

Original Article

Efficiency of training programs on quality of physical life in implantable cardioverter defibrillator patients

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Abstract

BACKGROUND: Implantable defibrillator is one of the methods used in curing arrhythmias and preventing sudden cardiac death. Despite rescuing patients, applying this device can cause mentionable effects including increase the patient's anxiety and fear to do normal physical activities again. In spite of these problems, there isn't enough intervention in accommodating the patient with the device. This study focuses on determining effects of training program on quality of physical life in patients with ICD.

METHODS: This study is a semi- experimental study (before and after). About 45 patients with ICD were examined. The collecting data tools were Fran's and Power's quality of life questionnaire and interviewing method. For analyzing data the SPSS software, independent t and t- test were used.

RESULTS: Assessing the data gave us an average score for life's quality in two importance and satisfaction dimensions before and after training programs. Even t-test ($p < 0.001$) shows meaningful differences between the average score of quality of life before and after training courses.

CONCLUSION: Considering the efficiency of these programs on patient's quality of life, it is recommended that these programs become a part of nursing process and be continued.

KEY WORDS: Training program, implantable defibrillator, quality of life

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A healthy heart blows the spirit of life into human mold with its every enlivening beat so, keeping it safe and healthy is really important. Cardiac disease is the most common cause of death all over the world.

One of these cardiac diseases is myocardial infarction that arrhythmias are one of its side effects. Ventricular arrhythmias is one of the main important causes of sudden death.¹

In spite of improved treatments for cardiac disease, 2-25% of healing process after these arrhythmias is happening outside the hospital.

Sudden cardiac arrest, because of coronary problems is one a of the main factors of mortalities in industrialized cuntries.²

About 400'000 people die in a year in united state because of atria fabricator ventricular tachycardia (VT). The study results show that 36% of deaths happen in patients who recovered from cardiac arrest and discharged from the hospital.

So, finding ways to decrease deaths caused by cardiac arrest, is the best way to support life for these patients.¹

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Today's anti-arrhythmias drugs and pace makers use to cure ventricular fibrillation (VF) and VT. In Iran, we use ICDs but unfortunately, there isn't exact number of users. In Isfahan, 150 apparatuses were applied during 2005-2007.

Bermner et al reported permanence rate in the first, second and third year after applying device were 99%, 97% and 96% respectively.

It is estimated that till now 75000 patients have used this device and every year 400-500 patients were added as new users.³

During the past 10-15 years, ICDs were the most important method of treating arrhythmias, but applying this device causes significant psycho-social effects on patients' lives and their families'.⁴

Considering protracting the patients' life with implantable defibrillator and not taking life's quality into consideration, means forgetting all about the patient's health and convenience since the latest procedures are only lingering the hope of life. The importance of pressure that the new treatment procedures put on life's quality also increases; therefore, evaluating life's quality was always a part of those clinical studies which conducted on drugs and cardiac disease.

Although ICD is an apparatus to increase life's duration and improve the quality of life, but unfortunately there is a possibility that it may cause some problems which if not properly distinguished in the right moment and not verified, it will put the patient's life at risk.

The Sears study illustrated that 15% of the patients who received ICD experienced unpleasant life performance and 10-20% experienced emotional disorders.⁴

After implanting this device, the fear of its disorder would limit the patient's functioning. In the other hand, inserting an external element in to the heart as a human body part and the symbol of emotions is considered as an important event in life.

After the implantation, this device can lead to some changes in patient's imagination and his quality of life. Besides, there would be some problems in psycho-social accommodation. Regarding that the patient wants to discharge from the hospital as soon as possible, the family

members and the patient require an extensive amount of training for home nursing. By performing effective training for the patient the recovery process will be accelerated.⁵ But unfortunately there has been no such training plan in Iran and if it has been, it was just for home studies. Therefore the researcher decided to carryout regular training courses for those patients, though it is a short step toward adopting and accepting the new situations and improving life's quality.

Since there was no study related to the effect of the application of ICD on life's quality, it is expected that it will be the first research done on patients with ICD. The aim of this research is to determine the effectiveness of these training programs on the quality of physical life in ICD patients.

Methods

The current study is a semi- experimental study of before and after kind which was done in one group and in two levels.

The researcher examined the effect of training programs' independent variable on the quality of physical life's dependent variable.

