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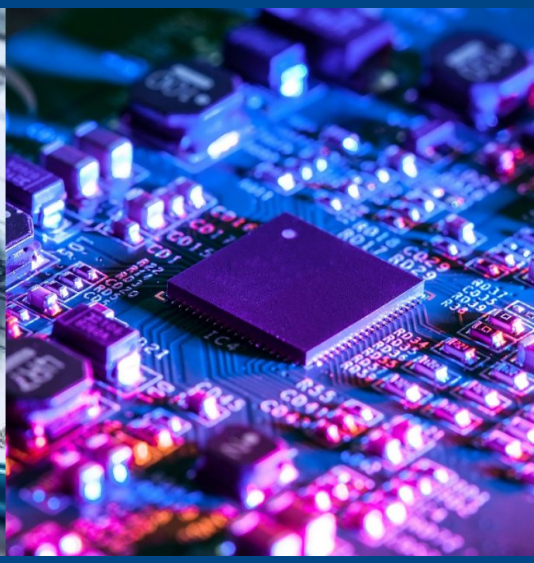

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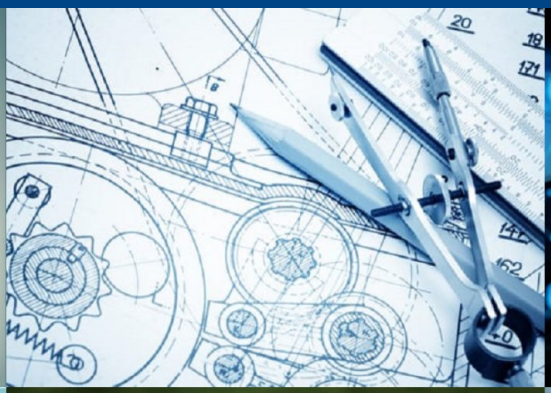

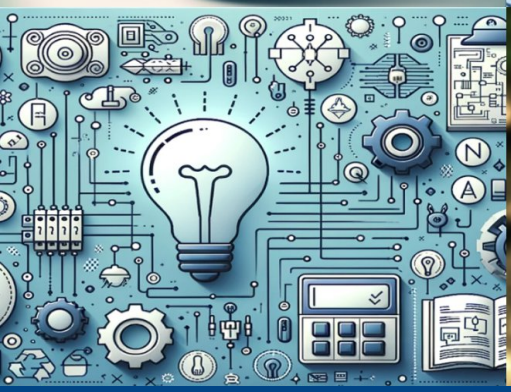

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Effectiveness of Kinesio-Taping in the Management of Patellofemoral Pain Syndrome: A Narrative Review

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ABSTRACT: Background: Patellofemoral pain syndrome (PFPS) is a prevalent musculoskeletal condition among physically active adults and athletes and is frequently managed using conservative physiotherapy interventions. Kinesio-taping has gained widespread clinical popularity; however, its effectiveness in PFPS remains debated.

Objective:
To critically review and synthesize the available evidence on the effectiveness of kinesio-taping in the management of patellofemoral pain syndrome in adult and athletic populations.

Methods:
A narrative review of the literature was conducted using electronic databases including PubMed, Scopus, and Web of Science. Peer-reviewed human clinical studies published after 2000 were considered. Eligible studies involved adult participants with PFPS and examined the effects of kinesio-taping on pain, function, biomechanics, and neuromuscular outcomes. Studies involving adolescents or non-clinical populations were excluded.

Results:
The evidence suggests that kinesio-taping may provide short-term pain relief in individuals with PFPS, particularly during functional activities. However, improvements in functional outcomes are inconsistent and generally comparable to exercise-based interventions alone. Kinesio-taping does not appear to produce meaningful changes in patellar alignment but may influence neuromuscular control and proprioception. When compared with rigid patellar taping, kinesio-taping offers greater comfort and suitability for athletic participation, though neither technique demonstrates clear long-term superiority.

Conclusion:
Kinesio-taping may be a useful short-term adjunct to exercise-based rehabilitation for patellofemoral pain syndrome in adults and athletes. Current evidence does not support its use as a standalone intervention. Further high-quality research with standardized application protocols and long-term follow-up is required to clarify its clinical role.

