

*Full Length Research Papers*

# The impact of foot and hand knead on postoperative cardiac surgery torment

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Accepted 20 April, 2022

This study was conducted to decide the impacts of foot and hand knead on postoperative torment and narcotic medicate utilize in cardiac surgery patients. One of the foremost imperative issues and complaint that have been experienced by patients who are affected by surgery is the torment. Physiological reactions to torment make destructive impacts on the body recuperation after cardiac surgery, and they routinely report mellow to direct torment indeed in spite of the fact that narcotic drugs have been managed. This think about was a clinical trial performed within the seriously care cardiac unit (ICCU) and cardiac surgery ward of Gollestan clinic, subordinate on Jondishapour College of Restorative Sciences in Ahwaz city, Iran. Sixty-five patients were chosen based on point and haphazardly doled out to either control (n = 33) or rub gather (n = 32). The rub gather gotten a 20 min foot and hand rub (each limit 5 min) and control bunch rested in bed and analyst was close them for 20 min. Torment concentrated measured by visual simple scale and other factors were measured by check list some time recently and after mediation in two bunches. There was factually noteworthy distinction on the torment escalated and sort, and sum of narcotic medicate utilized between the two bunches after mediation (rub) (p-value = 0.000). Concurring to the gotten discoveries, to begin with and moment theory were endorsed, and the torment was diminished by hand and foot knead. Our think about bolsters the adequacy of knead in postoperative cardiac surgical torment.

**Key words:** Patients, hand and Foot knead, cardiac surgery, torment, clinical trial.

## INTRODUCTION

One of the foremost critical issues and complaints experienced by patients experiencing surgery is the torment. They routinely report gentle to direct torment indeed in spite of the fact that they were managed narcotic drugs. Postoperative torment is one of the intense torment highlights (Monahan et al., 2007; Smeltzer et al., 2008). Physiological reaction to torment may cause hurtful impacts on the recuperation of the body after cardiac surgery (Wang et al., 2004). Postoperative torment for the grown-up patients who experience cardiac surgery has numerous features. Torment may be caused by cuts (Walsh et al., 1997), intra-operative tissue withdrawal and dismemberment, numerous intravascular cannulations, chest tubes inclusion after surgery, and numerous intrusive strategies that patients experience as portion of their helpful regimen (Ignatavicius et al., 1995).

Torment has been pointed out as one of the essential

sources of concern to ICU patients and comparable discoveries have been detailed for cardiac surgery patients as well (Monahan et al., 2008; Mueller, 2000). Uncontrolled postoperative torment may lead to a assortment of complications in cardiovascular, insusceptibility (Hancock, 1996; Ignatavicius et al., 1995), respiratory (Stenseth et al., 1996), metabolic, endocrine (Smeltzer et al., 2008), mindset frameworks (Lynch et al., 1998) additionally increment stability, thrombosis, emboli (Smeltzer et al., 2008), stretched hospitalization and expanded costs (Stenseth, 1996). Torment administration in cardiac surgery is getting to be more vital with the foundation of negligibly intrusive coordinate coronary course bypass surgery and fast-track administration of conventional cardiac surgery patients (Roediger, 2006). Thus, torment alleviation is exceptionally imperative for the recuperation speed and going back to past exercises in patients, this point merits accentuation.

The foremost common intercession for torment control is pain relieving drugs. In numerous individuals, pain relieving solutions can have unsavory side impacts (Perry and Potter, 2006; Smeltzer et al., 2008). There has been an blast of pain literature and investigate within the final

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three decades, but few thinks about have centered on postoperative torment of cardiac surgery pa-tients. In any case, most of them centered on torment escalated. Torment concentrated gives a valuable degree to recognize the sum of torment seen by the quiet and a valuable comparison with other difficult encounters (Mueller, 2000). Complementary techniques based on sound inquire about finding are required to supplement postoperative torment help utilizing pharmacologic management (Monahan et al., 2007). Knead treatment features a long history in societies around the world. Nowadays, individuals utilize numerous diverse sorts of knead treatment for a assortment of health-related postures. In spite of the fact that logical inquire about on knead treatment - whether it works and, on the off chance that so, how - is restricted, there's evi- dence that knead may be useful for a few patients. Conclusions by and large cannot however be drawn approximately its adequacy for particular wellbeing conditions (National Center for CAM, 2009). In later a long time, numerous ponders have been done approximately rub treatment and most of them are related to the final 200 a long time (Grealish et al., 2000). A few ponders appear that rub has valuable impacts on cardiac, respiratory, endocrinology and insusceptibility frameworks (Kim et al., 2001), mindset, uneasiness and push (Tappen et al., 1998). Primarily, complementary and elective medication (CAM) has a few customary employments. Agreeing to the National Wellbeing Meet Overview in 2007, which included a comprehensive study of CAM utilize by Americans, it was assessed that 18 million U.S. grown-ups and 700,000 children had received massage treatment within the past year (National center for CAM, 2009).

