# PHYSIOTHERAPISTS' KNOWLEDGE, ATTITUDE AND ADHERENCE TO EVIDENCE-BASED PRACTICE IN ANKLE SPRAIN REHABILITATION

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## ABSTRACT

**Background:** Ankle sprains are among the most common musculoskeletal injuries. Among the fact that approximately 20% of the population suffer from lateral ankle sprain and 73% of the athlete's population experience chronic ankle sprain. Among them, 59% reported a history of previous ankle sprain. As the primary healthcare providers, physiotherapists should treat patients with MSK disorders, including LASs, using evidence-based practice (EBP). In the past few years, a few CPGs and Consensus Statements have been released to help with applying EBP in LAS management.

**Objective:** This study aims to assess physiotherapists' knowledge, attitude, and adherence to evidence-based practice in managing ankle sprains and improving patient care. Methodology: Cross-sectional correlation study based on an online survey structured in four sections. Section I contains participants' demographic data; Section II is divided into 3 subsections: subsection 1 consists of Knowledge, subsection 2 consists of Attitude, and subsection 3 consists of Adherence.

**Results:** We received a total of 251 responses, of which 250 respondents were included in the study. Normality was assessed using the Kolmogorov-Smirnov test, and the results indicated that the total scores for knowledge, Attitude, and Adherence were normally distributed ($P<0.05$) for all variables.

**Conclusion:** This study found that knowledge significantly predicts both attitude and adherence to evidence-based ankle sprain management. Strong positive correlations were observed between knowledge and attitude as well as knowledge and adherence, with knowledge explaining 45.4 % and 41% of variance, respectively. These findings highlight the importance of enhancing clinical knowledge to improve both attitudes and adherence to best practices in musculoskeletal care.

**Keywords:** Ankle sprain, Attitude toward Evidence based practice, Ankle sprain, Evidence-based knowledge, clinical practice beliefs, rehabilitation adherence.

## INTRODUCTION

One of the most frequent injuries sustained during sports and physical activity is lateral ankle sprain (LAS). It is predicted that up to 40% of people who suffer LAS for the first time will go on to develop chronic ankle instability (CAI). [1] Patients who have experienced more than a year since their initial LAS and who have a history of recurrent ankle sprains, frequent episodes or sensations of the ankle giving way, and persistent symptoms like pain, swelling, limited motion, weakness, and decreased self-reported function are considered to have chronic ankle instability. [1] [2] An ankle sprain is the most common musculoskeletal injury among athletes and the general population, as approximately 20% suffer from lateral ankle sprain, and 73% of the athlete population experience chronic ankle sprain. Among them, 59% reported a history of previous ankle

sprain. [27] . It frequently results in secondary disorders that need significant medical care. In addition to generating discomfort and limited range of motion, ankle sprains can result in persistent ankle instability, post-traumatic osteoarthritis, and functional impairments or disability. One year following the injury, 44% of sprain patients might show these symptoms. [2] The ICF model can examine how the patient's condition affects other aspects of his life and vice versa.

Similarly, recording activity restrictions shows how the patient's condition affects his daily activities. [29] From the first evaluation to the course of therapy, we may use this paradigm in every interaction we have with this patient and help them regain full functioning. Using the ICF model during the evaluation process helps to measure a patient's degree of function. The clinician might also witness the patient's skills, allowing him or her to provide an objective assessment. Before addressing the patient's capacity to engage in sports, the therapist would concentrate on enhancing his capacity to perform everyday tasks, given his significant activity constraints [8]. Using the ICF model while treating patients will assist the clinician in concentrating on the entire, holistic list of issues that was created by your thorough 3 evaluation. [29] Establishing treatment goals and a treatment plan is based on the assessment's quantification of patient functioning. Interventions will be tailored to the patient's requirements and evolve as the patient moves through the stages of treatment. Such therapies might involve manual therapy, early motion with support, and physical agents that lessen his discomfort so he can sleep better and feel more at ease during the day. The focus of interventions might then shift to rehabilitative exercises and range-of-motion restoration to enhance his capacity to perform everyday tasks. To ensure that the interventions are improving the patient, the clinician should regularly review the patient's progress concerning their goals.

