

## ASSESSMENT OF QUALITY OF PAIN AND CONTRIBUTING FACTORS AFFECTING LEVEL OF PAIN AMONG PATIENTS WHO HAD UNDERGONE CARDIAC SURGERY IN SELECTED HOSPITALS, MANGALORE

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### ABSTRACT

Pain is complex, multi dimensional experience for many people. it is the most common problem for patients after cardiac surgery. The research was carried out to assess the quality of pain and contributing factors that affects patient's pain. A descriptive research design was used to assess the quality of pain and contributing factors affecting level of pain among 25 patients who had undergone cardiac surgery in selected hospitals at Mangalore. Purposive sampling technique was used to collect the sample for study. The data was collected by using Mc Gill pain questionnaire and rating scale to find out the contributing factors affecting it. Majority (68%) of the patients had moderate level of pain, (24%) of the patients had severe level of pain and (8%) had mild level of pain after undergone cardiac surgery. The factors such as ET suctioning, during chest dressing, changing position, presence of drainage tubings and presence of arterial lines and central lines were correlated with the level of pain. The findings of the study concluded that pain is a priority problem for patients after cardiac surgery and there was a significant relationship between the level of pain and the some contributing factors affecting it.

**Key words:** Pain, Cardiac surgery, Contributing factors.

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### INTRODUCTION

Heart, being an important organ, plays a vital role in the human body system as it circulates blood across the body and supports other internal organs to carry out their normal functions. Any alterations in the functions of the heart can result in various sorts of heart diseases. One of the major groups of diseases that affect the normal performance of the heart is cardiovascular diseases [1].

Cardiovascular disease is the leading cause of morbidity and mortality in the developing and developed countries. WHO (2002) estimated that 45 million patients of coronary artery disease are in India and one fifth of deaths has occurred due to coronary artery disease. By the year 2020, it will account for one third of all deaths.

Joachim (2006) reported that about 8,00,000 coronary bypass procedures are presently performed every year worldwide, and in India Kasliwal (2006) stated that 25,000 open heart surgeries are being performed every year. Even though there is a vast advance in surgical technique, the anxiety and post operative pain remains unavoidable [2].

Pain is complex, multi dimensional experience for many people. it is the most common problem for patients after coronary artery bypass grafting or valve replacement, is caused by the stimulation of peripheral nerve endings in the muscles and tissue that have been cut and traumatized during surgery [3]. It is a major problem that causes suffering and reduces quality of life. Pain is



the commonest reason for seeking help from health care professionals. Despite seeking help, Millions of patients have surgery every year and unrelieved pain continues to be reported for the majority of patients after surgery [4].

Cardiac surgical procedures are used to treat coronary artery disease, rheumatic heart disease, aortic or mitral stenosis and regurgitation, congenital heart defects, and ventricular dysrhythmias. According to recent estimates, roughly 350,000 to 500,000 patients undergo cardiac surgery each year [5]. The incidence of chronic pain after cardiac surgery varies between 21% and 55% [6]. Pain after cardiac surgery is caused by several factors; sternotomy, sternal/rib retraction, pericardiotomy, internal mammarian artery harvesting, saphenous vein harvesting, surgical manipulation of the parietal pleura, chest tube insertion and other musculoskeletal trauma during surgery [7].

Postoperative pain relief is one of the most important concerns for patients undergoing cardiac surgery and is one of the most clinically challenging problems for nurses. Multidimensional methods of pain assessment and analgesic pharmacology have aided the improvement of pain management practices [8]. Minimal or no pain should be the objective of the health team, to attain post operative pain control in patients it is important for nurses to blend alternative therapies with technology. Considering the above mentioned facts, the researcher gathered that post operative pain following the cardiac surgery is a common unresolved problem and the nursing professionals can contribute to resolve the problem by assessing the pain after cardiac surgery, thus the researcher felt the need to explore this area.

### Statement of the Problem

Assessment of quality of pain and contributing factors affecting level of pain among patients who had undergone cardiac surgery in selected hospitals, Mangalore.

### Objectives

The objectives of the study are:

1. To measure the level of pain among patients who had undergone cardiac surgery.
2. To find out the contributing factors affecting the level of pain among patients who had undergone cardiac surgery.

