

Original Research Article

ROLE OF MINDFULNESS IN POST-OPERATIVE REHABILITATION OF ORTHOPAEDICS PATIENTS FROM PUNJAB

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ABSTRACT

Background: The postoperative care regimens play a crucial role in influencing the long-term results of numerous surgical procedures. Various clinical settings have been used to assess a variety of postoperative therapies aimed at improving cognition and coordination, preventing joint stiffness and muscular atrophy, maximising recovery or functioning, and reducing pain. Now a days mindful meditation is gaining popularity in rehabilitation of post operative patients. mindfulness-based interventions (MBIs) are used for the purpose of relieving pain, they may have a greater impact on physical functioning following surgery. **Aims and objectives:** To evaluate the role of mindful meditation on post operative TKR/THR patients in post operative rehabilitation phase

Material and Methods: This descriptive analytical study was carried out on 105 post operative TKR/THR patients in the department of Orthopaedics Government Medical College, Patiala, India from Sep 2023 to Aug 2024. We used SF- 36 questionnaire to assess the effect of mindful meditation on patients, which allows calculating eight different scores (on a scale of 0 -100), a physical component scale (PCS), and a mental component scale (MCS) summary. Mean Mental (MCS) and Physical (PCS) component summary scores were assessed and compared with healthy people involved in the study. Overall, a higher PCS and MCS score indicates better QOL.

Results: out of 124 patients registered, 105 patients with mean age. Were included in the study. SF 36 score was deployed and assessed. The result from this questionnaire showed that mean PCS and mean MCS were significantly higher in patients who were performing mindful meditation compared to the patients in whom mindful meditation was not given and this was statistically significant.

Conclusion: Mindful Meditation is a useful adjuvant in post operative patients treated in orthopaedics in both physical dimension as well as Mental dimension of health, but further research is needed in support of our study to make it a usual practice in post operative patients.

Key words: Mindful meditation, post-op Rehabilitation, quality of life.

INTRODUCTION

More than one million total knee replacements (TKR) and total hip replacements (THR) are orthopedic surgeries that are often performed

worldwide each year to treat end-stage osteoarthritis and rheumatoid arthritis.^[1] Despite being extremely successful therapeutic choices, most patients experience moderate to severe postoperative pain following these surgeries.^[2] Inadequate management

of this discomfort could aggravate the results of surgery by impeding early ambulation and joint mobilization, raising the risk of thromboembolism, and lowering patient satisfaction and well-being.^[2-3] Total knee replacement (TKR) and total hip replacement (THR) are common orthopedic procedures for end-stage osteoarthritis and rheumatoid arthritis and are performed more than 1 million times per annum globally.^[1] While highly effective treatment options, these procedures result in moderate or severe postoperative pain for most patients.^[2] If poorly controlled, this pain may worsen postoperative outcomes by preventing early ambulation and joint mobilization, increasing the risk of thromboembolism,^[3] and reducing patient well-being and satisfaction.^[2]

Opioid medicines are a major component of current postoperative pain management techniques following TKR and THR. Nevertheless, side effects are frequent with these analgesic regimens,^[4] and opioid use disorders are becoming more widespread in the US, where the "Opioid Epidemic".^[5] is a rapidly worsening public health emergency linked to sharp increases in opioid-related hospitalizations,^[6] and opioid overdose death rates.^[7] Persistent opioid use following surgery is prevalent, with rates varying from 4.4% to 23.8% based on the subspecialty and peaking at 23.8% among patients undergoing orthopedic surgeries.^[8] The creation of non-pharmacological techniques for postoperative analgesia in total knee replacement and total hip replacement is essential to minimizing postoperative opioid dependency and averting the negative effects of opioid use disorders, all the while preserving favorable surgical results and patient satisfaction.

"The awareness which arises from purposefully paying attention to present moment experiences non-judgementally" is the definition of mindfulness.^[9] Through instruction in mindfulness meditation, participants in mindfulness-based treatments (MBIs) learn how to respond receptively, openly, and nonjudgmentally to unpleasant sensations, such as painful stimuli.^[10] There is a theory that suggests interacting with pain in this way can lessen its intensity. Evidence from neuroimaging studies has revealed that MBIs may diminish the discomfort of painful stimuli through changes in neurophysiological patterns within the cerebral cortex in response to thermal pain,^[11] which differ from those observed during placebo.^[12]

Using MBIs has been shown to be an effective non-pharmacological way to reduce pain in the clinical setting. These conditions include fibromyalgia (Cohen d effect size, 0.4-1.1), rheumatoid arthritis-related musculoskeletal pain,^[13] and chronic low back pain (relative risk of clinical improvement 1.37 (1.06-1.77) for mindfulness-based stress reduction (MBSR) vs. usual care).^[15] According to recent research, MBIs may be useful in lowering postoperative discomfort following septorhinoplasty.^[16] The current research on this

topic uses tiny sample sizes, and a lack of statistical power may be the cause of some null results.

This study is designed to evaluate the role of mindful meditation on post operative TKR/THR patients in post operative rehabilitation phase.

MATERIALS AND METHODS

The present study was conducted in Orthopaedics Department, Government Medical college, Patiala, Punjab, India, from Sep 2023

to Aug 2024. The study was approved by the Institutional

Ethics Committee of Government Medical College Patiala.

All patients gave their written informed consent before

beginning of the study.

