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A QUASI EXPERIMENTAL STUDY ON EFFECT OF TELE FOLLOW UP (TFU) ON ADHERENCE TO DISCHARGE INSTRUCTIONS IN PATIENTS AFTER CABG FROM SELECTED HOSPITAL OF A METROPOLITAN CITY

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Abstract:

Background: Tele Follow Up can help the patients and their families actively participate in care of patient and adhere to treatment plan with greater knowledge and confidence after CABG surgery to reduce the risks of complications at home and improve quality of life of patients. **Objective:** To compare adherence to discharge instructions and post discharge care satisfaction level in patients after CABG with and without tele follow-up and elicit opinion about TFU. **Methods:** A quasi experimental two group post-test only design was used in the study, with 60 post CABG patients recruited as per selection criteria. On day of discharge, TFU plan was explained to experimental group (30) and standard care given to control group (30) patients. TFU sessions were video calls of 10-15 minutes duration with assessment of four domains, followed by need based reinforcement of patient education on medication, diet, exercises and wound care. Adherence was assessed (Discharge Instructions Adherence Scale) in both groups on Day 6 and Day 12, followed by TFU in experimental group. On 15th day, during OPD visit, post discharge care satisfaction was assessed in both groups and tele follow-up feedback taken from experimental group. **Results:** The level of adherence to discharge instructions in experimental group on day 6 was 53.57 ± 8.31 and on day 12, 57.53 ± 5.52 and control group on day 6 was 47.90 ± 9.26 and on day 12, 49.20 ± 8.28. The difference in mean scores of adherence to discharge instructions, between experimental and control groups, was statistically significant with p value (unpaired t test) < 0.0001. It concludes TFU did improve adherence to discharge instructions. Patients were satisfied with TFU and agreed that it saved time, energy and money and it was helpful in dealing with their health issues. **Conclusion:** Tele follow-up is a convenient and cost effective way of providing follow up care for patients after CABG, which can improve patients' adherence to discharge instructions leading to fewer complications and better long-term patient outcomes and satisfaction.

Index Terms: Coronary Artery Bypass Graft, Tele Follow Up, Adherence, Discharge Instructions, Patient Satisfaction

I. INTRODUCTION

Coronary Artery Bypass Graft is a major surgery and is associated with risk of complications that require professional and long term follow-up and nursing care, that if not properly handled, could increase post-operative complications and reduce the quality of life. Postoperative complications of CABG surgery can result in significant morbidity and mortality. The complications after CABG include, decreased cardiac output, bleeding, cardiac tamponade, fluid over load, hypothermia, dysrhythmias, cardiac failure, stroke, infection, graft occlusion, myocardial ischemia and death.[1] There are many factors that prevent patients from adherence to therapeutic regimen which include, patient related factors, therapy-related factors, socioeconomic related factors and health care system related factors. The nurse has a critical role in teaching patients and caregivers about diet, exercise, medications and follows up medical care.[2] Patients with cardiac surgeries following hospital discharge experienced various problems like incision pain, anxiety, sleep disorders, lack of appetite, edema, angina, depression and tachycardia, etc. For preventing the risk of complications and preserving hearts function after surgery, patients receive various medications with side effects and special care instructions. After being discharged from the hospital, the patients and their families develop fears and concerns, and have many questions. In fact, patients and their families are responsible for their own care at home after hospital discharge.[3,5] In our country, patients are discharged and go back home with only general post-operative care instructions which are not necessarily suited to their individual medical status or care needs. Consequently, patients try to solve health problems alone or with the help of family members after they leave the hospital. A program which includes planned discharge education and rehabilitation services with supportive staff members, Tele Follow Up weekly or monthly to assess the adherence to discharge plan can help patients above any problems which might arise. Many problems at home are due to lack of knowledge and skills in the fields of health care, nutrition, medication use, and follow-up of treatment plans. Lack of training and counseling for the patients and lack of access to the required education and health care centers increase their problems.[4]

Tele Follow Up can help the patients and their families actively participate in care of patient and adhere to treatment plan with greater knowledge and confidence after CABG surgery to reduce the risks of complications at home and improve quality of life of patients.

