International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 19s, 2025
https://www.theaspd.com/ijes.php

Analysis Of Preferred Manual Techniques For Low Back Pain Among Orthopedic Physiotherapists Practitioners

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ABSTRACT

BACKGROUND *- Low back pain (LBP) is a leading cause of disability globally, with up to 80% of people experiencing it in their lifetime. In India, LBP is a common issue treated conservatively by orthopedic physiotherapists using various manual therapy techniques, including myofascial release, mobilization, manipulation and neural mobilization. There is continually emerging evidence supporting these various methods; however, clinical practice can be very different due to variable education, experiences, institutional practices, and patient factors. There is a considerable separation between guideline level evidence and real-world practice, with the majority of physiotherapists using habitual or experiential methods. Understanding what manual techniques are currently being used will enable identification of trends, inform clinical decision making and improve compliance with best practice. The overall aim of this study is to determine the manual techniques preferred by orthopedic physiotherapists in India when treating LBP, as well as investigate the factors informing their use.*

OBJECTIVE*- 1. The most commonly employed manual therapy methods, favored by orthopedic physiotherapists to manage low back pain in India*
2. Evaluation of factors determining the choice and efficacy of these techniques in clinical practice.
METHODOLGY*- This study is an analytical, observational research conducted in India over a period of 9 months. The sample size was calculated using the formula $n = Z^2PQ / L^2$, resulting in a total of 75 participants. A convenient sampling technique was employed to recruit participants. The primary outcome measure was obtained through a self-filled questionnaire designed to capture data relevant to the study objectives.*
RESULT*- This study analyzed preferred manual therapy techniques for low back pain among 75 orthopedic physiotherapists in India. Most participants were young (ages 27–28) and female (77.3%), with varied experience levels. The most used techniques were myofascial release (33.3%), mobilization (22.7%), and overall soft tissue methods (41.3%). Nearly all therapists (98.7%) used a multimodal approach, guided mainly by clinical findings (48%) and pain intensity (44%). A majority practiced in hospitals (57.3%), primarily in Mumbai, Thane, and Pune, treating 5–10 LBP patients weekly. Sessions typically lasted 10–20 minutes, with most reporting improvements in pain and function. While 48% had workshop-based certifications, only 56% had advanced training. There was interest in techniques like McKenzie, dry needling, and IASTM. Barriers included patient compliance (52%), time, and technique difficulty.*
CONCLUSION*- This research illustrates the current trends in practice patterns of orthopedic physiotherapists in managing low back pain, highlighting a strong inclination toward the use of soft tissue techniques, namely myofascial release and mobilization. Most clinicians note a preference for a multidisciplinary or multimodal and patient-centered approach, influenced by their clinical findings and pain numbers. Overall, the sample consisted mainly of predominantly female, younger, early career physiotherapists with different addons and levels of training, some of which indicated interest in additional training or education to learn more advanced techniques. While they expressed positive perceptions about efficacy, the challenges with manual therapy intended for patients still existed, such as patient compliance, time limitations, and difficulty implementing into practice. Overall the study highlights a gap in standardized training, but also the necessity for additional research in clinical settings to create that bridge between best evidence and clinical practice.*

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KEYWORDS- *Low back pain, manual therapy, physiotherapy, mobilization, myofascial release, orthopedic, treatment, techniques, practice, rehabilitation.*

INTRODUCTION

Low back pain (LBP) is a highly prevalent musculoskeletal condition, affecting approximately 80% of individuals at some point in their lives and contributing significantly to global disability and healthcare costs. It is a multifactorial condition with underlying causes that include mechanical strain, degenerative disc disease, facet joint dysfunction, spinal stenosis, sacroiliac joint problems, nerve root compression, inflammatory conditions like ankylosing spondylitis, and even systemic factors such as infections or malignancies. Injuries may involve various anatomical structures including the lumbar vertebrae, intervertebral discs, facet joints, paraspinal muscles, ligaments, sacroiliac joints, and nerve roots. Contributing risk factors include poor posture, a sedentary lifestyle, obesity, repetitive lifting or bending, prolonged sitting or standing, smoking, aging (especially over 40 years), and psychological stress or mental health issues.

LBP can be classified based on duration into acute (less than 6 weeks), subacute (6 weeks to 3 months), and chronic (more than 3 months), with each category requiring different clinical attention. It is also categorized by cause (non-specific or specific), by pathophysiological mechanisms (mechanical, radicular, inflammatory, traumatic), and by anatomical location (axial or radicular). Non-specific LBP, usually mechanical in nature, accounts for nearly 90% of cases and is often the result of muscle or ligament strain or minor disc issues. Specific LBP involves identifiable pathologies such as herniated discs, spinal stenosis, fractures, tumors, or infections and requires targeted management.

Orthopedic physiotherapists play a central role in the conservative management of LBP, employing a range of manual therapy techniques tailored to the patient's specific condition. These include myofascial release, spinal mobilization (Grades I–IV), high-velocity manipulations, muscle energy techniques (MET), neural mobilization, and posture correction strategies. The choice of technique often depends on clinical findings, patient response, therapist training, and available resources. Most physiotherapists use a multimodal approach, combining manual therapy with exercise programs, ergonomic advice, and patient education to address both physical and functional limitations.

Assessment of LBP involves a comprehensive patient history to identify symptom duration, aggravating or relieving factors, and previous episodes. Pain intensity and characteristics are often measured using standardized scales such as the Visual Analog Scale (VAS) or Numeric Rating Scale (NRS). Physical examination includes lumbar range-of-motion testing, muscle strength and flexibility assessment, palpation, gait analysis, and posture evaluation. Neurological assessment may include reflex testing, dermatomal sensory checks, and special tests like the Straight Leg Raise (SLR) or Slump test for nerve involvement. Inflammatory indicators like prolonged morning stiffness or systemic symptoms may suggest conditions like ankylosing spondylitis. Functional assessments help determine the impact of LBP on daily activities and work capability.

Identifying red flags is also crucial during physiotherapy assessment. These include unexplained weight loss, history of cancer, fever, severe or unrelenting night pain, and neurological deficits—all of which may indicate serious underlying pathology requiring immediate referral for medical evaluation and imaging. Understanding the classification and pathophysiology of LBP allows physiotherapists to deliver appropriate, evidence-based, and patient-centered care, reducing the risk of chronicity and improving quality of life.

1. AIM: Analysis of Preferred hands-on treatments for lower back pain Among Orthopedic Physiotherapy Practitioners.

2. OBJECTIVE

- The most commonly employed manual therapy methods, favored by orthopedic physiotherapists to manage low back pain in India.
- Evaluation of factors determining the choice and efficacy of these techniques in clinical practice.