The inclusion of subjective patient status utilizing capacity qualifiers and PROMs is crucial for reflecting their overall function. The clinician can integrate their clinical expertise along with the best research evidence to inform their treatment decisions that address these impairments and related limitations and restrictions. As our patient continues to improve from our therapeutic interventions, we can document their improvement over time both subjectively and objectively. [8]

Developing evidence-based guidelines necessitates a comprehensive comprehension of the progression of the ankle sprain injury, including potential factors that may impact recovery. [9] Among the most frequent orthopedic ailments are sprains of the ankle. The term "lateral ankle sprain" describes a partial or whole rupture or disruption of the ankle ligaments outside the ankle. In general, the structures that join bones are called ligaments. [25] As the primary healthcare providers, physiotherapists should treat patients with MSK disorders, including LASs, using evidence-based practice (EBP). In the past few years, a few CPGs and Consensus Statements have been released to help with applying EBP in LAS management. [27][24] Clinicians should begin analyzing LAS risk factors (such as a history of a prior LAS, the type and level of sport played, workload and participation level, proprioception and range of motion deficiencies) as well as risk factors for developing instability (such as the lack of proprioception exercises or balance after an acute lateral ankle sprain) as soon as they take charge of a patient with LAS.[28][27] To determine the existence and degree of ankle instability (such as the Cumberland Ankle Instability Tool) and functionality (such as the Foot and Ankle Ability Measure and the Lower Extremity Functional Scale), clinicians may include these measurements in their evaluation outcomes. The ligament assessment is at its best four to five days after the injury. [24][30]

Regarding treatment, physicians should recommend the use of external support for four to six weeks during the acute and protected motion period. The severity of the damage should be one of the elements that determine which device is best. Regardless of severity, people with LAS should gradually increase their weight bearing on the afflicted leg through exercise therapy. Furthermore, manual therapy approaches (such as lymphatic drainage, active and passive soft tissue and joint mobilization, and anterior-to-posterior talar mobilization procedures) are indicated in addition to exercise. [32][33] Repeated intermittent applications of ice are indicated to relieve pain. Suggesting rest, compression, and elevation on their own is not advised. The sole purpose of non-steroidal anti-inflammatory medications is to lessen discomfort and swelling [27]

Physiotherapists, however, seem to be using non-evidence-based treatments more frequently. Furthermore, there is sometimes a discrepancy between understanding a recommendation and putting it into effect in therapeutic settings. The "evidence-to-practice gap" is the term used to describe this lack of consistency. Knowledge of and adherence to CPGs for a variety of MSK illnesses has been the subject of much research conducted in various nations. When it comes to LAS management, a few studies examined either awareness of or adherence to LAS CPGs and recommendations in isolation, with no studies focusing on the evidence-to-practice gap. [10]

## METHODOLOGY

**Study Design:** Cross-sectional correlation study design.

**Participants:**

### INCLUSION CRITERIA

• Licensed physiotherapists with a BPT, MPT, or DPT/PhD in physiotherapy.
• Minimum 1 year of clinical experience in musculoskeletal physiotherapy.
• Actively practicing in hospitals, private clinics, rehabilitation centers, or academic settings with clinical exposure.
• Experience in managing ankle sprains and chronic ankle instability (CAI) patients.
• Uses evidence-based rehabilitation techniques (e.g., manual therapy, exercise therapy, taping, bracing).
• Willing to provide informed consent and complete the questionnaire.
• Proficient in English

### EXCLUSION CRITERIA

• Non-physiotherapists (e.g., orthopedic surgeons, podiatrists, chiropractors, athletic trainers). • Physiotherapy students or interns with less than 1 year of clinical experience.
• Physiotherapists working only in non-musculoskeletal specialties
• No experience in treating ankle sprains or CAI patients.
• Incomplete questionnaire responses or unwillingness to participate.
• Severe language barriers or cognitive impairments affecting response accuracy.
• Duplicate responses or random answering patterns.