KEYWORDS: Patellofemoral pain syndrome; kinesio-taping; physiotherapy; knee pain; rehabilitation

I. INTRODUCTION

Patellofemoral pain syndrome (PFPS) is one of the most prevalent musculoskeletal disorders affecting the knee, particularly among physically active adults and athletes. It is characterized by diffuse anterior knee pain that is exacerbated during activities involving repetitive or sustained knee flexion, such as stair climbing, squatting, running, jumping, or prolonged sitting [1]. PFPS accounts for approximately 25–40% of knee-related complaints in sports medicine and physiotherapy settings, making it a significant clinical and public health concern [2,3].

Despite its high prevalence, PFPS remains challenging to manage due to its multifactorial and heterogeneous nature. The condition is not associated with a single structural pathology; instead, it is considered a diagnosis of exclusion when other intra-articular or periarticular knee pathologies have been ruled out [4]. The underlying mechanisms are

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believed to involve a combination of altered patellofemoral joint loading, abnormal lower-limb biomechanics, neuromuscular dysfunction, and pain sensitization [5]. These factors contribute to increased stress on the patellofemoral joint during dynamic activities, resulting in pain and functional limitation.

Current best-practice guidelines recommend conservative, exercise-based management as the cornerstone of PFPS treatment. Strengthening of the quadriceps and hip musculature, neuromuscular control training, and movement retraining have demonstrated moderate to strong evidence for improving pain and function [1,3]. However, symptom severity often limits patients' ability to engage fully in exercise programs, particularly in the early stages of rehabilitation. Consequently, adjunctive interventions aimed at pain reduction are commonly incorporated to facilitate participation in therapeutic exercise.

Among these adjunctive interventions, taping techniques have been widely utilized in physiotherapy practice. Traditional rigid taping methods, such as McConnell taping, aim to mechanically correct patellar alignment and have demonstrated short-term pain relief in individuals with PFPS [6]. In contrast, kinesio-taping (KT) is an elastic taping method developed to provide dynamic support without restricting joint motion. KT has gained substantial popularity in sports and orthopaedic rehabilitation over the past two decades due to its ease of application, comfort, and theoretical neuromuscular benefits [7].

Kinesio-taping is proposed to reduce pain and improve function through several mechanisms, including enhanced proprioceptive input, modulation of muscle activity, improved circulation, and stimulation of cutaneous mechanoreceptors [8]. In PFPS specifically, KT is frequently applied to influence quadriceps activation, improve patellar tracking, and reduce pain during functional tasks. However, unlike rigid taping, KT does not aim to impose a sustained mechanical correction of patellar position, raising questions regarding its clinical effectiveness and mechanism of action.

The scientific literature evaluating the use of kinesio-taping (KT) in patellofemoral pain syndrome (PFPS) has expanded considerably over the past two decades; however, findings remain inconsistent. Several randomized controlled trials and systematic reviews report that KT may provide short-term pain relief, particularly when used in conjunction with exercise therapy, while others demonstrate minimal or no clinically meaningful benefit compared with sham taping or exercise alone [6,9,10]. Consequently, the therapeutic effectiveness of KT in PFPS continues to be debated.

The variability in reported outcomes may be partly explained by substantial heterogeneity across studies. Differences in taping protocols—including tape tension, placement, duration of application, and clinician expertise—as well as variability in participant characteristics and outcome measures, complicate comparison and synthesis of results [8]. In addition, inconsistency in diagnostic criteria for PFPS and variation in symptom chronicity across study populations further limit the interpretability and generalizability of findings [1].

As a result, uncertainty persists regarding the clinical contexts in which kinesio-taping may be most beneficial and the magnitude of its therapeutic effects. This underscores the importance of cautious interpretation of the existing evidence and highlights the need for individualized clinical decision-making when incorporating KT into rehabilitation programs.

Given the widespread use of kinesio-taping in physiotherapy and sports medicine practice, a critical synthesis of the current evidence is warranted. Therefore, the purpose of this narrative review is to examine and summarize the available literature on the effectiveness of kinesio-taping in adult and athletic populations with patellofemoral pain syndrome, with particular emphasis on its effects on pain, functional outcomes, biomechanical and neuromuscular parameters, and its role as an adjunct to exercise-based rehabilitation.

