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Educational Program for Improving the Quality of Life for Adult Client with Permanent Pacemaker at Home

Naglaa Abd El Kareem Hassaneen Soliman, [2]Prof. Dr. Nawal Mahmoud Soliman, [3]Prof. Dr.. Hemat Abd Elmoneem ElSayied

[1](M.Sc.N., Community Health Nursing), Faculty of Nursing, Ain Shams University
[2]Professor of Community Health Nursing, Faculty of Nursing, Ain Shams University
[3]Professor of Community Health Nursing, Faculty of Nursing, Ain Shams University
Doctorate's degree study- Faculty of Nursing- Ain Shams University.
Corresponding author: naglaaabdalkerm6@gmail.com

Abstract: **Sudden death is one of the most common reasons of death worldwide which can be prevented by inserting a pacemaker. Aim: to evaluate the effect of educational program on improving the quality of life for adult client with a permanent pacemaker at home Design: Quasi-experimental research design. Setting: in cardiac outpatient t clinics at El- Demerdash Hospitals. Setting: In cardiac outpatient clinics at El-Demardash Hospital. Sample purposive sample included 74 adult client with apermanent pacemaker. Tool: was used an interviewing questionnaire for assessing socio-demographic characteristics of clients, their knowledge their practices & quality of life toward apermanent pacemaker. Results: Show that 59.5 adult client with permanent pacemaker regarded to gender were male. there was no statistically significant relation condition, level of education, post the educational program implementation($p<0.0001$).- but there were highly statistically significant relation between total quality of life and total practices in Post educational program implementation at p -value =-0.0001 Conclusion: the educational program implementation had statistically significant positive effect on adult client with a permanent pacemaker at home regarding their knowledge, practices &quality of life. Recommendation: Continuous s of home care program to all adult clients with a permanent pacemaker insertion to improve their knowledge and practices regarding permanent pacemaker.**

Keywords: **Pacemaker, Heart anatomy, QOL&Home care.**

1. INTRODUCTION

The heart is a fist-sized, muscular organ situated in the center of the chest behind the sternum which pumps blood thought the blood vessels by repeated, rhythmic contraction. The term cardiac (as in cardiology) means "related to the heart and vertebrate heart is principally composed of cardiac muscle and connective tissue. Cardiac muscle is an involuntary striated muscle tissue founded only in this organ and responsible for the ability of the heart pump blood. The average human heart, beating at 72 beats per minute, ***(Ibraheem & Afzal, 2017)*.**

Pulse rate Pulse heart rate: is the wave of blood in the artery created by contraction of the left Ventricle during a cardiac cycle. The strength or amplitude of the pulse reflects the amount of blood ejected with myocardial contraction (stroke volume). Normal pulse rate range for an adult is between 60-100 beats per minute. A well-trained athlete may have a resting heart rate of 40 to 60 beats per minute, according to the American Heart Association ***(American Heart Association, 2017).***

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Factors that Influence Heart Rate**:** Age, Sex, Emotions, Stress, Exercise & Medication

Pulse site Temporal artery, Carotid artery, Brachial artery, Radial artery, Femoral artery, Popliteal artery &Dorsalis pedis artery**.**

Artificial pacemakers are provide lifesaving therapy for the treatment of bradyarrhythmias, ventricular tachyarrhythmias, and advanced systolic heart failure. These devices improve quality of life and, in many cases, reduce mortality ***(Melanie, & Steffe, 2019).*** Pacemakers are electronic devices that stimulate the heart with electrical impulses to maintain or restore a normal heartbeat. This topic review will discuss pacemakers, when they may be necessary or appropriate, the types of pacemakers that are available, and the precautions patients need to take after having a pacemaker placed ***(Brian Olshansky, 2019).***

The use artificial heart stimulation as treatment for cardiac conduction disorders is a challenge that seeks to add quality to the change in prognosis of patients with heart disease. The technology of current devices provides several resources, which can be adapted to the needs of every patient, making it possible to improve quality of life quality of life ***(de Barros, 2015).***

A permanent pacemaker can significantly improve quality of life, and for many people, it can be lifesaving. The best possible outcome after permanent pacemaker insertion can only be attained if patients are maintained in compliance with lifelong instructions ***(Timby &Smith, 2019)***

According to American Heart Association, permanent pacemaker patients must know the detailed restriction and precautions in activity daily living (ADL). Patients and family members must know about pacemaker's programmed lower and upper heart rate. Pulse rate should be checked daily. Patients should allow about eight weeks for pacemaker to settle firmly in place, during this period avoid sudden movements of the affected arm not raise the pacemaker side elbow higher than shoulder. Avoid causing pressure over pacemaker was implanted. However after Surgery, patient will be able to perform all normal activities for a person of same age. Always carry pacemaker card with patient. Stay away from electromagnetic interference and patient must be aware of warning signs like dyspnea, irregular pulse rate, and edema ***(American Heart Association, 2017).***

2. AIM OF THE STUDY

The aim of this study is to evaluate the effect of educational program on improving the quality of life for adult client with a permanent pacemaker at home through:

1- Assessing of adult client with a permanent pacemaker at home about their knowledge and their practices regarding a permanent pacemaker.

2- Assessing of adult client with a permanent pacemaker at home about their practices

3- Assessing of the quality of life through physical, social, psychological, spiritual and sexual health status of adult clients with a permanent pacemaker at home to detect their needs.

4- Assessing of adult client with apermennat pacemaker at home about their practice regard to radial pulse measurement.

5- Developing and implementing programs for adult client with a permanent pacemaker at home according to their needs.

6- Evaluating the effectiveness of educational programs on improvement of adult client with a permanent pacemaker at home about their knowledge and practices to improve their quality of life.

3. SUBJECTS AND METHODS

Research hypotheses:

The educational program will improve quality of life for adult client with a permanent pacemaker at home pre / post program.

