

Extended nursing care verses the conventional method of management of CABG patient after discharge

Jyoti Chaudhari^{1*}, Sankarsan Pani², Anvay Mulay³, Anuradha Mhaske⁴

¹PG Student, MGM University of Health Sciences, Kamothe, Navi Mumbai-410209, Maharashtra, INDIA.

²Associate Professor, Department of General Surgery, MGM Medical College and Hospital, Kamothe, Navi Mumbai-410209, Maharashtra, INDIA.

³Professor and HOD, Department of Cardiothoracic Surgery, Fortis Hospital, Mulund, Mumbai, Maharashtra, INDIA.

⁴Principal cum Professor, MGM College of Nursing Aurangabad, Maharashtra, INDIA.

Email: jmch169@gmail.com

Abstract

Introduction: CABG surgery is on rise as the Heart diseases are increasing day by day globally and with great speed in India. As it is often a lifesaving surgery the patient and care taker receives very less time to prepare them for convalescence period. With modern technology and understanding of disease, there is an increase in the trend of early discharge in developed and developing countries. This questions the patient's quality of life and come back to normalcy of life. With this intention the study was conducted to identify the difference between quality of life among CABG patient who received extended nursing care services during recovery period and who do not. **Methodology:** The before and after control study was conducted on 24 CABG patients operated in selected tertiary care hospital in Mumbai. 12 samples were in study group received the extended nursing care service by direct home visit and telephonic contact and 12 were in control group whose recovery period is managed by conventional method of discharge. At the end of 4-6 weeks of surgery the samples were interviewed by using semi-structured interview schedule and standardized visual analogue scale of Euro-5D-5L QOL. **Result:** The average compliance rate to discharge instructions was 43.8 and 73.8 in control group and study group respectively. The client satisfaction in study group (95.8) was found more than the control group (39.5). Mean difference between QOL on the day of discharge and after 4-6 weeks of discharge among study group is 32.08 with SD 12.51 which is higher (42.59 %) than difference among control group (22.5) with SD 8.66. Calculated t value (2.18) the difference between the mean difference of QOL among study group and control group is higher than the table value of t (2.07) at p 0.05 level. This indicates the positive influence of the extended nursing care programme over the conventional method of management of CABG patient. **Conclusion:** With the extended nursing care programme compliance rate to discharge instructions, and early detection and management of side effects of surgery rises. It also causes reduction in burden on care taker. QOL and client satisfaction also augments with extended nursing care programme and ultimately benefits to early normalcy of the life of CABG patient.

Keywords: Extended nursing care, Quality of Life, Coronary artery bypass graft.

* Address for Correspondence:

Ms. Jyoti Chaudhari, PhD Scholar, MGM University of Health Sciences, Kamothe, Navi Mumbai-410209, Maharashtra, INDIA.

Email: jmch169@gmail.com

Received Date: 04/11/2015 Revised Date: 18/12/2015 Accepted Date: 10/01/2016

Access this article online	
Quick Response Code:	Website: www.statperson.com
	DOI: 14 January 2016

INTRODUCTION

The current burden of Coronary Artery Disease (CAD) in India is more than 32 million. In mid-1990, 10,000 CABG surgery performed annually as compared to present annual number of CABG of about 70,000 as per industry sources.¹⁻² With modern technology and understanding of disease, there is an increase in the trend of early discharge in developed and developing countries. Minimally invasive surgery now almost standardized with improvement in morbidity and mortality. Immune-mediated inflammation and resultant endothelial activation, and cumulative exposure to infectious

pathogens implicated in coronary atherosclerosis leads to exhaustion in recovery phase of CABG.³ It is proved that health-related quality of life (QOL) in patients and significant others one month after coronary artery bypass grafting is inferior to that of the general population⁴ and it is directly associated with their preoperative Health related quality of life.⁵⁻⁶ Moderate to severe levels of anxiety and depression exist during the first month of home recovery and appear to have an effect on performance of ADL (activities of daily living).⁷ Only giving set of discharge instructions often does not meet the needs of CABG patients as learning needs differs with their demographic characteristics.^{8,9} The systematic reviews of the studies reveals that home based cardiac rehabilitation results in longer lasting maintenance of physical activity levels compared with hospital-based rehabilitation and is equally effective in improving cardiac risk factors. Furthermore, it has the potential to be a more cost-effective intervention for patients who cannot easily access their local centre or hospital.¹⁰ The systematic review of various nursing studies highlights that a nurse-led educational program during recovery period is closely associated with reduce rate of complications, of anxiety following cardiac events and readmissions to hospital. Moreover, the therapeutic lifestyle-change intervention into a nursing program effectively modifies cardiac risk factors and may improve prognosis. It is of most importance for nurses to meet the rehabilitative care needs of patients through education, support, supervision and reinforcement.¹¹ The five nursing diagnoses that occurred most frequently across the 8-week recovery period are altered comfort: pain; ineffective coping, individual; activity intolerance; sleep pattern disturbance; and altered nutrition.¹² Researcher aimed to manage this problems through Extended nursing care in their unique environment and observe the effectiveness on their QOL.