**Procedure:** The current cross-sectional study uses an online survey of Indian physiotherapists to determine their knowledge, adherence, and attitudes toward LAS CPGs and recommendations. The questionnaire is subdivided into four sections: Section I contains participants' demographic data; Section II is divided into 3 subsections: subsection 1 consists of Knowledge, subsection 2 consists of Attitude, and subsection 3 consists of Adherence. The data for the investigation were collected through an electronic survey created with Google Forms, a secure web application for building and managing online surveys and databases. Before answering the survey, the participants were provided with informed consent. Those who refused to participate in the study were shown a "Thank-You page" and were not allowed to proceed.

**Outcome Measures:** Primary outcomes included physiotherapists' knowledge, attitude, and adherence toward evidence-based ankle sprain management assessed using a structured self-administered questionnaire.

**Statistical Analysis:** We received a total of 251 responses, of which 250 respondents were included in the study. Normality was assessed using the Kolmogorov-Smirnov test, and the results indicated that the total scores for knowledge, Attitude, and Adherence were normally distributed ($P>0.05$) for all variables. A Pearson correlation was performed which showed a moderately strong positive correlation ($r=0.674$, $p=0.001$), indicating that participants with higher knowledge scores tended to have more positive attitudes.

This correlation was statistically significant at 0.001 level. For knowledge and adherence, it shows a statistically significant, strong positive correlation ($r=0.638$, $p=0.001$), indicating that greater knowledge was associated with better adherence among participants.

**RESULTS:** We received a total of 251 responses, of which 250 respondents were included in the study. Normality was assessed using the Kolmogorov-Smirnov test, and the results indicated that the total scores for knowledge, Attitude, and Adherence were normally distributed (P>0.05) for all variables.

## CHARACTERISTICS OF STUDY PARTICIPANTS

The demographic data of the study participants showed that 56.4% of respondents were female, while 43.6% were male. The study included individuals from different States of India having qualifications of B.P.T(63.2%), M.P.T (36.4%), and PhD (0.4%). Along with maximum responses having 1-5 years (57.2%), 1 year (37.6%), 6-10 years (4.8%), and more than 10 years (0.4%). Of these, 20.4% were from Clinical setup, 14.4% from Hospital setup, 45.2% from Academic setup, 2.4% from Sports Rehabilitation Centre, and the remaining 17.6% from other.
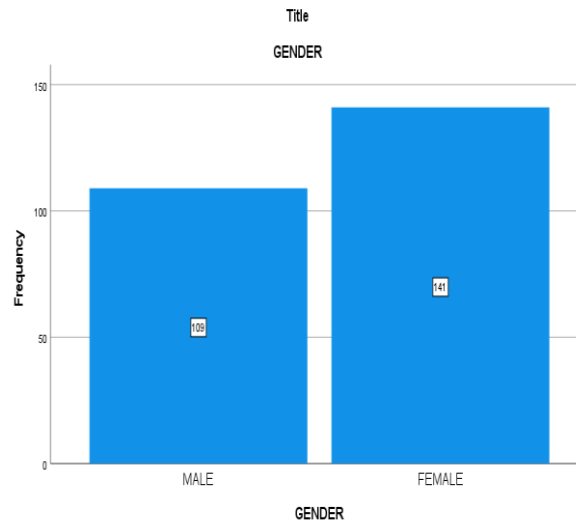


