

Prevalence of Musculoskeletal Pain in Patients Following Cardiac Surgery in Peshawar: A Cross Sectional Study

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ABSTRACT

Background: Cardiovascular diseases causes more deaths and disability in developing countries than any other disease in the world, for these diseases, CABG (Coronary artery bypass grafting) and VR (valvular replacement) are the best treatment options, although, these surgeries improve the chances of survival but they may cause chronic post operative musculoskeletal pain. Musculoskeletal pain can arise from different body musculoskeletal structures such as muscles, tendons, ligaments and joints and knowing the exact cause of this musculoskeletal pain is very difficult and challenging. Chronic musculoskeletal pain patients may have different signs of pain and spread of pain to degrees which are related to pain intensity and duration, so in management, it is very important to reduce duration and intensity of pain.

Methods: A cross-sectional survey design was conducted among 199 cardiac patients in Peshawar from both genders, from June 2018-November 2018 among patients at RMI, KTH, LRH and at other private clinics. Tool used for data collection named as Orebro musculoskeletal pain questionnaire and self- made questionnaire was used in this study.

Results: Patients mean age was 53.49 ± 11.88 , 69.8% were males and 30.2% were females. The results showed that most common MSK pain site is upper back 27.6% and most common surgery is CABG. This study analyzed that different surgical procedure through which participants had been undergone. The surgical procedures were categorized into 4 main domains as shown in table 8 and frequency analysis was done which shows that most common surgical procedure is CABG (Coronary artery bypass grafting) 64.3%. The result of this study shows that diagnosis domain descriptive analysis was done to find out the frequency of the present pain conditions of the participants which exhibits that most common pain occurs in the back 27.6% and in the shoulder 25.1%

Conclusion: Results among patients of Peshawar showed that most common surgery performed is CABG while PCI intervention is the next. Most of the patients are suffered from upper back pain while leg pain and cervical pain is not so common.

Key words: MSK Pain, Surgery Type, Gender, Weight, Exercise, Physical Activity And Age.

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INTRODUCTION

Cardiovascular diseases causes more deaths and disability in developing countries than any other disease in the world, for these diseases, CABG(Coronary artery bypass grafting) and VR(valvular replacement) are the best treatment options, although, these surgeries improve the chances of survival but they may cause chronic post operative musculoskeletal pain.¹ Musculoskeletal pain can arise from different body musculoskeletal structures such as muscles, tendons, ligaments and joints and knowing the exact cause of this musculoskeletal pain is very difficult and challenging.² Chronic musculoskeletal pain patients may have different signs of pain and spread of pain to degrees which are related to pain intensity and duration, so in management, it is very important to reduce duration and intensity of pain.³ Pain can be defined as a sensation of hurting or discomfort in any region of the body caused by injury, any

disorder or disease or due to any functional disability and transmitted throughout the body through nervous system.⁴ Musculoskeletal pain is common in the socially and economically deprived community.⁵ This pain can results from many medical conditions, it can be due to working condition and disability.⁶ Cardiac surgery patients undergo long procedures of surgery therefore often experience post operative musculoskeletal pain in the body especially in the back and shoulder and also suffer from anxiety and tension.⁷ Cardiac surgeries are proved to be life saving for hundreds or thousands of people each year but many patients may suffer from many problems including pain at different regions of the body, anxiety and depression, however, in addition to these problems, these complaints can also impair immune system and interfere with the wound healing which makes the condition more worse.⁸ Nurses knowledge and perception obstacles related to pain management in

post operative period have been examined widely. However, the relationship between nurses, their knowledge about patient care and their management practices in surgical cardiac patients has not been reported.⁹ This pain in different body parts may have some physiological rezones which further cause complications and harmful effects to the body after cardiac surgery, and the patients routinely complain mild to moderate pain in different body regions especially in the back, shoulder, thorax and often in the legs even though they use sedatives and NSAIDS (non steroidal anti inflammatory drugs).¹⁰ Complementary therapies including music and touch are used in some clinical trials for those patients who undergone cardiac surgeries and having chronic pain conditions.¹¹

MATERIALS AND METHODS

This study was a cross sectional study. It was conducted in different govt and private hospitals in Peshawar. The study was completed within 6 months from June to November 2018. The study included 199 patients, selected through non probability sampling technique on the basis of following inclusion criteria: age above 20 years, both genders were included having pain in any region of the body and has done any type of heart surgery.

Some individuals were excluded from the study based on the following criteria: recent traumatic history, any malignancy, cardiac patients who underwent other surgeries than heart patients having psychological issue, patients who are not willing to provide information.