Statement of the study

A study to evaluate the effectiveness of extended nursing care over the conventional method of management of CABG patient after discharge in terms of QOL.

OBJECTIVES

- To compare the QOL of patients underwent CABG at the end of four to 6 weeks after discharge in both study group (Management by Extended nursing care) and control group (Conventional method of management) with their QOL score on the date of discharge.
- To compare the overall experience of patients and care takers in both the group.

METHODOLOGY

Methodology : The 12 CABG patients with conventional method (control group) of discharge and recovery management and other 12 CABG patients enrolled under extended nursing care programme (study group) were taken for the comparison. In depth Interview was taken after 4-6 weeks of discharge from hospital among study group as well as among control group by using semi-structured interview schedule. Questionnaire was prepared on the basis of Euro 5D QOL scale of assessment of QOL. Observation record maintained by the investigator during 2 home visits in first and third week of discharge from hospital was also taken into consideration to help the patient to recollect their experience. Brief description about the extended nursing care programme: The investigator has conducted home visit at the residence of the CABG patient During the visit following activities are carried out:

1. Assessment
 - A. General assessment of patient
 - Monitoring of vital signs: TPR /BP /SpO2/ pain score / grades of dyspnoea / weight gain
 - Monitoring of wound: healing/infection/gapping/oozing/swelling
 - Chest auscultation
 - Blood sugar monitoring
 - B. Assessment of performance of ADL
 - Hygiene maintenance
 - Physical activity – walking, climbing, stretching exercises and spirometry
 - Wound care- cleaning of wound, wound protection, use of binder, crepe bandage
 - Diet- appetite, compliance with dietary restrictions, bowel pattern
 - Sleep- pattern, quality, satisfaction
 - C. Psychological/emotional health of patient and care taker- anxiety, depression, stress, response to change of role in the family.
 - D. Assessment of compliance to Medication- understanding of patient regarding medication and risk for or actual occurrence of error.
 - E. Episode of bleeding and preventive measures
 - F. Understanding of follow up instructions
2. Identification of actual and potential problem in the recovery of patient and care taker including care burden on the family.
3. Filling up of gap of knowledge by reinforcement of discharge instructions and therapeutic interventions like encouragement, reassurance, emotional support, environment modification,

and supervision of certain activities like exercises, stock of medicine/medicine box/medicine chart. Help the client to identify the resources to overcome day to day problem.

4. Measures were taken for prevention and /or control of side effects of surgery like pain, anxiety and depression, sleep pattern disturbance, surgical wound related complications, poor nutritional intake and promotion of normalizing the day to day activities.

Findings of the study

There were total 24 CABG patients studied equally in both the group with same sex ratio and same ratio of age group. Experience of care of sick person at home was equal in both the group i.e. 66.7%. Presence of comorbidity was also the same in both the group ie

91.6%. Out of 24 samples, 5.6% are suffering from only DM, 16.6% from only HT and 16.6% suffering from both DM and HT. Only 16.6% of samples were not having any known comorbidity.

Compliance to discharge instructions

Hygienic needs: In 25% of Study group influence of extended nursing care team seen on initializing body bath. Out of 11 samples in study group, those who were facing difficulties in bathing, difficulties of 9 samples (81.8%) addressed by the investigator and the samples and care taker were made comfortable. By the end of 4th week, 75% of samples in control group and 100% samples of study group are able to bathe independently. By the end of 4-5th week almost all patients able to take care of hair and other groom activities. (Fig. 1)

