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Research Article

Effect of Kinesio Taping on Postoperative Pain and Comfort After Cesarean Section: A Randomized Controlled Trial

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ABSTRACT

Aim: The aim of this study was to evaluate the effectiveness of kinesio taping on acute pain, comfort, and patient satisfaction after cesarean section.

Material and Methods: The single-center, participant-blinded, randomized placebo-controlled trial was conducted between December 2024 and May 2025. The intervention group (n=32) received a kinesio taping application on the lumbar and trochanteric regions, specifically designed to avoid direct incision sensitivity. The placebo group (n=32) received sham taping. Pain intensity was the primary outcome; comfort and patient satisfaction were secondary. Data was collected at baseline and at 1, 24, and 48 hours post-intervention.

Results: Before intervention, the intervention group had higher pain scores ($p = 0.030$). Post-intervention, no significant differences in pain scores were found at 1 hour ($p = 0.828$) or 24 hours ($p = 0.179$). However, at 48 hours, the intervention group reported significantly lower pain scores than the placebo group ($p = 0.021$). Within group analysis showed significant decrease in pain only for the intervention group ($p < 0.001$). Body Mass Index was significantly higher in the placebo group ($p = 0.024$). Overall comfort levels did not differ between the groups ($p = 0.572$), but satisfaction was significantly higher in the intervention group ($p = 0.011$).

Conclusion: Distal kinesio taping is an effective and safe non-invasive method for reducing postoperative pain at 48 hours and improving patient satisfaction, offering an alternative to around the surgical site. Despite unchanged comfort scores, improved pain and satisfaction support this technique as a valuable adjunct in nursing care.

Keywords: Cesarean section, kinesio tapes, pain, postoperative, patient satisfaction, patient comfort, nursing.

INTRODUCTION

Cesarean section is one of the most common surgical procedures performed on women globally (1). Despite its frequency, the postoperative period is often associated with significant challenges, most notably acute pain at the incision site (2). Unmanaged post-cesarean pain can lead to a cascade of negative outcomes, including difficulties with breastfeeding, decreased quality of sleep and comfort, increased anxiety levels, delayed postpartum recovery, and prolonged hospital stays (2,3). These complications adversely affect both maternal health and the overall recovery process. Managing pain during the early postoperative period following a cesarean section is critical, as this acute phase represents the most challenging period for early mobilization, maternal-infant bonding, and the successful initiation of breastfeeding (3).

The management of post-cesarean pain involves numerous pharmacological and non-pharmacological methods. However, the potential for inadequate relief and the presence of adverse side effects associated with pharmacological agents have spurred increased interest in nonpharmacological interventions in the postoperative setting (4). Various nonpharmacological methods are frequently employed due to their advantages: they are non-invasive, cost-effective, easy to apply, and generally free of side effects, while also providing patients with a sense of relaxation and control (4,5).

Among these non-pharmacological approaches, kinesio taping (KT) emerges as a promising method for pain reduction and comfort enhancement. Developed in Japan by Dr. Kenzo Kase in the 1970s, kinesio taping involves the application of an elastic therapeutic tape to address pain, swelling, and edema, facilitate proprioception, and promote muscle relaxation (6). The tape, composed of woven cotton strips with an acrylic adhesive, is heat-sensitive, non-allergenic, and devoid of any chemical or pharmaceutical agents (7).

Kinesio taping serves as a valuable aid in reducing postoperative complications such as pain and swelling in dental surgery or cosmetic procedures (8,9). Parallel to these applications, KT has been utilized in abdominal surgeries to enhance recovery outcomes and quality of life (10). In the specific context of cesarean and postpartum care, research has primarily targeted musculoskeletal issues like low back pain or late-stage abdominal strength recovery (11,12). Beyond these clinical benefits, KT improves overall patient comfort and satisfaction due to its skin-like elasticity (13). Physiologically, while active KT decompresses fascial layers by creating skin convolutions under tension (6), zero-tension sham taping serves as a non-mechanical sensory control (13).