3. MATERIAL AND METHODOLOGY

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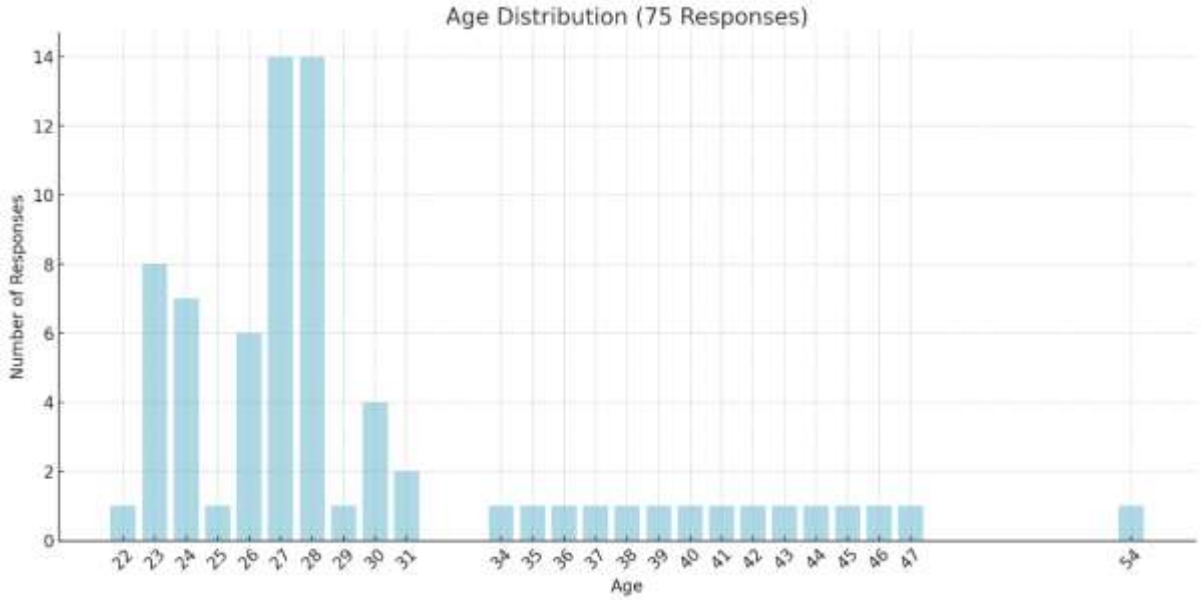
This study was designed as an analytical observational research project aimed at understanding the preferred manual therapy techniques used by orthopedic physiotherapists in the management of low back pain. The study was conducted over a period of nine months across various regions in India, targeting registered orthopedic physiotherapy practitioners actively involved in clinical care. The sample size was determined using the formula $n = Z^2PQ / L^2$, where Z = 1.96 (standard normal deviate for 95% confidence), P = 75.3 (estimated proportion based on preliminary data), Q = 100 – P, and L = 5 (margin of error). This calculation resulted in a required sample of approximately 75 participants. A convenient sampling technique was adopted, allowing easy access to participants based on availability and willingness to participate, while still meeting defined inclusion criteria such as years of experience, field of practice, and consent to participate. The primary outcome measure was collected using a structured self-filled questionnaire, which included both closed and open-ended questions. The questionnaire was designed to gather detailed information regarding the types of manual therapy techniques commonly used, their perceived effectiveness, frequency of application, training background, and any barriers encountered in clinical practice. This method ensured that responses were gathered uniformly and allowed participants to reflect on their personal clinical preferences and practices. Data from the questionnaire served as the foundation for statistical analysis and interpretation of clinical trends among physiotherapists treating low back pain in India.

4. RESULT



Age (Years)	Number of Participants (n)	Percentage (%)
25	8	10.7%
26	9	12.0%
27	14	18.7%
28	14	18.7%
29	10	13.3%
30+	20	26.6%
Total	**75**	**100%**

The age distribution of 75 orthopedic physiotherapists participating within the study on preferred manual therapy strategies to manage low back pain reveals that the majority are aged 27 and 28 (each 18.7%), followed by practitioners in their mid-20s. This suggests that younger professionals predominantly contribute to current clinical trends in manual therapy.

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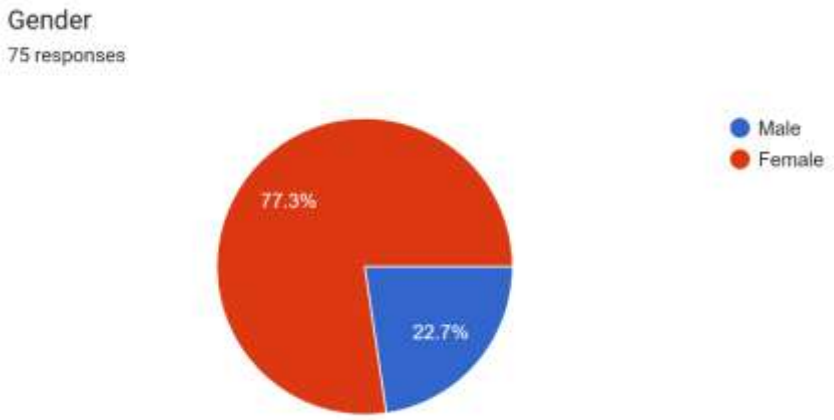
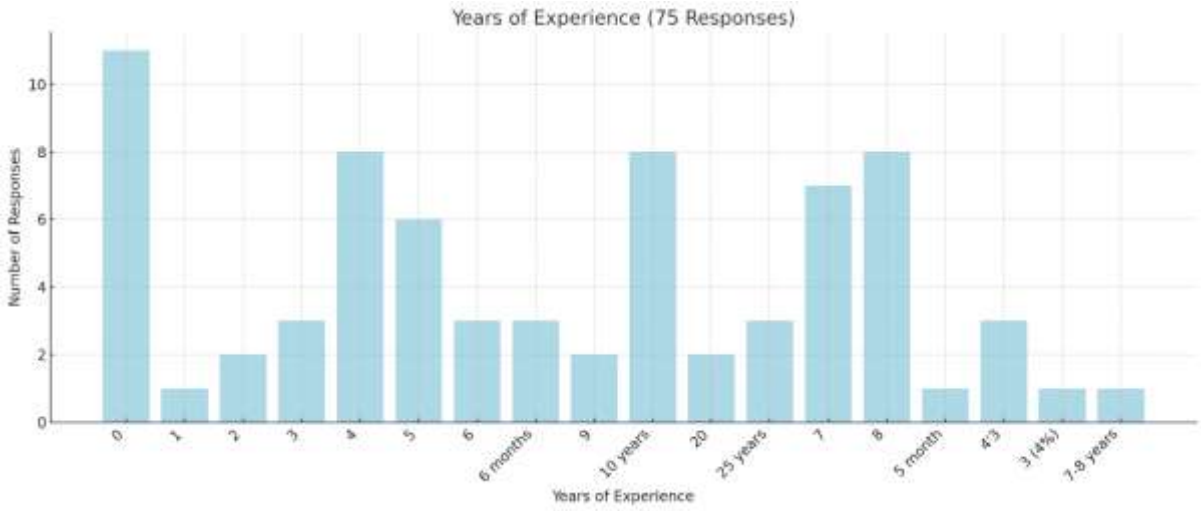


Gender	Number of Participants (n)	Percentage (%)
Female	58	77.3%
Male	17	22.7%
Total	**75**	**100%**

The gender distribution of the 75 orthopedic physiotherapists surveyed shows that 77.3% are female and 22.7% are male. This indicates a significant female majority among practitioners adding to the study on preferred manual therapy strategies for managing low back pain.