**Graph 6.1 Gender distribution**
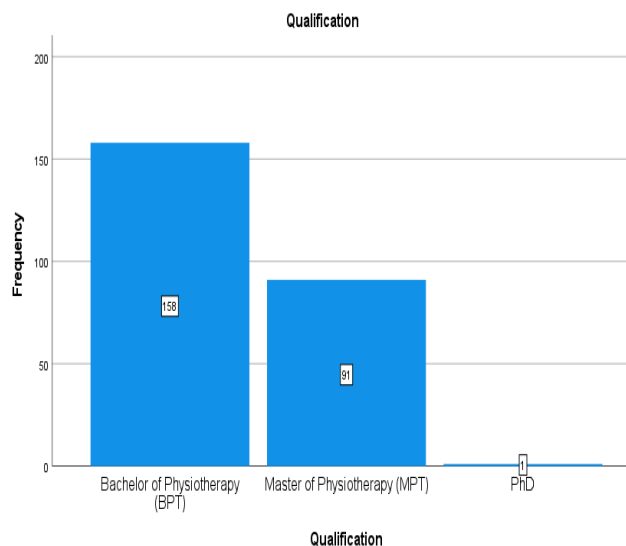


**Graph 6.2 Qualification of participants**

28
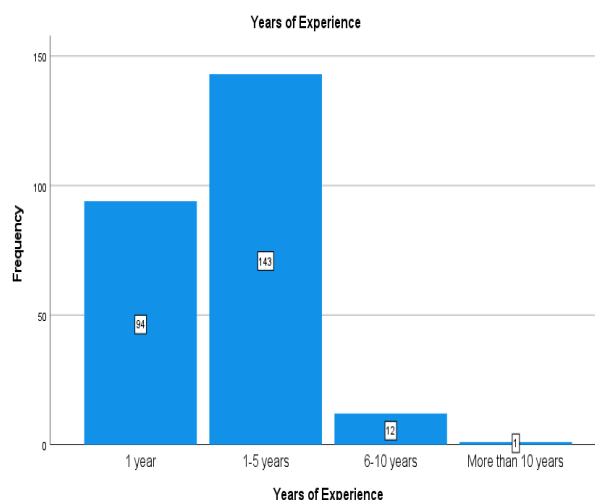
**Graph 6.3 Years of Experience**

**Table 6.1 Descriptive statistics of knowledge, attitude, and adherence score**

| Variable | Mean | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|
| **Knowledge score** | 50.36 | 5.184 | 34 | 69 |
| **Attitude score** | 48.39 | 4.525 | 34 | 61 |
| **Adherence score** | 50.97 | 5.559 | 34 | 64 |

Table 6.1 shows that the mean knowledge score was 50.36, while the mean attitude score 48.39, and the mean adherence score was 50.97.

| VARIABLE | KNOWLEDGE | ATTITUDE | ADHERENCE | P-VALUE |
|---|---|---|---|---|
| **KNOWLEDGE** | .995** | .674** | .638** | <.001 |
| **ATTITUDE** | .674** | .995** | .737** | <.001 |
| **ADHERENCE** | .638** | .737** | .995** | <.001 |

**Table 6.2 Pearson's correlation analysis of knowledge score, attitude score, adherence score**

A Pearson correlation was performed to examine the relationship between knowledge and attitude, and the results showed a moderately strong positive correlation (r=0.674, p=0.001), indicating that participants with higher knowledge scores tended to have more positive attitudes as shown in table 6.2. This correlation was statistically significant at 0.001 level. For knowledge and adherence, it shows a statistically significant, strong positive correlation (r=0.638,p=0.001), indicating that greater knowledge was associated with better adherence among participants.

