ASSESSMENT OF QUALITY OF LIFE POST CARDIAC DEVICE IMPLANTATION: AN AFIC EXPERIENCE

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ABSTRACT

Objective: To assess quality of life (QOL) after cardiac device implantation using WHO validated questionnaire.
Study Design: Descriptive cross sectional study.
Place and Duration of Study: Study was conducted at Electrophysiology department of AFIC/NIHD Rawalpindi from June 2021 to Sep 2021
Methodology: A total of 135 patients of both genders were evaluated regarding QOL. The evaluation included data related to physical, personal, psychological and social domains using WHO based quality of life questionnaire. Statistical analysis was conducted using SPSS-24. Mean and standard deviation was calculated for continuous variables while frequency and percentages for categorical variables.
Results: Out of 135 patients, 102 (75.6%) were men and 33 (24.4%) were women with the mean age of 67.09 ± 8.80 years. Eight-two (60.7%) of the patients rated their overall quality of life as good post implantation. In domains related to physical, psychological, social and environment majority of patients were neither satisfied nor dissatisfied. Questions related to health satisfaction and peer support showed more positive responses.
Conclusion: Overall QoL of patients was good after device implantation. Majority of the respondents were neutral about the queries related to physical, psychological, social domains. However, in terms of physical health most of the patients reported it to have been improved.

Keywords: Quality of life, Cardiac devices, WHO questionnaire.

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INTRODUCTION

The heart is a vital organ for ensuring proper nutrition of the human body's tissues. However, there are times when various irregularities in its operation demand proper medical treatment. If the disorder emerges as an insufficient number or quality of contractions, it may be necessary to implant a device that "drives" the heartbeat.[1] The number of pacemaker implantation procedures is increasing significantly as the population's life expectancy tends to increase.[2] Implantable Cardiac Device (ICD) therapy has become a common treatment option for patients at risk of sudden cardiac death. Apart from its impact on survival, the impact of ICD implantation on patients' health-related quality of life (QoL) has gained importance.

The ICD may lessen patients' health concerns and let them resume an independent and vital lifestyle. However; living with an implanted device may lead to a feeling of dependence, psychological pain, or worry.[3-5] Thus, health-related QoL assessment refers to the patient's subjective viewpoint on his health, which can conflict with physiological evaluations, interpretations of his well-being, and physical functioning, but it can also broaden the clinical parameters.[6] The primary goal of pacemaker implantation is to improve the patient's quality of life and eliminate symptoms caused by heart automatism dysfunction.[7]

The patients' personal assessment of their circumstances, as well as how they interact with their family, job, and social environments, is critical. Permanent pacemaker installation is a challenging scenario for the patient and their family due to a variety of factors such as early and late difficulties following surgery, monthly checks, and most importantly, the fact that this is a lifelong treatment. It also affects the patient's social environment, as well as his or her physical, mental, and functional health. In recent years, the list of indications for permanent pacemaker implantation has grown, resulting in higher implantation rates. The assessment of quality of life is especially important in cardiac pacing because the goal of therapy for most chronic disease patients is to improve function rather than cure.[8,9]

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METHODOLOGY

This descriptive cross-sectional study was carried out in the electrophysiology department of Armed Forces Institute of Cardiology/National Institute of Heart Diseases, Rawalpindi Pakistan, from June to 2021. The study was carried out after getting formal approval from Institutional Ethical Review Board (IERB) of AFIC/NIHD Rawalpindi. A non-probability sampling technique was used and a total of respondents participated in the study.

Inclusion Criteria: Patients of both genders and with all kind of cardiac devices were included in the study.

Exclusion Criteria: Very seriously ill patients those not willing to participate were excluded from the study.

Data was collected through a WHO QOL validated questionnaire which is divided into three sections. An informed consent was taken from the respondents prior to data collection. Data was managed in SPSS version 24. Mean and standard deviation will be calculated for continuous variables while frequency and percentages for categorical variables.

RESULTS

The baseline clinical characteristics of 135 patients who underwent cardiac device implantation are given in Table-I. Out of 102 were males while 33 were females. Mean age of the study group was 67.09 ± 8.80 years, 14% of the individuals were university graduates. In which,128 (94.8%) were married and 108 (80%) patients thought they were not ill.

Table-I: Socio-demographic characteristics.