Years of Experience	Number of Participants (n)	Percentage (%)
0 years	11	14.7%
4 years	8	10.7%
10 years	8	10.7%
Other (1–3, 5–9, 11+)	48	64.0%
Total	**75**	**100%**

Years of experience among the 75 orthopedic physiotherapists show a wide range, with the highest proportion (14.7%) having no experience, followed by clusters around 10 years and 4 years (each 10.7%). This suggests that both fresh graduates and mid-career professionals are actively engaged in applying manual therapy strategies to manage low back pain.

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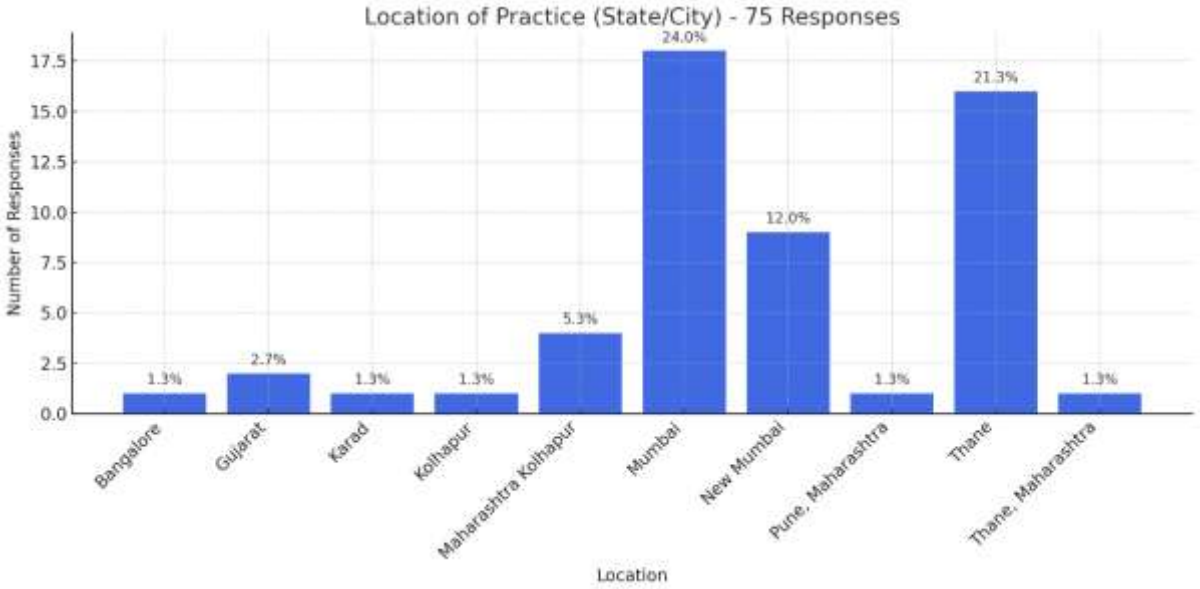
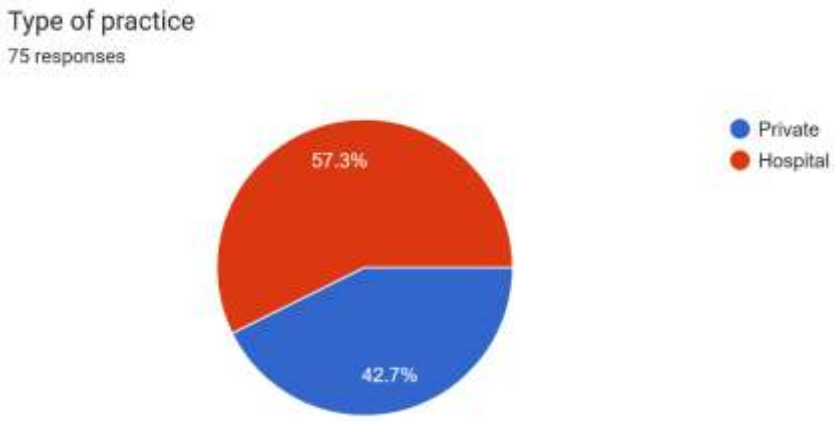


City	Number of Participants (n)	Percentage (%)
Mumbai	18	24.0%
Thane	16	21.3%
Pune	9	12.0%
Other Cities	32	42.7%
Total	**75**	**100%**

Majority of orthopedic physiotherapists practicing manual therapy strategies to manage low back pain are based in Mumbai (24%) and Thane (21.3%), followed by Pune (12%). This indicates a strong concentration of clinical activity and research contributions from urban centers in Maharashtra.



Practice Setting	Number of Participants (n)	Percentage (%)
Hospital	43	57.3%
Private Practice	32	42.7%
Total	**75**	**100%**

Among the 75 orthopedic physiotherapists surveyed, 57.3% practice in hospitals, while 42.7% are engaged in private practice. This indicates a slightly higher inclination toward institutional settings for delivering manual therapy methods targeting the lower back pain.

