Received: 1 Nov. 2008 **Accepted: 10 Jan. 2008**

Original Article

The effect of telephone follow-up on different domains of quality of life in patients with pacemaker at pacemaker implantation clinic in Chamran Hospital of Isfahan in 2007

Asghar Khalifezadeh, Fateme Aliakbari**, Khosrow Tavakol***, Akram Aarabi Naeini*****

Abstract

BACKGROUND: Acute cardiac diseases are a hazardous problem that threats the human life. Pacemaker is one of the curative and preventive maneuvers in treating the patients with arrhythmia. It can cause physical and psychological problems for patients, so following-up the treatment of these patients after discharge is crucial. Telephone follow-up can be used as an effective method for this reason. The purpose of this study was to assess the effect of telephone follow-up on different domains of quality of life in patients with pacemaker.

METHODS: This was a prospective quasi experimental study that covered 40 patients that were divided into two groups. The subjects were selected by convenience sampling. The data were collected through"SF-36" questionnaires and were analyzed with SPSS software.

RESULTS: Data analyses show that the mean score of the quality of physical life in case group was significantly higher than control group and the difference between two groups were significant ($p < 0.001$, $t = 20.23$).

CONCLUSION: The case group's health after the telephone follow-up was in a better condition than control group's. Therefore the application of this method for following-up the patient after discharge is beneficial to patient's health and quality of life.

KEY WORDS: Telephone follow-up, nurse, quality of life, patient with pacemaker.

IJNMR 2009; 14(1): 29-33

During past 30 years, great improvements have happened in preventing, diagnosing, treating and rehabilitation of heart diseases. In spite of decrease in deaths caused by cardiovascular disease, this disease is still a major threat.[1]

In 1910, only 10% of deaths in the world were caused by cardiovascular arrhythmia disease. But in 2000 this statistic reach to 50% and it's predicted that in 2020 mortalities prevent reach about 75% in the world.[2] About 50% of deaths is the result of heart failure and arrhythmia.[3] One of the methods for helping heart patients is to use electric pacemaker.[4]

Since any electrical interference which is used for treating arrhythmia and heart problems, is not without side effects, pacemakers are not an exception from this rule and infection of the pacemaker's place, leads effects and the patient's rely on an electrical device to continue living which cause mental problems are some of its side effects. Also this is possible some indisposition that related to leads and psychological problem to arise from patient reliance existence

* MSc, Department of Medical Surgical Nursing, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.
** MSc, in Midwifery, School of Nursing and Midwifery, Shahre Kord University of Medical Sciences, Shahre Kord, Iran.
*** MSc, Department of Health Nursing, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.
**** MSc, Department of Operating Room Nursing, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.
Correspondence to: Fateme Aliakbari MSc.
E-mail: khalifezadeh@nm.mui.ac.ir
Research Article of Isfahan University of Medical Sciences, No: 386352

that patients encounter to continue life possibilities.[5] These patients can't do their duty without transgressing problems. They usually, encounter weakness and inability that leads to dejection and decrease of self reliance and had negative effect on their quality of life.[6] Therefore it is necessary to help these patients to free from their anxiety and agitation and one of the useful actions in this field is to follow-up patient's condition after their discharge from hospital. It is important to teach patients and follow-up their functioning improvements after discharging from hospital and after releasing the patient most of the educating and following-ups are about self-care and learning the warning signs, medicines, risk factors and how to use the knowledge they have gained in practice.[7]

A study on electric cure user patients shows that most of the patients hadn't any information about the treatment method of their electric tools and they needed to be educated about their electric cure.[8] Telephone follow-up can be one of the cheapest and most available methods to use for following-up patient's health condition and giving them necessary education.[9]

The results of studies conducted on the effect of telephone follow-up by nurses in the cure of diabetes patients show that telephone follow-up by nurse is helpful in making the improvements last longer and strengthening the hygienic behaviors in diabetes.[10] According to this subject that mainly attention on patient carrier without attention to quality of life is forgetting their welfare and health, therefore more attention should pay to these patients' quality of life and conforming power. So, using telephone follow-up as an available method in this field is useful. Therefore, the aim of this research is to show the effect of telephone follow-up on different aspects of quality of life in patients with pacemaker.

Methods

This research was a quasi-experimental of before and after type, with two-group's and prospective plan. The samples are among patients who referred to pacemaker planting clinic in Chamran hospital of Isfahan and had the criteria for entering the research. The sampling method was easy sampling and continual method that led to selecting 40 samples randomly and then they were divided into two groups. This study's entrance criteria included age (between 18 and 80) and having telephone at home.

