Effectiveness of Nurse-Led Heart Failure Management Program on Quality of Life of Heart Failure Patients in Cardiology OPD, at KGMU, U.P

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ABSTRACT

Background: Heart failure (HF) is characterized by poor quality of life (QOL) with high hospitalization rates, and poor prognosis. Younger age groups are more affected in developing countries like India. HF can be very disabling, and QOL of patient's can be severely affected **Objectives:** 1. To assess the Quality of Life of Heart Failure patients in Experimental and Control Group. 2. To Compare the effectiveness of Nurse-Led Heart Failure Management Program on Quality of life of heart failure patients in Experimental and Control Group. **Method:** The study was conducted for 3 months from 1 Dec to 1 March 2019, in cardiology OPD, at KGMU, U.P, based on simple random sampling the groups were divided into control group and experimental group in which the control group received no intervention and Interventions of Nurse led Heart failure management program was given in experimental group with a Log book which they have to fill once a week for 3 months. Post - test questionnaire for Quality of life and log book data will be collected from both the groups after 3 months. **Results:** The result showed significant difference between Quality of life (P <0.002 *) as measured by KCCQ, mean Quality of life was found to be significantly higher among the subjects of Experimental group (60.50±12.10) than control group (46.73±16.23) at post intervention. Conclusion: Simple systemic educational intervention that was targeted towards patient to provide a tailored educational intervention through an holistic Perspective, focused on preserving or enhancing health and Self management goal achievement has improve quality of life of heart failure patients those who received NLP i.e, Experimental group, Their Quality Scores were High as Compared to Control group. **Conclusion:** The study concluded that, structured information brochure is an effective way to improve the knowledge and reduce the anxiety among the patient planned for angioplasty. The study recommended that structured information brochure about the post procedural care about the angioplasty should be implemented to improve the knowledge and reduce the anxiety among the patient for providing a better care.

KEYWORDS: Quality of life, KCCQ, Nurse-Led Heart Failure Management Program

1. INTRODUCTION

Heart failure is growing in incidence as a result of the aging of the population and of improved survival from myocardial infarction. However, quality of life is poor among patients with heart failure, and has shown to be worse than in most chronic conditions.[1] The heart, is a complex structure composed of fibrous tissue, cardiac muscle, and electrical conducting tissue, has a single function to pump blood.

When the heart is stressed, several reserve mechanism can be called upon to maintain good pumping function that is, to provide a cardiac output sufficient to meet the demands of the body. These mechanism are increased heart rate, dilatation, hypertrophy, and increased stroke volume. When the normal cardiac reserves for responding to stress are inadequate to meet the metabolic demands of the body, the heart fails to do its job of pumping the blood, and results in heart failure. Also, as stated earlier, dysfunction of any of the components of the pump may ultimately result in failure of heart.

The condition can have devastating effects on patients' **Quality of life**, especially in a patient group that often has inadequate access to help and advice. This is mainly due to overstretched services in primary and secondary care. Patients are often on suboptimal treatments and are not receiving the best management, thus creating a huge potential for care to be improved. Often there is a lack of patient education and support. This can have a knock-on effect in terms of non-adherence both with pharmacological and non-pharmacological treatments. In addition, it has been shown New York Heart Association (NYHA) Class of Patients with Description of Heart Failure Related Symptoms, **Class I (Mild**) Patients with cardiac disease but without resulting in limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation (rapid or pounding heart beat), dyspnea (shortness of breath), or anginal pain (chest pain). **Class II (Mild)** Patients with cardiac disease resulting in slight limitation of physical activity. They are comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea, or anginal pain. **Class III (Moderate**) Patients with cardiac disease resulting in marked limitation of physical activity. They are comfortable at rest. Less than ordinary activity causes fatigue, palpitation, dyspnea, or anginal pain. **Class IV (Severe)** Patients with cardiac disease resulting in the inability to carry on any physical activity without discomfort. Symptoms of heart failure or the anginal syndrome may be present even at rest. If any physical activity is undertaken, discomfort is increased.

2. Statement of the Problem
A study to assess the Effectiveness of Nurse- Led Heart Failure Management Program on Quality of Life of Heart Failure patients in cardiology OPD, at KGMU**, Lucknow, U.P**

3. Objectives of the Study
1. To assess the Quality of Life of Heart Failure patients in Experimental and Control Group

2. To Compare the effectiveness of Nurse-Led Heart Failure Management Program on Quality of life of heart failure patients in Experimental and Control Group.

Hypothesis
H_0: There will be no Significant difference in Quality of life among heart failure patients who will receive Nurse – led heart failure management program as compared to control group

H_1: There will be Significant difference in Quality of life of heart failure patients who will receive Nurse – led heart failure management in Experimental and Control group

4. Methodology
Research approach: Quantitative research approach was selected for the study

Research design: Randomized Control Trail was selected for the study

Setting of the study: Study was conducted Cardiology OPD, KGMU tertiary care hospital in Lucknow.