The nominal environment was Shahid Chamran hospital in Isfahan, for it is the only university hospital in Isfahan conducting ICD operation in it.

The collecting data tool was Fran's and Power's life's quality questionnaire in which every question gained a grading scale of 1 to 6. In satisfaction rank 1 shows high dissatisfaction and 6 shows high satisfaction and in importance rank 1 means very unimportant and 6 means very important. In all the questions there was a direct link between measuring scale and the score that was given to quality of life.⁶ Furthermore, some personal characteristics such as age, gender, marriage status, education, occupation and the duration of suffering from heart disease were also questioned. The physical section of the questionnaire consisted of 8 questions related to satisfaction rank and the same number related to importance rank. Every individual could assign a total 16 to 96 scores to himself.

After gaining the permission from the authorities, the researcher refereed to the study environment and explained his purpose to the manager and the director. Then she interred the hospital during 2007-12-10 to 2008-05-09 from 9 A.M. to 12 A.M., in order to simply collect the required examples and interview with the qualified patients for the study.

Furthermore, each patient's opinion about taking part in the study were questioned and then after being accepted and filling out their desire forms, they were chosen as nominal group of the study.

Right after entering the study, the investigated units were supposed to fill out demographic information, and then the importance and satisfaction rank of their quality of life were examined through the questionnaire.

Next, a training course based on default protocol consisted of a series of theoretical and practical training with the subject of knowing the apparatus and its functioning, how to use their electrical device in their surrounding environment and situations that can have pseudo effect on the device's functioning, by individual (sometimes in group) and face to face method for about three 45 minute sessions in one week was scheduled. This training was designed based on Khalifeh Zadeh and Madani's research.^{7,8}

The training plan was performed equally and in the same place for everyone.

The sessions' schedules adjusted with both life conditions and the patient's time. It should be with a specific time limitation so that those who wish not to incorporate any longer or unable to continue in the process exit from the study in any stages of the program.

After performing the training sessions in conference, using projector and computer, showing practical techniques by using gesture illustration, having a training coach and giving the patients confidence that every unit is able to do the technique individually (she performed the method again), an educational booklet was prepared for them to gain better functioning.

Furthermore, to prevent the samples from being exhausted and increase their interests, they were entertained during each session.

Having finished the training program, the patients were asked to continue the techniques at home for about 3 weeks.

In order to give the patients confident that they are supported by the researcher, they were asked to contact him with the given number if they encountered any problem with the technique or had any question. In addition, the researcher called every individual twice a week and talked to them for about 15 minutes.

At the end of this stage, the questionnaire was filled again and the result were examined and compared with the former results. Being gathered, the data was entered into the computer and qualitative and quantitative variables were calculated.

For statistical analysis, the SPSS software, descriptive statistical method (average, standard deviation and relative abundance distribution table) and conceptual statistics were used.

Results

In this study the majority were married man from 62 to 69 years old. Most of them were illiterate and without high education. In addition, they had suffered from heart disease for 3 to 5 years.

The findings showed that the average score of the satisfaction rank of quality of physical life before training courses was 21.62 ± 3.31 and for the importance rank was 26.46 ± 4.8 .

After the training programs the average in satisfaction level was 28.22 ± 2.7 and in importance level was 30.80 ± 2.74 .

Also, t-test ($p < 0.001$) illustrated that there is a meaningfully statistical difference between the average score of quality of physical life before and after the training programs in both satisfaction and importance ranks. Also it showed that the average was higher after the program (Table 1).

Discussion

In the current study the samples were 62 to 69 years old.

Also in studies conducted by Carroll et al⁶ and Hamilton et al⁹ on ICD patients, the cases were from 60 to 65 years old. In Carroll et al⁶

Table1. Comparing the average score of quality of physical life's domains before and after the training courses

| Quality of physical life's domains | Before | | After | | Statistical results |
|------------------------------------|--------|------|-------|------|------------------------|
| | Mean | SD | Mean | SD | |
| Satisfaction | 21.62 | 3.31 | 28.22 | 2.7 | t = 15.04 p < 0.001 |
| Importance | 26.46 | 4.8 | 30.80 | 2.74 | t = 9.91 p < 0.001 |

study concluded that at the beginning of their study the average score of quality of physical life was 21.8 ± 4.6 that is confirming the current findings in which the average score in satisfaction level was 21.62 ± 3.31 and in importance level was 26.46 ± 4.8 .