Subject and methodology:

I-Technical design

II-Administrative and ethical design

III- Operational design

IV-Statistical design

1-Technical Design:

The technical design for the study included research design, the setting of the study subject, sample and tools for data collection.

A-Research design:

Quasi-experimental research design was utilized to fulfill the aim of this study.

B- Setting:

The study was conducted in outpatient clinics at Ain Shams University (El- Demerdash Hospitals) Cairo Governorate, the place consist of one large halls, contains of three rooms, one for the consultant well equipped with the latest diagnostic device examiner room, the second room for pacemaker insertion the third room for post insertion follow-up and the fourth room is for waiting to follow up after post insertion and well ventilation and illuminated perception with comfortable chairs it suitable for session and two clean and illuminated bathroom.

C- Sampling:

A purposive sample was used in this study. The total number of client with a permanent pacemaker admitted 2019 at the Ain Shams ElDemardash Hospital were 25% (84) adult client with a permanent pacemaker 336 (7 adult client /week). 25% was chosen according previous criteria and pilot study it was chosen and carried out on 10 adult client with permanent pacemaker whom & excluded later the study sample. The sample was became 74 adult client with a permanent pacemaker for both genders (male &female), adult client with permanent pacemaker above 40 years old –recent insertion after 2 years and accepting to participate in the study program.

D-Tools of data collection:

Data was collected by using the following tool:

First tool: Self-administered questionnaire was developed by researcher based on the recent related literature review and supervisors guidance to assess clients' knowledge, it comprised two parts:

Part One: adult client's Socio- Demographic characteristics Data: it included age, gender, marital status, level of education& job.

Part two:

a-Assess of adult client with a permanent pacemaker at home about their knowledge regarded to cardiovascular system (heart, natural pacemaker; it was used as pre, post –test.

b-Assess of adult client with a permanent pacemaker at home about their knowledge regarded to a permanent pacemaker.

Scoring systems of knowledge tool: The knowledge tool was coded. **1 score** for the correct answer, **zero** score for incorrect and 0 for don't know answer The total knowledge scores were considered adequate if the score of the total knowledge ≥ 60 % and considered inadequate if it is less than 60%.

Second Tool: For assess the adult client with a permanent pacemaker at home about their practice regarded to their daily living activities.

Scoring systems of practices tool*:* The practice tool was coded. **2** score for frequently, **1 score** sometime answer, **0** score for never, The total knowledge scores were considered adequate if the score of the total knowledge ≥ 60 % and considered inadequate if it is less than 60%.

Practices about their modification of their the diet, practice about dealing with their home environment devices and their practice about their about their general precaution about the permanent pacemaker implementation.

Scoring systems of knowledge tool*:* The knowledge tool was coded. 2 score for frequently answer, 1 score for some time answer, 0 score for never answer, and total of 60 % and above was considered satisfactory and <60 % were considered unsatisfactory.

Third tool To assess the quality of life of a adult client with a permanent pacemaker at home: using the quality of life scale by **(Ferans, Powers, 1985).** which composed of the following aspects Physical, social, , psychological, spiritual and sexual.

-The Physical dimension included: - Physical health, personal hygiene, nutrition, exercise, grooming, clothing, and physical appearance.

-The Social dimension included Links with social environments and includes the sense of acceptance by intimate others, family, friends, co-workers, neighborhoods and the community.

-The Psychological dimension included adult client with a permanent pacemaker at home about their level of anxiety, depression, and fear.

- The Spiritual dimension included inner peace, hopefulness, religious activities and supports.

- The Sexual dimension included: adult client with a permanent pacemaker at home about their sexual activities.

Scoring system for assess the quality of life of a client with a permanent pacemaker: using the quality of life scale tool was coded. 2score for frequently answer, 1 score sometime answer & 0 score for never answer, and total of- ≥ 60 % and above was considered satisfactory and <60% were considered unsatisfactory.

Tool : Observation checklist for radial pulse measurement: This tool developed by ***Westat (1989),*** to measure the ability of adult client with permanent pacemaker at home to count their own radial pulse.

Scoring systems for Observation checklist for radial pulse measurement: the tool was coded **1** score for performed the procedure of pulse measurement & **0** score for not performed the procedure of the pulse measurement, and divided into two categories as follows- ≥75 % was considered satisfactory<75 % was considered un satisfactory and.

II) Administration Design:

An official approval letter were taken from the faculty of Nursing –Ain Shams University to the general manager of previously mentioned setting to facilitate in conducting the study.

Ethical Consideration*:* The subject rights secured. Nature of the study was not harmless the adult client with a permanent pacemaker at home had a right to accept or refuse participation at any time. Ensure that privacy and confidentiality of all records and personal information used only for research purpose.

III-Operational Design:

A- Preparatory phase:

A review of past and recent, current, national and international related literatures covering all aspects of the researcher subject using the available textbooks, nursing articles and magazines and internet search. In order to get a clear picture on the research problem and to assist in development of data collection tools to gather all information and review about knowledge, practices & quality of life adult client with a permanent pacemaker at home and starting educational program.

B- Pilot Study:

It carried out on 10% of a adult client with a permanent pacemaker at home to test applicability of the tools then the necessary modifications was done according to the result of pilot study and carried out on whom are excluded later in the study simple.

C-Field Work:

- The researcher was revised the literature to design the tools and the tools revised from expertise to test the content validity.

- Approval was obtained from the concerned authorities in the faculty of nursing.
- Written consent was obtained from every adult client with a permanent pacemaker at home to share in the study.

The actual field work started from the beginning of July and finished at August (2019) for data collection. The investigator was available one day weekly (Thursday) during morning shift from 9am to 1 pm, and started by introducing herself to the clients and giving the brief idea about the aim of the research. and verbal consent was obtained from adult client with permanent pacemaker to share in the study the researcher interviewed with each adult client with permanent t pacemaker individually at available time within 30 minute to complete questioner. This technique was performed one day each week. Before starting the follow up and taking permission for conducting this study, formal letter was issued from the Faculty of Nursing, Ain Shams University to the directors of hospitals selected for the study describing the aim of study.