Those who had special speaking or listening problems or had other surgeries at the same time with pacemaker or didn't like to continue the research study were omitted. In order to collect information a 3-part questionnaire was used: the first part involved demographic information, the second part involved questions related to patient's medical specification and third part were sf-36 questionnaire that contains 36 questions and is used to measure physical, psychological, social and satisfactory quality of life. This questionnaire consists of 11 parts that parts one and two are related to patient's social health and have five scales from high to low. High shows the best health condition and is referred to with number 4 and the lowest condition is shown with number 0. The third part of the questions is related to patient's physical actions and according to Leikhert had 3 scales from high limitation to without limitation. The fourth part of the questions measure physical domain and has 5 scales from always to never and is scored from 0 to 4. The fifth part of the questions is based on Leikhert questionnaire that is related to patient's mental and psychological condition and scaled from always to never and scored from 0 to 4. The sixth part of the questions is based on Leikhert questionnaire and scaled from any to high and related to social domain. The seventh and eighth parts of the questions are based on the patient's physical pain and are scored from 0 to 5. The ninth and tenth parts of the questions evaluate feeling domain and scaled in five stages from 0 to 4. The eleventh part of the questions is based on Leikhert questionnaire and has 5 scales from completely correct to completely false and "don't know" is the neutral answer. These questions are related to patient's social health. At the end all of the scores that attained from all 36 questions were add up the gained score of the questionnaire as a whole reported from 0 to 100

and then each part's score were analyzed. Questionnaire's validity and reliability was assessed during different studies conducted inside and outside the country.[12,13] Information collecting took place in two parts. The quality of life of each patient in both study and control group, was analyzed one week after planting the pacemaker. After answering the questions, patients in study group received telephone follow-up for 4 weeks and patients in control group, just received routine follow-up. In telephone follow-up program there are different protocols, one of them is a protocol Kohn et al conducted on telephone follow-up for patients with pacemaker. They recommended that telephone follow-up should be two or three times a week and last 10-30 minutes.[14] Telephone follow-up in intervention group were conducted in three types of phone follow-up lasting 20 minutes during week. The time of phone follow-up was determined to be from 8 A.M. to 8 P.M. considering subjects' views and in each contact important self-care notes were taught to the patients and if patients had any questions they would be answered. Meanwhile another phone number was available for patients to contact the researcher when they encounter any problem or question, then these patients' questions were recorded and answered by counseling doctors. As the second stage, one week after ending the telephone follow-up the quality of life in both groups was evaluated again.

Necessary analyses were done in order to study the effect of independent variable (telephone follow-up) on dependent variable (the quality of life's score). The collected data were qualitative and quantitative. SPSS software, descriptive and inferential statistical methods were used to analyze qualitative data. In order to statically analyze the dependent variable in study and control group independent t test, and in order to compare the internal average score of quality of life in each group even t test were used. Also Kai2 and Fisher tests were used in both groups to study the similarity between variables such as age, gender, employment, period of suffering from heart disease, medication, educational level, and pacemaker type.

Results

The results of studying the similarity between theme variables showed that there's no significant statistical difference between study and control group. Analyses show that the highest frequency (46.3%) is related to age of more than 65 years old and the lowest frequency (13.5%) is related to 10-39 years. In study group 45% and in control group 75% were male. In study group 70% and in control group 80% were married. The average score of quality of physical life in study group before telephone follow-up was 48.41 ± 9.82 and in control group was 47.55 ± 13.34.

In order to compare the average score of quality of physical life between two groups before telephone follow-up, t test were used and the obtained results show that there were no significant statistical differences between two groups. After one month and executing the telephone follow-up in study group, the score of quality of life in both study and control group was 75.93 and 51.17 respectively and the independent t test ($t = 19.03$ and $p < 0.001$) showed a significant statistical difference between two groups. The average score of the quality of physical life in study group before telephone follow-up was 48.14 ± 9.82 and after telephone follow-up was 75.93 ± 13.24. The obtained results from t test show that there are significant differences between the score of quality of physical life after and before telephone follow-up. The average score of the quality of physical life before intervention was 36.66 and after intervention were 58.64. The average score of quality of social life before intervention was 33.75 and after intervention were 53.12. The average score of satisfaction of the quality of life before intervention was 26.75 and after intervention were 54.25. In order to compare the average score of different aspects of quality of life after and before telephone follow-up in study group, t test were used. Results show that there are significant differences between quality of life before and after telephone follow-up. Considering that in scoring the questionnaire lower scores show lower quality of life, the obtained results of the present study show that the aver-

age score of quality of life in satisfaction dimension has more improvements and in all dimensions the score of quality of life in subjects was increased after the intervention and even t test showed that this increase was statistically significant ($p < 0.001$).