Research variables:
➤ Independent variables: Nurse - Led heart failure management program..
➤ Dependent Variables: Quality of life

Demographic variables: age, sex, education, occupation, Marital status, Smoking history income, Socioeconomic condition, Area of living

Target population: People clinically diagnosed with heart failure of NYHA classification 1 and 2 within 3 months i.e newly diagnosed patients and completes the inclusion criteria in cardiology OPD at KGMU

Accessible population: In this study assessable population is all the patients diagnosed with Heart failure and have ejection fraction less than 40 % irrespective of NYHA classification.

Sample size: It consisted of total 40 patients. Samples were selected from Cardiology OPD at Lari cardiology Center at King George's Medical University

Sampling Technique
In this study a purposive sampling was used. Purposive sampling is a type of non-probability sampling method in which the researcher used his or her own judgment in the selection of sample members. It is sometimes called a judgmental sample Available patients were entered into the study on the day of data collection. 90 patients were selected by non-probability purposive sampling technique from cath wards of Lari cardiology Center at King George's Medical University.

Criteria for Samples Selection:

A. Inclusion criteria

➢ Patients with NYHA classification (I and II) newly diagnosed within 3 months

➢ Patients who are willing to participate in the nurse led cardiac management program

➢ Patients who are stable for at least 2 months

➢ Patients with ejection fraction of less than 40 %..

B. Exclusion Criteria

➢ Patients who are already enrolled in other programs for treatment

➢ Patients with comorbidities and other chronic illness. example Cronic renal failure, patient on dialysis.

Part I: Demographic and clinical profile The demographic and clinical profile was self structured tool. it contains 12 items in demographic profile and 6 items in clinical profile with their most suitable responses. it is structured tool in which the most appropriate response have to be ticked as per the patient responses

Part II: Assessment of Quality Of Life by Kansas City Cardiomyopathy Questionnaire (KCCQ)

A Standardized KCCQ Kansas City Cardiomyopathy Questionnaire with score ranging on a scale of 0-100 where- Extremely limited -0, Quite a bit limited – 25, Moderately limited – 50, Slightly limited -75, Not at all limited -100

Self- administered questionnaire designed to quantify various domains, i.e, Physical limitations, symptoms (stability, frequency and burden), social limitations, self efficacy, and overall QOL among heart failure patients which shows lower score indicating better health status and will enable the patient to categorize themselves in three zones of heart failure which is to be followed by Hriday card

Part III: Heart failure monitoring log – book designed to monitor their health status at home

The tool is divided into 2 **subgroup category**
Group– a - minor criteria
Group– b - major criteria (area of concern)

Group–a minor criteria consists of 3 vital parameters related to heart failure patients. Each parameter have 4 components each with scoring of 1.

[About weight, about swelling status over the body, about energy status of the body]

Scoring of - ZONE –A

GREEN – (3-4)

YELLOW – (5-7)

RED - (8-12)

Group – b - major criteria (area of concern) consists of 2 vital parameters related to heart failure patients

[About breathing status, sleeping pattern]

Scoring of - ZONE – B

GREEN - (2-3)

YELLOW - (4-5)

RED – (6-8)

Reliability

The results are presented in frequencies, percentages and mean±SD. The Chi-square test was used to compare the categorical variables between the groups. The Unpaired t-test/Mann-Whitney U test was used to compare continuous variables between the groups. The percent mean change was calculated as (pre-post)/pre*100 from pre to post intervention. The p-value<0.05 was considered significant. All the analysis was carried out on SPSS 16.0 version (Chicago, Inc., USA).

Data collection procedure

➢ The data was collected from 15st November 2018 to 15rd February 2019. The sample was collected from Cardiology OPD all day of the week by Simple Random sampling technique.

➢ Self introduction and purpose of the study was explained to the subject, willingness to participate in the study was ascertained & informed consent was taken. Confidentiality was maintained to all subjects, Demographic data was collected with self structured socio demographic tool.

➢ Based on inclusive criteria the samples were selected and allotted to experimental group and control group. The procedure for data collection was similar to that of the pilot study. Using simple random sampling technique

➢ Post test data were collected from both groups after 3 months The investigator

➢ Data collected was analysed by using both descriptive and inferential statistics.

Plan for data analysis

Statistical analysis is the organization and analysis of quantities data using statistical procedures including both descriptive and inferential statistics.

Ethical consideration

Ethical approval obtained from the institutional ethic committee and permission was taken from the departmental HOD's. Informed consent was taken from the subjects. Confidentiality and anonymity of information was maintained.

