

## **TUINA THERAPY FOR MUSCULOSKELETAL PAIN RELIEF: EXPLORING ITS IMPACT ON KNEE OSTEOARTHRITIS, BACK AND SHOULDER PAIN**

**Muhammad Asim**  
(Corresponding author)

Department of Eastern Medicine, Faculty of Medicine and Allied Health Sciences,  
The Islamia University of Bahawalpur, Pakistan.

**Email:** [asim32988@gmail.com](mailto:asim32988@gmail.com)

**Faizan mohi ud din Rawa**

Department of MBBS, Quaid-e-Azam Medical College Bahawalpur.

**Email:** [faizanrawa7@gmail.com](mailto:faizanrawa7@gmail.com)

**Dr. Zumar Rizvi**

Margalla College of Pharmacy, Margalla institute of health sciences.

**Email:** [zumarrizvi@gmail.com](mailto:zumarrizvi@gmail.com)

**Faziyya Latif**

Department of Pharmacy, Iqra University H-9 Islamabad campus.

**Email:** [Latiffaziyya@gmail.com](mailto:Latiffaziyya@gmail.com)

**Faiza Jamshaid**

Margalla College of Pharmacy, Margalla institute of health sciences.

**Email:** [faizajamshaid9@gmail.com](mailto:faizajamshaid9@gmail.com)

### **Abstract**

Musculoskeletal pain, such as knee osteoarthritis, back pain, and shoulder pain, is quite common and often hurts a person's quality of life. Conventional treatments can only bring minimal relief, thus making it imperative for individuals to turn to alternative therapies like Tuina therapy. Tuina is a historical Chinese manual therapy acupressure, joint manipulation, and muscle techniques used to relieve pain and increase mobility. Homeopathic and Tibbi Medical Center treated 60 patients suffering from knee osteoarthritis, back pain, and shoulder pain at Islamia University, Bahawalpur. The therapy included joint manipulation techniques along with acupressure tuina. Pain levels and flexibility improvements regarding the patients were measured before and after treatment. Patients suffering from knee osteoarthritis reported 57% less suffering from pain and a 25% improvement in flexibility. Patients with

back pain reported a reduction of 64.7% in pain and an improved flexibility of 30%. Patients with shoulder pain showed a decrease of 51.3% in pain and a 20% increase in the range of motion. Overall, around 70% of the patients rated therapy as excellent. The therapy practiced in Tuina proved very helpful in reducing musculoskeletal pain and also improved flexibility or range of motion in cases of knee osteoarthritis, back pain, and shoulder pain. This points to the fact that Tuina therapies can be a complementary form of treatment in chronic musculoskeletal morbidity and should be further studied in larger studies with control groups.

**Keywords:** Muscul, knee, osteoarthritis, back pain, Tuina therapy.

## **INTRODUCTION:**

*It is that thousands of millions of people across the world suffer from musculoskeletal pain, and this has quite an impact on their quality of life as mobility is limited, productivity is reduced, and almost always accompanied by chronic pain. Musculoskeletal disorders such as knee osteoarthritis, back pain, and shoulder pain are the commonest and generally result from age, overuse, injurious accidents, or a sedentary lifestyle[1]. Such conditions further add to the woes of a healthcare system and severely affect the personal physical, psychological, and social aspects of life. A plethora of pharmacological and non-pharmacological approaches have now developed; however, there seems to be an ever-increasing demand for safe, highly effective, and holistic remedies to solve the real underlying causes of pain while not having any associated side effects. The latest one getting into the limelight among these therapy treatments is Tuina an essential part of traditional Chinese medicine (TCM)[2].*

*Tuina ("twee-nah") therapy combines massage, acupressure, and other manipulative techniques into a manual therapy which translates into "push and grasp" or other such terms. Tuina is a TCM-based therapy that seeks to bring balance into the organism by removing blockages in the energy streets, known as meridians, and improving the flow of qi (vital energy)[3]. Tuina ("twee-nah") therapy combines massage, acupressure, and other manipulative techniques into a manual therapy which translates into "push and grasp" or other such terms. Tuina is a TCM-based therapy that seeks to bring balance into the organism by removing blockages in the energy streets, known as meridians, and improving the flow of qi (vital energy)[4].*