II. METHODOLOGY

Study Design

This manuscript was designed as a narrative review to provide a comprehensive and critical synthesis of the existing literature on the effectiveness of kinesio-taping (KT) in the management of patellofemoral pain syndrome (PFPS). A narrative review approach was selected to allow in-depth discussion of theoretical concepts, clinical outcomes, and methodological variability across studies, which may not be adequately captured through a strictly systematic framework [11].

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Literature Search Strategy

A comprehensive literature search was conducted to identify relevant peer-reviewed studies examining the use of kinesio taping in individuals with patellofemoral pain syndrome (PFPS). The electronic databases searched included PubMed/MEDLINE, Scopus, Web of Science, and CINAHL, with Google Scholar used for supplementary searches. The search encompassed studies published between January 2000 and June 2025, a period reflecting the growing clinical relevance of kinesio taping. Only articles published in English were considered for inclusion. Search terms were combined using Boolean operators and incorporated key terms and Medical Subject Headings (MeSH), including "patellofemoral pain syndrome," "patellofemoral pain," "anterior knee pain," "kinesio taping" or "kinesiology taping," "elastic taping," and "rehabilitation" or "physiotherapy." An example of the search strategy used in PubMed was: ("patellofemoral pain syndrome" OR "anterior knee pain") AND ("kinesio taping" OR "kinesiology taping" OR "elastic taping"). Additionally, the reference lists of relevant articles and review papers were manually screened to identify further studies that may not have been captured through the database search.

Eligibility Criteria

Inclusion Criteria

Studies were included if they met the following criteria:

1. Human **clinical studies** (randomized controlled trials, quasi-experimental studies, cohort studies, or clinical trials)
2. Participants diagnosed with **patellofemoral pain syndrome or anterior knee pain**
3. **Adult populations (≥18 years)**, including recreationally active individuals and athletes
4. Studies investigating **kinesio-taping** as a primary or adjunct intervention
5. Outcomes related to **pain, function, biomechanics, neuromuscular control, or gait**
6. Articles published in **peer-reviewed, indexed journals**

Exclusion Criteria

Studies were excluded if they:

1. Included **adolescents or pediatric populations**
2. Examined non-elastic or rigid taping techniques exclusively (e.g. McConnell taping without KT comparison)
3. Were **case reports**, conference abstracts, editorials, or opinion pieces
4. Investigated knee pathologies other than PFPS (e.g. osteoarthritis, ligament injuries, post-surgical conditions)
5. Were non-English publications

Study Selection Process: Titles and abstracts from database searches were screened for relevance, and full texts were reviewed when eligibility was met or unclear. Selection aimed to include clinically relevant, methodologically sound studies aligned with the review objectives. Although no formal PRISMA flow diagram was used, the process followed transparent and consistent eligibility criteria.

Data Extraction and Synthesis: Key data extracted included authorship, publication year, study design, sample size, and participant characteristics (age, activity level, athletic status). Details of kinesio-taping application (technique, duration, frequency), comparator interventions, outcome measures (e.g., pain scales, functional scores, EMG, gait), and main findings were recorded. Data were synthesized qualitatively and organized into themes such as pain reduction, functional improvement, biomechanical or neuromuscular effects, and the role of kinesio taping as an adjunct to exercise therapy, with attention to trends and inconsistencies.

Methodological Transparency and Quality Considerations: While narrative reviews lack the rigor of systematic reviews, transparency in study selection and interpretation remains essential. Greater weight was given to randomized controlled trials and high-quality systematic reviews, while smaller or uncontrolled studies were treated as exploratory. Common limitations in taping research include poor blinding, short intervention duration, limited follow-up, and inadequate reporting of protocols. Recognizing these issues supports more balanced interpretation and strengthens the credibility of the review.

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III. EVIDENCE ON THE EFFECTIVENESS OF KINESIO-TAPING IN PATELLOFEMORAL PAIN SYNDROME

Effects of Kinesio-Taping on Pain

Pain reduction is the most frequently reported outcome in studies investigating kinesio-taping (KT) in individuals with patellofemoral pain syndrome (PFPS). Several randomized controlled trials and systematic reviews have demonstrated that KT may provide short-term relief of anterior knee pain, particularly during functional activities.