While kinesio taping is a promising non-pharmacological approach, there is limited research specifically evaluating its efficacy for acute incisional pain immediately following a cesarean section. Previous studies have typically focused

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on applying the tape directly over or near the surgical incision (14). However, this approach can be challenging due to patient sensitivity at the fresh incision site and may limit optimal tape tension. In other surgical contexts, such as thoracotomy, researchers have successfully utilized taping at a distance from the incision site to manage pain (15). Additionally, various lumbar taping (16) and trochanteric taping (17) applications in literature provide a foundation for our distal protocol. This study introduces and evaluates a novel kinesio taping technique specifically tailored for acute post-cesarean pain. Our protocol aims to reduce strain on the anterior abdominal wall without direct contact with the sensitive area by applying the tape to the distal, biomechanically connected support muscles of the lumbar and trochanteric regions. This approach is based on the co-contraction of the erector spinae and gluteal muscles with the transversus abdominis, providing support through the posterior kinetic chain to indirectly alleviate stress on the anterior abdominal wall (18,19).

Although rooted in physiotherapy, KT is emerging as a valuable tool in nursing practice. Since surgical nurses are responsible for managing postoperative pain, comfort, and satisfaction, integrating non-pharmacological methods like KT enhances professional nursing autonomy and holistic care. Within this scope, the purpose of this randomized controlled trial was to evaluate the effects of this distal kinesio taping technique, which, to the best of our knowledge, is a novel approach, on pain management, comfort, and patient satisfaction in women following cesarean section.

MATERIAL AND METHODS

Design and Setting

This study was designed as an explanatory, participant-blinded, single-center, randomized controlled trial with repeated measures. The study was conducted in the Obstetrics and Gynecology Clinic of a hospital between December 2024 and May 2025. This study was prospectively registered at ClinicalTrials.gov with the identification number NCT06661109. The principal registration date was October 28, 2024, and the first participant was enrolled on December 2, 2024. Also reported in accordance with the CONSORT 2025 guidelines.

The study population consisted of women who underwent cesarean section at the specified clinic. The sample size was calculated using G*Power software (Ver. 3.1.9.2). Based on a similar study (14) with an effect size (Cohen's d) of 0.91, a power of 90%, and a significance level of 5%, it was determined that a minimum of 26 participants were required for each group. To account for a potential attrition rate of 20% (20), the target sample size was increased to 32 participants per group. A total of 64 participants were included in the final analysis, and a post-hoc power analysis revealed an actual power of 95.5%, confirming the adequacy of the sample size.

Inclusion criteria were being aged 18-45 years, having an American Society of Anesthesiologists classification of I or II, receiving spinal anesthesia, having no communication difficulties, having no prior experience with kinesio taping, and providing voluntary informed consent. Exclusion criteria were having a diagnosed allergic skin condition, developing postoperative complications (e.g., hemorrhage, infection), or expressing a wish to withdraw from the study.

During the recruitment period, 82 patients were assessed for eligibility. Of these, 16 did not meet the inclusion criteria (e.g., declined to participate, had a different American Society of Anesthesiologists classification or analgesia protocol). The remaining 66 eligible patients were randomized. One participant from the intervention group withdrew from the study, and one from the placebo group experienced a postoperative bleeding complication, resulting in 32 participants being analyzed in each group (Figure 1).

Randomization and Blinding

Participants were randomly assigned to either the intervention group or the placebo group at a 1:1 ratio. The randomization sequence was generated by an independent statistician, who was not involved in patient recruitment or data collection, using the web-based tool Randomizer.org. Allocation was concealed using sequentially numbered, opaque, sealed envelopes. This was a single-blind study where participants were blinded to their group assignment. To prevent potential unblinding due to sensory differences between 100% and 0% tension, all applications were performed individually in single-patient rooms. This environment ensured that participants could not interact or compare the specific sensations of the tape. Furthermore, as only individuals with no prior taping experience were included, they remained unaware of the tension differences, ensuring that the blinding was maintained effectively throughout the study (15). The researcher administering the intervention was aware of the group allocation due to the nature of the procedure. However, the data were coded, and the statistical analysis was performed by another independent statistician who was blind to the group codes.

Data Collection and Measures

Data was collected using a descriptive information form and standardized scales.

***Descriptive Information Form*:** This form collected sociodemographic data (age, Body Mass Index (BMI), education level, employment status) and clinical data (number of pregnancies, vaginal/cesarean births, cesarean indication, surgical history). At the end of the study, participants' satisfaction with the intervention was assessed with a single question: How satisfied were you with the taping application?' Responses were recorded using a 3-point Likert scale (satisfied, neutral, and dissatisfied).

***Visual Analog Scale (VAS)*:** Postoperative pain intensity was measured using a 10 cm Visual Analog Scale, where 0 represents "no pain" and 10 represents "the worst imaginable pain." The Visual Analog Scale is a widely validated and reliable tool for acute pain assessment (14,21).