*Osteoarthritis in the knee is a joint disease where there is deterioration of the cartilage accompanied by inflammation. This disease has been proven to be one of the major and common causes of chronic pain and disability in the world today. As for knee osteoarthritis, the typical modalities include NSAIDs, steroid injections, and surgical options; however, they entail considerable*

## **TUINA THERAPY FOR MUSCULOSKELETAL PAIN RELIEF: EXPLORING ITS IMPACT ON KNEE OSTEOARTHRITIS, BACK AND SHOULDER PAIN**

---

*contraindications and risks[5]. It shows very good promise as a less invasive supplement for pain relief, joint mobilization, and potentially a means to slow disease progression. It is also found that Tuina would benefit the treatment of knee pain by reducing pain and stiffness through improving circulation and aspirational inflammation and the body's natural healing mechanisms[6].*

*Back pain usually affects adults sometimes up to 80%. Like many such disorders, it usually doesn't have a single reason but may be caused by improper posture, or injuries such as muscle strains or ruptured discs. Chronic back pain can significantly hamper daily routines and lead individuals to psychological issues, including anxiety and depression[7]. Tuina therapy: Aligning musculoskeletal structures and relieving deep tissue tension has proven to provide much relief for many a patient suffering from back pain. The combination of techniques incorporating deep pressure rhythms with stretching and mobilization relieves muscle spasms, improves spinal alignment, and restores functional mobility. Indeed, shoulder pain, usually associated with the likes of rotator cuff injuries, frozen shoulder, or tendonitis, is just one of those in which tuina therapy has proven effective. Even the most trivial activities, such as dressing or lifting something, are nearly impossible for those affected by limited mobility and long-standing pain in their shoulders. Addressing both the structural and energetic imbalances that have given rise to shoulder pain, tuina therapy employs target manipulations and stimulation of specific acupressure points. Research shows that regular Tuina therapy sessions improve the range of motion, the intensity of pain reduction, and the overall function of the shoulder[8].*

*In addition, all this is being substantiated by forthcoming scientific evidence that indicates a strengthening interest in Tuina therapy to relieve musculoskeletal pain. Unlike the pharmacological treatment that only gives importance to the management of painful symptoms, Tuina therapy is aimed to approach both sides, treating the causality generally but also including the complete health of the patient. Most importantly, it also combines individualization and noninvasiveness, and it also makes this a very attractive option for patients seeking alternative or supplementary treatment[9].*

*This manuscript describes the use of Tuina therapy as an adjunct or alternative intervention to the management of musculoskeletal pain types, primarily knee osteoarthritis, back pain, and shoulder pain. The discussion will*

*delve into the historical origins and mechanisms of action as well as clinical evidence backing Tuina's application, and through this discussion will aim to shed light on how Tuina can be effective and meaningful today in pain management. Furthermore, the article explores how Tuina integrates within the conventional approaches and may serve as practical contributions to providers and patients.*

*In a world that increasingly embraces an integrative, patient-centered approach in healthcare, understanding Tuina therapy about musculoskeletal pain management becomes important, especially with the increasing demand for invasive and holistic therapies. Indeed, Tuina is the proven practice in this domain, bridging ancient healing with contemporary medical science. Thus, addressing its benefits as well as limitations, this study is a promising perspective on how Tuina will potentially change the face of musculoskeletal pain relief.*

## **METHODS**

### **STUDY DESIGN AND SETTING**

*The Hospital and Tibbi Medical Centre-styled Homeopathy was carried out at Islamia University of Bahawalpur. This center is integrative in approach in the sense that it combines Eastern healings with modern medical interventions. The study was conducted in clinical settings, thus having proper patient care and safety during the whole process. Ethics clearances of the research were obtained through the ethics review board of the university. Informed consent was taken from all the participants at the starting point of any therapy procedure.*

### **PARTICIPANT SELECTION**

*A study on musculoskeletal pains including knee osteoarthritis, back pain, and shoulder pain was conducted. Its inclusion criteria would include:*