Program Construction:

The present study was conducted in three phases:

Preparatory Phase:

First, preparatory phase: A review of recent, current, national and international related literature in various aspects of the problems to design the study tools, then assessment done to determine the adult client with a permanent pacemaker at home needs by using pretest based on the collecting data on the adult client with permanent pacemaker at home about their knowledge and their practices.

Second phase: Planning and the implementing educational program designed to be practical that necessary for increasing the adult client with a permanent pacemaker at home bout their knowledge and practices toward permanent pacemaker.

The program Objective:

Improve of the quality of life for adult client with a permanent pacemaker at home.

The program content was included:-

anatomy and the function of heart mention the component of cardiac system function of the heart, normal pulse rate , Sites of measuring pulse ,the meaning of natural Pacemaker**,**meaning of permanent pacemaker, indication of permanent pacemaker types of permanent pacemaker, clarify the function of the pace maker, the time of battery off, List of the signs of permanent pacemaker malfunction, Importance of medical follow up after permanent pacemaker insertion, , meaning of the pulse, demonstrate the adult with permanent pacemaker client Technique of pulse measurement, the activity restrictions about adult client permanent with pacemaker, the important of medications after the permanent pacemaker insertion, clarify use certain electrical devices over the space-maker site, discuss important of carry the identification card of pacemaker at all times, important regular follow up care with the physician a recommended.

Practices sessions:-

- Discuss Physical dimension: -it was included: (Physical health, personal hygiene, nutrition, exercise, grooming, clothing, and physical appearance).

- Social dimension: included: Links with social environments and includes the senses of acceptance by intimate others, family, friends, co-workers, neighborhoods and the community. Psychological dimension included: client level of anxiety, depression, and fear. Spiritual dimension - included: inner peace, hopefulness, religious activities and supports. Sexual Dimension included: client sexual activities.

Course duration:

A program session was included **9.10** hours distributed on **11** session (**4.10** hours for theory and **5** hours for practices**)**

Place: Outpatient clinics of cardiac catheter department.

Language: The program was conducted in Arabic language to be easily understood by adult client.

Teaching methods:-Lectures, demonstration, role play & group discussion

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Teaching media: Booklet for educated adult client and Pictures, colored materials, power point &CD for illiterate clients.

Resources and equipment: Using available equipment but the material will be prepared by the researcher.at the end of the sessions. Adult client was informed to be in contact with the researchers by telephone for any guidance**.**

3- Evaluation phase: This phase aims to evaluate the effect of educational program on improving the quality of life for adult client with a permanent pacemaker at home**.** A post –test, was the same pre test and was administrated to the study subjects after accomplish the educational program.

VI. Statistical design:

The obtained finding will be analyzed by appropriate statistical Methods and tests of significance and then will be presented in tables**,** the collected data were organized, categorized, tabulated, and analyzed. Data were presented in tables and charts using SPSS (the Statistical package for Social Science for windows) version 20.0 the statistical significance and associations were assessed using percentage values (%), mean value, and standard deviation (SD), and Chi square test (X2) and P- value.

Significance of Result:

- Non – significant (NS) if P>0.05
- Significant (S) if P<0.05
- Highly significant (HS) if P<0.01
- Number (N)

4. RESULTS

Table (1): Frequency distribution of the studied sample according to their socio- demographic characteristics (n=74).

Socio- demographic	No	%
Age		
40 -	20	27.0
50 -	25	33.8s
60 and more -	29	839.2
Mean ±SD	45.32±12.24	
Gender		
Male	44	59.5
Female	30	40.5
Social status		
Single	3	4.1
Married	63	85.1
Widowed	6	8.1
Divorced	2	2.7
Educational level		
Illiterate	34	45.9
Basic education	22	29.7
Secondary education	16	21.6
High education	2	2.7
Occupation		
Employee	26	35.1
Worker	39	52.7
Farms	9	12.2
Type of Occupation		
Hard	46	62.2

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Simple	28	37.8
Smoking		
Smoker	44	59.5
Non smoker	30	40.5

Table (1) Shows that the age of the studies clients with permanent pacemaker were 29.0% between 60and more years, the genders 59.5% were males, 85.1% of them were married while 45.9% of them were illiterates. Regarded to Type of occupation 62.2% of them was hard work, while 59.5% of them were smoker.

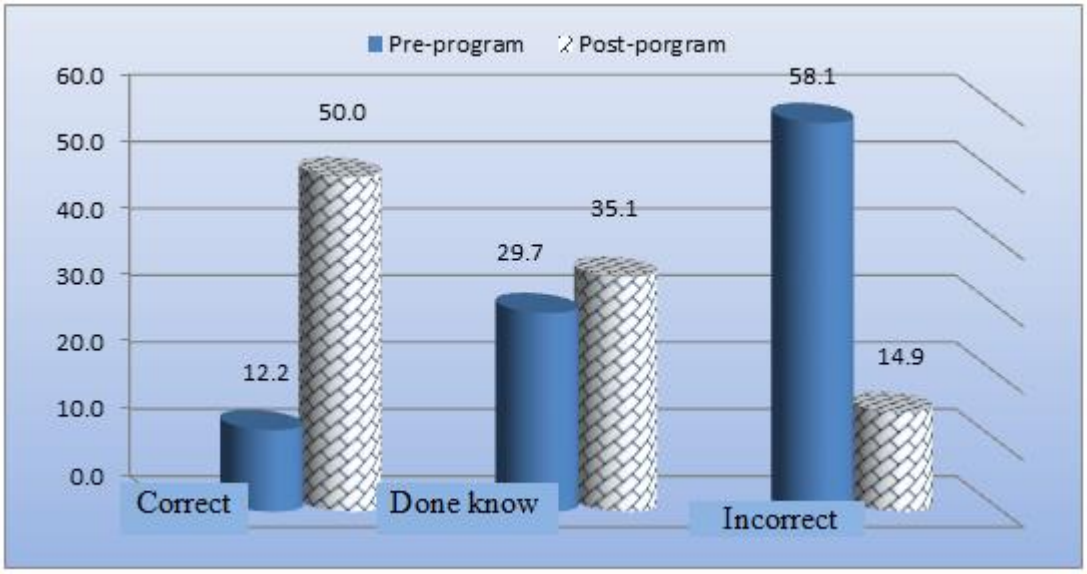
Table (2): Differences for adult client regarding their knowledge about cardiovascular system (heart) pre and post educational program (n=74)