Source of Data

All patients coming to the Department of Orthopaedics for TKR/THR

Inclusion Criteria

- All THR and TKR patients
- Age between 18 -75 yrs
- Surgery scheduled a for at least 7 days after enrolment

Exclusion criteria

- Patients with preexisting cognitive impairment
- Pre-existing history of psychiatric illness
- History of dementia, Alzheimer's disease
- Patients on previous management of chronic pain

All TKR and THR patients will be counselled preoperatively about the mindfulness and those willing to participate will be included in the study. The participants gave their informed consent and were recruited in the study. A complete history was taken and clinical examination was performed and patient demographic data were registered. For assessing pain Vas score is used whereas for assessing effect of mindful meditation on patient SF-36 is used. After the surgical procedure patients will start the mindfulness activities and music therapy will be provided in the post operative wards these patients will be assessed after 7 days, 1 month, 3 months, 6 months and compared with the patients who will not receive the mindfulness and music therapy upto 6 months.

SF36:

After surgical procedure SF36,^[17] is recorded, the SF-36 score was used to assess QOL, and the SF-36 score of patients not doing mindful meditation was calculated throughout the study period. The SF-36 questionnaire assesses eight domains of health-related QOL. The results are scored and transformed on a scale of 0 (worst health) to 100 (highest health) (best score). A physical component scale (PCS) and a mental component scale (MCS) can be used to report SF-36 results (MCS).

Statistical Analysis

The information gathered was processed and analysed using IBM SPSS software version 20 for Windows. All patients were analyzed preoperative and postoperative day 7, 30 days on the scale as mentioned previously. Comparison between mean values of each scale for patients on mindful meditation with the patients who are not on mindful meditation using unpaired t-test was done.

RESULTS

One Hundred and twenty-four patients with TKR and THR were analysed post-operatively out of 124 patients 105 gave their informed consent to participate in the study and 101 were included in the

study. The average age was 53.3 (SD =11.7, range from 18 to 70 years) and there were 63% male patients and 37% female patients. Other general characteristics of patient is given in Table 1.

The average values of SF-36PCS and MCS were calculated at 1st postoperative day, 7, 30 days on both the groups are given in table 2

The value of mean physical health component score of patients who did not receive mind full mediation evaluated with SF36 questionnaire was 26.1. When compared to the patients who received mindful meditation, it was significantly lower ($P < 0.001$). Whereas comparing the Mental score component, which was 29.21, which was also statistically lower ($P < 0.001$).

Table 1: General Characteristics of patients

Age (years)±SD	53.7±13.3
Sex(%)-Male	63
-Female	37
Education(%)-Illiterate	16
-upto 12 th std	40
-College(UG)	38
- PG	6
Marital Status(%)- Married	
Unmarried	91
-Divorced	9
Surgery Performed(%)-TKR	71
-THR	29

Table 2: Comparison of SF-36 between Mindful meditation patients and without Mindful meditation Patients

SF-36 Components	Without Mindful Meditation	With Mindful Meditation	P-value
Physical functioning	78.59	87.11	0.0001
Role Physical	81.35	86.58	0.0001
Bodily pain	69.52	83.23	0.0001
General health perception	67	79.11	0.0001
Energy/Vitality	69.09	74.23	0.0001
Social Functioning	78	85.2	0.0001
Role emotional	69.03	78.43	0.0001
Mental Health	81	93.49	0.0001
PCS	37.7	47.21	0.0001
MCS	39.11	44.71	0.0001

PCS: Physical Component scale, MCS: Mental Component scale

DISCUSSION

The present study investigated the effect of mindful mediation on physical and psychological parameters after total hip/knee replacement surgeries. The basis for the study raised was the current state of research on the effectiveness of mindfulness interventions in different settings, specifically the use of music therapy along mediation and the importance of mental health status in orthopaedic patients. In the study, significant effects were measured for mental and physical health using SF-36 score. In addition, a correlation between self-reported mindfulness, age, gender, and mental health status at the end was identified.

Mindfulness has been successfully used in treating anxiety (E Antonova et al., 2015),^[18] and depression (C Strauss et al., 2014),^[19] but targeted mindfulness training has also been shown to bring about success in the treatment of chronic pain (Bakhshani et al.,

2016).^[20] Furthermore, it has been shown that mindfulness-based interventions are feasible for use in surgical patient populations (Hymowitz et al., 2022).^[21] Thus, mindfulness as a therapeutic approach appears to be a good complement to the relaxation methods used so far, such as autogenic training and progressive muscle relaxation, as well as the complementary movement therapy measures such as Qi Gong, Tai Chi, and yoga (Deutsche Rentenversicherung, 2020).^[22] The integration of relaxation methods (Lin, 2019).^[23] and the mentioned exercise therapies into the rehabilitation therapy standards show the importance of psychological factors for successful process, which is confirmed by numerous studies, for example, on the influence of anxiety and depression on the therapy outcome in orthopaedic diseases (Ali et al., 2017).^[24]

The present study provides evidence that mindful meditation in orthopaedic patients post surgeries as

an additional therapy offer is easy to implement from an organisational and economic point of view and can be a good support for the users. Significant effects of the intervention could be demonstrated for physical as well as mental components of health, indicating that the intervention has a positive effect. This is partly in line with the study of Ali et al. (2017).^[24]

There is an accumulation of evidence suggesting that mindful meditation correlates positively with the state of mental and physical health in post operative patients of orthopaedics. This aligns with a study by university students showing that trait mindfulness is related to psychological aspects after a short mindfulness intervention (Sousa et al., 2023).^[25] However, no single predictor was significant, and the explained variance was relatively small.

CONCLUSION

Mindful Meditation is a useful adjuvant in post operative patients treated in orthopaedics in both physical dimension as well as Mental dimension of health, but further research is needed in support of our study to make it a usual practice in post operative patients.

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