***Perianesthesia Comfort Scale (PCS)*:** Comfort levels were assessed using the Turkish version of the Perianesthesia Comfort Scale. This 24-item, 6-point Likert scale measures comfort, with scores ranging from "definitely disagree" (1) to "definitely agree" (6). Higher scores indicate greater comfort. The scale created using the components of the comfort theory developed by Kolcaba (2003) was validated by Üstündağ and Eti Aslan (2010) with a Cronbach's alpha coefficient of 0.89 (22,23). In the current study, the Cronbach's alpha coefficient for the Perianesthesia Comfort Scale was 0.73.

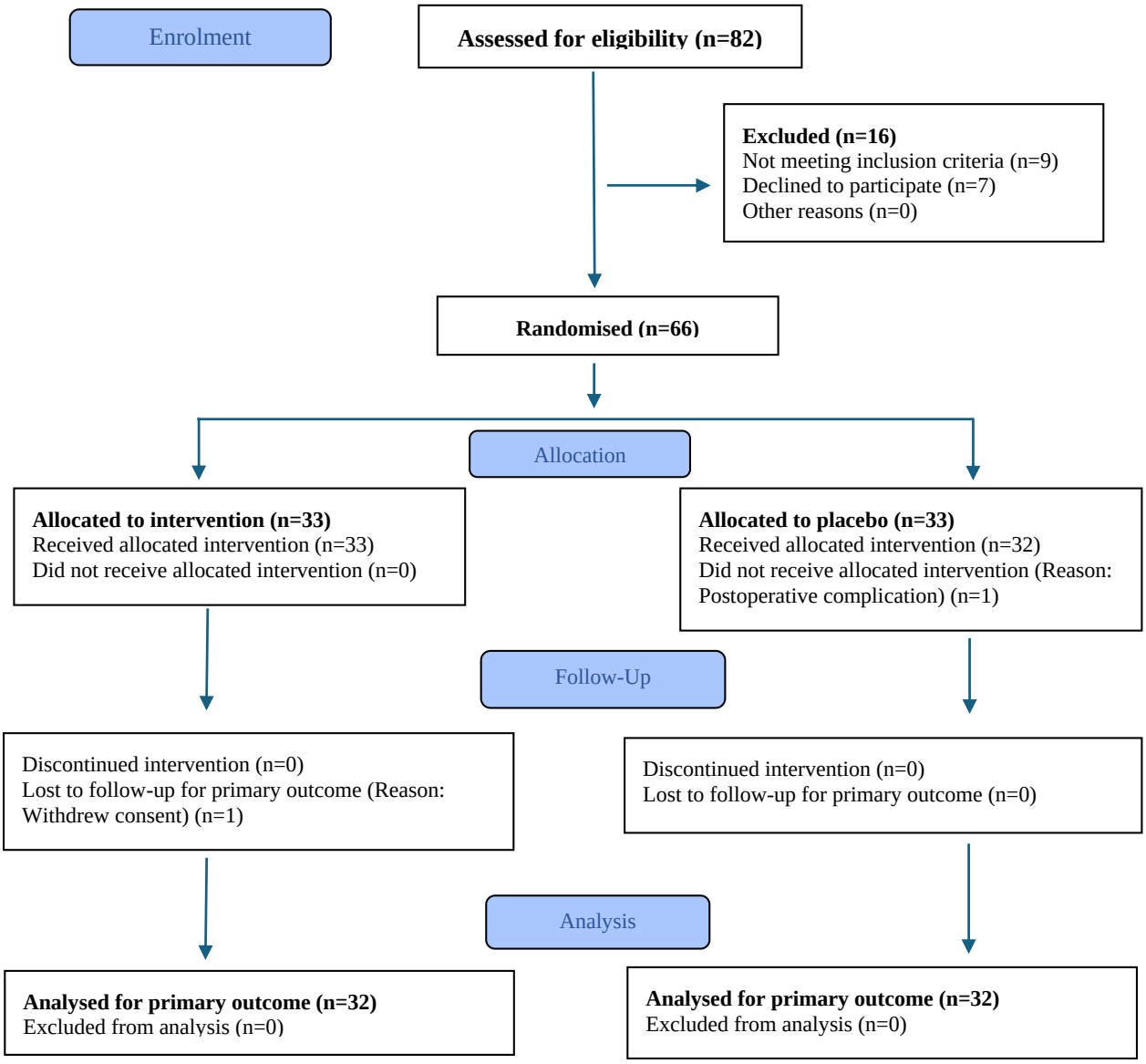


Figure 1. CONSORT 2025 Flow Diagram.