PROBLEM STATEMENT

"A Quasi experimental study on effect of Tele Follow Up (TFU) on Adherence to Discharge Instructions in Patients after CABG from a selected hospital of a metropolitan city"

AIM

To Compare Adherence to Discharge Instructions in Patients after Coronary Artery Bypass Grafting with and without Tele Follow Up (TFU)

OBJECTIVES OF THE STUDY

- To Compare Post Discharge Care Satisfaction level with and without Tele Follow Up (TFU)
- To elicit opinion about Tele Follow Up (TFU) from patients in study group

II. MATERIAL AND METHODS

Research Approach: The quantitative research approach is used to establish causal relationship between Tele Follow Up and adherence level to discharge instructions in patients after CABG.

Research Design: A quasi experimental two group post-test only design was adopted.

Research settings: The setting is selected as cardiac wards, OPD of a multi-specialty tertiary care hospital based on feasibility, permission and avaibility of sample based on inclusion and exclusion criteria.

Research Variables: Here in this study, research variable was the effect of Tele Follow Up on adherence to discharge instructions is observed.

Population: Targeted population post-operative CABG patients are admitted in selected hospital. The accessible population was post-operative CABG patients undergoing discharge from hospital and willing for Tele Follow Up.

Sample Size: The total sample size was 60, 30 subjects each in experimental and control group allotted by non-randomization based on prevalence rate of patient undergoing CABG during two months in selected hospital.

Sampling Technique: Non-Probability Convenient Sampling Technique was used to select the samples.

Criteria for Selection of Sample:

INCLUSION CRITERIA

- Adult Patients (25-70years and above)
- Patients discharged from hospital and going home after Coronary Artery Bypass Graft
- Post CABG Patients who are willing to participate in the study
- Patients communicating in English or Hindi or Marathi
- Patient who is having android mobile phone and know the use of Zoom and WhatsApp Application
- Patients with no visual, hearing and verbal disability

EXCLUSION CRITERIA

- Patients with infected surgical wounds
- Patients with redo surgeries or history of previous thoracic/ abdominal surgeries
- Patients with valve replace surgeries and other cardiac surgeries

III. TOOLS AND TECHNIQUES

Section A – Demographic Data And Clinical Data: It comprises demographic variables and clinical variables including, age, gender, marital status, education, work pattern/occupation, history of ill-habits or addictions, dietary pattern, primary care taker at home, presence of co-morbidities, height, weight, BMI, provisional diagnosis and surgery done.

Section B- Discharge Instructions Adherence Scale (DIAS): DIAS are the questionnaire based on four domains of Discharge Instructions; Medications, Diet, Exercise and Wound Care. It is a self-reported questionnaire and each item has four responses Never, Sometimes, Often and Always. The self-reported 25

questionnaire comprises four domains; 7 items about adherence to Medications prescribed, 8 items about adherence to Diet, 5 items related to Exercise Adherence and 5 items about adherence to Wound Care.

The participants were asked to score each aspect on the scale of NEVER=0, SOMETIME=1, OFTEN=2, ALWAYS=3 where 0 represents the lowest score of adherence and 3 represents the highest score of adherence level. Higher the scores, Higher The Level of Adherence.

Section C- Post Discharge Care Satisfaction and Tele Follow Up Feedback: This section dealt with opinionnaire, consists of open-ended question provided to the subjects of the experimental group which elicit their opinion about discharge preparation and feedback about Tele Follow Up and its effect on them if they would use it in future or recommend to others. An opinionnaire for the participants on the intervention of patient teaching and tele follow up used for improving the level of adherence to discharge instructions.

Content Validity: A total 9 experts consisting of one cardiothoracic surgeon, one wound care specialist, one statistician, one physiotherapist, one dietitian, five nursing personnel have validated tool.

Reliability: The reliability of the tool was done by using Test-Retest Method in that two methods were used for reliability one is KAPPA statistic for categorical data and Pearson Correlation Coefficient for continuous data. The reliability was calculated as 0.85-0.9 for DIAS for assessing level of adherence and correlated positively ($r = 0.90$).

Data collection: The permission to conduct the study was granted by the Ethical Review Committee for research in the desired hospital. Approval was also taken from the concerned authorities and cardiothoracic surgeon for including the Post CABG patients for the study. Data collection period began from 17th May 2022. Investigator has done training and certification course in telemedicine & teleconsultation through online platform Udemy. The selection was done by communicating with the client face to face and also gathering data from clients file to ensure the confirmation of data disclosed. Once the client was considered to be an eligible participant for the study, the investigator gave a self-introduction, brief description of the study and Tele Follow Up. In order to show willingness to participate in the study the client had to sign a written informed consent for Tele Follow Up and Tele Nursing. All the doubts and queries were clarified and the clients were given assurance of their confidentiality of data and anonymity as well. On the day of the discharge investigator Patient's demographic and clinical data was collected.