*Adults aged 30 to 70 years. Diagnosed with knee osteoarthritis (clinical and radiological criteria), chronic back pain, or shoulder pain. Not having a history of any previous surgery related to the affected area. Consent for Tuina and reporting from the patient regarding the outcome of treatment[10].*

*Other conditions that were excluded, included systemic inflammatory diseases like rheumatoid arthritis, acute injuries, or conditions that needed surgical intervention. Thus, a total of 60 patients are selected for the study.*

### **TUINA THERAPY PROCEDURE**

*This Tuina therapy is a part of the entire program of Chinese traditional medicine and is individualized to correspond to the specific musculoskeletal problem of each patient. The therapy was complemented by an experienced*

## **TUINA THERAPY FOR MUSCULOSKELETAL PAIN RELIEF: EXPLORING ITS IMPACT ON KNEE OSTEOARTHRITIS, BACK AND SHOULDER PAIN**

---

*Tuina practitioner. Each session varied between 30 and 45 minutes and consisted of treatments twice to thrice a week with a total intervention duration of four weeks.*

### **PREPARATION AND PATIENT POSITIONING**

*The subjects are fairly placed on the massage table, that is either their entire lying body or just the affected part. After that, the visible area is opened up, observing the patient's modesty and hygiene. Warm towels were laid over the site, making it much easier for the muscles. Relaxed before therapy started[11].*

### **TUINA TECHNIQUES**

*The therapy comprised the following techniques, applied according to the patient's condition:*

#### **KNEE OSTEOARTHRITIS:**

*Around the knee, kneading-and-pressing techniques in a circular manner were beneficial to blood circulation in the local region (fig 3). Rolling and grasping motions were performed on the quadriceps and hamstring muscles, thus improving stiffness and mobility in the joints[12].*

#### **BACK PAIN:**

*The technique of finger press and rolling movement has been carried out on the paraspinal muscles to relieve tension and improve spinal alignment (fig 2). Rhythmic tapping and friction techniques have been applied to the lower back, stimulating the blood flow and providing relaxation[13].*

#### **SHOULDER PAIN:**

*The trapezius and deltoid muscle tension has been relieved by pinching and grasping techniques (fig 1).*

*Rotational stretching and joint mobilization techniques have been applied to improve the shoulder joint's range of motion (**Table 1**).*

### **ACUPRESSURE APPLICATION**

*Specific acupoints were targeted during therapy to enhance the therapeutic effects, including:*

- **Knee Osteoarthritis:** ST35 (Dubi), GB34 (Yanglingquan), SP9 (Yinlingquan).
- **Back Pain:** BL23 (Shenshu), BL25 (Dachangshu), DU3 (Yaoyangguan).
- **Shoulder Pain:** LI15 (Jianyu), SI9 (Jianzhen), SJ14 (Jianliao).

*Firm yet gentle pressure was applied to these acupoints using the thumbs or palms[14].*

## **POST-THERAPY GUIDANCE**

*The patients were further advised to do light stretching exercises and be in a good posture to augment Tuina maneuvers. Dietary and lifestyle changes were also advised for the patients in line with the principles of the Eastern way of life to support this therapy's efficacy.*

## **OUTCOME ASSESSMENT**

*The efficacy of Tuina therapy was evaluated using the following methods:*

**Visual Analog Scale (VAS):** *Patients rated their pain intensity on a scale of 0–10 before and after each session [15].*

**Movement Measurement:** *Joint mobility was measured in the affected joints (knee, back, shoulder) using the goniometer.*

**Questionnaire on Patient Satisfaction:** *At the end of the treatment course, patients were asked for feedback on their overall experience, perceived improvement, and side effects.*

**Follow-Up:** *Patients were reassessed after one month of termination of therapy to determine whether the pain relief and improvement in functionality were sustainable.*

## **DATA ANALYSIS**

*Data with numbers adopted the scoring of VAS and measurements of ROM covered through the applications of statistical software. To test the edits, a paired t-test was used for the comparison of pre-and post-treatment scores. Then, the differences between these scores after treatment were calculated from the pre-and post-treatment scores. Next, the qualitative feedback of the patient questionnaires was divided according to the theme for common patterns and insights [16].*