Systematic reviews and meta-analyses consistently report a statistically significant, albeit modest, reduction in pain intensity following KT application. A meta-analysis by Callaghan and Selfe[12] concluded that elastic taping techniques were associated with short-term pain reduction compared to no taping or placebo taping. More recently, a systematic review by Logan et al.[9] reported that KT resulted in improved pain scores during activities such as stair ascent and descent, squatting, and running, although the clinical significance of these improvements varied.

Individual randomized controlled trials support these findings. Akbaş et al.[13] compared KT combined with exercise therapy to exercise alone in individuals with PFPS and found that both groups experienced significant pain reduction; however, pain reduction occurred earlier in the KT group. Similarly, Chang et al.[14] reported that KT significantly reduced pain during functional tasks compared to no taping, although the magnitude of improvement was small.

Despite these positive findings, several studies have highlighted that pain reduction achieved with KT may not differ significantly from sham taping, suggesting a possible placebo or neurosensory effect. A trial by Barton et al.[6] found no clinically meaningful difference in pain outcomes between KT and placebo taping when both were combined with an exercise program. Overall, the evidence suggests that KT can provide short-term pain relief in PFPS, but its effects may not be superior to placebo interventions in all cases.

Effects of Kinesio-Taping on Functional Outcomes

Functional improvement, commonly assessed using patient-reported outcome measures such as the Kujala Anterior Knee Pain Scale or the Lysholm Knee Score, represents a key goal in PFPS management. The evidence regarding the impact of KT on functional outcomes is less consistent than that for pain.

Several studies report improvements in functional scores following KT application; however, these improvements are often comparable to those achieved with exercise therapy alone. In a randomized controlled trial, Akbaş et al.[13] observed significant improvements in Kujala scores in both KT-plus-exercise and exercise-only groups, with no statistically significant difference between groups at follow-up. These findings suggest that exercise therapy remains the primary driver of functional improvement.

Similarly, a systematic review by Logan et al.[9] concluded that while KT may enhance comfort and allow greater participation in activity, there is insufficient evidence to support its independent effectiveness in improving functional outcomes. In athletic populations, KT has been shown to permit pain-free participation in training or competition but does not consistently translate into superior functional performance measures [8].

Conversely, some smaller trials have reported favorable functional outcomes with KT, particularly when combined with structured rehabilitation programs. These studies often report improvements in Kujala scores exceeding minimal clinically important differences; however, methodological limitations such as small sample sizes and lack of blinding limit the strength of these conclusions. Taken together, the evidence indicates that KT may support functional recovery indirectly by reducing pain, but it does not consistently enhance function beyond exercise-based interventions.

Effects of Kinesio-Taping on Biomechanics and Neuromuscular Control

The proposed biomechanical and neuromuscular effects of KT have been explored in several studies, particularly with respect to quadriceps muscle activation and patellar tracking. Electromyographic (EMG) studies suggest that KT may influence muscle activation patterns around the knee.

Chang et al.[14] demonstrated that KT application over the quadriceps altered the timing and amplitude of vastus medialis obliquus (VMO) activation relative to the vastus lateralis (VL) during stair descent. These changes were associated

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with reduced pain during functional activities. Similarly, Sinaei et al.[15] found that KT improved the VMO/VL activation ratio and enhanced postural control during single-leg balance tasks in individuals with PFPS.

However, evidence supporting a mechanical correction of patellar alignment with KT is limited. Imaging and kinematic studies indicate that KT does not produce sustained changes in patellar position or tilt. Barton et al.[6] reported that while rigid taping techniques could alter patellar alignment, KT primarily exerted neurosensory effects without meaningful mechanical repositioning of the patella.

Gait analysis studies have demonstrated small improvements in spatiotemporal parameters, such as step length and cadence, following KT application, likely due to reduced pain and improved confidence during movement [8]. These findings suggest that KT may improve movement quality indirectly by modulating pain and proprioception rather than by correcting biomechanical faults.