Knowledge related to anatomy and physiology of the heart	Pre						Post						X^2	p-value
	Correct		Don't know		Incorrect		Correct		Don't know		Incorrect			
	No	%	No	%	No	%	No	%	No	%	No	%		
Heart position	6	8.1	11	14.9	57	77.0	29	39.2	24	32.4	21	28.4	36.55	.000**
The heart component	4	5.4	41	55.4	29	39.2	31	41.9	39	52.7	4	5.4	39.81	.000**
The heart function	9	12.2	9	12.2	56	75.7	41	55.4	15	20.3	18	24.3	41.49	.000**
The normal heart rate	12	16.2	18	24.3	44	59.5	43	58.1	20	27.0	11	14.9	37.37	.000**
Site of pulse measurement	8	10.8	22	29.7	44	59.5	32	43.2	27	36.5	15	20.3	29.16	.000**

Differences are highly statistically significant (p<0.0001).

Table (2) shows that there was a highly statistical significant improvements in a correct knowledge regarding to The heart component, the heart function &the normal heart rate in post educational program implementation compared to pre educational program implementation, the heart component, the heart function &the normal heart from frequently 5.4 %, 12.2%&16.2%prespectively pre educational program implementation advanced to in post the educational program implementation, became 41.9%, 55.4 & 58.1% post educational program implementation.

Figure (1): Differences for adult client with a permanent pacemaker at home regarding total knowledge score regarded to permanent pacemaker pre and post educational program implementation



Differences are highly statistically significant (p<0.0001).

Figure (1) There was a highly statistical significant regarding to their knowledge about permanent pacemaker pre and post educational program implementation (p<0.0001

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Figure (2): Frequency distribution for the adult client with a permanent pacemaker at home regarding their total practices regarded to ADL, important of follow up and their precaution about permanent pacemaker in pre and post educational program.

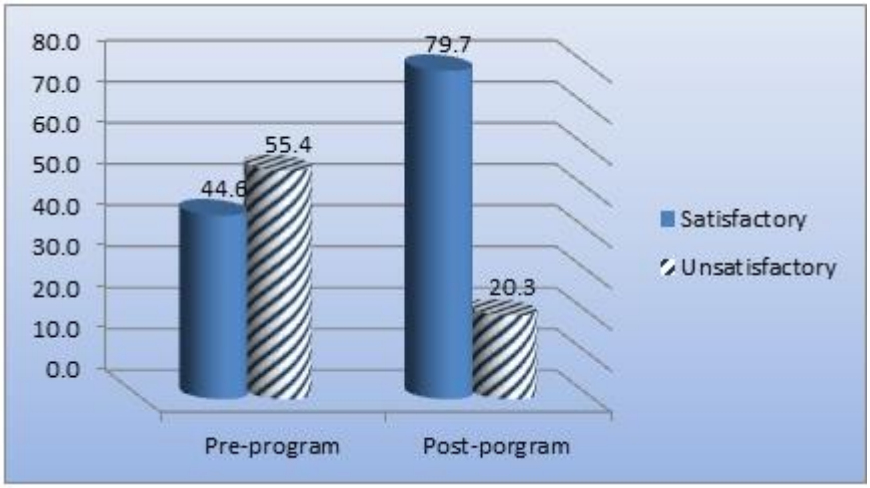

Figure (2) Clarify that 44.6 % of the adult client with a permanent pacemaker were satisfactory regarded to total practices and 55.4%were unsatisfactory and changed in post educational program implementation to 79.7% satisfactory, 20.3% unsatisfactory.

Table (3): Differences for the adult client with permanent pacemaker at home regarding their practices about dealing with their home environment devices pre and post the educational program (n=74)

The home environment devices	Pre						Post						X^2	p-value
	Always		Sometimes		Never		Always		Sometimes		Never			
	No	%	No	%	No	%	No	%	No	%	No	%		
T.V distance	4	**5.4**	10	**13.5**	60	**81.1**	65	**87.8**	5	**6.8**	4	**5.4**	104.59	0.000**
Computer distance	5	**6.8**	8	**10.8**	61	**82.4**	60	**81.1**	8	**10.8**	6	**8.1**	91.68	0.000**
Phones distance	6	**8.1**	6	**8.1**	62	**83.8**	61	**82.4**	6	**8.1**	7	**9.5**	88.99	0.000**
Refrigerators distance	0	**0.0**	4	**5.4**	70	**94.6**	61	**82.4**	4	**5.4**	9	**12.2**	108.10	0.000**
washing machine distance	6	**8.1**	4	**5.4**	64	**86.5**	56	**75.7**	8	**10.8**	10	**13.5**	81.06	0.000**
Dryers distance	5	**6.8**	5	**6.8**	64	**86.5**	59	**79.7**	9	**12.2**	6	**8.1**	94.76	0.000**
Microwaves distance	0	**0.0**	2	**2.7**	72	**97.3**	64	**86.5**	4	**5.4**	6	**8.1**	120.51	0.000**
Electric oven	4	**5.4**	10	**13.5**	60	**81.1**	65	**87.8**	5	**6.8**	4	**5.4**	104.59	0.000**