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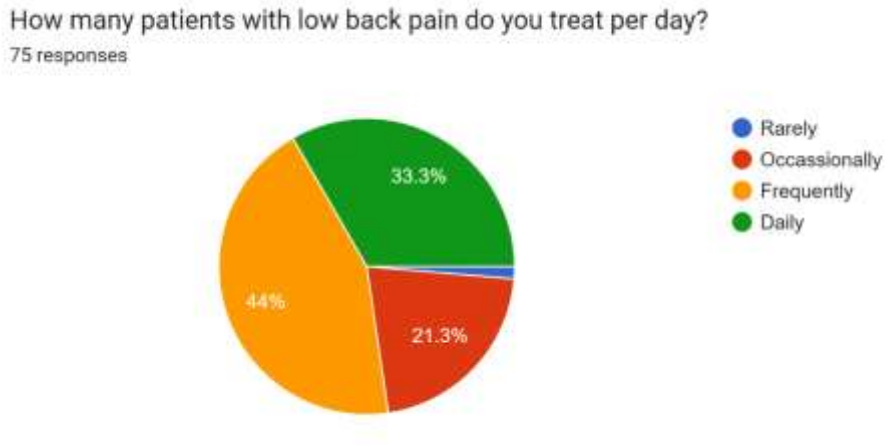
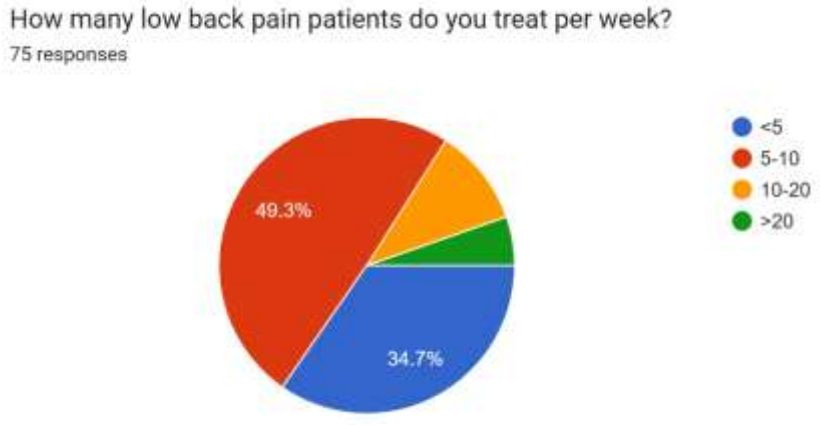


Frequency of LBP Cases	**Number of Participants (n)**	**Percentage (%)**
Frequently	33	44.0%
Daily	25	33.3%
Occasionally/Rarely	17	22.7%
Total	**75**	**100%**

Most of orthopedic physiotherapists manage people experiencing low back pain frequently (44%) or daily (33.3%), indicating that low back pain is a prevalent condition encountered in clinical practice. Only a small fraction treat such cases rarely.



Number of LBP Patients per Week	**Number of Participants (n)**	**Percentage (%)**
< 5 patients	26	34.7%
5–10 patients	37	49.3%
10–20 patients	8	10.7%
> 20 patients	4	5.3%
Total	**75**	**100%**

Results show that nearly half of the orthopedic physiotherapists (49.3%) treat between 5 to 10 people experiencing low back pain per week, while 34.7% see fewer than 5 such patients. A smaller proportion treat 10–20 (10.7%) or over 20 (5.3%) per week. this suggests that despite low back pain is common, the average physiotherapist manages a modest number of such cases weekly.

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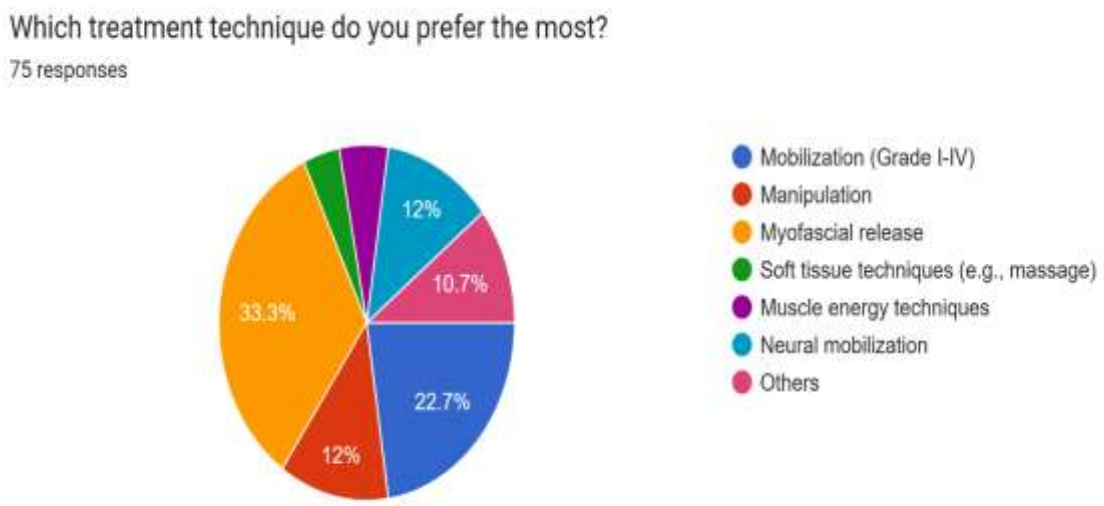

Manual Therapy Technique	**Number of Participants (n)**	**Percentage** (%)
Myofascial Release	25	33.3%
Mobilization (Grade I–IV)	17	22.7%
Manipulation	9	12.0%
Neural Mobilization	9	12.0%
Other Techniques	15	20.0%
Total	**75**	**100%**

The most preferred treatment technique is myofascial release (33.3%), followed by mobilization (Grade I–IV) (22.7%). Techniques like manipulation and neural mobilization are moderately preferred (12% each), while others are used less often chosen

If others then specify responses :-

1. Modalities and excercises along with mobilization
2. Stretches and exercises
3. Strengthening, stretching
4. Followed by hvt
5. Mulligan Mobilization technique
6. Modalities, Mackenzie Exercise
7. McKenzie
8. No
9. Myofascial release
10. Mckenzie
11. Electrotherapy
12. In combination as per the symptoms- Neural mobs,Manipulation,MFR,MET
13. Mckenzie
14. Exercise therapy
15. Electrotherapy modalities, traction (manual)

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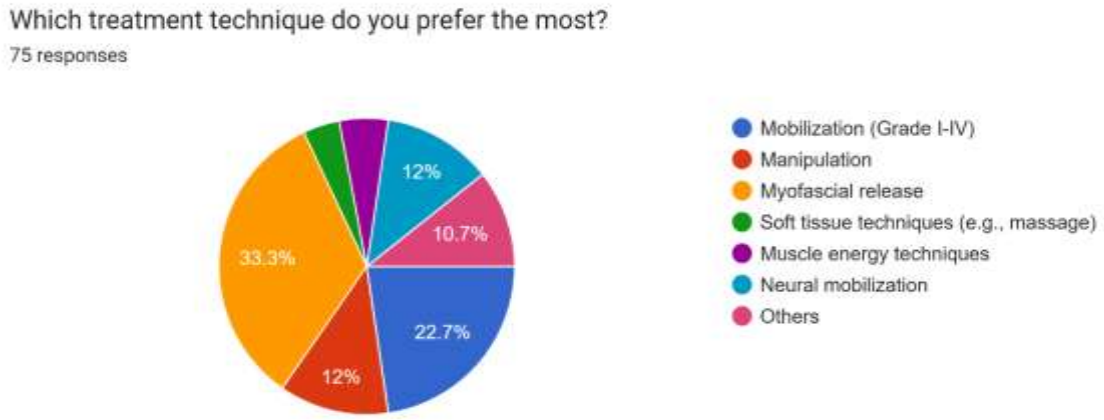