5. Result
Section A: Distribution of the demographic characteristics among study and control group.

Table 1: Frequency and percentage distribution of demographic variables of patients planned for angioplasty,

n=90

Variable	Study group n_1=45		Control group n_2=45	
	f	*%*	*f*	*%*
Age (in years)				
21-30	1	4.3	1	4.3
30- 40	2	8.7	1	4.3
40-50	7	30.4	4	17.4
>50	13	56.5	17	73.9
Gender				
Male	17	73.9	19	82.6
Female	6	26.1	4	17.4
Education				
No formal education	8	34.8	6	26.1
Primary	3	13.0	4	17.4
High school	2	8.7	5	21.7
Secondary	7	30.4	5	21.7
Graduate	3	13.0	3	13.0
Occupation				
Self employed	5	21.7	8	34.8
Government job	3	13	6	26.1
Private job	3	13	0	00
Agriculture	3	17.4	3	13.0
Unemployed	4	34.8	6	26.1
Monthly income in Rs.				
<7,000	2	8.7	2	8.7
7,001-14,000	1	4.3	3	13.0
14,001-21,000	4	17.4	5	21.7
>21,000	16	69.6	13	56.5
Residence				
Rural	6	26.1	7	30
Urban	17	73.9	16	69.6
Marital status				
Married	14	60.9	10	43.5
Unmarried	9	39.1	13	56.5
Diet pattern				
Non-vegetarian	18	78.3	13	56.5
Vegetarian	5	21.7	10	43.5
Frequency of visiting hospital				
Once in a month	0	0.0	2	8.7
Once in 3 months	6	26.1	5	21.7
Once in 6 months	14	60.9	14	60.9
Once in a year	3	13.0	2	8.7
Previous knowledge regarding Heart Failure				
TV programs/radio	11	47.8	13	56.5
Book, newspaper, magazine	1	4.3	0	0.0
Healthcare worker	0	0.0	2	13.0
Public health program	11	47.8	8	30.4

Addiction				
Smoking	8	34.8	11	47.8
Tobacco chewing	3	13.0	5	21.7
Alcohol	8	34.8	5	21.7
None	4	17.4	2	8.7
Clinical profile				
Hypertension	15	65.2	15	65.2
Diabetic (Insulin dependent	7	30.4	3	13.0
Diabetic (oral hypoglycemic)	8	34.8	12	52.2
Obesity	11	47.8	6	26.1
Valvular disease	4	17.4	6	26.1
Myocardial Infraction	17	73.9	17	73.9
Cardiomyopathy	12	52.2	11	47.8

Section B- Comparison of quality of life parameters between experimental and control groups at pre intervention

Table 2: Comparison of quality of life parameters between experimental and control groups at pre intervention

n=90

Quality of life parameters	Experimental group (n=23)	Control group (n=23)	p-value[1]
Physical Limitation	40.39±10.00	46.73±8.32	0.06
Symptom Stability	79.09±25.73	82.35±21.89	0.64
Symptom Frequency	54.16±18.08	55.61±15.50	0.77
Symptom Burden	84.89±19.29	87.06±21.00	0.71
Total Symptom Score	69.53±18.13	71.34±17.62	0.73
Self-Efficacy	44.56±9.09	44.56±11.81	1.00
Social Limitation	55.16±11.09	52.44±11.42	0.41
Overall Summary Score	52.86±12.31	52.50±9.88	0.91
Clinical Summary Score	54.96±13.74	59.04±12.30	0.29
Quality of life	46.37±15.03	39.49±13.34	0.10

Table no. 2 shows the comparison of quality of life parameters between experimental and control groups at pre intervention. There was no significant (p>0.05) difference in the quality of life parameters between the groups at pre intervention.

Table 3: Comparison of quality of life parameters between experimental and control groups at post intervention

Quality of life parameters	Experimental group (n=23)	Control group (n=23)	p-value[1]
Physical Limitation	46.19±7.31	45.65±9.01	0.82
Symptom Stability	89.96±32.63	85.61±22.39	0.60
Symptom Frequency	64.94±22.41	54.89±14.26	0.07
Symptom Burden	99.02±18.78	84.89±20.09	0.01*
Total Symptom Score	81.98±20.11	69.89±16.66	0.03*
Self-Efficacy	72.82±14.42	52.17±14.42	0.0001*
Social Limitation	64.13±10.01	54.61±10.52	0.003*
Overall Summary Score	63.20±11.56	54.22±11.41	0.01*
Clinical Summary Score	64.09±13.38	57.77±11.98	0.09
Quality of life	**60.50±12.10**	**46.73±16.23**	**0.002***

Table no. 3 shows the comparison of quality of life parameters between experimental and control groups at post intervention. Symptom Burden was found to be significantly (p=0.01) higher among the subjects of Experimental group (99.02±18.78) than Control group (84.89±20.09) at post intervention. Total Symptom Score was also found to be significantly (p=0.03) higher among the subjects of Experimental group (81.98±20.11) than Control group (52.17±14.42) at post intervention. Other parameters such as Self-Efficacy, Social Limitation, Overall Summary Score and Quality of life were also significantly (p<0.05) higher among the subjects of Experimental group than Control group at post intervention.