Table 1. Summary of Key Clinical Studies on Kinesio-Taping in Patellofemoral Pain Syndrome

Author(s) & Year	Study Design	Population	Intervention	Comparator	Main Outcomes
Akbaş et al.[13]	Randomized controlled trial	31 adults with PFPS (mean age ~27 yrs)	Kinesio-taping + exercise program	Exercise program alone	Both groups improved in pain and function; KT group showed greater short-term pain reduction but no additional long-term functional benefit
Chang et al.[14]	Randomized controlled trial	52 adults with PFPS	Kinesio-taping vs McConnell taping	Comparison between taping methods	Both taping methods reduced pain; McConnell taping showed greater immediate biomechanical effects, while KT improved muscle activation patterns
Barton et al.[6]	Controlled laboratory study	Adults with PFPS	Kinesio-taping	Sham taping	No significant differences in patellar alignment or pain compared to sham, suggesting limited mechanical effect
Logan et al.[9]	Systematic review	Adults with PFPS	Various taping techniques including KT	Exercise or sham taping	KT may reduce pain in the short term but does not demonstrate superiority over exercise therapy
Sinaei et al.[15]	Randomized controlled trial	Recreational athletes with PFPS	Kinesio-taping + exercise	Exercise alone	Improved balance and proprioception in KT group; no significant difference in functional outcome scores
Mostafavifar et al.[8]	Systematic review	Mixed adult musculoskeletal populations	Kinesio-taping	Placebo or no taping	Limited evidence for KT beyond placebo effects; short-term pain relief reported

Table 2. Summary of Reported Effects of Kinesio-Taping in Patellofemoral Pain Syndrome

Outcome Domain	Reported Effects	Strength of Evidence	Clinical Interpretation
Pain reduction	Short-term reduction during functional tasks (e.g. stair climbing, squatting)	Moderate	KT may be useful for short-term symptom modulation
Functional	Small improvements in patient-reported	Low to	Improvements often comparable

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outcomes	scores	moderate	to exercise alone
Biomechanics	Minimal effect on patellar alignment	Low	KT does not appear to mechanically reposition the patella
Neuromuscular control	Altered quadriceps activation patterns	Low to moderate	Possible facilitation of muscle timing and proprioception
Balance & proprioception	Modest improvements reported in athletes	Low	Potential adjunctive benefit in sport-specific contexts
Long-term outcomes	Insufficient evidence	Very low	Long-term effectiveness remains unclear

Table 3. Comparison of Kinesio-Taping and Rigid Patellar Taping in PFPS

Feature	Kinesio-Taping	Rigid (McConnell) Taping
Tape elasticity	Elastic	Non-elastic
Primary mechanism	Neurosensory and proprioceptive	Mechanical patellar repositioning
Effect on patellar alignment	Minimal	Immediate short-term correction
Comfort and mobility	High	Moderate to low
Suitability for sport	High	Limited
Evidence for long-term benefit	Limited	Limited
Role in rehabilitation	Adjunct to exercise	Adjunct to exercise

Kinesio-Taping as an Adjunct to Exercise Therapy

The role of KT as an adjunct to exercise therapy has been emphasized across the literature. Current evidence strongly supports exercise therapy as the primary intervention for PFPS, with KT serving as a supplementary modality.

Several studies report that KT enhances short-term outcomes when combined with exercise by reducing pain and allowing greater tolerance of therapeutic loading. Logan et al.[9] concluded that taping should be used as an adjunct rather than a standalone treatment. Similarly, Crossley et al.[1] emphasized that taping may facilitate engagement in rehabilitation during the early phases of treatment but does not replace strengthening and movement retraining.

In contrast, studies that examined KT without concurrent exercise reported limited or transient benefits. This reinforces the view that KT should be integrated into a comprehensive rehabilitation program rather than applied in isolation.

Variability in Kinesio-Taping Application and Dose–Response Considerations

A significant challenge in interpreting the literature on kinesio-taping is the lack of standardized application protocols. Studies vary considerably in tape configuration, direction, applied tension, duration of wear, and frequency of reapplication [8]. Some protocols involve continuous application for several days, while others restrict taping to exercise sessions or specific activities.

This heterogeneity limits the ability to determine whether inconsistent findings across studies reflect true variability in treatment effectiveness or differences in application technique. Currently, there is insufficient evidence to establish a clear dose–response relationship for kinesio-taping in patellofemoral pain syndrome. Standardization of application parameters and reporting practices is necessary to improve reproducibility and facilitate clinical translation of research findings [9].