Preferred Technique	**Number of Participants (n)**	**Percentage** (%)
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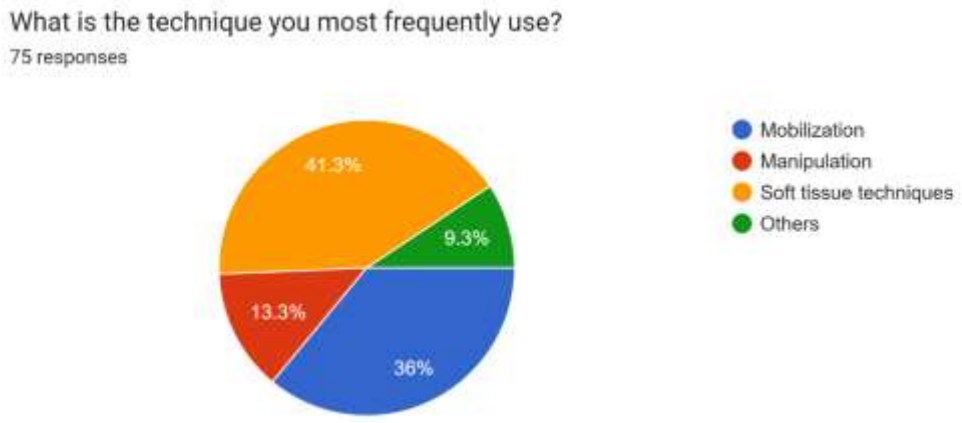
Mobilization (Grade I–IV)	17	22.7%
Manipulation	9	12.0%
Neural Mobilization	9	12.0%
Other Techniques	15	20.0%
Total	**75**	**100%**

The most preferred treatment technique among respondents is myofascial release (33.3%), followed by mobilization (Grade I–IV) (22.7%). Other techniques like manipulation and neural mobilization are still used though less favored.



Technique Category	**Number of Participants (n)**	**Percentage** (%)
Soft Tissue Methods	31	41.3%
Mobilization	27	36.0%
Manipulation	10	13.3%
Other Techniques	7	9.3%
Total	**75**	**100%**

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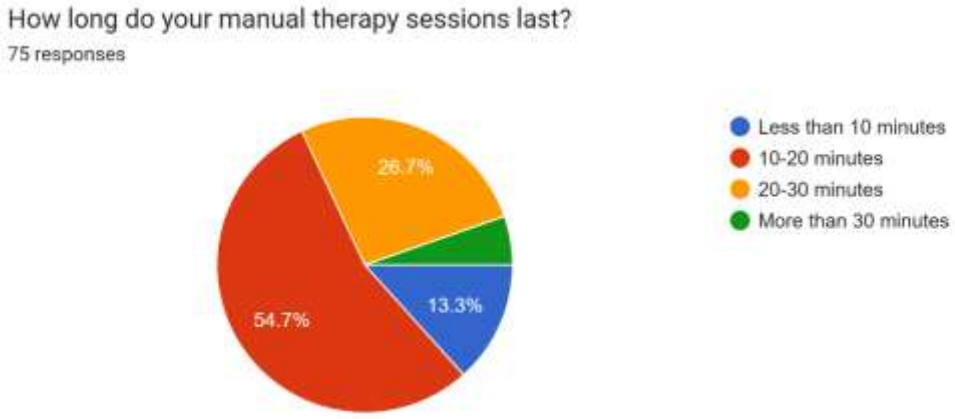
The pie chart illustrates that among 75 orthopedic physiotherapists, soft tissue methods are the most frequently used method (41.3%) to treat low back pain, followed by mobilization (36%), manipulation (13.3%), and other techniques (9.3%).

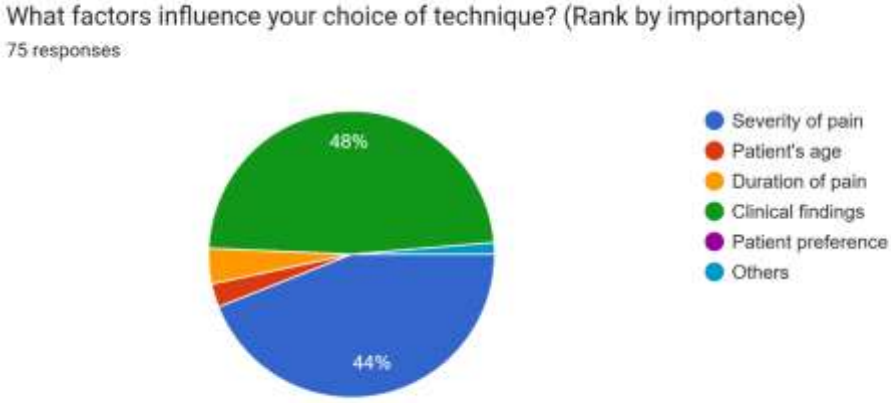
If others then specify:-

1. Stretching and excercise
2. Electro therapy, exercises,McKenzie MDT
3. No
4. Mobilization
5. Dry needling
6. Electrotherapy
7. Mckenzie



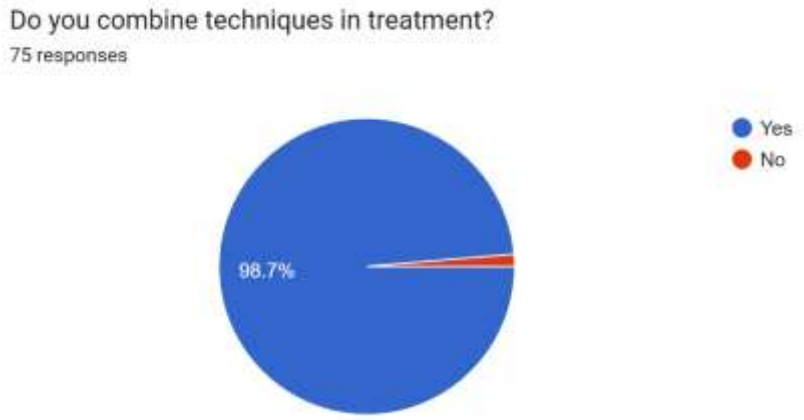
Session Duration	**Number of Participants (n)**	**Percentage (%)**
< 10 minutes	10	13.3%
10–20 minutes	41	54.7%
20–30 minutes	20	26.7%
> 30 minutes	4	5.3%
Total	**75**	**100%**

The majority of orthopedic physiotherapists (54.7%) reported that their manual therapy sessions for low back pain last between 10–20 minutes. This is followed by 26.7% who provide 20–30 minute sessions, 13.3% with sessions under 10 minutes, and only 5.3% exceeding 30 minutes.