Graph 6.4, scatter plot showing the relationship between Knowledge and Adherence. The Regression line demonstrates a strong and statistically significant positive correlation, suggesting that increased knowledge is linked to better adherence behavior.
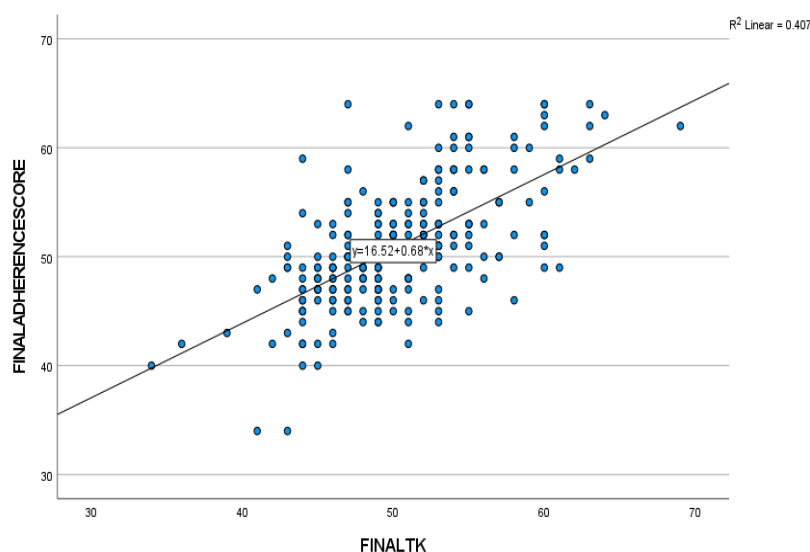


**Graph 6.4 Scatter plot of Knowledge vs Adherence with Trendline**

A scatter plot graph 6.5, was constructed to visualise the association between total knowledge score and attitude scores. The distribution of data points revealed a clear positive linear pattern, suggesting that participants with higher knowledge scores tended to report more positive attitude. A linear regression trend line added to plot confirmed this relationship with a moderately strong upward slope.
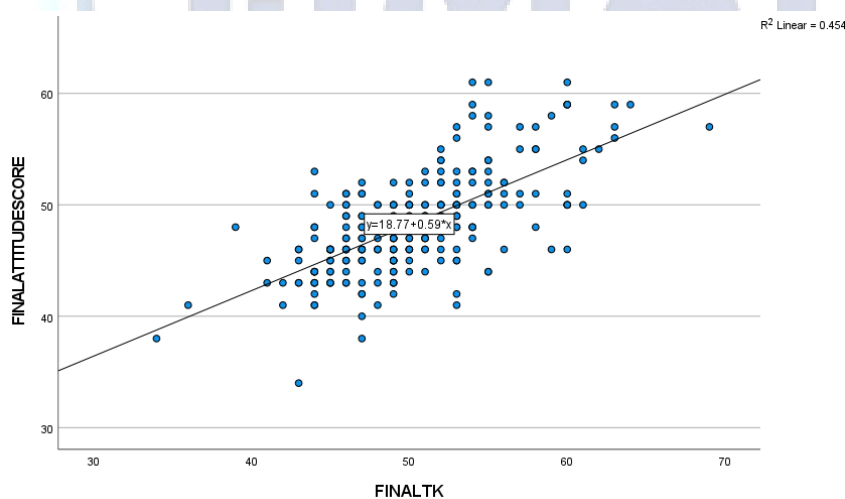


**Graph 6.5 Scatter plot of Knowledge vs Attitude with Trendline.**

| MODEL | R | $R^2$ |
|---|---|---|
| KNOWLEDGE–ADHERENCE | .638 | .410 |

**Table 6.3 Regression model summary of Knowledge and Adherence**

Table 6.3 indicates that **41%** of the variance in adherence can be explained by the level of knowledge, suggesting a substantial influence, with higher knowledge scores associated with greater adherence to evidence-based guidelines.

**Table 6.4 Regression coefficient for Knowledge predicting Adherence**

| PREDICTOR | B(UNSTANDARDIZED) | STANDARD COEFFICIENT BETA |
|---|---|---|
| CONSTANT | 16.523 | |
| KNOWLEDGE | .684 | .053 |

Table 6.4 suggests that for every one-unit increase in knowledge, the adherence score increased by **0.684** points. This reflects a moderate to strong positive predictive relationship between knowledge and adherence.

| MODEL | R | $R^2$ |
|---|---|---|
| KNOWLDEGE-ATTITUDE | .674 | .454 |

**Table 6.5 Regression model summary of Knowledge and Attitude**

A linear regression analysis was conducted to examine the predictive relationship between knowledge and attitude. The model was statistically significant and accounted for 45.4% of the variance in attitude score, suggesting that individuals with greater evidence-based approaches to ankle sprain management are more likely to hold positive attitudes toward implementing such practices in clinical settings.