<i>Aspect</i>	<i>Description</i>
<i>Location</i>	<i>Homeopathic and Tibbi Medical Center, IUB</i>
<i>Participants</i>	<i>Adults (30–70 years) with knee, back, or shoulder pain</i>
<i>Sessions</i>	<i>30–45 mins, 2–3 times/week, for 4 weeks</i>
<i>Techniques</i>	<i>Kneading, pressing, rolling, stretching, acupressure</i>
<i>Outcome Measures</i>	<i>VAS (pain), ROM (mobility), satisfaction survey</i>
<i>Analysis</i>	<i>Paired t-tests, thematic feedback analysis</i>

**Table 1: "Details of Treatment Protocol and Outcome Measures for Pain Management"**

## **RESULTS**

*In total, there were 60 people present in this research. The average age of the participants is 50 years (30-70 years old). Among these people, 35% (21 out of 60) were male, while 65% (39 individuals) were females. Beyond that, the*

## **TUINA THERAPY FOR MUSCULOSKELETAL PAIN RELIEF: EXPLORING ITS IMPACT ON KNEE OSTEOARTHRITIS, BACK AND SHOULDER PAIN**

---

*conditions treated included knee osteoarthritis (20 patients, 33.3%), back pain (25 patients, 41.7%), and shoulder pain (15 patients, 25%). The demographic thus might indicate a diverse age and severity group of musculoskeletal pain.*

### **REDUCTION OF PAIN**

*The study found a significant reduction of pain ratings in all conditions by administering the VAS. For knee osteoarthritis patients, the VAS score averaged reduced from 8.2 to 3.5, denoting a 57% reduction of pain in that group; back pain patients experienced the highest relief, with VAS scores dropping from 8.5 to 3.0 for a reduction of 63%; and shoulder pain patients from 7.8 to 3.8, a decrease of 50%. These differences were statistically significant ( $p < 0.05$ ), demonstrating the effectiveness of Tuina in relieving musculoskeletal pain.*

### **RANGE OF MOTION IMPROVEMENTS**

*The improvement of range of motion (ROM) was noted in all the groups of patients who were assessed. The joint movement improved joint mobility for knee osteoarthritis patients by 25%, thus helping them to function better in their everyday activities. While the patients with back pain showed an improvement in spine flexibility of 30%, patients with shoulder pain showed a 20% improvement in shoulder mobility. It shows that the therapy is capable of*



*bringing about improvement in physical function and flexibility at the site of the particular condition.*

***Fig 3: backbone massage and movement Fig 2: knee massage***

***Fig 1: Shoulder massage***

### **PATIENT SATISFACTION**

*The patient satisfaction survey carried out revealed that patients overwhelmingly approved of it. Among the 60 patients, 42 (70%) reported*

having experienced excellent pain relief and mobility improvement. Whereas 12 patients (20%) reported moderate improvement, the remaining 6 patients, making 10%, reported little or no improvement. This set of satisfaction data represents a great impact of Tuina on the welfare of patients.

### **SUSTAINABILITY OF BENEFITS**

The Follow-up undertaken after a single month of therapy indicated that 80% of the cases or 48 patients had retained their improvements in pain relief and mobility. A retrospective look, however, revealed that the other 20% (12 patients) may have experienced mild recurrences of their symptoms but not at the intensity they had experienced before therapy; per this finding, though, such benefits were sustained over time and thus serve to demonstrate the efficacy of Tuina therapy in treating chronic musculoskeletal conditions (**Table 2**).

### **ADVERSE EFFECTS**

No significant negative effects were observed during the therapeutic session and follow-up period. However, 5% of participants reported slight discomfort during treatment typically characterized as transient soreness or tenderness at the place of treatment. All those minor adverse reactions would resolve spontaneously without any intervention, thus indicating the safety and tolerability of Tuina therapy.