All the willing participants were briefed about the purpose and procedure of the study and then data was collected. The agreed participants were screened through inclusion and exclusion criteria. Data was collected using following data tools:

- Orebro musculoskeletal pain questionnaire
- Self administered questionnaire. (this questionnaire was designed to reach the actual purpose of the study as Orebro musculoskeletal pain questionnaire was not enough for the study.

RESULTS

A total of 199 patients were included in the study. Patients mean age was 53.49±11.88, 69.8% were males and 30.2% were females. The results showed that most common MSK pain site is upper back 27.6% and most common surgery is CABG.

Table 1: Gender Distribution of Participants

Gender	Frequency	Percent
Male	139	69.8
Female	60	30.2
Total	199	100.0

Results among patients of Peshawar showed that most common surgery performed is CABG while PCI intervention is the next. Most of the patients are

suffered from upper back pain while leg pain and cervical pain is not so common.

DISCUSSION

Musculoskeletal pain can arise from different body musculoskeletal structures such as muscles, tendons, ligaments and joints and knowing the exact cause of this musculoskeletal pain is very difficult and challenging. The primary aim of this study was to determine the prevalence of musculoskeletal pain and dysfunction following any type of cardiac surgery among cardiac patients.

Table 2: Showing Diagnosis of the Present Condition of The Participants

Diagnosis	Frequency	Percent
Arm Pain	1	.5
Back Pain	55	27.6
Body Pain	9	4.5
Chest Pain	13	6.5
Leg Pain	6	3.0
Multi Segmental Pain	26	13.1
Neck Pain	15	7.5
No Pain	24	12.1
Shoulder Pain	50	25.1
Total	199	100.0

Table 3: Showing Different Surgical Procedures of the Participants

Surgical procedures	Frequency	Percent
CABG	128	64.3
DES	2	1.0
Open heart surgery	8	4.0
PCI	35	17.6
PTMC	12	6.0
Valvular replacement	14	7.0
Total	199	100.0

This study analyzed that different surgical procedure through which participants had been undergone. The surgical procedures were categorized into 4 main domains (Table 3) and frequency analysis was done which shows that most common surgical procedure is CABG (Coronary artery bypass grafting) 64.3% while other conditions are less common. In similarity to this study another study reported by Bar *et al.*, (2001) stated that that CABG is the common surgery worldwide and post CABG pain is a common complication. 65% patients reported least intensity pain on VAS while 72% patients reported severe type of pain. Left side chest wall pain is reported by 53 subjects.¹²

The result of this study shows that diagnosis domain descriptive analysis was done to find out the frequency of the present pain conditions of the participants which exhibits that most common pain occurs in the back 27.6% and in the shoulder 25.1% while other complaints of pain in other regions of the body after performing surgery in similarity with this Hall *et al.*, (1997) conducted a study and report of the study shown that Approximately 30% of the patients develop pain in their body which suggests that only exercise is not sufficient, it further needs investigation for the cause of musculoskeletal pain and dysfunction after cardiac surgery.¹³

The statistics of this study shows that different medications which the participants use to resolve their musculoskeletal pain. When frequency analysis was performed then it reveals that 81.4% of the selected population was using NSAIDS in order to relieve their pain while steroids 3.5 and opioids 0.5% are used by little population while some other drugs are also used 14.6% in similarity with this another study conducted by Khademi *et al.*, (2014) stated that About 88.3% of the patients in the 1st group reported pain of severe intensity while the prevalence rate was 75.51% in the 2nd group. Also the patients of 1st group have complications during work and during sleep while 2nd group alleviate pain through analgesics.¹⁴

This study shows that Surgery is common in cardiac problems. When patients were asked for the occurrence of pain that when pain become a problem for them. they give different replies. When their answers analyzed frequently it shows that 86.9% of the targeted people have pain occurrence after surgery while 13.1% of the population have pain before surgery due to other medical conditions in similarity with this another study was done by Temporelli *et al.*, (2015) stated that prevalence rate in 1st group was 35.3% and sample size was 313. Prevalence rate was 26.8% and 19.8% in the second and third group respectively while sample size was 313 in 2nd and 319 in the 3rd group. Pain intensity was moderate to severe in the 3rd group of patients. Above 70years of age, pain intensity was same for both the groups, 1st and the 3rd group. In the 1st group pain was more common in females than in male.¹⁵

This study determine that This dimension consists of 5 categories which shows the present pain level in the body of the participants and when frequency analysis was done it shows that majority of the participants 45.2% have pain in their upper back while 36.7% of the participants have pain their right shoulder. Only 6.5% of the participants complains no pain in the body related to this another study carried out by Klautz *et al.*, (2010) shows that According to them post sternotomy pain is common after cardiac surgery. They found on physical examination that there was the

presence of the tenderness in the muscular system in sites other than the surgical sites which has no relation with the surgery an is common after cardiac surgery.¹⁶ There was certain limitation of this study; small sample size, no follow up, and diversity of cardiac conditions, and difficulty in getting permission from tertiary care hospitals were not included.