Tele follow up plan was explained and instructions were given. Telephonic video call made on 6th day after discharge, which is of 10-15 minutes duration with assessment of 4 domains, followed by need based reinforcement of patient education on Medication, Diet, Exercises, Wound care, cardiac issues after discharge & Follow up. On 6th day after discharge, prior to video call tool (DIAS) Discharge Instruction Adherence Scale was administered and data was collected. Second telephonic video call made on 12th day after discharge and tool administered. Data was collected as per Tele Follow Up Protocol.

Data Analysis: The collected data analysed in terms of objectives of the study using descriptive and inferential statistics.

- ✓ Demographic data and clinical data analysed by using Frequency Distribution and Percentage.
- ✓ Comparison of Adherence Level within the experimental group done by Wilcoxon Test.
- ✓ Comparison of Adherence Level within the control group would be done by Paired TTest.
- ✓ Comparison of adherence levels post intervention between experimental and control group done by Mann Whitney Test.
- ✓ Opinionnaire of Post Discharge Care Satisfaction and Tele Follow Up Feedback analysed by Frequency and Percentage.

The investigator prepared a master sheet to enter data obtained from the subjects. The data is then analysed using both descriptive and inferential statistics.

IV. RESULTS AND DISCUSSION

A. Findings Related To Demographic Data:

This section deals with the sample characteristics under study. Most of the data showed that majority of (63.34%) subjects were from the age group 57-72 years, most of the subjects (80%) were males, Majority (46.67%) subjects were highly educated, most of the subjects (46.6%) had a sedentary work pattern and lifestyle, most of the subjects (85%) had hypertension while (85%) of the participants had multiple co-morbidities like hypertension with diabetes and hypothyroidism, (66.70%) had diabetes while (60%) are having dyslipidemia. BMI showed that most of the subjects (70%) were overweight whereas (10%) were obese. Level of adherence to discharge instructions in patients after CABG showed statistical significant with presence of co-morbidities.

B. Findings related adherence to discharge instructions in patients after CABG:

This section deals with the comparisons of experimental group and control group mean score regarding adherence to discharge instruction in patient after CABG were done by the paired t test. The experimental group average score on Day 6 was 53.57 with standard deviation of 8.31 and on Day 12 experimental group average score was 57.73 with standard deviation of 5.52. The tabulated ‘t’ value for n= (30-1) i.e. 29 degrees of freedom, significance level was 1.69. The test statistics value of the paired t test was 4.91. Also, The calculated ‘t’ value was much higher than the tabulated values at 5% level of significance which was statistically acceptable level of significance. Therefore, null hypothesis is rejected and alternative hypothesis is accepted. This shows that effect of Tele Follow Up on adherence to discharge instruction in patients after CABG was effective.

Table 4.1 Comparison of the level of adherence to discharge instructions in patients after CABG within experimental group (paired t test) (n=30)

Group	N=60	Mean	SD	t value	Significance (2 tailed)
Experimental Group (Day 6)	30	53.57	8.31	4.91	0.000 **Significant**
Experimental Group (Day 12)	30	57.73	5.52		

Table 4.2 Comparison of the adherence level score post intervention to discharge instruction in patients after CABG between experimental group and control group (Unpaired t-test) (N=60)

Group	N	Min.	Max	Mean	Median	SD	p value (unpaired t test)
Experimental Group (Day 12)	n=30	48	69	57.73	57.5	5.52	P<0.0001
Control Group (Day 12)	n=30	32	69	49.2	49	8.28	

C.Findings related to Post Discharge Care Satisfaction & Tele Follow Up Feedback in patients after CABG.

This section deals with the analysis of Post Discharge Care Satisfaction & Tele Follow Up Feedback in patients after CABG. In experimental group, Majority of subjects (56.67%) were moderately satisfied followed by (43%) subjects were highly satisfied. And in control group, majority of subjects (80%) of subjects were moderately satisfied, followed by (13%) subjects were highly satisfied and only (6.67%) subjects were dissatisfied. The experimental group average score was 20.20 with standard deviation of 2.74. The control group average score was 18.03 with standard deviation of 2.18. Post Discharge Care Satisfaction score in Experimental and Control Group showed statistical significance with p value < 0.0013 hence, null hypothesis is rejected. This showed there is improvement in the level of satisfaction with post discharge care and Tele Follow Up (TFU) Feedback in patients after CABG.