Table (3) Indicates that (5.4%, 6.8% & 8.1%)of adult client with permanent pacemaker at home regarding their practices as T.V distance, Computer distance, & Phones distance respectively in pre educational program improved to (87.8 %, 81.1 % & 82.4 %) in post educational program also **5.4**% of them had sometime practice regarded to electronic distance in preprogram advanced to 6.8% sometimes, and 5.4% had never practice in post the educational program implementation. There was statistical significant differences between pre and post educational program p-value =0.0001*

Figure (3): Differences for the adult client with a permanent pacemaker at home regarding to their quality of life pre and post the educational program

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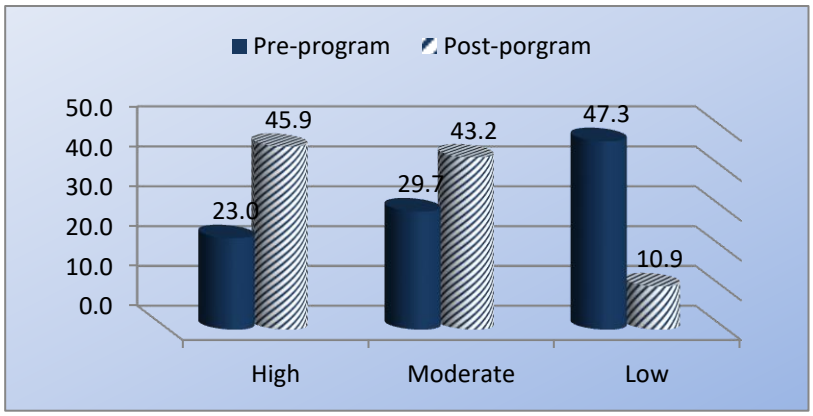

Figure (3) show that there was a highly statistical significant differences between pre and post educational program implementation

Figure (4): Differences for the adult client with a permanent pacemaker at home regarding their practices about the pulse measurement pre and post the educational program

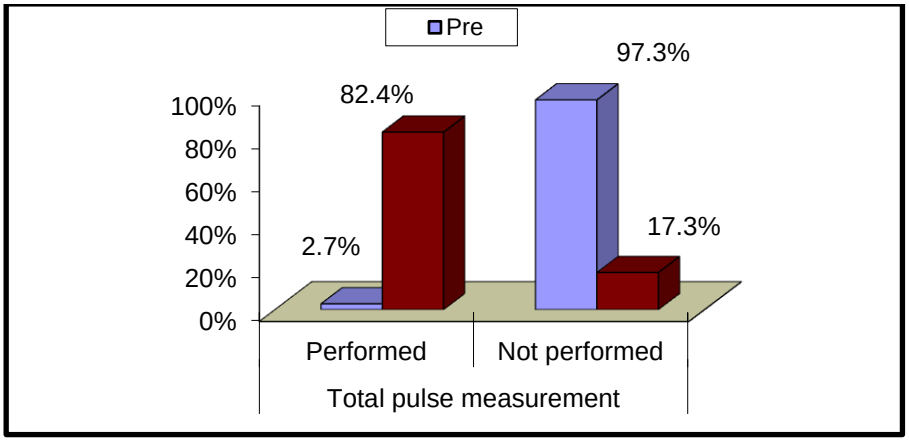

Figure (4) there was a highly statistical significant differences between pre and post educational program implementation.

Table (4): Statistically relation between sociodemographic & their total knowledge and the adult client with a permanent pacemaker at home characteristics pre and post educational program (n=74)

Items	Pre						X^2	p-value	Post						X^2	p-value
	Incorrect (n=43)		Don't know (n=22)		Correct (n=9)				Incorrect (n=11)		Don't know (n=26)		Correct (n=37)			
	No	%	No	%	no	%			no	%	No	%	no	%		
Age																
40 years	9	20.9	9	40.9	2	22.2	4.776	0.311	3	27.3	6	23.1	11	29.7		
50 years	16	37.2	9	40.9	4	44.4			7	63.6	9	34.6	13	35.1	4.786	.310
Over 60 years	18	41.9	4	18.2	3	33.3			1	9.1	11	42.3	13	35.1		
Gender																
Male	26	60.5	12	54.5	6	66.7	0.432	0.806	5	45.5	16	61.5	23	62.2	1.054	.590
Female	17	39.5	10	45.5	3	33.3			6	54.5	10	38.5	14	37.8		
Social statues																
Single	2	4.7	1	4.5	0	0.0	1.507	0.959	2	18.2	1	3.8	0	0.0		
Married	36	83.7	19	86.4	8	88.9			7	63.6	23	88.5	33	89.2	20.30	.002*
Widowed	4	9.3	1	4.5	1	11.1			0	0.0	2	7.7	4	10.8		
Divorced	1	2.3	1	4.5	0	0.0			2	18.2	0	0.0	0	0.0		
Education level																

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Illiterate	16	37.2	6	27.3	0	0.0	9.95	0.127	4	36.4	6	23.1	12	32.4	3.58	.733
Basic	18	41.9	10	45.5	6	66.7			4	36.4	14	53.8	16	43.2		
Intermediate education	9	20.9	4	18.2	3	33.3			3	27.3	6	23.1	7	18.9		
High education	0	0.0	2	9.1	0	0.0			0	0.0	0	0.0	2	5.4		
Occupation																
Employee	14	32.6	8	36.4	4	44.4	7.62	0.106	5	45.5	10	38.5	11	29.7	2.67	.614
Worker	20	46.5	14	63.6	5	55.6			6	54.5	12	46.2	21	56.8		
Farms	9	20.9	0	0.0	0	0.0			0	0.0	4	15.4	5	13.5		

Table (4) Illustrates that there was no statistically significant relation between studied sample regarded to total knowledge and age, marital status, living condition, level of education, post the educational program implementation

Table (5): Statistically relation between sociodemographic and their total practices of a adult client with a permanent pacemaker at home pre and post educational program (n=74).