<b>Condition</b>	<b>Number of Patients</b>	<b>Pain Reduction (%)</b>	<b>Improvement in Flexibility/Range of Motion (%)</b>	<b>Overall Patient Satisfaction (%)</b>
<b>Knee Osteoarthritis</b>	20	57%	25%	70%
<b>Back Pain</b>	25	63%	30%	65%
<b>Shoulder Pain</b>	15	50%	20%	65%
<b>Total Patients</b>	60	-	-	66%

**Table 2: "Distribution and Prevalence of Pain Conditions Among Patients"**

### **COMPARISON OF CONDITIONS**

Back Pain Patients have shown almost the highest reduction in VAS scores and the highest improvement in their ROM, thus proving that Tuina therapy was beneficial to spinal flexibility and pain relief. Patients with knee osteoarthritis reported significant improvement in pain intensity and mobility,

## **TUINA THERAPY FOR MUSCULOSKELETAL PAIN RELIEF: EXPLORING ITS IMPACT ON KNEE OSTEOARTHRITIS, BACK AND SHOULDER PAIN**

---

*while patients suffering shoulder pain also benefited from therapy, though the results were somewhat less impressive than those of other groups. Such findings would imply that Tuina therapy now stands classified as a safe, non-invasive treatment for painful musculoskeletal conditions with associated limited mobility enhancement. Not only synergistically does it relieve pain and improve mobility, but it also demonstrates very high levels of patient satisfaction and thus has the potential to be an option in treatment for knee osteoarthritis, back pain, and shoulder pains, with its durability and lesser side effects adding strength to its clinical applicability.*

### **DISCUSSION:**

*Tuina therapy is an ancient Chinese healing method that has rapidly gained increasing fame in treating various musculoskeletal disorders such as knee osteoarthritis, back pain, and shoulder pain. Tuina uses a combination of acupuncture, manipulation of joints, and muscle techniques to return the Qi of the body to its normal balance, facilitate blood circulation, and relieve pain. Continued studies and knowledge on Tuina therapy will likely spell good news to patients with chronic pain because it might emerge as an alternative or complementary way of managing chronic pain, as it would primarily reduce inflammation, improve mobility, and enhance the quality of life. The study was to investigate whether or not Tuina could offer patients suffering from knee osteoarthritis, back pain, and shoulder pain relief from musculoskeletal pain. Especially focused on patients who did not get any relief through standard treatments[17].*

*The findings of this research include strong testimony about the use of Tui-Na Therapy in enhancing pain relief and finally improving the functional outcomes in musculoskeletal patients. Of the knee osteoarthritic patients, pain relief was dramatic with a 57% reduction after treatment, with a rise of about 25% in the knee joint flexibility. This corresponds well to what has already been established in previous literature, which has suggested that Tui-Na would reduce pain and soreness connected with degenerative joint conditions[18]. The mechanical manipulation is so in Tuina therapy concerning the knee joint that promotes better circulation around the knee, lessens the inflammation, and improves the functioning status of its surrounding tissues. The validity of Observations made in this study is also true for other studies that mention that manual therapy like Tuina can significantly de-sensitize pain as well as improve*

*the mobility of patients suffering from knee osteoarthritis due to the improvement in blood flow with tissue repair stimulation[19].*

*Most jaw-dropping results as treatments created under the scheme occurred in patients suffering from back pain. A 64.7% decrease in pain and a 30% enhancement in spinal mobility were reported by the study participants, which is consistent with previous studies indicating effectiveness in treating chronic back pain through Tuina. Back pain is frequently caused by muscle tension, vertebral malalignment, or nerve compression; in Tuina therapy, the respective problems are addressed by relieving muscular stiffness, lessening inflammation, and enhancing spinal mobility. Techniques such as spinal manipulation and acupressure are said to stimulate the body's innate capacity to heal itself so that it achieves pain relief and increases flexibility over time. It is thus confirmed that Tuina therapy is one promising approach to chronic low back pain in terms of both immediate relief and mobility over time[20].*

*People have shown some improvements after Tuina therapy for shoulder problems, which could be the result of a frozen shoulder or a rotator cuff injury, but not as much as osteoarthritis of the knee and back pain. Fifty-one point three percent reduced pain and a 20 percent increase in range of motion were found in patients: indeed, these haven't been larger than modest, but "small" does prove the therapeutic potential of Tuina for musculoskeletal pain in the upper body. Gentle manipulation and stretching that are used in Tuina help to release shoulder muscles, enhance circulation, and reduce stiffness and discomfort due to shoulder conditions. Thus, though not as impressive as knees and back pain recovery, it did relieve most of the patients, suggesting Tuina therapy seems promising as adjunctive therapy for shoulder pain, especially in conjunction with other therapies, such as physical therapy or acupuncture[8].*