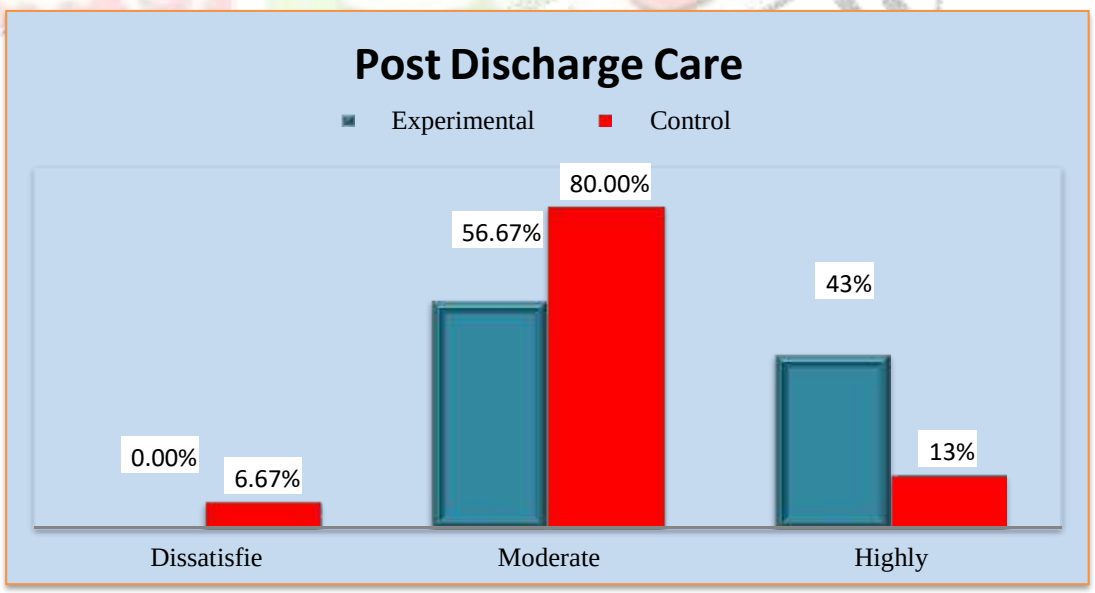
Table 4.3: Frequency and percentage distribution of Post Discharge Satisfaction level (N=60)

Group	N	Dissatisfied		Moderately Satisfied		Highly Satisfied	
		f	*%*	*f*	*%*	*f*	*%*
Experimental Group (Day 12)	30	00	00	17	56.67	13	43.33
Control Group (Day 12)	30	02	6.67	24	80.00	04	13.33

Table 4.4: Post Discharge Satisfaction score (N=60)

Group	N=60	Min.	Max	Mean	Median	SD	p value (unpaired t test)
Experimental Group (Day 12)	30	16	25	20.20	20	2.74	**P<0.0013**
Control Group (Day 12)	30	13	23	18.03	18	2.18	

Fig 1. Frequency and percentage distribution of Post Discharge CareSatisfaction and Tele Follow Up Satisfaction Feedback (N=60)



D.Findings related to Tele Follow Up Feedback in patients after CABG

This section deals with Tele Follow Up (TFU) Feedback in patients after CABG. In experimental group almost (100%) subjects agreed that Tele Follow Up save time, energy and money. Most of the subjects (96.7%) were able to manage timings for Tele Follow Up. Most of the subjects (100%) felt that privacy and confidentiality were respected and protected during Tele Follow Up. Most of the subjects 90% agreed that Tele Follow Up was helpful in dealing with their health issues. Majority of the subjects (86.70%) feel assured to have professional advice and assessment at home. Majority of subjects (43.30%) would like to continue Tele Follow Up sessions.

CONCLUSION

The present study aimed Compare Adherence to Discharge Instructions in Patients after CABG with and without Tele Follow Up. The study result shows that effect of Tele Follow Up (TFU) on adherence to discharge instructions in patients after CABG was effective. Tele follow-up is a convenient and cost effective way of providing follow up care for patients after CABG, which can improve patients' adherence to discharge instructions leading to fewer complications and better long-term patient outcomes and satisfaction.

V. ACKNOWLEDGMENT

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