Items	Pre				X^2	p-value	Post				X^2	p-value
	Unsatisfactory (n=41)		Satisfactory (n=33)				Unsatisfactory (n=15)		Satisfactory (n=59)			
	No	%	No	%			No	%	No	%		
Age												
40 years	13	31.7	7	21.2	5.75	0.056	1	6.7	19	32.2	4.06	.131
50 years	19	46.3	10	30.3			8	53.3	21	35.6		
Over 60 years	9	22.0	16	48.5			6	40.0	19	32.2		
Gender												
Male	22	53.7	22	66.7	1.28	0.257	9	60.0	35	59.3	0.002	.962
Female	19	46.3	11	33.3			6	40.0	24	40.7		
Social statues												
Single	1	2.4	2	6.1	2.56	0.464	1	6.7	2	3.4	.87	.831
Married	34	82.9	29	87.9			13	86.7	50	84.7		
Widowed	4	9.8	2	6.1			1	6.7	5	8.5		
Divorced	2	4.9	0	0.0			0	0.0	2	3.4		
Education level												
Illiterate	8	19.5	14	42.4	7.58	0.056	8	53.3	14	23.7	5.28	.152
Basic	19	46.3	15	45.5			5	33.3	29	49.2		
Intermediate education	13	31.7	3	9.1			2	13.3	14	23.7		
High education	1	2.4	1	3.0			0	0.0	2	3.4		
Occupation												
Employee	17	41.5	9	27.3	2.86	0.239	3	20.0	23	39.0	4.48	.106
Worker	21	51.2	18	54.5			8	53.3	31	52.5		
Farms	3	7.3	6	18.2			4	26.7	5	8.5		

Table (5) illustrates that there was no statistically significant relation between studied sample regarded to total practices and their age, marital status, living condition, level of education, post the educational program im

Table (6): Statistically relation between sociodmgraphic & their total quality of life of a adult client with a permanent pacemaker at home characteristics pre and post educational program. (n=74)

Items	Pre						X^2	p-value	Post						X^2	p-value
	Always (n=35)		sometimes (n=22)		Never (n=17)				Always (n=8)		sometimes(n=32)		Never (n=34)			
	No	%	No	%	No	%			No	%	No	%	No	%		
Age																
40 years	7	20.0	10	45.5	3	17.6	6.35	0.174	2	25.0	6	18.8	12	35.3	4.26	0.371
50 years	14	40.0	6	27.3	9	52.9			2	25.0	13	40.6	14	41.2		
Over 60 years	14	40.0	6	27.3	5	29.4			4	50.0	13	40.6	8	23.5		
Gender																
Male	23	65.7	12	54.5	9	52.9	1.08	0.58	5	62.5	20	62.5	19	55.9	0.33	0.846

Female	12	34.3	10	45.5	8	47.1			3	37.5	12	37.5	15	44.1		
Social statues																
Single	1	2.9	1	4.5	1	5.9	8.5	0.203	0	0.0	2	6.3	1	2.9	4.86	0.561
Married	32	91.4	18	81.8	13	76.5			8	100.0	28	87.5	27	79.4		
Widowed	2	5.7	3	13.6	1	5.9			0	0.0	2	6.3	4	11.8		
Divorced	0	0.0	0	0.0	2	11.8			0	0.0	0	0.0	2	5.9		
Education level																
Illiterate	12	34.3	5	22.7	5	29.4	2.71	0.844	3	37.5	11	34.4	8	23.5	5.597	0.47
Basic	16	45.7	11	50.0	7	41.2			2	25.0	16	50.0	16	47.1		
Intermediate education	7	20.0	5	22.7	4	23.5			3	37.5	5	15.6	8	23.5		
High education	0	0.0	1	4.5	1	5.9			0	0.0	0	0.0	2	5.9		
Occupation																
Employee	9	25.7	10	45.5	7	41.2	3.75	0.44	3	37.5	10	31.3	13	38.2	2.07	0.723
Worker	20	57.1	11	50.0	8	47.1			3	37.5	18	56.3	18	52.9		
Farms	6	17.1	1	4.5	2	11.8			2	25.0	4	12.5	3	8.8		

Table (6) Illustrates that there was no statistically significant relation between studied sample regarded to total quality of life and age, marital status, living condition, level of education, post the educational program implementation.

Table (7: Correlation between total knowledge, practices, and quality of life pre and post educational program

Correlation between total knowledge, practices, and quality of life	**Knowledge**			
	Pre		**Post**	
	R	**p-value**	**R**	**p-value**
Total practices	0.44	0.002*	0.81	0.31
Total quality of life	0.51	0.000**	0.26	0.54

Table (7) Shows that there were highly statistically significant relation between total knowledge, practices, and quality of life after the educational program implementation

5. DISCUSSION

Sudden death is one of the most common causes of death in India & worldwide and it can be prevented by implanting a pacemaker (ICD). Studies have shown that 60 per cent of all Sudden Cardiac Arrest occur due to arrhythmia." Each year 1-2 million individuals worldwide die due to a lack of access to pacemakers. In India, about 1, 00, 000 patients suffer from bradycardia (slow heart rate) every year. However, only 20, 000 patients resort to pacemakers in India annually. Need to take after having a pacemaker placed ***(Bhamri, 2017).***

A permanent cardiac pacemaker is implantable device used to maintain sufficient heart rate when natural mechanisms fail, either as a result of a deficiency with the natural PM or the conduction system in the heart the impaired cardiac rhythm is initiated and maintained through cardiac pacing where very low electrical energies are delivered to the heart repetitively. Pacing may be temporary, with an external pulse generator, or permanent, with an implanted pulse generator.More recently, the indications for cardiac pacing have extended beyond symptomatic such as bradycardia ***(Snegalatha and Anand, 2019)***.