### Hypothesis

The hypothesis will be tested at 0.05 level of significance.

H<sub>1</sub>: There will be a significant relationship between quality of pain and contributing factors affecting the level of pain among patients who had undergone cardiac surgery.

## MATERIALS AND METHODS

Descriptive research design was used in the study. Purposive sampling technique was used to select the sample. After getting the ethical clearance, the study was conducted in A.J Hospital and Research Centre, Indiana hospital and Omega hospital, Mangalore. Subjects were selected according to the selection criteria. Informed consent was obtained from the sample. Demographic proforma and the Short form Mc Gill pain questionnaire [9] and rating scale to assess contributing factors affecting pain after surgery were administered to 25 patients who had undergone cardiac surgery. Both descriptive and inferential statistics were used for data analysis.

## RESULTS

### Section 1: Description of Demographic Variables of the Sample

Highest number of the sample [44%] were in the age group of 50-59 years and all the samples [100%] were married. The highest percentage (40%) of the sample were Christians and Muslims. Majority (64%) of the sample had high school education. The highest samples [68%] were not having any family history of cardiac disease whereas (32%) has family history of cardiac disease. None of the sample had history of any previous cardiac surgeries

### Section 2: Description of Level of Pain among patients who had undergone Cardiac Surgery

The data presented in Figure 1 shows that majority (68%) of the patients has moderate level of pain, (24%) of the patients has severe level of pain and 8% had mild level of pain after undergone cardiac surgery. The data in Table 1 reveals that the score ranged from 22 – 42 with the mean  $30.84 \pm 4.84$

### Section 3: Description of Age and Level of Pain among Patients who had undergone Cardiac Surgery.

The data presented in Figure 2 show in the age group 41-49 years maximum (12%) patients had moderate level of pain and 4% of the patients had mild and severe level of pain, In 50-59 years highest percentage (28%) of the patients had moderate level of pain, In 60 years and above highest percentage (28%) of the patients had moderate level of pain and 12% of the patients had severe level of pain and none of them had mild pain.

### Section 3: Correlation between Level of Pain and Contributing Factors Affecting Pain After Surgery Questionnaire.

The data in Table 2 show that the factors such as ET suctioning, during chest dressing, changing position, presence of drainage tubings and presence of arterial lines and central lines were correlated with the level of pain since 'r' is more than 0.396. So there was correlation



between the level of pain and the some contributing factors affecting it.

**LIMITATIONS**

1. The study was confined to specific geographical area (Mangalore), which imposes limits on generalization
2. Since the sample size was relatively small, generalization of the findings is limited.
3. All the contributing factors affecting the level of pain

was not assessed

**RECOMMENDATIONS**

1. The study can be replicated on a larger sample, spread over different hospitals for the generalization of findings.
2. The study could be undertaken during chronic painful experience like cancer pain.
3. An experimental study can be conducted.

**Table 1. Range, Mean, Median, Standard Deviation of Level of Pain among patients who had undergone Cardiac Surgery. N=25**