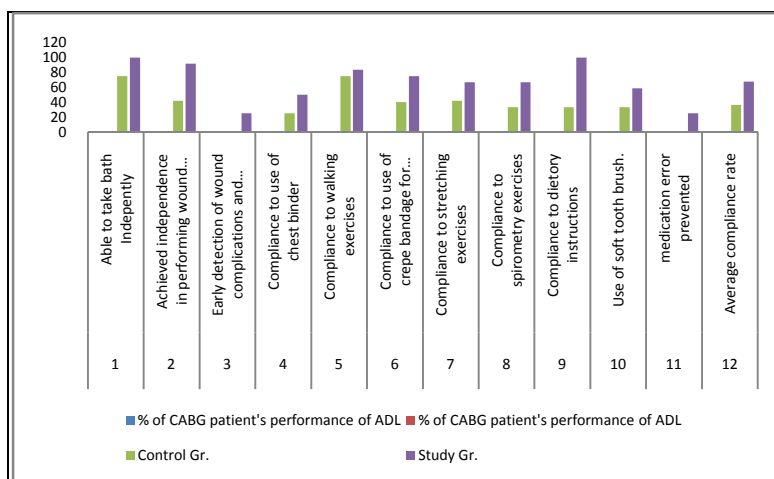


Figure 1: Percentage (%) of performance of ADL among CABG patient

Wound care: In study group 91.6% samples were able to take care of wound independently by 4th week of discharge which was higher than that of control group (41.6% only). Though 50% of study group and 25% of control group were having some or other difficulties with use of chest binder, after encouragement, reassurance and demonstration of correct use of binder the compliance rate in study group became 100% than the control group i.e. 25%. Early detection of complications of wound was occurred in 3 samples (25%) of study group and hence action taken immediately before sample could recognise the problem. Among control group, 2 cases (16.6%) of gapping and one case (8.3%) of pus formation reported at OPD. Compliance to use of crepe bandage among patient with external leg graft (75%) was higher than the control group (40%). (Fig.1) In control group 16.7% patients were applying antiseptic ointment even after healing of wound due to the ignorance and fear. (Fig.2) **Exercises:** Compliance to walking exercise was higher in study group (83.3%) than of control group 75%. Compared to

control group (41.6%) it was observed that compliance to correct and consistence use of stretching exercises among study group (66.7%) was higher. Out of 66.7% of samples who were consistently doing the exercises, 50% of them has been corrected by the investigator by using extended nursing care model. Compliance rate to performance of spirometry exercises \geq 4 times a day as prescribed was 75% in study group and 33.3% in control group. (Fig 1) **Diet:** Though appetite related issues were experienced by both the group acceptance rate for compliance to dietary restrictions found more in study group. This could be because of cues provided to patient and care taker regarding dietary modification during extended nursing care. (Refer fig 1) **Awareness regarding blood thinners:** Potential risk of bleeding and its prevention in both the group was neglected during discharge instructions. But % of samples using soft tooth brush was more in study group (66.7%) compare to control group (33.3%).

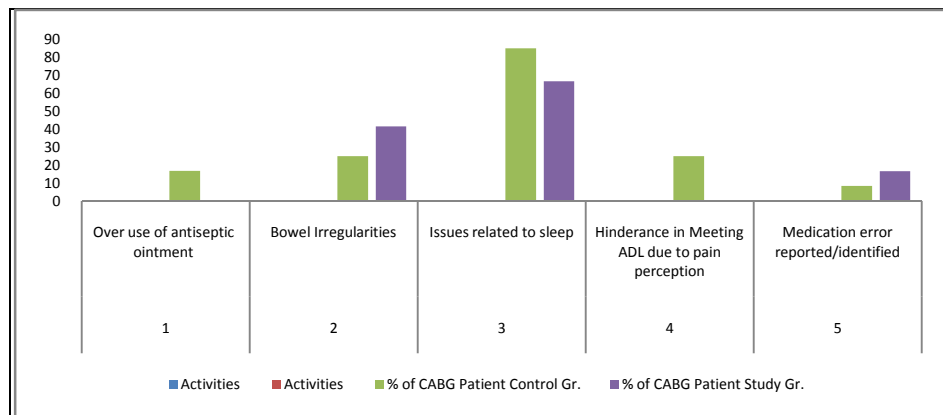


Figure 2: Problems identified in CABG patients

Problems faced by CABG patient

Pain perception: The study findings reveals that even though pain perception (4.75 after discharge and 1.41 after 4-6 weeks of discharge) was little higher side in a study group compare to control group (4.5 and 1.41 respectively), the acceptance of it was very high (100%) in study group compare to control group (25%). It may be because of encouragement got to the study group from investigator as a part of extended nursing care. In both the group maximum pain was perceived either in 1st week or in 3rd week after discharge. **Bowel pattern:** Compare to study group bowel irregularities (41.6%) observed more in the control group (25%). In both the groups 16.6 % samples were using stool softener regularly even in 4th week after discharge. (Fig. 2) **Sleep:** In study group sleep related issues were identified (66.7%) lesser than control group (85%) due to practical tips given during extended nursing care. **Medication adherence:** In 41.6% study samples, potential problem of medication error was able to detect and prevent. (Fig.1) In 16.6 % patients of study group medication error was detected during extended

nursing care and necessary guidance was given. In other 25 % of patients in study group it was found that there was a gap in understanding of medication administration. At the end of 6 weeks it was observed that there was no medication error reported in the same sample. (Fig.2)