Outcomes

The primary outcome was the level of postoperative pain, measured by the Visual Analog Scale at baseline and at 1, 24, and 48 hours post-intervention. The secondary outcomes were comfort level, measured by the Perianesthesia Comfort Scale before discharge, and patient satisfaction, assessed at the end of the study, using the 3-point Likert scale.

Intervention

On the preoperative day, potential participants were informed about the study's purpose and procedures. It was clarified that all participants, regardless of group assignment, would receive the hospital's standard of care for post-cesarean pain, which included routine nursing care and a standard analgesia protocol. In accordance with established methodologies (15,24), all participants followed a standardized clinical analgesia protocol. As part of the department's clinical routine, nurses administered 10 mg/kg paracetamol IV every 8 hours, 75 mg diclofenac sodium IM every 12 hours, and 1 mg/kg tramadol IV as supplemental analgesia according to physician orders during the postoperative period. The kinesio taping intervention or placebo application was performed 6-8 hours post-operation, after the patient's general condition had stabilized and initial mobilization was complete. Patient privacy was ensured during all procedures. Due to hospital discharge routines (between 24-48 hours), some follow-up assessments were conducted via telephone. To ensure reliability, participants were initially trained on the scales face-to-face. No reporting issues occurred, supported by the participants' young age, digital literacy, and the detailed instructions provided by the researcher. Participants were instructed not to remove the tapes for 48 hours. They were also informed on how to easily remove the tapes themselves after this period (e.g., with soap and water in the shower or with baby oil). A direct contact number was provided so they could reach the researchers at any time in case of discomfort or questions.

All procedures were performed by a certified kinesio taping specialist (Y.S.A). The kinesio taping technique employed in this study was intentionally designed to differ from previous applications. Unlike studies that applied

kinesio taping directly over or adjacent to the surgical incision, such as the spider-web technique (21) or parallel bands on the rectus abdominis (14), our protocol utilized a distal application on the lumbar and greater trochanter regions (16,17). The decision to target the lumbar and greater trochanter regions was twofold. Clinically, this approach avoided direct contact with the highly sensitive incision area, enhancing patient comfort and allowing for optimal tape tension. Anatomically, this technique leverages the interconnectedness of the core musculature. The application was designed to activate the erector spinae and gluteal muscles, which are known to co-contract with the transversus abdominis and other abdominal muscles to enhance lumbopelvic stability (19). By providing support through this posterior kinetic chain, the protocol aimed to reduce the functional strain on the anterior abdominal wall, thereby alleviating incisional pain. To the best of our knowledge, this is the first study to investigate a distal kinesio taping application on the lumbar and trochanteric regions for acute pain management following a cesarean section.

***Intervention Group*:** Participants received the novel distal kinesio taping application using Kinesio Tex Gold tape (5 cm width, cotton, latex-free). The skin was ensured to be dry before application. The technique, developed based on the anatomical principles of the thoracolumbar fascia and core stabilization, was as follows: Lumbar Application: With the patient in a standing position and leaning forward, two parallel I-strips were applied vertically with 100% tension along the erector spinae muscles, from the L5 to the T12 vertebral level. A third, U-shaped decompression strip was then applied horizontally across the lumbar region. Trochanteric Application: With the patient in a standing position, two I-strips were applied in a cross ("+") formation with 100% tension directly over the greater trochanter of the femur (Figures 2 and 3).

The use of maximal tension (100%) in this study is supported by research that utilized varied tensions to investigate the physiological and functional effects of kinesio taping (25). The thoracolumbar fascia and its associated muscles act as a critical stabilizer for the entire trunk; by supporting the posterior kinetic chain, the mechanical strain on the anterior abdominal wall can be indirectly reduced (18). The literature includes various lumbar taping (16) applications and trochanteric taping applications that serve as a basis for our distal protocol (17).

***Placebo Group*:** Participants in this group received a sham (placebo) taping application. A placebo tape identical in color, size, and stripe-shape to the intervention tape was used. The strips were applied to the same anatomical landmarks as the intervention group but with zero tension (0% stretch) to ensure no mechanical effect on the underlying tissues. This zero tension application design is modeled after randomized controlled trials in the literature that have successfully utilized identical tensionless applications as a reliable sham control to prevent mechanical or therapeutic effects on the underlying tissues while maintaining participant blinding (15,26,27). The single-room environment prevented participant interaction and sensory comparison (e.g., tape tension). Without prior experience, participants were unable to distinguish the differences in tape tension between the groups, ensuring consistency with established blinded protocols (15). To maintain an ethical approach, participants in this group were contacted after the study and offered a fully tensioned application.