Nursing Implications

This study demonstrates that a simple systematic educational intervention that was targeted toward patients to provide a tailored educational intervention through an holistic perspective, focused on preserving or enhancing health and patient's self-management goal achievement can improve Quality of life of heart failure patients. The Instructional components of the Nurse – led heart failure management program not only improve Quality of life of heart failure patients but also has the potential to reduce the risk of adverse effects from unnecessary medications or treatments. Following the Instructional components of the Nurse – led heart failure management program could Easily help the patient to remain there in Green Zone if instructions are followed continously and reduce readmission rates, It can be achieved if more studies will get conducted related to this program. Furthermore, as shown in this study that Instructional components of the Nurse – led heart failure management program can improve Quality of Life of Heart failure Patients.

Nursing Education

The investigator had drawn the following implication for nursing education.

➢ The results of the present study can be used in the class rooms for teaching the nursing students about appropriate of Instructional components of the **Nurse – led heart failure management program**

➢ **Nurse – led heart failure management program** could be applied in the clinical practice for the benefit of the patients too.

➢ Provide adequate clinical exposure for the students to give effective health teaching

➢ Continuing nursing educational programs may be organized for the faculty and practicing nurses to acquire skills in **Nurse – led heart failure management program**

➢ The nurse should be aware and know about the guidelines of **Nurse – led heart failure management program** according to American Heart Association guidelines.

➢ Make use of available literatures and studies related to **Nurse – led heart failure management program** and, educate the students about various positive outcomes.

➢ Encourage the students for effective utilization of research based practices.

➢ The syllabus of medical and surgical nursing should enable nursing students to be skilled in such types of programs

➢ Nurse educator should provide adequate training and opportunity to the nursing students regarding such types of programs

Nursing Administration

➢ Nurse Administrators can make policies that will include all nursing staff to be actively involved in continuing nursing education in their respective hospital and colleges. Nurse administrators can organize education programmed regarding Instructional components of the **Nurse – led heart failure management program**

➢ Collaborative with governing bodies to formulate standard policies and protocols to emphasize on Nurse – led heart failure management program

➢ Ensure and conduct workshops, conferences, seminars on Nurse – led heart failure management program to improve better outcomes.

➢ The administration should take the initiate to organize in-service education programme and continuing education programme for nursing personnel skills in Nurse – led heart failure management program. Also, the provision should be made for money in the budget for various activities like in-service education, advance training and conducting research in this field. In summary the Nurse – led heart failure management can improve quality of life of heart failure patients and also benefit staff while at the same time reducing hospital care costs.

Nursing Research

➢ As a nurse researcher, promote more research on Nurse – led heart failure management program

➢ Disseminate the findings of the research through conferences, seminars and publishing in nursing journals.

➢ Promote effective utilization of research findings on Nurse – led heart failure management program

➢ It is also provide a knowledge research base for nurses or other health care professionals for future research development or for replicating a similar study in a different setting.

➢ There is a need for extensive and intensive research in this area so that strategies for educating nurse regarding various nursing care aspects of patient with Heart Failure. As a nurse researcher nurse should encourage further studies to improve the health care practices, suitable intervention packages need to be developed and their feasibility of implementation and effectiveness require in depth studies. As a nurse researcher, nurse should disseminate the findings

through workshops, seminar, symposium, small scale programs and worldwide web.

Nursing practice

➢ Nurses can provide this systematic educational intervention through an holistic perspective, focused on preserving or enhancing health and patient's self-management goal achievement Nurses can conduct continuing nursing education on Instructional components of the **Nurse – led heart failure management program.** The present study allows for evidence based practice.

➢ In view of important in communication and collaboration between nurses, physician and physical therapist to prevent complication of heart failure Nurse – led heart failure management program should be promoted

➢ The strong motivation, great support and assistance is very much needed for the patient with heart failure

➢ The study findings clearly demonstrate better quality of life in patient who received Nurse – led heart failure management program

6. Conclusion

The study concluded that, structured information brochure is an effective way to improve the knowledge and reduce the anxiety among the patient planned for angioplasty. The study recommended that structured information brochure about the post procedural care about the angioplasty should be implemented to improve the knowledge and reduce the anxiety among the patient for providing a better care.

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