Placebo and Contextual Effects of Kinesio-Taping

The potential contribution of placebo and contextual effects should be carefully considered when interpreting the benefits of kinesio-taping. The highly visible nature of kinesio-taping, along with its association with elite athletes and sports performance, may enhance patient expectations and perceived treatment credibility [8]. Cutaneous stimulation from tape application may also influence pain perception through non-specific sensory mechanisms, independent of tape direction or tension.

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Several trials reporting comparable outcomes between kinesio-taping and sham taping support the hypothesis that contextual factors play a significant role in observed pain reduction [6]. While placebo effects do not diminish clinical relevance, they underscore the importance of using kinesio-taping ethically and as part of a broader, evidence-based rehabilitation strategy rather than as a sole intervention.

Cost–Benefit Profile and Safety Considerations

From a clinical perspective, kinesio-taping offers a favorable cost–benefit profile. The materials are inexpensive, application is simple, and adverse effects are rare, typically limited to minor skin irritation [8]. These characteristics make kinesio-taping an accessible adjunctive intervention in both clinical and athletic settings.

However, the low risk and cost associated with kinesio-taping should not lead to overreliance on passive modalities. Its value lies in supporting active rehabilitation strategies by reducing pain and facilitating participation in exercise, rather than replacing interventions with stronger evidence for long-term functional improvement [1].

Summary of Evidence

Overall, the literature suggests that kinesio-taping may provide short-term pain relief and modest improvements in neuromuscular control in adults with patellofemoral pain syndrome. However, its effects on functional outcomes and biomechanical correction are inconsistent, and it does not appear to offer significant advantages over placebo or exercise therapy alone. The strongest evidence supports the use of KT as an adjunct to exercise-based rehabilitation to manage symptoms and facilitate participation in therapeutic activity.

IV. DISCUSSION

The purpose of this narrative review was to critically examine the existing literature regarding the effectiveness of kinesio-taping (KT) in the management of patellofemoral pain syndrome (PFPS) in adult and athletic populations. The findings indicate that KT may provide short-term pain relief and modest neuromuscular benefits; however, its effects on functional outcomes and biomechanical correction remain inconsistent. Overall, the evidence supports the use of KT as an adjunctive, rather than primary, intervention within a comprehensive rehabilitation program.

Interpretation of Pain-Related Outcomes

The most consistent finding across the literature is the short-term reduction in pain associated with KT application. Multiple randomized controlled trials and systematic reviews demonstrate statistically significant decreases in pain intensity during functional activities such as stair climbing, squatting, and running [13,14,9]. These findings align with the proposed neurosensory mechanisms of KT, whereby stimulation of cutaneous mechanoreceptors may modulate nociceptive input and reduce pain perception [8].

However, the clinical relevance of these pain reductions must be interpreted cautiously. In many studies, the magnitude of pain relief approaches but does not consistently exceed the minimal clinically important difference, raising questions about real-world impact. Furthermore, the frequent observation that KT performs similarly to sham taping suggests that placebo effects or contextual factors may play a substantial role [6]. This does not negate the utility of KT but underscores the importance of managing patient expectations and recognizing the influence of non-specific treatment effects in musculoskeletal pain.

Functional Outcomes and Performance

In contrast to pain outcomes, evidence for functional improvement with KT is less robust. Most studies report improvements in patient-reported functional scores over time; however, these improvements are typically comparable between KT-plus-exercise and exercise-only groups [13,9]. This finding reinforces the central role of exercise therapy in addressing the underlying impairments associated with PFPS, such as muscle weakness, altered movement patterns, and reduced load tolerance [1].

While KT may not independently enhance function, its ability to reduce pain may indirectly support functional gains by enabling greater participation in rehabilitation exercises. This facilitative role is particularly relevant in early rehabilitation phases, where pain often limits adherence to exercise programs. Thus, KT may contribute to functional recovery indirectly rather than through direct mechanical or performance-enhancing effects.

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Biomechanical and Neuromuscular Considerations

One of the theoretical advantages of KT is its proposed influence on muscle activation and joint mechanics. Electromyographic studies suggest that KT may alter the timing and amplitude of quadriceps muscle activation, particularly improving the balance between the vastus medialis obliquus and vastus lateralis [14,15]. Improvements in balance and postural control observed in some studies further support a neuromuscular rather than mechanical mechanism of action.