Hamilton et al⁹ in their research for examining the effect of age on the quality of ICD patients' life reach the conclusion that the average score of the quality of physical life in young individuals was about 21.2 ± 5.3 .

In another research, explaining how patients experience after receiving ICD, Kamphuis et al¹⁰ showed that some patients were hopeless about recovering properly and saw it hard to do physical exercises again.

As it is illustrated in table 1, after training programs the average score in satisfaction rank was 28.22 ± 2.7 and in importance rank was 30.80 ± 2.74 .

Studying on call training interventions Dougherty¹¹ mentions that, although all the participants had received the related training, there was more meaningful awareness in intervention group than in control group after call intervention.

According to the researcher the results of this study shows the importance of reinforcing

information to apply knowledge and receive feed back in a specific time.

The outcomes showed that statistically there is a mentionable difference in both satisfaction and importance rank of quality of physical life before and after training and that the average score was higher after the training than before.

Having examined the heart's revealing effect on patient's life's quality, Dugmore et al¹² concluded that there is a meaningful difference in total life's quality score in both control and test groups one year after the intervention ($p < 0.001$).

Another similar research's¹³ outcomes also stated that after training the patients and offering them some nursing advice about the disease and the treatment, their life's quality was much better than those not received the training.

The researcher believes that recovering from cardiac disease requires time, patience and strong resolution to change the environment and life style. The patient should understand that he is the most important help that he's got and he's the one who must do exercise, abandon smoke or have a healthy diet.

The researchers declare that have no conflict of interest in this study and they have surveyed under the research ethics.

References

1. Wood SL, Froelicher ES, Motzer SA, Bridges E. Cardiac Nursing. 5th ed. Philadelphia: Lippincott Williams & Wilkins; 2004.
2. Hahn SJ, Smith JM. ICD therapy for the prevention of sudden cardiac death in post-MI patients. *Current Treatment Options in Cardiovascular Medicine* 2003; 5(5): 369-76.
3. Hatchet R, Thompson DR. Cardiac nursing: a comprehensive guide. 2nd ed. Oxford: Churchill Livingstone; 2008.
4. Sears SF, Todaro JF, Urizar G, Lewis TS, Sirois B, Wallace R, et al. Assessing the psychosocial impact of the ICD: a national survey of implantable cardioverter defibrillator health care providers. *Pacing and Clinical Electrophysiology* 2000; 23(6): 939-45.
5. Nobahar M. Fundamental of Nursing. Tehran: Boshra Publication; 2007. [Persian].

6. Carroll DL, Hamilton GA, Kenney BJ. Changes in health status, psychological distress, and quality of life in implantable cardioverter defibrillator recipients between 6 months and 1 year after implantation. *European Journal of Cardiovascular Nursing* 2002; 1(3): 213-9.
7. Khalifeh Zadeh A. Effect of education and practice of healthy behavior on the return to work of the patients with MI. *Nursing and Midwifery Research* 2001; 18: 29-37. [Persian].
8. Madani Gh. Effect of nursing roles on the quality of nursing care in patients with post operation care referring to selected university hospitals in Isfahan. *Nursing and Midwifery Research* 2001; 17: 14-9. [Persian].
9. Hamilton GA, Carroll DL. The effect of age on quality of life in implantable cardioverter defibrillator recipients. *J Clin Nurs* 2004; 13(2): 194-200.
10. Kamphuis HCM, Verhoeven NWJM, Leeuw R, Derksen R, Hauer RNW, Winnubst JAM. ICD: a qualitative study of patient experience the first year after implantation. *J Clin Nurs* 2004; 13(8): 1008-16.
11. Dougherty C, Pyper G, Frasz H. Description of a nursing intervention program after an implantable cardioverter defibrillator. *The Journal of Acute & Critical Care* 2004; 33(3): 183-90.
12. Dugmore LD, Tipson RJ, Phillips MH, Flint EJ, Stentiford NH, Bone MF, et al. Changes in cardiovascular fitness, psychological wellbeing, quality of life and vocational status following a 12 month cardiac exercise rehabilitation program. *Heart* 1999; 81(4): 359-66.
13. Lofgren B, Nyberg L, Osterlind PO, Gustafson Y. In-patient rehabilitation after stroke: outcome and factors associated with improvement. *Disabil Rehabil* 1998; 20(2): 55-61.