Variables	n (%)
Age (Mean ± SD)	67.09 ± 8.80
Gender	
Male	102 (75.6)
Female	33 (24.4)
Education	
Primary	52 (38.5)
Secondary	40 (29.6)
University	19 (14.1)
No Education	24 (17.8)
Marital Status	
Single	2 (1.5)
Married	128 (94.8)
Divorced/Separated	2 (1.5)
Widowed	3 (2.2)
Currently ill	
Yes	27 (20)
No	108 (80)

Responses to various questions based on WHOQOL-BREF questionnaire are given in Table-II. Post implantation 82 (60.7%) of the patients rated their overall quality of life as good. Majority of the respondents were "neither satisfied nor dissatisfied" in most of the questions based on all the domains including physical, psychological, social and environmental domains were asked. Positive responses were observed when they were asked about health satisfaction and peer support.

DISCUSSION

Health-related quality of life (HRQoL) is an important aspect that is an indirect measure of the patient's well-being and functioning in daily life post Cardiovascular Implantable Electronic Device (CIED) Implantation and can be deemed as a valuable parameter in the identification of the therapeutic impact on patient's clinical status.[9] There are two ways by which Quality of life can be assessed: subjectively and objectively. Subjectively following points are usually discussed: what do they think about their situation, are they able to adjust themselves in the family circle as well as socially.[10] HRQL assessment is generally considered as an approved parameter to assess life quality in patient implanted with cardiac devices. There are many questionnaires available to measure HRQL objectively including the Short Form-36 Health Survey (SF-36), Karolinska Quality of Life questionnaire, Assessment of Quality of Life and Related Events (Aquarel) and the MacNew Heart Disease Health-related Quality of Life Questionnaire and all of these have shown to be reliable and reproducible.[11]

Although WHO Quality of Life Scale-Brief (WHOQOL-Brief) questionnaire has been around in practice but is not commonly used in CIED implants. We therefore applied this questionnaire in our study population which takes into account four domains to assess person's wellbeing. These include questions on physical health, psychological domain, evaluation on social relationships and finally environmental influence.[12] overall general quality of life was reported to be good by 61% of the respondents. Few patients (10%) felt that it had become poor. Similar results were seen in other studies,[13,14] which also demonstrated improvement in quality of life but using different types of questionnaires. Similarly, majority (58%) of the patients were satisfied with their overall health status. This improvement can be explained by the elimination of the symptoms and ultimately restoring quality of life.

In terms of physical health most patients reported that they were enjoying their life post implantation and were more able to concentrate on their daily activities. However, they felt that pain at procedural site was a limiting factor and as a result they might need medical assistance more often than usual. Although we did not

Table-II: Questions related to quality of life.