*This multiple approach is reflected in the functioning of Tuina therapy. Possibly because of stimulation of acupressure points located along the body's meridians, the flow of Qi is facilitated, blockages are removed, and the circulation of blood, as well as energy, is improved. In doing so, the self-healing prospects of the body are improved and, more specifically, pain and inflammation decrease too. Involvement of muscles, as manipulated by Tuina, bears importance in musculoskeletal pain relief[20]. By relaxing tight muscles and restoring the imbalances caused by some muscle dysfunctions, Tuina therapy decreases mechanical stress, which frequently results in pain and restricted movement. Furthermore, the use of certain manual techniques in Tuina will allow blood flow into the affected areas, thereby facilitating tissue*

## **TUINA THERAPY FOR MUSCULOSKELETAL PAIN RELIEF: EXPLORING ITS IMPACT ON KNEE OSTEOARTHRITIS, BACK AND SHOULDER PAIN**

---

*regeneration while also reducing the inflammation that most often aggravates conditions like osteoarthritis and back pain. Such therapy techniques combined make Tuina a cost-effective yet holistic approach to managing musculoskeletal conditions[21].*

*The positive outcomes shown in this report have been further proven through the acceptance of patients since 70% of the participants reported their results as excellent. Most participants report having continued effects after their last treatment, with many noting that this pain relief lasted for weeks. This is very important since chronic musculoskeletal pain is often very challenging to treat traditionally and even leads to dependence on long-term medication or surgery procedures. These outcomes from Tuina therapy present an alternative or complementary therapy for managing chronic pain without medications or even surgery. A small proportion of participants reported a slight recurrence of pain, which can be expected in a chronic disorder such as osteoarthritis and back pain. This indicates that Tuina therapy may effectively relieve patients for a very short term, and maintenance therapy may be needed for the long-term upkeep of benefits.*

*Although the findings of the study are encouraging, several limitations need to be remedied in further research. For example, the sample of 60 patients is considerably small, and larger and more heterogeneous participants would be required to validate the present findings and hence give the basis of more robust evidence on the efficacy of the Tuina therapy. Moreover, this study did not incorporate any control or placebo treatment, which makes it difficult to clarify whether the improvements were due to Tuina therapy alone, the naturally improving course of the condition, or placebo effects. Future randomized controlled trials (RCTs) of larger samples and with controls would help provide a better understanding of the actual effects of Tuina therapy on musculoskeletal pain.*

### **CONCLUSION:**

*Based on the findings of the study, Tuina therapy is considered effective management of musculoskeletal pain, especially knee osteoarthritis, back pain, and shoulder pain. Significant reduction of pain, better joint flexibility, and enhanced mobility yield this therapy as an important non-invasive, drug-free alternative to conventional total pain management strategies. The success of the therapy is based on the stimulation of acupressure points, manipulation of*

muscles, and increased blood flow. All these elements contribute to improvement in functional recovery and pain reduction. The present study would provide preliminary encouragement towards the development of evidence for the eventual use of Tuina therapy as a treatment intervention for chronic musculoskeletal pain; much larger sample sizes and control groups are needed for future studies.

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**AUTHOR CONTRIBUTION:**

The authors confirm their contribution to the paper as follows: study conception Muhammad Asim, and design Data Collection Faizan mohi ud din Rawa, Analysis and interpretation of results. Dr. Zumar Rizvi, Faziyya Latif, Draft and manuscript preparation Faiza Jamshaid. All authors reviewed the results and approved the final version of the manuscript.

**DATA AVAILABILITY:**

All the work is performed in the labs of the Islamia University of the Bahawalpur and supporting data is collected from different authentic research papers.

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The authors declare no conflict of interest.



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**TUINA THERAPY FOR MUSCULOSKELETAL PAIN RELIEF:  
EXPLORING ITS IMPACT ON KNEE OSTEOARTHRITIS, BACK AND  
SHOULDER PAIN**

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