Parameter	Range	Mean	Median	Standard deviation
Level of pain	22-42	30.84	29	4.84

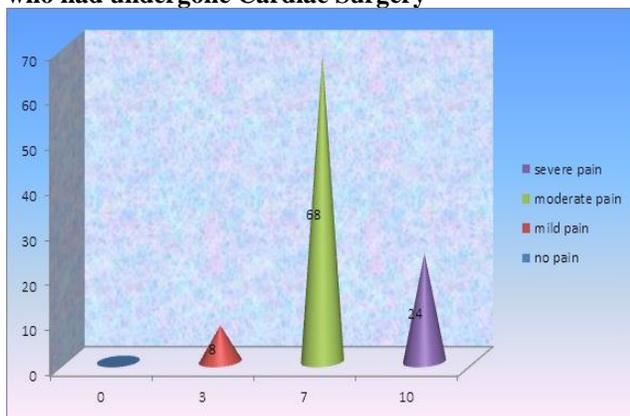
Max score:45

**Table 2. Relationship between Level of Pain and Contributing Factors Affecting the Level of Pain N=25**

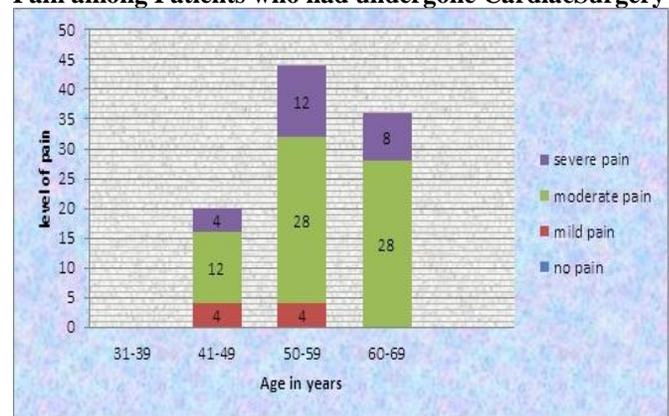
Parameters	Pearson correlation	df	table value	P value	Inference
Movement of chest tube	0.248	23	0.396	0.231	Not significant
ET suctioning	0.442	23	0.396	.027	significant
During chest dressing	0.559	23	0.396	.004	significant
During coughing	0.362	23	0.396	.075	Not significant
Performing incentive spirometry	0.442	23	0.396	.027	significant
Changing position	0.442	23	0.396	.027	significant
Getting up from bed to chair	0.336	23	0.396	.099	Not significant
Doing chest physiotherapy	0.363	23	0.396	.075	Not significant
Giving medications through invasive lines	0.355	23	0.396	.085	Not significant
Meeting elimination needs	0.329	23	0.396	.109	Not significant
During daily living activities	0.376	23	0.396	.064	Not significant
Presence of drainage tubings	0.474	23	0.396	.017	significant
Presence of arterial lines and central lines	0.442	23	0.396	.027	significant
Analgelsic medications	-0.07	23	0.396	.974	Not significant
After removal of chest tubes	-0.189	23	0.396	.365	Not significant
After removal of ET tubes	-0.211	23	0.396	.311	Not significant
Staying immobile	-0.022	23	0.396	.918	Not significant
Any other(visit by family members)	-0.14	23	0.396	.946	Not significant

(r=0.396, p<0.05)

**Fig 1. Cone Diagram Representing the Percentage Distribution of Average Intensity Pain among Patient who had undergone Cardiac Surgery**



**Fig 2. Bar Diagram Representing the Percentage Distribution of Subjects According to Age and Level of Pain among Patients who had undergone Cardiac Surgery**



## CONCLUSION

Findings of the study showed that pain is a priority problem for patients after cardiac surgery. Cardiac surgery is associated with severe postoperative pain which may have serious implications for mortality and morbidity. Understanding the causes of pain and the activities and procedures which diminish pain will enhance the postoperative management of patient who have undergone major cardiac surgery. All the factors such as ET suctioning, during chest dressing, changing position, presence of drainage tubings and presence of arterial lines and central lines were correlated with the level of pain. So there was a significant relationship between the level of pain and the some contributing

factors affecting it.

## CONFLICT OF INTEREST

There were no conflicts of interest reported.

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## REFERENCES

1. Moser, Riegel. (2007). Cardiac nursing. A comparison to Braunwald's heart disease, Philadelphia: Saunders Publication.
2. Ramesh C, Priya G, Jyothi K, Victoria E. (2013). Effectiveness of twin therapeutic approaches on pain and anxiety among patients following cardiac surgery. *Nitte University Journal of Health Science*, 3(4), 34-39.
3. Chintamani, Lewis. (2011). Medical surgical nursing. New Delhi: Mosby Elsevier Publications.
4. Perry P. (2011). Fundamentals of nursing. Mosby Elsevier Publications.
5. Wahr AJ. (2004). Enhancing patient outcomes after cardiac surgery.
6. Cogan J. (2010). Pain management after cardiac surgery. *Seminars in cardiothoracic and vascular anaesthesia. Montreal heart institute*, 14(3), 201-204.
7. Rafiq S, Andreas D, Jargel M, Willy L. (2014). Multimodal analgesia versus traditional opiate based analgesia after cardiac surgery. *Journal of cardiothoracic surgery*, 9(52), 1-8.
8. Langley, Malinda EP. (2009). Pain Management after Cardiac Surgery.
9. Melzack R. (1987). The short-form McGill Pain Questionnaire. *Journal of pain*, 30, 191-197.

