17) .who found that, the majority of study sample were married.   This study may be explained that, most of the patients under the study were married this may be due to that, the married people were liable to cardiac diseases more than single because they always facing psychological stress of the social role . Regarding the smoking status, results of this study showed that more than half of the patients (50%), (5%) respectively in study groups were active smoking. And non smoking   A study done by (20) revealed that a total of 598 (22.8%) of the study population were currently smoking. (21) found that the majority of the studied participants were smokers and passive smokers (57.5%) (32.5) respectively. Also the Iraqi study mentioned above done by (22) showed; that the highest percentage of the sample 61 (64.2 %) were smoker. this result corresponded with our research result. The researcher believed that the majority of patients with IHD were smoking may be considered a major risk factor and important initial diagnostic for CVD. Due to smoking damages the lining of arteries, leading to a build up of fatty material (atheroma) which narrows the artery and can cause angina, and a heart attack.As regards patient clinical presentation, the current study revealed that all patients (100%) of patients in the study sample suffered from chest pain on admission followed by dyspnea 13(26%). Clinical diagnosis of 25(50%) patients

were second degree heart block; 11 (22%)Sick sinus syndrome and 6(12%) complete heart block table (4.2) (23) stated that comparison of clinical variable of both groups. 78% of the study subjectsin control group and 70% of study subjects in experimental group presented with chief complaint of dyspnoea followed by syncope at admission. Clinical diagnosis of 60% patients in control and 46% patients in experimental group was complete heart block. Sick sinus syndrome and 2nd degree heart block were the other main indications for permanent pacemaker implantation..

Part III: Discussion of The Health Related Quality of Life for Patients with Permanent Pacemaker Implantation

Permanent pacemaker can greatly improve quality of life and for some people it can be lifesaving and preventing death. Optimal outcome after permanent pacemaker insertion can only be obtained if patients are supported in compliance to a lifelong with permanent pacemaker.(24) Timby, and Smith, (2009).

Data for this study was collected in a single interview within a mean time span of one month after implantation. Due to a lack of a questionnaire specific to assessing the QoL of people after pacemaker implantation, there are few publications concerning HRQoL of this group of cardiac patients in the literature. Moreover, in the recent years it has been observed that the attention has been focused on researching the QoL of patients with implanted permanent pacemaker as the effect of development of general heart stimulation and an attempt to support its further progress .In this study of the impact of an education, the effectiveness must be considered. This is associated with the increased attention patients receive, they have been selected and understand, consciously or unconsciously. The result of this study showed that - showed that there were highly significant difference increased in mobility; self-care; usual activity; pain and discomfort and anxiety and depression month between pre-test and one month after an instructional program regarding their total score of quality of life (table 4.5;4.6).

Florianópolis et al., (2020)(25) assessed the health-related quality of life of patients with a permanent cardiac pacemaker .that study result referred to the patients gave the highest health-related quality of life ratings in regard to mental domains and the lowest ratings for the physical domains

A large study done by Relampa et al., (26) (2016) and Atheneu et al., (2017) One longitudinal study conducted in Italy assessed two groups of individuals with a cardiac pacemaker, with and without remote follow-up, and verified that HRQoL assessed by the AQUAREL resulted in better scores obtained by the group with remote follow-up in the three first months of follow-up, especially in the domains Arrhythmia and Chest Discomfort.

One study (27)(Conelius ,2015) stated that counseling patients with pacemaker helped in improving their health status and quality of life and strengthened patients' self-efficacy, perception and helped them to   cope with their implanted pacemakers

Previous studies (28)(Ouali etal.,2010 and Lamas etal.,1998)stated that HRQoL in pacemaker recipients addressed the improvement in HRQoL observed shortly after pacemaker implantation.

Buellesfeld, et al., (29)(2012) stated that patients who are oriented about their disease and treatment plan are more positive and definitely changing their behaviors that promote their physical, social, psychological and functional outcomes as well their compliance improved more than those who were not oriented

Wong etal., (30)(2014) found that, the prevalence of poor psychological and physical wellbeing and high level of depression were somewhat increased in patients with pacemaker implantation even after post counseling intervention. On the other hand, those who are depressed may experience symptoms such as anorexia, palpitations, which may contribute negatively to their state of health.

The study may be confirmed that the QoL of patients after pacemaker implantation was statistically significant positive effect on patient's performance with permanent Pacemaker than in the pre test.

The improvement of the QOL in the physical domain in patients after pacemaker implantation (table 4.7;4.8)

One study observed by Młynarski et al.(31) (2009) They applied the MLWHF Questionnaire and assessed such spheres as mobility, activities of daily life, ability to self-care, pain and anxiety. The higher number of points scored, the worse QoL patients presented in preoperative.

Deborah et al., (32)(2019) assessed the knowledge and attitude of patients regarding permanent pacemakers (PMs) and their quality of life (QOL) after the permanent PM implantation. That study measured the knowledge on PPI and the patients' QOL at one point of time provides an understanding of the patients' level of knowledge and their QOL. By understanding patients' perspective regarding permanent PMs, concluded from that study nurses will be able to assist these patients in their transitional process of learning to live with the permanent PM.

Akbarzadeh etal.,(33)(2011)reported the study participants were divided into two groups. In the first group, the indication for pacemaker implantation consisted in atrioventricular block, in the second one a sinus node dysfunction. While analysing the physical domain one has to pay attention to satisfactory results presented by the said author in the scope of mobility, self-care, activities of daily life and pain .

Aya (34)(2016) stated that, educated patient was promoted by clarification and explanation about everything. Therefore, the information provided through education programs sufficient to increase patients' desire and encourage them to comply with prescribed education after discharge. The patients who are oriented with every-thing about their disease

are more likely to engage in activities that promote changing their behaviors, promote physical well-being and enhancing the education program than those who are not.

The present study may be explained that point of view the rational for practice improvement among the study patients throughout the different assessment periods might be related to the provision of education program with CD for the patients, booklets and posters. Also, the curiosity of the studied subjects to know how to deal with the pacemaker, precaution of pacemaker and follow up and how to make wound care, and pulse measuring before, during and after procedure, and how does the pacemaker work in a correct way.

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