Overall experience regarding services received

Perceived Benefit to family members/care takers: Compare to control group (16.6%), care taker and other family members of samples in study group (83.3%) also perceived the great benefit in terms of reducing the risk of CAD among other family members and guidance on other health issues. **Patient satisfaction:** In control group the experience of follow up visit in terms of amount of time provided to ask queries and quality of response given along with practical tips was found 58.3% and 75% respectively where as it was very high (100% and 100% respectively) in study group. It could be because of individualised approach in extended nursing care model. There was drastic difference found in the satisfaction in terms of time consumption for follow up visit and other benefits to family and care taker. (Fig. 3)

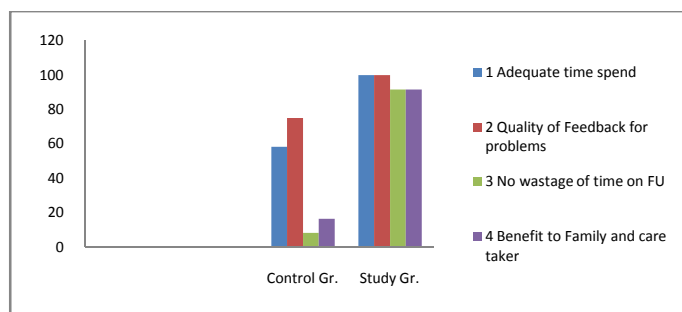


Figure 3: Satisfaction after follow-up visit

Quality of life: Among study group Mean score of QOL on the day of discharge is 46.25 whereas it is 78.33 after 4-6 weeks of surgery. The mean difference between QOL on the day of discharge and after 4-6 weeks of surgery

was 32.08. (Fig. 4A) **Among control group:** Mean score of QOL on the day of discharge was 52.91 where as it is 75.41 after 4-6 weeks of discharge among control group was 22.5.(Fig. 4B)

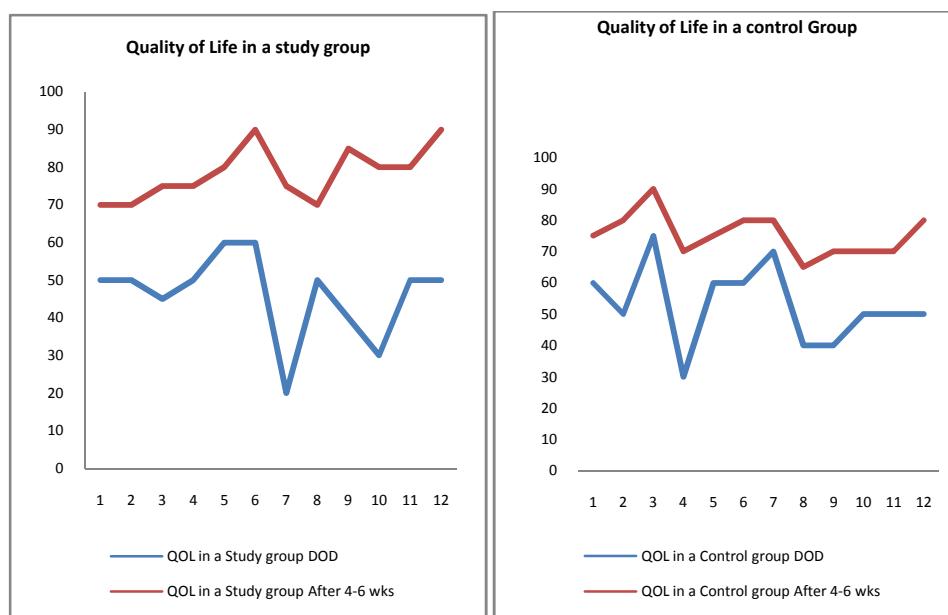


Figure 4 A to B: (A): Quality of Life (QOL) in a study group (B): Quality of Life (QOL) in a control group

DISCUSSION

Mean difference between QOL on the day of discharge and after 4-6 weeks of discharge among study group is 32.08 which is higher (42.59 %) than difference among control group (22.5). (Table)

Table 1: Significance of difference in the mean difference of QOL scores on the day of discharge and after 4-6 weeks of discharge.