**Table 6.6 Regression coefficients for Knowledge predicting Attitude**

| PREDICTOR | B (UNSTANDARDIZED) | STANDARD COEFFICIENT BETA |
|---|---|---|
| CONSTANT | 18.773 | |
| KNOWLEDGE | .588 | .041 |

Table 6.6 suggests that knowledge is significantly predicted by attitude, indicating that higher knowledge scores were associated with more positive attitudes.

**DISCUSSION**

The present study aimed to assess the relationship between knowledge attitudes and adherence towards evidence-based ankle sprain management among health professionals. The findings revealed a statistically significant positive correlation between knowledge and attitude ( r =0.674, p=0.001), as well as between knowledge and adherence (r=0.638, p=0.001). Furthermore, linear regression analysis showed that knowledge significantly predicted both attitude (B = 0.41) and adherence (B = 0.53), indicating that higher levels of knowledge are associated with more favorable attitudes and greater adherence to evidence-based practices. CPGs and evidence-based recommendations are essential to convey evidence-based management

However, knowledge of recommendation and its application in the clinical practice are not always consistent, and this is referred to as the "evidence to practice gap". When it comes to LAS management, Indian physiotherapists seem to be aware of recommended treatment in case of an LAS injury, and they seem to apply them in their practice. [10]. In our sample, highly recommended treatments were applied together with therapists with lower level of recommendation such as the use of physical therapies, as diathermy, LASER therapy, electrotherapy and ultrasound in which 21.2% completely agreed 40% partially agreed 27.6% were neutral 6% partially disagreed and 5.2% completely disagreed.The reason behind continuing the usage of lower recommended treatment in the clinical practice might stem from an attempt to meet patients expectations and values which are also part of the EBP principles however providing only low recommended

treatments with people with LAS can lead to the development of long term symptoms causing a decrease in physical activity and Quality of life therefore physiotherapists should investigate patients expectations related to the treatments and providing education strategies to reduce the gap between what patients want and need.[10]

When it comes to emergency contexts, Indian physiotherapists seem to know they should apply Ottawa ankle rules when a bone fracture is suspected after an episode of LAS, They also apply these rules in practice. When physiotherapists were asked about the incorporation of functional outcome measures such as the FAAM (foot and ankle ability measure) as a part of the examination of patients with ankle sprain, only 0.8% strongly disagreed, 16.4% strongly agreed, and 33.2% were neutral.[25]

When asked about the recommended duration for functional bracing after a grade II ankle sprain, 56.8% responded positively.60.4% of physiotherapists update their treatment approach when new research supports a more effective method for ankle sprain management. This shows that Indian physiotherapists are aware of recent advances and are applying them in the rehabilitation protocol for managing LAS. [13]

When asked about educating the patient about the importance of adherence to home-based rehabilitation exercise for better outcomes, only 46.8% (117 out of 250) of physiotherapists educate their patients on the importance of home exercise.[15]

**Limitations Of the Study**
- Cross-sectional design limits the ability to infer causality.
- No objective assessment of actual adherence.
- Self-reported data may introduce recall or social desirability bias
- Limited generalizability due to the specific sample or region.
- Confounding factors like clinical experience or training were not controlled
- The questionnaire may not fully capture clinical reasoning or depth of knowledge.
- Potential sampling bias due to voluntary participation.
- The small sample size may reduce statistical power.

**Future Implications:** Future research should consider longitudinal designs, include objective adherence measures, and explore additional factors such as institutional support and workload to better understand the dynamics influencing evidence-based clinical practice.

**CONCLUSION:** This study found that knowledge significantly predicts both attitude and adherence to evidence-based ankle sprain management. Strong positive correlations were observed between knowledge and attitude as well as knowledge and adherence, with knowledge explaining 45.4 % and 41% of variance, respectively. These findings highlight the importance of enhancing clinical knowledge to improve both attitudes and adherence to best practices in musculoskeletal care.

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