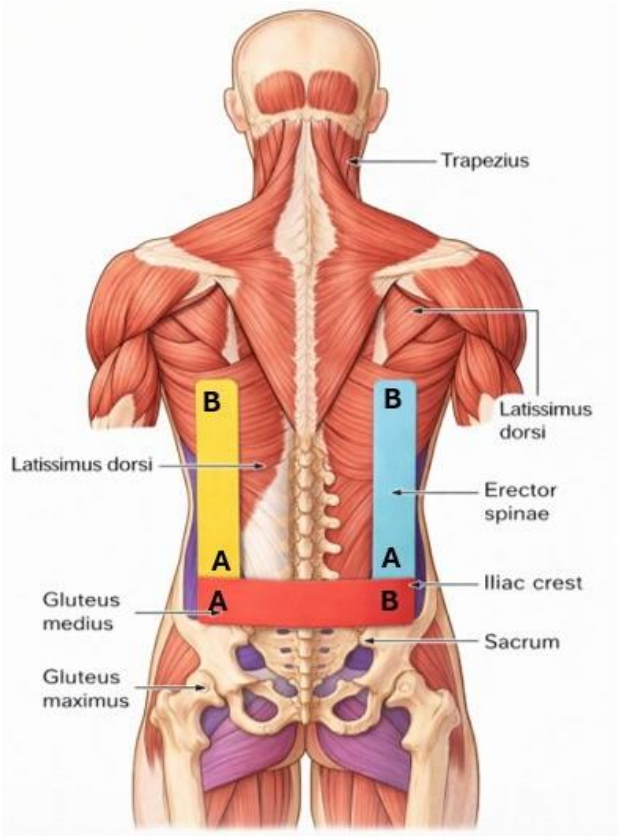


Figure 2. Schematic representation of the distal lumbar kinesio taping application. The illustration shows the application along the erector spinae muscles to provide lumbopelvic stability. Note. A: Starting point; B: End point; Yellow and Blue strips: Parallel vertical I-strips (100% tension for intervention; 0% for placebo); Red strip: Horizontal decompression strip.

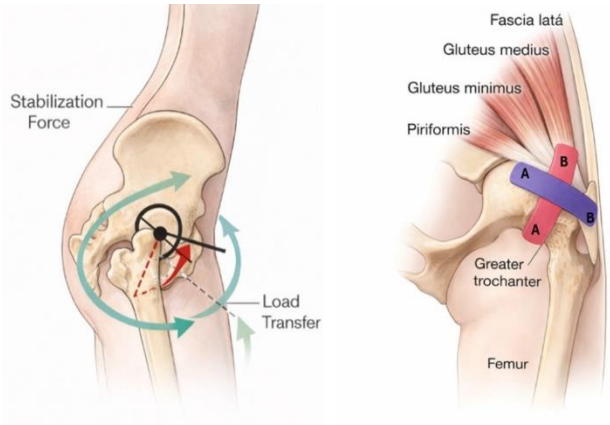


Figure 3. Schematic representation of the distal trochanteric kinesio taping application. The illustration shows the cross-formation (+) application directly over the greater trochanter. Note. A: Starting point; B: End point; Red and Purple strips: Cross-formation I-strips (100% tension for intervention; 0% for placebo).

Ethical Approval

This study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical approval was

obtained from the KTO Karatay University Ethics Committee for Non-Drug and Non-Medical Device Research (Meeting Date: 26.09.2024; Decision No: 2024/050). This was a single-center study, and institutional permission was granted by the management of Private Mersin Forum Yaşam Hospital, where the data collection took place (Date: 25.11.2024; Ref No: 1416). Prior to data collection, all participants were informed about the study's purpose and procedures, and written informed consent was obtained from each individual. At the time of ethical approval, because the private hospital where the study was conducted did not have its own Institutional Ethics Committee, and the authors' affiliated university at that time did not evaluate randomized controlled trial protocols, approval was obtained from an external university ethics committee. Additionally, the institutional affiliations of the researchers changed during the publication process.