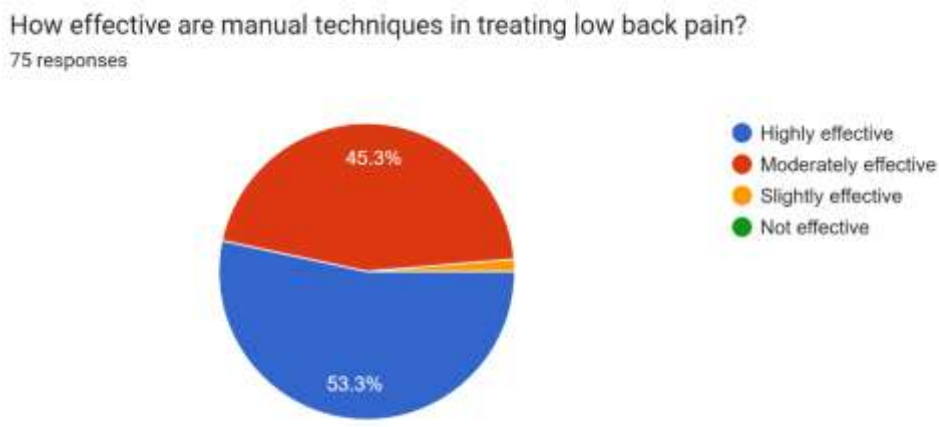
Influencing Factor	Number of Participants (n)	Percentage (%)
Clinical Findings	36	48.0%
Intensity of Pain	33	44.0%
Duration of Pain	3	4.0%
Patient's Age	2	2.7%
Patient Preference	1	1.3%
Total	**75**	**100%**

According to the chart, the most impactful factor in choosing manual therapy methods in cases of low back pain, it is clinical findings (48%), followed by intensity of pain (44%). Other factors like duration of pain, patient's age, and patient preference play a much smaller role.



Approach Used	Number of Participants (n)	Percentage (%)
Multimodal (Combined)	74	98.7%
Single Technique Only	1	1.3%
Total	**75**	**100%**

An overwhelming majority of orthopedic physiotherapists (98.7%) reported that they combine multiple techniques to manage low back pain, indicating a strong preference for integrative therapeutic approaches.



International Journal of Environmental Sciences
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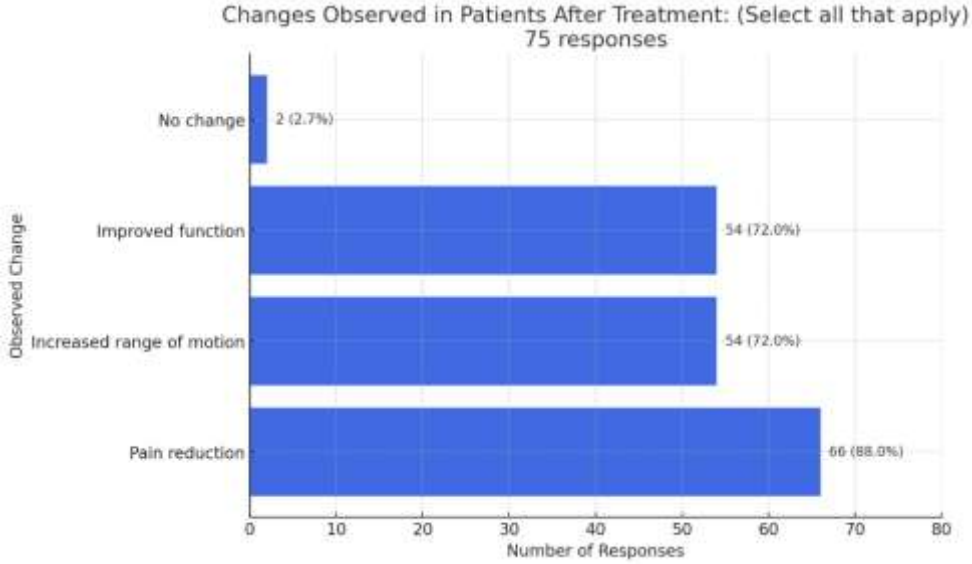
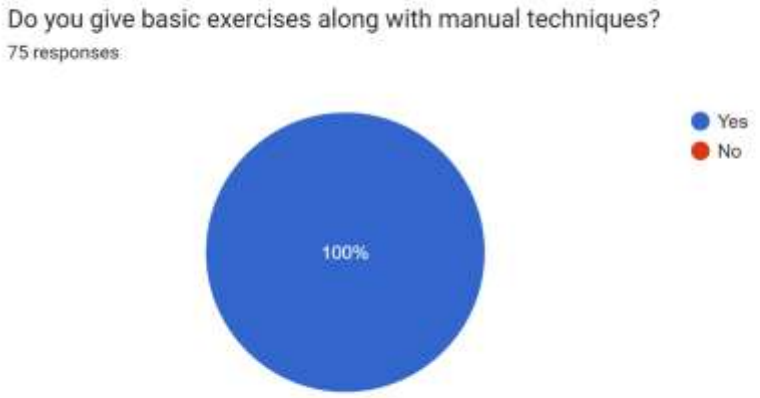
Perceived Effectiveness	**Number of Participants (n)**	**Percentage** (%)
Highly Effective	40	53.3%
Moderately Effective	34	45.3%
Slightly Effective	1	1.3%
Ineffective	0	0.0%
Total	**75**	**100%**

The majority of orthopedic physiotherapists (53.3%) consider manual techniques to be highly effective in treating low back pain, while 45.3% find them moderately effective. Very few rated them as slightly effective, and none found them ineffective.



Observed Outcome	**Number of Participants (n)**	**Percentage** (%)
Pain Reduction	66	88.0%
Improved Range of Motion	54	72.0%
Improved Function	54	72.0%
No Change	2	2.7%

Most physiotherapists observed positive outcomes after treatment, with 88% reporting pain reduction, and 72% each noting increased range of motion and improved function. Only 2.7% reported no change in patients.