As regards age, the present study indicated that, more than one third of studied sample aged 60 or more years (**table1)** this result in the same line with ***Sharma et al. (2018)*** in India who studied Assessment of effectiveness of permanent pacemaker care guidelines on patient activity and adherence The total sample size were100 adults patienst with permanent pacemaker from both gender who showed that more than the half of study subject was male 60%. This finding agreement with ***Mohamed et al (2015)*** in Egypt who studies Impact of Nursing Teachi ng Protocol on reduction of Complications for Patient with Permanent Artificial pacemaker who shows that majority 63.3% of study group patients were between 61-80 years this finding an incongruent with, ***Jesica & Kulkarin et al. (2019)*** in India *who studied that* Program on Knowledge Regarding the Care of a Permanent Pacemaker at Home among Patients, he total sample size was 50 adult patients who revealed that of 64% the age group of 51years.This may be due to recurrent exposure to life stressors and responsibility the most of patients often utilized in older adults, this is due to an increase in abnormalities of impulse generation and conduction with advancing age.

In relation to gender, the present results showed that, that nearly two third of the studied sample were male.. In the same line, ***Jesica & Kulkarin, et al. (2019)*** in India who studied that Program on Knowledge Regarding the Care of a Permanent Pacemaker at Home among Patients, he total sample size was 50 adult patients &Purposive sampling who revealed that more than half of studied sample was male 56.0%. on the other hand this finding was an incongruent with ***Nasr et al. (2016),*** in Egypt who studied that, Impact of counseling program on Knowledge and self-efficacy of patients with implanted permanent A convenience sample of 35 adult patients from both genders who, revealed that more than half were females, . This may be due to recurrent males more than females' exposure to life stressors and responsibility.

Concerning marital status, the current study revealed that, Majority of study sample were married (**table1)** This finding agree with ***Ahmed Abdul-Hussein et al (2020)*** in Iraq, Who studied the Effectiveness of an Instructional Programs on Patient's Knowledge Regarding Self- Care Management after Ischemic Heart Disease the studied sample size was 50 patients who mentioned that the, majority of studied sample were married.86.0% Also this findings on the same line, ***Sharm et al. (2018)*** in India who studied Assessment of effectiveness of permanent pacemaker care guidelines on patient activity and adherence The total sample size was 100 adult patient with permanent pacemaker from both gender who showed that Majority of study subjects were married 74% in experimental group 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.

In relation to education, the present results showed that, appromimtly half of the studied sample were illiterates this finding accordance with **Nasr *(2015)*** in Egypt who studied Impact of counseling program on Knowledge and self-efficacy of patients with implanted permanent pacemaker A convenience sample of 35 adult patients from both genders revealed who that slightly less than two thirds of them were, illiterates this finding incongruent with ***Abdul-Hussein et al. (2020)*** in Iraq, Who studied Effectiveness of an Instructional Programs on Patient's Knowledge Regarding Self- Care Management after Ischemic Heart Disease the studied sample size was 50 patients who mentioned that improve the patient' knowledge in post program implement. It may be the education enhances the awareness about diseases and increases their knowledge regarded to permanent pacemaker..

As regards occupation, the current study revealed that more than half 52.7%of adult clients were worker with hard work that more than two third of adult client with a permanent pacemaker at home finding on the same line**, *Mohamed et al. (2016)*** in Egypt who studies Effectiveness of Educational Program on Knowledge And Practice of Patients Undergoing Permanent Pacemaker the studied sample was 50adult patient, who Mentioned that sample the study had jobs that require muscular effort..this may be the studied sample had jobs that require muscular effort and work stressors that effect on cardiac efficacy and cause cardiac disease.

As regards smoking, the current study revealed that two third of adult clients were smoker. This finding on the same line with**, *Sharma et al. (2018)*** in India who studied Assessment of effectiveness of permanent pacemaker care guidelines on patient activity and adherence The total sample size was 100 adult patient with permanent pacemaker from both gender who showed the studied samples were more than three quarter of them were smoker 76.0%.I t may could be, explained that, the nicotine content of cigarettes causes vasoconstriction and the production of carbon monoxide, which place a demand on the heart and interfere with oxygen supply recognized that lifestyle measures that reduce risk of cardiovascular disease recognized that lifestyle measures that reduce risk of cardiovascular disease include smoking.

Concerning level of knowledge related to a cardiovascular system (heart), the result of this study found that more than two third of adult client with a permanent pacemaker at home have incorrect knowledge regarding to a anatomy and physiology of the heart in pre educational program and there was improvement of knowledge post educational program and there was statistical significant difference between pretest level of knowledge and post educational program, **(table 2).** this finding goes with ***Laddawan et al. (2019)*** in Iran who studied The Effect of Education and Social Support Program on Health Behaviors in Patients with Cardiac Permanent Pacemaker, the studied sample were 44 patients with permennat pacemake, showed that the mean score of health behavior of the patient with cardiac permanent pacemaker after given knowledge program in the experimental group significant higher than that in the control group significant level of 0.05

This finding an incongruent with ***Sreelekshmi, (2011)*** in Pakistan who studied that Assess the knowledge of homecare management of permanent pacemaker implanted patients, who stated that, studied sample, had inadequate knowledge regarding homecare management post permanent pacemaker implantation the studied sample were 93 adult patients. This

might be attributed to the fact that less than half of them were illiterate. So, they cannot read or seek information about pacemaker. Also, this could be due to that all patients stated that, the nurses weren't explaining instructions to be followed and most of them didn't take information about precautions related to permanent pacemaker that may increase susceptibility to pacemaker complications Such as; Low educational level, lack of health awareness, nutritional patterns and not Practicing exercises.

Concerning knowledge about pacemaker the present study revealed that, immediate and post implementing educational program there were statistically significant improvements in their knowledge and practice

This is on the same line with ***Shen et al (2019)*** in China Who studied that Effect of peer support on health outcomes in paents with cardiac pacemaker implantation, the studied sample were 76patients Reaveld that improvement their knowledge after the peer support program implementation.

