

Effectiveness of a Self-Care Instructional Program on the Satisfaction for Patients with Permanent Pacemaker Implementation 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 1st 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 It is clear that the satisfactory level of self-care is associated with a better level of outcomes, with statistically significant differences between the pretest and the post-test after one month of the instructional program.

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

Material and Method

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 January 2020 to 1st 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 adopte 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	Housewife	24	48.0	0.166	1.17
	Self-Employee	9	18.0		
	Governmental employment	8	16.0		
	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 (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		SE	SD
		Freq	%		
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 Error ;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): Comparison between Pre-Test ; Pre Discharge; and One Month After an Instructional Program regarding their total score of Satisfaction

Variable		Pre-Test		Pre Discharge		One Month after an Instructional Program	
		Freq	%	Freq	%	Freq	%
Satisfaction	Satisfactory	11	22.0	45	90.0	41	82.0
	Un satisfactory	39	78.0	5	10.0	9	18.0
Total		50	100.0	50	100.0	50	100.0
Chi-Square		15.680a		32.000a		20.480a	
Df		1		1		1	
P.Value		.000		.000		.000	

Freq=Frequency; %= percentage ;df=degree of freedom

Table (3) demonstrated that there is (H.S) differences between satisfactory and un satisfactory increased un satisfactory on pre-test while increased in satisfactory on pre discharge and one month after an instructional Program

Table (4) Level of Satisfaction for Patients With Permanent Pacemaker Implantation Pre-Test According to The Questionnaire to be Answered on a 100 MM Visual Analog Scale (VAS)

Variable	5%		25%		50%		75%		95%	
	F	%	F	%	F	%	f	%	f	%
Overall satisfaction							15	30.0	35	70.0
Pain							27	54.0	23	46.0
Soreness/discomfort							26	52.0	24	48.0
Cosmetic results							12	24.0	38	76.0
Movement							11	22.0	39	78.0
Sleep							20	40.0	30	60.0
Concern about malfunction							12	24.0	38	76.0
Total	0	0	0	0	0	0	123	246	227	454

Score satisfaction ,bad..... (100) , week(75) Acceptable.....(50) , good.....(25) , very good.....(0)

Table 4- showed that bad satisfaction 35(70%) Overall satisfaction ;27(54%) related to pain and 26(52%) concerning Soreness/discomfort and 38(76%) cosmetic results ; 39(78%) related to the movement and 30(60%) sleep and 38(76%) concern about malfunction on pre-test period

Table- 5-Level of Satisfaction for Patients with Permanent Pacemaker Implantation at One Month After an Instructional Program According to The Questionnaire to be Answered on a 100 MM Visual Analog Scale (VAS)

Variable	5%		25%		50%		75%		95%	
	F	%	F	%	F	%	f	%	f	%
Overall satisfaction	17	34.0	29	58.0	4	8.0				
Pain	22	44.0	25	50.0	2	4.0	1	2.0		
Soreness/discomfort	25	50.0	18	36.0	5	10.0	2	4.0		
Cosmetic results	23	46.0	20	40.0	7	14.0				
Movement	21	42.0	20	40.0	9	18.0				
Sleep	23	46.0	20	40.0	6	12.0	1	2.0		
Concern about malfunction	9	18.0	34	68.0	6	12.0	1	2.0		

Total	140	280	166	332	39	78	5	10	

Score satisfaction ,bad..... (100) , week(75) Acceptable.....(50) , good.....(25) , very good.....(0)

Table (5) showed that very good satisfaction 17(34%) concerning to the overall satisfaction ;22(44%) related to the pain ; 25(50%) related to the soreness/discomfort ; 23(46%) concerning cosmetic results ; 21 (42%) related to the movement ;23(46%) related to the sleep and 9(18%) Concern about malfunction

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 -4.1.)

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 \pm SD= 65.7 \pm 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 \pm 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 (60 %) were male. Two third of the sample (70%)

were married. half of the sample moderate education, (50%). 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 (20) .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 (21) revealed that a total of 598 (22.8%) of the study population were currently smoking. (22) 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 (23) 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) (25) stated that comparison of clinical variable of both groups. 78% of the study subjects in 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 Satisfaction of Patients with Permanent Pacemaker Implantation