Discussion

Research's results show that different aspects of the quality of life in study group were increased after telephone follow-up. The results of the study that Dougherty conducted on patients with ICD show that after one month of telephone follow-up the physical condition of the study group had significant improvement.[9] Sneed had a research in 2003 and studied the effect of nurses' interventions on the condition of ICD patients. In this study 34 patients were studied in two groups. Patients in the study group received two programs, group meetings and 8-week telephone follow-up. The control group received only routine care. After finishing, t test results showed significant decrease ($p < 0.05$) in anxiety and other mood factors of intervention and control groups.[15] Kohn (2001) believed that using telephone follow-up and educating the patients lead to decrease in patients' deaths and improve patients' ability to take care of themselves but it had no effect on patients' anxiety.[14] According to the research that Holst et al conducted (2006) which aimed to study the effects of telephone follow-up on patients' self-care behavior after and before intervention, there was no significant differences ($p >0.05$) and researcher said this probably happened because the phone contacts were few or the existing studies were insufficient [16]. Considering the results of different studies that mentioned above, telephone follow-up has positive effect on patients' quality of physical life. Also current study's results show that the increase in quality of physical life in the study group is statistically considerable. Considering the positive effect of telephone follow-up on different aspects of quality of life in patients with pacemaker, it is recommended to the responsible programmers in education and medicine science to use this method as an available one for educating patients' and also execute educational classes for nursing personnel and provide necessary means and conditions for these follow-ups to happen. It is also recommended that in pacemaker implantation clinics, they use this method to follow-up the patient's condition after patient's discharge, and try to answer patient's possible questions and prevent their illnesses and problems.

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

References

1. Thompson JM, McFarland GK, Hirsch JE, Tucker SM. Mosby's clinical nursing. 5th ed. London: Mosby; 2002. p. 3.
2. Ghalamghash R. Introduction to heart rehabilitation. [cited 2006 July 29]. Available from URL: *http://www.icra.ir*. [Persian].
3. Braunwald E, Zipes DP, Libby P. Heart disease: a text book of cardiovascular medicine. 6th ed. London: W.B. Saunders Company; 2001.
4. Boyle J, Rost MK. Present status of cardiac pacing: a nursing perspective. Critical Care Nursing Quarterly 2000; 23(1): 1-19.
5. Van Eck JWM, Van Hemel NM, Grobbee DE, Buskens E, Moons KGM. FOLLOWPACE study: a prospective study on the cost–effectiveness of routine follow-up visits in patients with a pacemaker. Europace 2006; 8(1): 60-4.
6. Dixon T, Lim LLY, Powell H, Fisher JD. Psychosocial experiences of cardiac patients in early recovery: a community-based study. Journal of Advanced Nursing 2000; 31(6): 1368-75.
7. Pashkow FJ, Dafoe WA. Clinical cardiac rehabilitation: a cardiologist's guide. 2nd ed. Philadelphia: Lippincott Williams & Wilkins; 1999. p. 436.
8. Shahriari M, Jalalvandi F, Yousefi HA, Tavkol Kh, Saneei H. The effect of a self-care program on the quality of life of patients with permanent pacemaker. Iranian Journal of Medical Education 2005; 1(5): 45-52. [Persian].
9. Dougherty CM, Pyper GP, Frasz HA. Description of a nursing intervention program after an implantable cardiovertor defibrillator. Heart & Lung: The Journal of Acute and Critical Care 2004; 33(3): 183-90.

10. Maljanian R, Grey N, Staff I, Conroy L. Intensive telephone follow–up to a hospital–based disease management model for patients with diabetes mellitus. Dis Manag 2005; 8(1): 15-25.
11. Hartford K. Telenursing and patients' recovery from bypass surgery. Journal of Advanced Nursing 2005;50(5):459-68.
12. Dehdari T. The effect of health education on quality of life with open heart surgery patients. [MSc Thesis]. Tehran: Tarbiat Modares University; 2002. [Persian].
13. Fanian H, Boozari Pour Booeini B, Shamandi Z. Comparison of quality of life in patients with femoral shaft fracture, undergone surgery and normal individuals in Al-Zahra and Kashani hospitals, Isfahan. Journal of Shahrekord University of Medical Sciences 2005; 7(2): 14-9. [Persian].
14. Kohn CS, Petrucci RJ, Baessler Ch, Soto DM, Movsowitz C. The effect of psychological intervention on patients' long-term adjustment to the ICD: a prospective study. Pacing and Clinical Electrophysiology 2000; 23(4): 450-6.
15. Sneed NV, Finch N, Michel Y. The effect of psychosocial nursing intervention on mood state of patient with implantable cardioverter defibrillators and their caregivers. Prog Cardiovasc Nurs 2003; 12: 4-14.
16. Holst M, Willenheimer R, Martensson J, Lindholm M, Stomberg A. Telephone follow-up of self-care behavior after a single session education of patients with heart failure in primary health care. European Journal of Cardiovascular Nursing 2007; 6(2): 153-9.