Variables	n (%)
Assessment of Feelings	
Do you get the kind of support from others that you need?	
Not at all	4 (3)
Not much	43 (31.9)
Moderately	30 (22.2)
A great deal	58 (43)
How would you rate your quality of life?	
Very poor	1 (0.7)
Poor	9 (6.7)
Neither poor nor good	31 (23)
Good	82 (60.7)
Very good	12 (8.9)
How satisfied are you with your health?	
Very dissatisfied	13 (9.6)
Dissatisfied	9 (6.7)
Neither satisfied nor dissatisfied	31 (23)
Satisfied	78 (57.8)
Very satisfied	13 (9.6)
Experiencing Things	
To what extent do you feel that physical pain prevents you from doing what you need to do?	
Not at all	2 (1.5)
A little	37 (27.4)
A moderate amount	58 (43)
Very much	38 (28.1)
How much do you need any medical treatment to function in your daily life?	
A little	38 (28.1)
A moderate amount	62 (45.9)
Very much	35 (25.9)
How much do you enjoy life?	
Not at all	1 (0.7)
A little	26 (19.3)
A moderate amount	67 (49.6)
Very much	40 (29.6)
An extreme amount	1 (0.7)
To what extent do you feel your life to be meaningful?	
Not at all	5 (3.7)
A little	23 (17)
A moderate amount	76 (56.3)
Very much	22 (16.3)
An extreme amount	9 (6.7)
How well are you able to concentrate?	
Not at all	5 (3.7)
A little	26 (19.3)
A moderate amount	74 (54.8)
Very much	21 (15.6)
An extreme amount	9 (6.7)
How safe do you feel in your daily life?	
Not at all	1 (0.7)
A little	25 (18.5)
A moderate amount	60 (44.4)
Very much	37 (27.4)
An extreme amount	12 (8.9)
How healthy is your physical environment?	
Not at all	4 (3)
A little	9 (6.7)
A moderate amount	66 (48.9)
Very much	44 (32.6)
Extremely	12 (8.9)
Ability To Do Things	
Do you have enough energy for everyday life?	
A little	49 (36.3)
Moderately	48 (35.6)
Mostly	29 (21.5)
Completely	9 (6.7)
Are you able to accept your bodily appearance?	
Not at all	1 (0.7)
A little	43 (31.9)
Moderately	53 (39.3)
Mostly	38 (28.1)
Have you enough money to meet your needs?	
Not at all	12 (8.9)
A little	8 (5.9)
Moderately	62 (45.9)
Mostly	53 (39.3)
How available to you is the information that you need in your day-to-day life	
Not at all	1 (0.7)
Moderately	92 (68.1)
Mostly	42 (31.1)
To what extent do you have the opportunity for leisure activities?	
A little	14 (10.4)
Moderately	76 (56.3)
Mostly	45 (33.3)
How well are you able to get around?	
A little	3 (2.2)
Moderately	87 (64.4)
Mostly	43 (31.9)
Completely	2 (1.5)
Satisfaction Regarding Various Aspects of life	
How satisfied are you with your sleep?	
Very dissatisfied	2 (1.5)
Dissatisfied	17 (12.6)
Neither satisfied nor dissatisfied	72 (53.3)
Satisfied	44 (32)
How satisfied are you with your ability to perform your daily living activities?	
Very dissatisfied	1 (0.7)
Dissatisfied	30 (22.2)
Neither satisfied nor dissatisfied	58 (43)
Satisfied	44 (3.6)
Very satisfied	2 (1.5)
How satisfied are you with your capacity for work?	
Very dissatisfied	1 (0.7)
Dissatisfied	22 (16.3)
Neither satisfied nor dissatisfied	75 (55.6)
Satisfied	36 (26.7)
How satisfied are you with yourself?	
Dissatisfied	14 (10.4)
Neither satisfied nor dissatisfied	89 (65.9)
Satisfied	31 (23)
How satisfied are you with your personal relationships?	
Dissatisfied	34 (25.2)
Neither satisfied nor dissatisfied	84 (62.2)
Satisfied	16 (11.9)
Very satisfied	1 (0.7)
How satisfied are you with the support you get from your friends?	
Dissatisfied	22 (16.3)
Neither satisfied nor dissatisfied	93 (68.9)
Satisfied	20 (14.8)
How satisfied are you with the conditions of your living place?	
Dissatisfied	2 (1.5)
Neither satisfied nor dissatisfied	100 (74.1)
Satisfied	10 (7.4)
Very satisfied	23 (17)
How satisfied are you with your access to health services?	
Neither satisfied nor dissatisfied	71 (52.6)
Satisfied	36 (52.6)
Very satisfied	26 (19.3)
How often do you have negative feelings such as blue mood, despair, anxiety, depression	
Never	12 (8.9)
Seldom	28 (20.7)
Quite often	66 (48.9)
Very often	29 (21.5)

look at the complications post devices implantation and there can be multiple causes of pain we could not conclude about the predominance of such finding in our study.

Taking into account psychological domain most respondents answered "neither satisfied nor dissatisfied" in most of the queries suggesting that they were able to accept the procedure and were trying to live their life as usual. However, 48% patients still suffered from negative feelings of anxiety, blue mood. This suggests that although patient did have some concerns of their change in appearance and environmental changes but they had not a significant effect on the patients.

When considering social relationships and family support our study population showed a neutral response in almost all areas including personal relationships, friends support. Study by Chen *et al*[15] depicted that those patients who were cared by their spouses had remarkable improvement in the quality of life. This highlights the fact that close personal relationships may have a significant improvement in life quality. L-VAD related complication may also affect QoL as demonstrated by various literatures[16,17] and these findings are in line to our study's findings. Psychological distress is one of the complications and remains higher after implantation. While another evidence from literature demonstrated quite dissimilar result by stating that psychological stress remains constant and in low intensity.[18,19]. Patients were being presented with significant self-care disability and more dissatisfaction with socioeconomic areas of life from before to immediately after surgery.

CONCLUSION

Overall QoL of patients was good after device implantation. Majority of the respondents were neutral about the queries related to physical, psychological, social domains. However in terms of physical health most of the patients reported it to have been improved.

Conflict of Interest: None.

Author's Contribution

SP: Principal author, MA: Mauscirpt writing, SS: Data collection, AK: Manuscript writing, AH: Intellectual contribtiion, AK: Data collection.

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