However, evidence does not support the notion that KT produces meaningful or sustained changes in patellar alignment. Unlike rigid taping techniques, KT does not appear to mechanically reposition the patella [6]. This distinction is clinically important, as it suggests that KT should not be selected with the expectation of correcting structural maltracking. Instead, its effects are more likely mediated through enhanced proprioception, sensorimotor integration, and pain modulation.

Kinesio-Taping as an Adjunct Intervention

A key theme emerging from the literature is the adjunctive role of KT in PFPS management. High-quality reviews and clinical guidelines consistently emphasize that taping interventions should complement, not replace, exercise-based rehabilitation [1,9]. KT appears most beneficial when used strategically to reduce pain, facilitate movement, and improve patient confidence during activity.

The findings of this review support current best-practice recommendations that prioritize progressive strengthening of the quadriceps, hip, and trunk musculature, alongside movement retraining. KT may be applied selectively during periods of symptom exacerbation or high activity demand, particularly in athletic populations where rapid return to training is often desired.

Methodological Limitations of the Evidence Base

The interpretation of KT effectiveness is limited by several methodological shortcomings within the literature. Many studies involve small sample sizes, short follow-up durations, and heterogeneous taping protocols. Variability in tape application methods, tension, duration of wear, and concurrent interventions complicates comparison across studies. Additionally, blinding participants and therapists in taping trials is inherently challenging, increasing the risk of bias.
Another limitation is the predominance of short-term outcome assessment. PFPS is frequently a chronic condition, and the long-term effects of KT on symptom recurrence, load tolerance, and functional capacity remain unclear. Future research should prioritize longer follow-up periods and standardized reporting of taping protocols to improve clinical applicability.

Future Research Directions

Despite the growing body of literature on kinesio-taping in patellofemoral pain syndrome, several gaps remain that warrant further investigation. Future research should prioritize high-quality randomized controlled trials with larger sample sizes and standardized kinesio-taping protocols, including clear reporting of tape tension, application technique, duration of use, and clinician training.

Long-term follow-up studies are needed to determine whether the short-term benefits of kinesio-taping translate into sustained improvements in pain, function, and activity participation. Given the chronic and recurrent nature of PFPS, understanding the role of kinesio-taping in preventing symptom recurrence is particularly important.

Further research should also explore patient-specific factors that may influence responsiveness to kinesio-taping, such as baseline pain severity, activity level, movement patterns, and psychosocial variables. Advanced biomechanical and neurophysiological assessments, including motion analysis and electromyography, may help clarify the underlying mechanisms through which kinesio-taping exerts its effects.

Finally, comparative effectiveness studies examining kinesio-taping alongside other adjunctive interventions, such as bracing, foot orthoses, and education-based strategies, would provide valuable guidance for optimizing multimodal treatment approaches in patellofemoral pain syndrome.

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Strengths of This Narrative Review

This narrative review has several strengths that enhance its contribution to the literature. It focuses specifically on adult and athletic populations with patellofemoral pain syndrome, a group frequently encountered in physiotherapy practice. The review synthesizes evidence from peer-reviewed, indexed journals published after 2000, ensuring contemporary relevance. Additionally, the thematic approach allows integration of clinical outcomes, neuromuscular findings, and practical considerations, providing a balanced and clinically meaningful synthesis. By critically examining both supportive and contradictory evidence, this review offers a nuanced perspective on the role of kinesio-taping in PFPS management.

Implications for Clinical Practice

From a clinical perspective, KT can be considered a low-risk, cost-effective intervention that may enhance short-term pain management in PFPS. Its use should be individualized based on patient response, preferences, and activity demands. Clinicians should emphasize that KT is a supportive measure rather than a curative treatment and ensure that it is integrated into a comprehensive, exercise-focused rehabilitation program.

Educating patients about the expected benefits and limitations of KT is essential to avoid overreliance on passive modalities. When used judiciously, KT may improve patient engagement and adherence, which are critical determinants of rehabilitation success.