In the present study, more than half of adult client had incorrect knowledge regarding to a permanent pacemaker) in pre educational program and there was improvement of knowledge post educational program and there was statistical significant difference between pretest level of knowledge and post educational program $p<0.000$, **(table 3)**. this result goes with ***Khalil, (2020)*** in Egypt who studies effect of educational program on outcomes of patients undergoing permanent pacemakers' implantation the study sample was a convenient sample of 35 adult patients from both genders, showed that majority of the studied sample had satisfactory knowledge immediately post educational intervention, improved to 85.7%., But this results are not agree with ***Elsayed, (2013)*** in Egypt who studied factor effecting compliance of patients with permanent pacemaker regarding therapeutic regimen faculty of nursing Ain shams university the study sample were 80adult patients from both genders. Showed that most of patients had unsatisfactory level of knowledge.. This could be to sufficient information &knowledge provided to the adult clients and adequate knowledge regarding how to deal with permanent pacemaker at home in the educational program

Regarding to practices of adult client with a permanent pacemaker at home about to their daily living activities, showed that improvement their practices in post educational program implementation compared to in pre educational program implementation **(table 4).**This finding goes with This finding on the same line with ***Bekir, (2018)*** in Turkey who studied How Do Patients Understand Safety for Cardiac Implantable Devices? Importance of Post intervention Education the studied sample was 28 adult patient with a permanent pacemaker who showed that improved awareness on topics related to physical and daily life activities including work, driving, sports after intervention education. Also this finding on the same line with ***Shen et al. (2018)*** in China Who studied that Effect of peer support on health outcomes in patients with cardiac pacemaker implantation, the studied sample were 76patients Reaveld that improves in their self care ability after the peer support program implementation. This could be lack of knowledge in pre program implementation had effect on the their practices.

The current study finding illustrated that there was no statistically significant relation between studied sample regarded to total knowledge and age, marital status, living condition, level of education, a post the educational program implementation **(table5)** this finding on the same line with ***Sharmila & Regina, (2014)*** in India who studied Effectiveness of Information Booklet regarding Home Care of Pacemaker among the Patients with Complete Heart Block revealed studied samples were 30 patient with a permanent pacemaker selected by convenient sampling that, there is no association exists between knowledge score after administration of information booklet with selected demographic variable as, age in years, gender, educational status, occupation, family income.

Concerning the relation between client socio-demographic characteristic and their total practice about pacemaker device, the result of the present study indicated that there no significant between quality of life and socidemographic data **(table 6).**

The present study findings in **table (15-16**) Showed that, there is no significant relation between patients' knowledge and practice and socio demographic characteristics. This finding an congruent**,** ***Mohamed et al. (2016)*** in Egypt who studies Effectiveness of Educational Program on Knowledge And Practice of Patients Undergoing Permanent Pacemaker the studied sample study was 50adult patient, who showed that The present study findings showed that, there is no significant relation between patients' knowledge and practice and socio demographic characteristics. This finding not agrees with ***Elsayed, (2013)*** *in Egypt who* he said there is a significant relation between patients' knowledge and their age. This could

be explained by the fact that all studied sample so caution g keep their life all age categories post r the educational program implementation.

Moreover, the result of the current study illustrated that there is no statistical significant relation between client's socio-demographic characristic and their quality of life the result of the current study showed that there is statistical significant relation between age and quality of life **(table 7).** This finding was consistent with ***Brunner et al. (2004),*** who studied long-term survival after age and quality of life. This finding was agreement with The current study finding revealed that there was no statistically significant relation between studied sample regarded to total knowle dge and age, marital status, living condition, level of education,

The current study revealed that there is statistically significant relation between patients' knowledge and patients' practice with pacemaker. This finding is. On the same line ***Smeltezer et al. (2010)*** highlighted that, patients' education is very important to enhance knowledge and practice. This study results so we accept the research hypothesis, the education program will affect positively on knowledge and practice score post implementing educational program on patients with permanent Also). This finding on the same line with**, *Mohamed et al. (2016)*** in Egypt who studies Effectiveness of Educational Program on Knowledge and Practice of Patients Undergoing Permanent Pacemaker the studied sample study was 50adult patient.

The present study. The current study revealed that there is statistically significant relation between patients' knowledge and patients' practice with pacemaker. This may be due to knowledge is the most important strategy to enhance practice to education program. This finding also on the same line The entire demographic variables are working independently**.** This may be attributed to the adult client interest in how to deal with the device and get rid of the fear that was threatening it. Also sense them regarding the importance of the necessity of applying knowledge to actions (practice) and may be due to the positive effect of the home care program

Concerning to Correlation between total knowledge, practices, and quality of life& showed that there were highly statistically significant relation between total quality of life and total practice& that there were highly statistically significant relation between total quality of life and total practice after the educational program implementation **Table (18&19)** this finding in the same line with ***Chapagai et al. (2017)*** in India who studied Study to Assess the Knowledge and Quality of Life of Pacemaker Patients with a view to Develop an Information Booklet the studied sample was purposive sampling among 100 patients with a permanent pacemaker showed that There was weak positive correlation of knowledge with quality of life in physical health ($r = 0.32$, $p = 0.0206$) and their practice s regarding to their social relationships domain ($r = 0.38$, $p = 0.0052$) during early phase of pacemaker implantation but improve after Develop an Information Booklet. This may be due to the positive effect of the home care program. This study results accept the research hypothesis, the education program will affect positively on knowledge practice and quality of life of adult client with permanent pacemaker at home post implementing educational program.

Conclusion: the educational program implementation had statistically significant positive effect on adult client with a permanent pacemaker at home regarding their knowledge, practices &quality of life. **Recommendation:** Continuous of home care program to all adult clients with a permanent pacemaker insertion to improve their knowledge and practices regarding permanent pacemaker. . A further research on a large sample is recommended to achieve more generalization.

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