International Journal of Environmental Sciences
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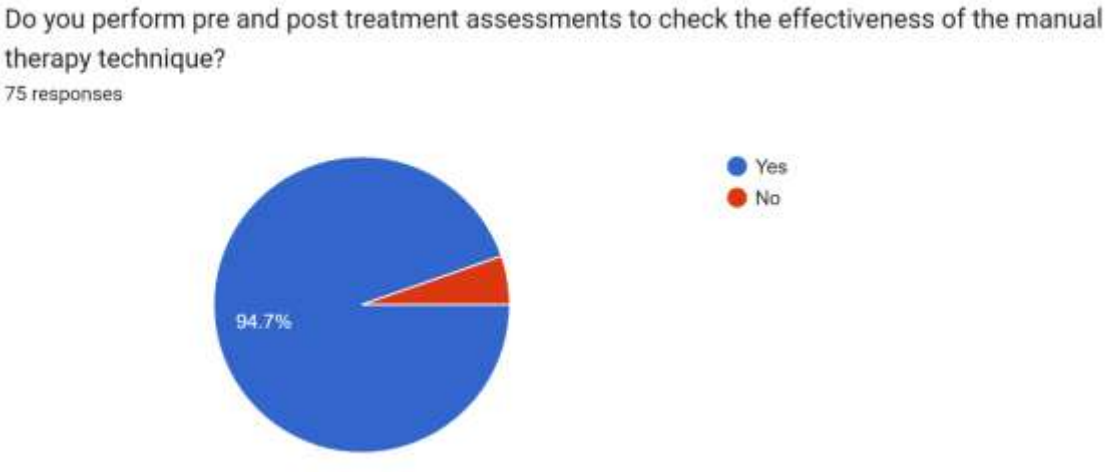
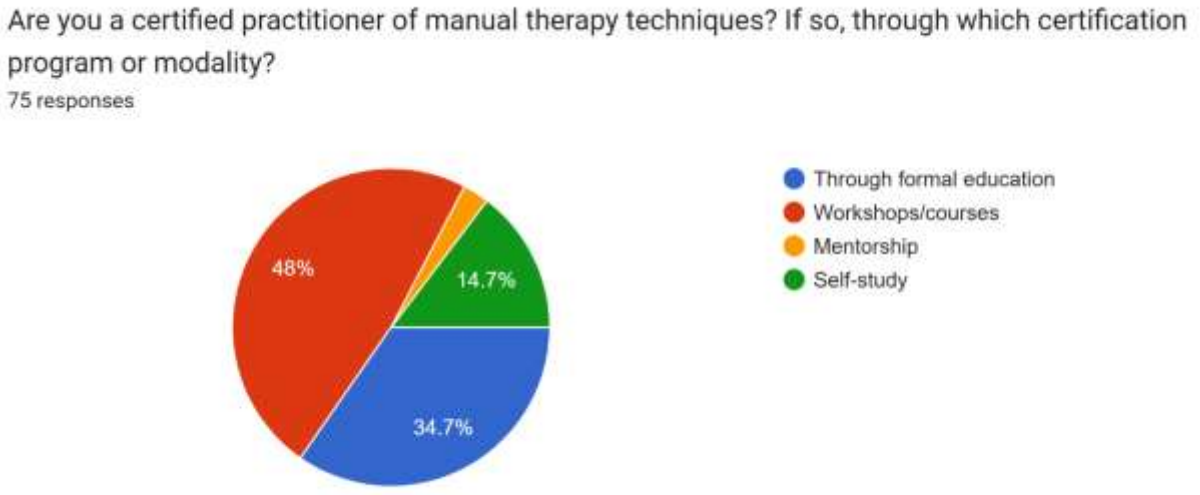
Use of Basic Exercises with Manual Therapy	Number of Participants (n)	Percentage (%)
Yes	75	100.0%
No	0	0.0%
Total	**75**	**100%**

All surveyed orthopedic physiotherapists (100%) reported that they provide basic exercises alongside manual techniques when treating low back pain.



Pre & Post Treatment Assessment	Number of Participants (n)	Percentage (%)
Yes	71	94.7%
No	4	5.3%
Total	**75**	**100%**

The vast majority of physiotherapists (94.7%) perform pre and post-treatment assessments to assess the impact of manual therapy techniques for low back pain.



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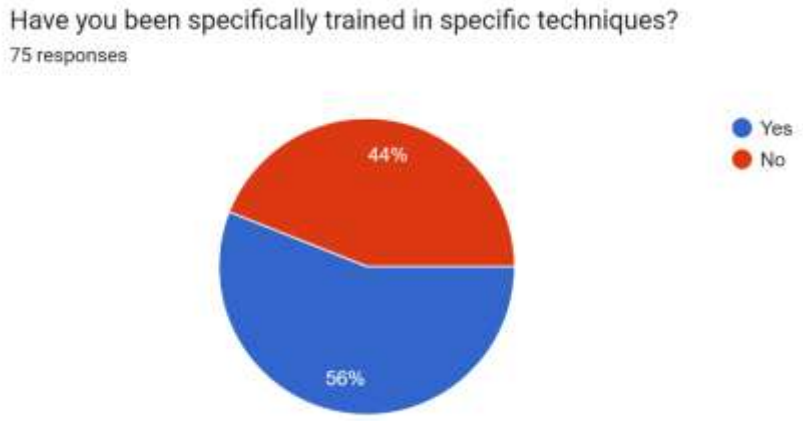
Source of Training/Certification	Number of Participants (n)	Percentage (%)
Workshops or Courses	36	48.0%
Formal Education	26	34.7%
Self-Study	11	14.7%
Mentorship	2	2.6%
Total	**75**	**100%**

Almost half of the respondents (48%) gained certification in manual therapy through workshops or courses, followed by 34.7% through formal education, 14.7% via self-study, and a limited portion (2.6%) through mentorship.



Specific Manual Therapy Training	Number of Participants (n)	Percentage (%)
Yes	42	56.0%
No	33	44.0%
Total	**75**	**100%**

A most of the respondents (56%) stated they had undergone specific training in particular manual therapy techniques, while 44% indicated they had not.

If yes, give me a list responses:-

1. MFR, Dry Needling
2. McKenzie, MET, Maitland Mobilisation, MFR
3. Mulligan Concept - Capri Institute of Manual Therapy
4. Soft tissue mobilization
5. McKenzie MDT Myofascial Release Dry Needling Spinal Mobilisation
6. FOMT
7. Mulligan IASTM Dry needling
8. Maitland's techniques
9. Chiropractic Cupping therapy Dry needling therapy
10. MFR, Mulligan Mobilization.
11. MFR, Cupping, Maitland, Mulligan, IASTM
12. No
13. Maitland system of manual therapy , Mulligan's
14. Dry needling
15. MFR , IASTM , Mobilization, Stecco Manipulation Therapy, Cyriax
16. Mulligan, maitland
17. McKenzie