Prove is rising that knead treatment may be an vital component of the recuperating involvement for patients after cardiovascular surgery (Brent et al., 2010). Medical caretakers have utilized complementary treatments for numerous a long time to soothe uneasiness, advance consolation, and diminish or reduce torment (Monahan et al., 2007; Smeltzer et al., 2008).

## Aim

This consider was outlined to assess the affect of foot and hand knead on postoperative cardiac torment and sum of analgesic drugs required within the ICCU and cardiac surgery wards.

## RESEARCH DESIGN

This was a randomized controlled trial which was worn out educa- tional Golestan healing center (ICCU and cardiac surgery wards). This clinic is related to the Ahvaz Jondishapur Therapeutic College of Sciences found in Ahvaz city in south west zone in Iran between 2005 and 2006.

## Sampling size and participants

Sixty five patients who experienced cardiac surgery selected for the ponder. Testing strategy was done

persistently, whereas screening was done concurring to the the components included within the ponder. In this consider, of 65 patients, 25% were female and 40% were male, 63% were hitched and 2% were single. Twenty seven of the members were ignorant whereas 6% wrapped up tall school. Almost all patients within the two bunches (64%) experienced common anesthesia and as it were one took spinal. Comes about appeared that there was no critical contrast between both bunches with respect to age, sex, conjugal status, educa- tional level, anesthesia strategy, history of surgery, hospitalization conjointly torment seriousness ( $p>0.5$ ). In the primary postoperative night, patients were arbitrarily (concurring to indeed or odd hospitalization day) allotted to either control ( $n = 33$ ) or knead gather ( $n = 32$ ). Consideration measure included; having capacity to reply to the interviewer's questions. Prohibition criteria included; hands and feet removal, any problem related to vessels and blood, diabetes, visual disorders, hearing disorders and also hypersensitivity to hand and foot massage. Moreover, individual should not be dependent on oxygenation apparatus.

## Data collection

Massage technique was included: finger kneading, thumb kneading (Margaret, 1998) and stroking (Sandy, 2004). At first, hands and feet were massaged from the base of fingers to the wrist, using the thumb and other fingers of one of the researchers (thumb kneading and finger kneading). Then massage continued on the hand and foot with the thumb transversing than the length of the base of the fingers to the wrist for heart massage (thumb kneading). At the next stage, fingers and toes were massaged, after which each finger between two fingertips was rotationally massaged in tension (finger kneading). Finally, the hands and feet, both ventral and dorsal, were massaged to the heart by palms (stroking).

The intervention group received a 20 min foot and hand massage, 5 min for each extremity at a time. Control group received routine nursing care and rested in the bed for the same time (20 min) while researcher was beside them (for emotional consi- deration). Then, pain intensity measured by visual analogue scale (VAS) and other variables were measured by check list before and after massage in two groups. This study was approved by ethical committee of Ahvaz Jondishapour Medical Sciences University in Iran.

## Data analysis

The statistical package of social sciences (SPSS) version 12 was used to analyze the data. Descriptive statistics and percentages for variables determined by counting mean and SD. Independent t-test was used to investigate differences between two groups and paired t-test was used for determine differences before and after in each group for variables which met parametric test assumption. The Mann-Whitney test was used for variables that did not meet these assumptions. The chi-square test was used to analyze the relation- ship between two variables in case of non-continuous data.

Table 1. The socio-demographic and physical characteristics of case and control groups.

Characteristic	Case (N=32)	Controls (N=33)	P value
Age mean	52.03	52.15	N S
<b>Sex {N (%)}</b>			N S
Male	20 (62.5)	20 (60.6)	
female	12 (37.5)	13 (36.4)	
<b>Marital status N (%)</b>			N S
Single	1 (3.1)	1 (3)	
Married	31 (96.9)	32 (91)	
<b>Hospitalization times {N (%)}</b>			N S
No time	7 (21.9)	11 (33.3)	
One time	12 (37.5)	14 (42.4)	
Two times	10 (31.3)	4 (12.1)	
≥three times	3 (8.3)	4 (12.1)	
<b>Education level {N (%)}</b>			N S
illiteracy	13 (40.6)	14 (42.4)	
Primary school	6 (18.8)	6 (18.2)	
Secondary school	5 (15.6)	6 (18.2)	
High school	5 (15.6)	4 (12.1)	
Diploma or university	3 (9.4)	3 (9.1)	
<b>Surgery history {N (%)}</b>			N S
Without	17 (53.1)	17 (51.5)	
≥ one time	15 (46.9)	16 (48.5)	

P values < 0.05 accepted as statistically significant.