V. CONCLUSION

Patellofemoral pain syndrome remains a prevalent and complex musculoskeletal condition, particularly among physically active adults and athletes. This narrative review evaluated the current evidence regarding the effectiveness of kinesio-taping as a conservative intervention for PFPS. The findings indicate that kinesio-taping may provide short-term pain relief and modest neuromuscular benefits; however, its effects on functional outcomes and biomechanical correction are inconsistent and generally limited.

The evidence suggests that the primary value of kinesio-taping lies in its ability to reduce pain and facilitate movement, particularly during the early phases of rehabilitation or periods of increased activity demand. Importantly, kinesio-taping does not appear to offer significant advantages over placebo taping or exercise therapy alone and should not be considered a standalone treatment. Exercise-based rehabilitation remains the cornerstone of PFPS management, addressing the underlying neuromuscular and biomechanical impairments associated with the condition.

In clinical practice, kinesio-taping may be considered a safe, low-cost adjunctive modality that can be selectively used to enhance patient comfort, support adherence to exercise programs, and improve short-term symptom management. Clinicians should apply kinesio-taping judiciously, set realistic expectations, and integrate its use within a comprehensive, individualized rehabilitation approach.

REFERENCES

1. Crossley KM, van Middelkoop M, Callaghan MJ, Collins NJ, Rathleff MS, Barton CJ, et al. Patellofemoral pain. Br J Sports Med. 2016;50(4):247–250.
2. Boling M, Padua D, Marshall S, Guskiewicz K, Pyne S, Beutler A. A prospective investigation of biomechanical risk factors for patellofemoral pain syndrome. Am J Sports Med. 2010;37(11):2108–2116.
3. Collins NJ, Barton CJ, van Middelkoop M, Callaghan MJ, Rathleff MS, Vicenzino B, et al. 2018 Consensus statement on exercise therapy and physical interventions for patellofemoral pain. Br J Sports Med. 2018;52(18):1170–1178.
4. Willy RW, Hoglund LT. Patellofemoral pain. J Orthop Sports Phys Ther. 2019;49(9):CPG1–CPG95.
5. Powers CM, Witvrouw E, Davis IS, Crossley KM. Evidence-based framework for a pathomechanical model of patellofemoral pain. Br J Sports Med. 2017;51(23):1713–1723.
6. Barton CJ, Lack S, Hemmings S, Tufail S, Morrissey D. The 'Best Practice Guide to Conservative Management of Patellofemoral Pain': incorporating level 1 evidence with expert clinical reasoning. Br J Sports Med. 2014;49(14):923–934.
7. Kase K, Wallis J, Kase T. Clinical Therapeutic Applications of the Kinesio Taping Method. 3rd ed. Tokyo: Ken Ikai Co Ltd; 2013.

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8. Mostafavifar M, Wertz J, Borchers J. A systematic review of the effectiveness of kinesio taping for musculoskeletal injury. Phys Sportsmed. 2012;40(4):33–40.
9. Logan CA, Bhashyam AR, Tisosky AJ, Haber DB, Jorgensen A, Roy A, et al. Systematic review of the effect of taping techniques on patellofemoral pain syndrome. Sports Health. 2017;9(5):456–461.
10. Callaghan MJ, Selfe J. Has the incidence or prevalence of patellofemoral pain in the general population been properly evaluated? Phys Ther Sport. 2020;41:34–41.
11. Green BN, Johnson CD, Adams A. Writing narrative literature reviews for peer-reviewed journals. J Chiropr Med. 2006;5(3):101–117.
12. Callaghan MJ, Selfe J. Patellofemoral pain syndrome: impact of taping and bracing. Man Ther. 2012;17(2):93–99.
13. Akbaş E, Atay AO, Yüksel I. The effects of additional kinesio taping over exercise in the treatment of patellofemoral pain syndrome. Acta Orthop Traumatol Turc. 2011;45(5):335–341.
14. Chang WD, Chen FC, Lee CL, Lin HY, Lai PT. Effects of kinesio taping versus McConnell taping for patellofemoral pain syndrome. J Orthop Sports Phys Ther. 2015;45(7):512–520.
15. Sinaei E, Foroughi F, Ghaffarinejad F, Akbari A. Effect of kinesio taping on muscle activity and balance in women with patellofemoral pain syndrome. J Bodyw Mov Ther. 2021;25:237–244.

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