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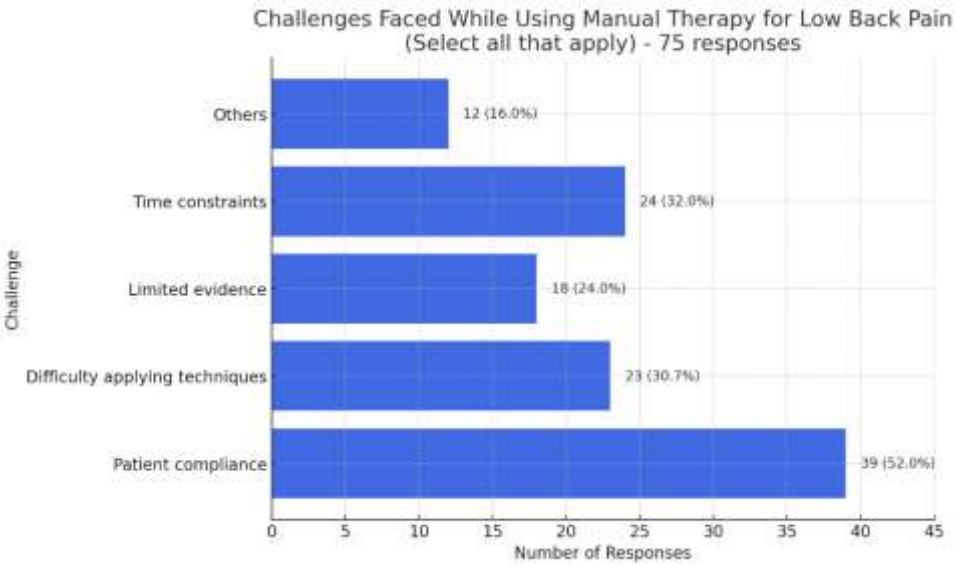
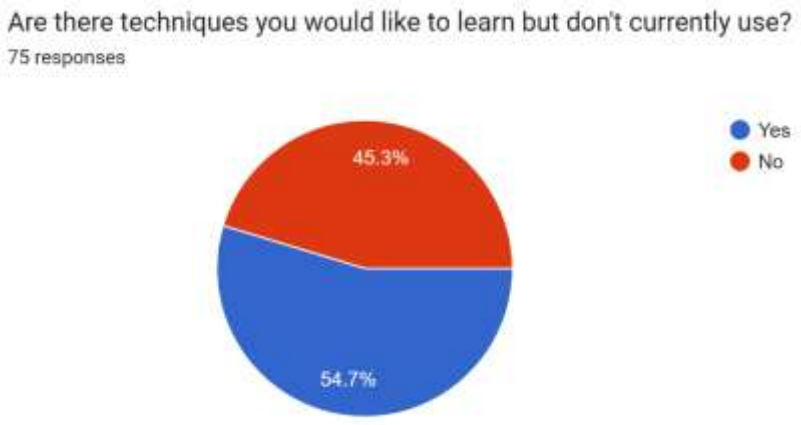
18.Muscle manipulation
19.Mulligan, Neural mob
20.Certified comt
21.Myofascial Release technique
22.Dry needling Cupping MFR Chiropractic of spine
23.Mulligan,MFR,Structure Integration,SI Joint Course,Taping,Pilates.
24.Physiotherapy college COMT Hpe workshops



Challenge Faced	Number of Participants (n)	Percentage (%)
Patient Compliance	39	52.0%
Time Constraints	24	32.0%
Difficulty Applying Techniques	23	30.7%
Limited Supporting Evidence	18	24.0%
Other Factors	12	16.0%

The chart illustrates the key challenges faced by orthopedic physiotherapists when using hands-on therapy for low back pain. The most common issue is patient compliance (52%), followed by time constraints (32%) and difficulty applying techniques (30.7%). Limited evidence (24%) and other factors (16%) were less frequently cited.



Interest in Learning New Techniques	Number of Participants (n)	Percentage (%)
Yes	41	54.7%
No	34	45.3%
Total	**75**	**100%**

The pie chart shows that 54.7% of orthopedic physiotherapists are interested in learning manual therapy techniques they don't currently use, while 45.3% are not interested in exploring new techniques. This suggests a moderate demand for skill enhancement in the field.

If yes, specify responses:-

1. Mckenzie Method
2. Manipulation/COMT
3. FDM
4. Mackenzie technique
5. MFR
6. Dry needle
7. IASTM
8. Needling
9. Muscle energy technique
10. Mackenzie mobilization
11. Manipulation
12. Mcenzie
13. Visceral manipulation
14. Formal Maitland certification
15. Fascial manipulation
16. COMT
17. McKenzie
18. McKenzie

5.DISSCUSSION

This study underscores the significant variation in manual therapy practices among orthopedic physiotherapists treating low back pain (LBP) in India, reflecting broader challenges in standardizing care. Although manual therapy techniques such as myofascial release, spinal mobilization, muscle energy techniques (MET), and neural mobilization are commonly applied, their usage varies widely based on individual clinical experience, training background, and access to evidence-based guidelines. Studies by Ganesh (2020) and Fidvi et al. (2021) reinforce this variability, revealing a disconnect between current practice and clinical recommendations, especially in rural or resource-constrained areas. While research supports the clinical efficacy of manual therapy for improving pain, mobility, and function (Sivakumar, 2022), cultural preferences, delayed care-seeking behavior, and a tendency to opt for traditional treatments (Sushil et al., 2023) often interfere with timely and effective physiotherapy intervention. Additional barriers such as lack of awareness, insufficient continuing education, patient skepticism, time constraints, and difficulties in technique application (Almazrou, 2024) further limit uniform adoption of best practices. Moreover, concerns around the reliability and validity of manual assessment techniques due to subjective interpretation and lack of standardized procedures highlight the need for improved training and objective diagnostic tools. Despite these limitations, most physiotherapists show a willingness to learn new techniques and adopt a multimodal, patient-centered approach, suggesting a readiness within the profession to bridge the gap between clinical practice and evidence-based care. Enhancing guideline dissemination, developing standardized protocols, and fostering ongoing education are crucial for advancing the quality and consistency of manual therapy interventions for LBP in India.

6.CONCLUSION

This research illustrates the current trends in practice patterns of orthopedic physiotherapists in managing low back pain, highlighting a strong inclination toward the use of soft tissue techniques, namely myofascial release and mobilization. Most clinicians note a preference for a multidisciplinary or multimodal and patient-centered approach, influenced by their clinical findings and pain numbers. Overall, the sample consisted mainly of predominantly female, younger, early career physiotherapists with different addons and levels of training, some of which indicated interest in additional training or education to learn more advanced techniques. While they expressed positive perceptions about efficacy, the challenges with manual therapy intended for patients still existed, such as patient compliance, time limitations, and difficulty implementing into practice. Overall the study highlights a gap in standardized training, but also the necessity for additional research in clinical settings to create that bridge between best evidence and clinical practice.

7.LIMITATION

This study has several limitations that should be considered when interpreting the findings. The relatively small sample size of 75 respondents limits the generalizability of the results to the broader population of orthopedic physiotherapists. Additionally, the geographic concentration of participants from Maharashtra and nearby regions introduces potential regional bias, as preferences and practices may vary across different states or regions of India. The reliance on self-reported data also presents a risk of response bias, with participants potentially overstating their use of certain techniques or their perceived effectiveness due to social desirability or recall inaccuracies. Furthermore, the absence of objective outcome measures such as clinical assessments or standardized patient-reported outcome tools means that the effectiveness of the manual therapy techniques was evaluated based solely on subjective opinions, limiting the robustness of the conclusions.

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