## RESULTS

Table 1 shows socio-demographic and physical characteristic of case and control groups. Both groups were matched for age, sex, marital status, hospitalization times, education level and surgery history.

Table 2 indicates intensity pain in both groups before and after cardiac surgery. The results reveal that there was no statistically significant difference between two groups for pain intensity before massage; however, they had significant difference in pain intensity immediately, and 24 h after intervention. The pain severity of intervention group was significantly lower than the control group ( $p > 0.001$ ).

Table 3 shows that both groups had statistically significant difference for time and the kind of sedative drug which used PRN (as needed) ( $p < 0.001$ ); this means that massage group demanded sedative drug less than the control group.

## DISCUSSION

According to the present study results, there was no significant difference between intervention and control groups for pain severity before massage administration, but there was significant difference between the groups

immediately after massage and 24 h after intervention. Clinical trials have shown that 20 min foot and hand massage significantly reduced both pain intensity and distress resulting from incision pain on the first postoperative day (Wang and Keck, 2004). Hattan and King (2002) studied effects of foot massage and conducted relaxation on physiologic factors (pain, calm, anxiety, etc.) of 25 patients after coronary arteries by pass surgery. They did not find any significant relationship between foot massage and pain relief ( $p > 0.05$ ). They suggested that other studies should be performed with more research sample size. It seems that in the study of Hatta and King (2002), the small sample size was a reason for non significant results. Brent et al. (2010) conducted a similar clinical trial on 113 patients (62 massage, 51 control).

Massage group showed significant decrease in pain, anxiety, and tension after the intervention and they were highly satisfied and no major barriers to implementing massage therapy were identified. These researchers suggested massage therapy may be an important component of the healing experience for patients after cardiovascular surgery.

Moreover, we found significant difference between intervention and control group. Massage stimulates non-painful nerve fibers and releases endorphins; it has the potential ability to assist pain relief (Wang and Keck, 2004).

**Table 2.** Comparison of pain severity in the intervention and control groups.

Groups	Control		Cases		Mann witney	Kruskalwalis	z	p-value
	Frequency	Mean	Frequency	Mean				
Before massage	33	4.6970	32	6.3750	501.50	1062.500	-0.364	0.716
Immediately after massage	33	4.5152	32	2.0938	114	642	-0.028	0.00
24 h after massage	33	3.8788	32	1.6250	198	726	-4.339	0.00

**Table 3.** Distribution of participants according to need for analgesic drugs.

Groups	Control		Case		Total
	Frequency	Percent	Frequency	Percent	
None	7	21.3	25	78.1	32
Morphine 2 mg	21	63.6	6	18.8	27
Morphine and pethedine 25 mg	2	6.1	0	0	2
Morphine and suppiteri	2	6.1	0	0	2
Bruphen	1	3	1	3.1	2
Total	33	100	32	100	65

P=0.00.

Massage is a cutaneous stimulation that uses touch and movement of muscle, tendon and ligament without manipulation of joints for pain relief (Perry and Potter, 2006). Related to this, Wang and Keck (2004) studied effects of hand and foot on pain severity after general surgeries (urology, gastrointestinal, gynecology, head and neck) in India.

The patients experienced moderate pain after they received pain medications. This pain was reduced by the massage; the effectiveness of massage in postoperative pain management was supported.

Foot and hand massage appears to be an effective, inexpensive, low-risk, flexible, and easily

applied strategy for postoperative pain management. These results confirm our results. Chang's findings also suggest that massage is a cost-effective nursing intervention that can decrease pain and anxiety during labour in 60 primiparous women (Chang et al., 2002), where there is need to use sedative drug ( $p= 0.00$ ). This result is similar to that of Eghbali et al (2010) study in Iran. They studied the effects of hand and foot massage on postoperative patients who underwent arthroscopic knee surgery patients ( $p= 0.001$ ).

### CONCLUSION

Our results suggested that a 20 min hand and foot

massage intervention could be adjunct to analgesic agents to control the postoperative pain of cardiac surgery. This decreases the doses of analgesics and increase calmness level of these patients.

### ACKNOWLEDGEMENTS

We would like to thank the office of research deputy of vice chancellor of Ahvaz Jondishapour University of Medical Sciences for financial support of this study.

Thanks also extended to Miss Ramezani and other nursing staff personnel in Golestan hospital. All costs of this study are provided by the Ahvaz Jondishapour University of Medical Scienc

in Iran.

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