Group	Sample (N)	Mean(D)	SD	Student t	LOS *
Study	12	32.08	12.51	2.18	0.05**
Control	12	22.5	8.66		

LOS*: level of significance at df for unpaired test is n-2= 22,

** table value at 0.05 level= 2.07

Calculated t value (2.18) is higher than the table value of t (2.07) at p 0.05 level. Therefore, the null hypothesis is rejected at 5% significance level and alternative hypothesis is accepted that the quality of life is better among the study group compared to QOL of control group. This could be due to the positive influence of intervention-extended nursing care conducted for study group. Other findings: 3 patients in control group verbalized the need for supervision of health personal after 2-3 days of discharge as it is difficult to grasp all instructions within short time on the day of discharge or patient should be prepared from 2 days prior to discharge for care at home. This matches with the findings of study conducted by Sameer A, et al (2013) that there is need to consider individual differences while preparing the CABG patient. Among control group it was noticed that on the follow up visit they were not able to meet cardiac surgeon who has operated them and unable to raise questions or ask query's to the health care provider due to

busy OPD schedule and that caused disappointment. In the study group it was observed that the extended nursing care programme was beneficial to them even in terms of travel cost and time. This matches with the findings of Hasnain M Dalal.¹¹

CONCLUSION

All the above findings show that there is a need for extended nursing care in recovery phase of CABG patient after discharge. Individualized approach in meeting activities of daily living and understanding human response; and supervision and clinical judgement of nurse investigator to detect early signs of complications of surgery eased the comfort and client satisfaction among CABG patient and their care taker. This enhanced the health seeking behaviour in terms of compliance to discharge instructions and early to normalcy of life. Thereby it also increased the quality of life (QOL).

ACKNOWLEDGEMENT

We owe our deepest gratitude to Dr. S. Narayani, Facility Director, Dr. Supriya Amey, Medical Superintendent, Cardiac surgeons and nurses of Fortis Hospital and Ms. Rita Lakhani, Principal, Fortis Institute of Nursing for their support in conducting this study.

REFERENCES

1. <http://www.who.int/mediacentre/factsheets/fs317/en/>
2. <http://health.india.com/diseases-conditions/world-heart-day-2013-heart-disease-kills-one-in-three-women/>
3. Miller PS, Evangelista LS, Giger JN, Martinez-Maza O, Corvera-Tindel T, Magpantay L, Pena G, Doering LV. Exhaustion, immuno-inflammation, and pathogen burden

- after cardiac surgery: An exploratory study. *Eur J Cardiovasc Nurs* 2014; 13(3): 211-220.
4. Parker RD, Adams J. Activity restrictions and recovery after open chest surgery: Understanding the patient's perspective. *Proc (Bayl Univ Med Cent)* 2008; 21(4): 421-425.
 5. Rantanen A, Kaunonen M, Sintonen H, Koivisto AM, Astedt-Kurki P, Tarkka MT. Factors associated with health-related quality of life in patients and significant others one month after coronary artery bypass grafting. *J Clin Nurs* 2008; 17(13): 1742-1753.
 6. Thomson P, Niven CA, Peck DF, Eaves J. Patients' and partners' health-related quality of life before and 4 months after coronary artery bypass grafting surgery. *BMC Nurs* 2013; 12(1): 16. (Doi: 10.1186/1472-6955-12-16).
 7. Fredericks S, Lapum J, Lo J. Anxiety, depression, and self-management: a systematic review. *Clin Nurs Res* 2012; 21(4): 411-430.
 8. Hoseini S, Soltani F, BabaeBeygi M, Zarifsanaee N. The effect of educational audiotape programme on anxiety and depression in patients undergoing coronary artery bypass graft. *J Clin Nurs* 2013; 11-12: 1613-1619. (doi: 10.1111/jocn.12125).
 9. Theobald K, McMurray A. Coronary artery bypass graft surgery: Discharge planning for successful recovery. *J Adv Nurs* 2004; 47(5):483-491.
 10. Alkubati SA, Al-Zaru IM, Khater W, Ammouri AA. Perceived learning needs of Yemeni patients after coronary artery bypass graft surgery. *J Clin Nurs* 2013; 22(7-8): 930-938. (doi: 10.1111/j.1365-2702.2012.04177.x).
 11. Dalal SM, Zawada A, Jolly K, Moxham T, Taylor RS. Home based versus centre based cardiac rehabilitation: Cochrane systematic review and meta-analysis. *BMJ* 2010; 340: b5631 (<http://dx.doi.org/10.1136/bmj.b5631>).
 12. Tack BB, Gilliss CL. Nurse-monitored cardiac recovery: A description of the first 8 weeks. *Heart Lung* 1990; 19(5 Pt 1): 491-499.

Source of Support: None Declared
Conflict of Interest: None Declared