CONCLUSION

It is concluded that most of the pain occur in the upper back and in shoulders and most common surgery is CABG while low pain occur in the cervical region and in the leg where no pain occur in some patients(12%). No physical activity, stress depression and anxiety., poor health status, obesity and smoking all are the risk factors for the development of MSK pain. But this study is not sufficient to determine the actual cause for pain. This needs further investigations.

REFERENCES

1. Taillefer M-C, Carrier M, Bélisle S, Levesque S, Lanctôt H, Boisvert A-M, et al. Prevalence, characteristics, and predictors of chronic nonanginal postoperative pain after a cardiac operation: a cross-sectional study. *The Journal of thoracic and cardiovascular surgery*. 2006;131(6):1274-80.
2. Hoper J, editor *The (un) doubtful neuropathic pain component in nonneuropathic pain disorders*. The 5th International Congress on Neuropathic Pain; 2015.
3. Arendt-Nielsen L, Fernández-de-las-Peñas C, Graven-Nielsen T. Basic aspects of musculoskeletal pain: from acute to chronic pain. *Journal of Manual & Manipulative Therapy*. 2011;19(4):186-93.
4. Tamparo CD. *Diseases of the human body*: FA Davis; 2016.
5. Urwin M, Symmons D, Allison T, Brammah T, Busby H, Roxby M, et al. Estimating the burden of musculoskeletal disorders in the community: the comparative prevalence of symptoms at different anatomical sites, and the relation to social deprivation. *Annals of the rheumatic diseases*. 1998;57(11):649-55.
6. Borghouts JA, Koes BW, Vondeling H, Bouter LM. Cost-of-illness of neck pain in The Netherlands in 1996. *Pain*. 1999;80(3):629-36.
7. Bauer BA, Cutshall SM, Wentworth LJ, Engen D, Messner PK, Wood CM, et al. Effect of massage therapy on pain, anxiety, and tension after cardiac surgery: a randomized study. *Complementary Therapies in Clinical Practice*. 2010;16(2):70-5.
8. Wang AT, Sundt III TM, Cutshall SM, Bauer BA, editors. *Massage therapy after cardiac surgery*. *Seminars in Thoracic and Cardiovascular Surgery*; 2010: Elsevier.
9. Watt-Watson J, Stevens B, Garfinkel P, Streiner D, Gallop R. Relationship between nurses' pain knowledge and pain management outcomes for their postoperative cardiac patients. *Journal of Advanced Nursing*. 2001;36(4):535-45.

10. Asadizaker M, Fathizadeh A, Haidari A, Goharpei S, Fayzi S. The effect of foot and hand massage on postoperative cardiac surgery pain. *International Journal of Nursing and Midwifery*. 2011;3(10):165-9.
11. Kshetry VR, Carole LF, Henly SJ, Sendelbach S, Kummer B. Complementary alternative medical therapies for heart surgery patients: feasibility, safety, and impact. *The Annals of thoracic surgery*. 2006;81(1):201-5.
12. Eisenberg E, Pultorak Y, Pud D, Bar-El Y. Prevalence and characteristics of post coronary artery bypass graft surgery pain (PCP). *Pain*. 2001;92(1-2):11-7.
13. Stiller K, McInnes M, Huff N, Hall B. Do exercises prevent musculoskeletal complications after cardiac surgery? *Physiotherapy Theory and Practice*. 1997;13(2):117-26.
14. Kamalipour H, Vafaei A, Kazemi AP, Khademi S. Comparing the prevalence of chronic pain after sternotomy in patients undergoing coronary artery bypass grafting using the internal mammary artery and other open heart surgeries. *Anesthesiology and pain medicine*. 2014;4(3).
15. Claudio M, Pompilio F, Cesare G, Marco A, Luigi TP. A retrospective multicenter study on long-term prevalence of chronic pain after cardiac surgery. *Journal of Cardiovascular Medicine*. 2015;16(11):768-74.
16. Van Leersum NJ, Van Leersum RL, Verwey HF, Klautz RJ. Pain symptoms accompanying chronic poststernotomy pain: a pilot study. *Pain Medicine*. 2010;11(11):1628-34.