A pacemaker implantation is considered major life event for cardiovascular patients, so they will probably have very interesting experiences of living with this device. Results of this study demonstrated that there is (H.S) differences between satisfactory and un satisfactory increased un satisfactory on pre-test while increased in satisfactory on pre discharge and one month after an instructional program Table (4. 3) . (26) stated that the vast majority of pacemaker patients report excellent overall satisfaction with their pacemaker system, including the absence of pain, no soreness/discomfort, acceptable cosmetic results, good shoulder movement, sound sleep, and no concerns about device malfunction. In 2.9% of the study population, a surgical procedure was need to correct device placement. Females report worse overall satisfaction, pain, soreness/discomfort, and more sleep problems related to the pacemaker.(27) stated that the implantation of a permanent pacemaker positively influences patients' quality of life,especially in domains of health and functional status. Attention should be given to older patients and those who are unmarried,with respect to the implementation of effective nursing interventions, in order to promote quality of life.(28) evaluated patients' acceptance and satisfaction of the Home Monitoring (HM) remote control system after 1 year of follow-up by a self-made questionnaire (HM Acceptance and Satisfaction Questionnaire, HoMASQ) specifically designed for this purpose.The study result of that study revealed patients with implanted device chronically followed by using the HM remote control system showed a high level of acceptance and satisfaction for this new technology. All investigated areas of the HoMASQ had >90% of positive responses. After 1-year follow-up only three patients refused to continue to be followed by HM. HoMASQ showed a good internal consistency.The results of this study may be explained that Long-term (one month after an instructional program) patient acceptance of and satisfaction with implanted device remote monitoring. Results of this study showed that bad satisfaction 35(70%) Overall satisfaction ;27(54%) related to pain and 26(52%) concerning Soreness/discomfort and 38(76%) cosmetic results ; 39(78%) related to the movement and 30(60%) sleep and 38(76%) concern about malfunction on pre-test period (Table-4. 4-).(29) determinants of satisfaction with medical care among 1,784 (781 African American and 1,003 white) cardiac patients. Patient satisfaction was modeled as a function of predisposing factors (gender, age, medical mistrust, and perception of racism) and enabling factors (medical insurance). African Americans reported less satisfaction with care. Although both black and white patients tended not to endorse the existence of racism in the medical care system, African American patients were more likely to perceive racism. African American patients were significantly more likely to report mistrust. Multivariate analysis found that the perception of racism and mistrust of the medical care system led to less satisfaction with care. When perceived racism and medical mistrust were controlled, race was no longer a significant predictor of satisfaction .The results of this study showed that very good satisfaction 17(34%) concerning to the overall satisfaction ;22(44%) related to the pain ; 25(50%) related to the

soreness/discomfort ; 23(46%) concerning cosmetic results ; 21 (42%) related to the movement ;23(46%) related to the sleep and 9(18%) Concern about malfunction(table 4.5)

(30) analyzed the experiences of people with telemonitoring pacemakers. that study showed that *overall satisfaction with the pacemaker system* was positive and similar experiences in patients living with telemonitoring and hospital monitoring pacemakers.(31) assessed among pacemaker patients their overall satisfaction with the pacemaker system, pain, soreness/discomfort, cosmetic results, restrictions due to impaired movement of the shoulder/arm/chest, related sleep disturbances, and concern about possible device malfunction.the study resulterefered that the response rate was 75.5% and 342 questionnaires were analyzed. Median age of respondents was 77.6 years and 57.0% were males. In total, 65 complications requiring surgery (10 pocket corrections (2.9%), 5 in females) occurred during a median follow-up of 5.6 years.The distribution of the primary outcome had a median score of 5 while the 75th percentile was 32. Cosmetic appearance was significantly associated with reoperation (but not other variables). Overall scores for men and women were 5 vs. 6, respectively, which achieved significance ($p = 0.042$). Median ratings of pain, soreness/discomfort, cosmetic appearance, range of motion, sleep, and concern about device malfunction were all ≤ 5 . Females reported worse outcomes for all questions, except for cosmetic results and concern about malfunction.andThe vast majority of patients report excellent overall satisfaction with the pacemaker system, and are not affected by pain, soreness/discomfort, or concern about device malfunction. They also reported favourable outcomes with respect to cosmetic results, shoulder movement, and sleep. However, some patients underwent a surgical correction of the pacemaker pocket

This study may be explained that the vast majority of pacemaker patients report excellent overall satisfaction with their pacemaker system, including the absence of pain, no soreness/discomfort, acceptable cosmetic results, good shoulder movement, sound sleep, and no concerns about device malfunction.

Conclusion from the discussion that the study results accepted the research hypothesis , the an instructional program will affect positively on practice score post implementing an instructional program on patients with permanent pacemaker..The majority of patients with permanent pacemaker implementation within the age group between (50-79) in the study sample ; low education level which could to poorer health education and greater difficulty in using health instruction most of the patients under the study were married ; that the vast majority of pacemaker patients report excellent overall satisfaction with their pacemaker system, including the absence of pain, no soreness/discomfort, acceptable cosmetic results, good shoulder movement, sound sleep, and no concerns about device malfunction. Long-term (one month after an instructional program) patient acceptance of and satisfaction with implanted device remote monitoring

Ethical Clearance: All experimental protocols were approved under the Ministry of Health, BaghdadHealth Directorate and all experiments were carried out in accordance with approved guidelines.

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