Statistical Analysis

Statistical analysis was performed using IBM SPSS Statistics for Windows, Version 24.0 (Armonk, NY: IBM Corp). The normality of the data distribution was assessed using the Shapiro-Wilk test, and the homogeneity of variances was assessed using the Levene test. Descriptive statistics were reported as percentages, means, and standard deviations. An independent samples t-test was used to compare continuous variables between two groups. Pearson chi-square test was used; however, Fisher's exact test was preferred in cases where the expected cell frequencies were low, and the Fisher-Freeman-Halton test was preferred when appropriate. A repeated-measures ANOVA was conducted to analyze changes in pain scores over time, with a Bonferroni correction for post-hoc tests. An ANCOVA was also performed with BMI as a covariate. A p-value of < 0.05 was considered statistically significant for all analyses. The primary analysis followed a per-protocol approach, including only participants who completed the 48-hour follow-up.

RESULTS

Participant Characteristics

A total of 64 participants were included in the final analysis. The demographic characteristics of the groups are presented (Table 1), and the obstetric characteristics of the groups are presented (Table 2). The groups were comparable across most baseline variables, including age, education, and working status (all $p > 0.05$). However, homogeneity was not established for BMI, as the placebo group had a significantly higher BMI ($p = 0.024$) (Table 1).

Table 1. Demographic characteristics of women by group.

Demographic Characteristics	Intervention group (n=32)		Placebo group (n=32)		Test/p
	M ± SD		M ± SD		
Age	30.59±8.25		27.38±6.81		t=1.667 p=0.099
Body Mass Index	28.13±2.82		30.33±4.57		t=-2.319 **p=0.024****
	N	**%**	**n**	**%**	Test/p
Level of Education					
Secondary school graduate	4	12.5	5	15.6	χ^2=0.593 p=0.743*
High school graduate	7	21.9	9	28.1	
University graduate	21	65.6	18	56.3	
Working Status					
Working	9	28.1	6	18.7	χ^2=0.348 p=0.555
Not Working	23	71.9	26	81.3	

M±SD: Mean ± Standard Deviation. t: Student t test; χ^2: Chi-square test statistics; *: Fisher's exact test (as appropriate), **p < 0.05 indicates statistical significance.

Also, ANCOVA revealed that BMI had no significant effect on pain, comfort, or satisfaction scores ($p>0.05$), confirming that the observed group differences were independent of BMI.

Regarding the obstetric profile, a notable portion of women in the intervention group were in their second pregnancy (n=15, 46.9%), had no previous vaginal births (n=27; 84.4%), were undergoing their first cesarean section (n=15; 46.9%), and had a history of prior surgery (n=19; 59.4%). Similarly, in the placebo group, many participants were in their first pregnancy (n=14; 43.8%), had no previous vaginal births (n=28; 87.5%), and had a history of prior surgery (n=18; 56.2%). Half of the participants in the intervention group (n=16; 50.0%) and over half in the placebo group (n=17; 53.1%) opted for the cesarean section upon individual request (Table 2).

Primary Outcome: Postoperative Pain

The primary outcome of the study was postoperative pain, as measured by the Visual Analog Scale. At baseline, before the intervention, the intervention group reported higher pain scores than the placebo group ($t = 2.190$; $p = 0.030$) (Table 3).

Following the intervention, there were no statistically significant differences in pain scores at the 1-hour ($t = 0.220$; $p = 0.828$) or 24-hour ($t = -1.360$; $p = 0.179$) marks. However, at the 48-hour follow-up, the intervention group reported statistically significantly lower pain scores than the placebo group ($t = -2.370$; $p = 0.021$) (Table 3).

A within-group analysis of the three post-intervention time points showed a statistically significant overall reduction in pain in the intervention group (F=28.704; p < 0.001). In contrast, the overall change within the placebo group during the post-intervention period was not statistically significant (F=1.703; p = 0.201). The overall time-by-group interaction effect was also statistically significant, confirming that the pattern of pain reduction over time differed between the two groups (Table 3).

Secondary Outcomes: Comfort and Satisfaction

There was no statistically significant difference in Perianesthesia Comfort Scale scores between the intervention and placebo groups before discharge (t = 0.570; p = 0.572) (Table 3).

Participant satisfaction with the taping application differed significantly between the groups (χ^2 = 6.478; p = 0.011). A statistically significantly higher proportion of participants in the intervention group reported being satisfied (n=24; 75.0%) compared to the placebo group (n=14; 43.8%) (Table 4).

Table 2. Obstetric characteristics of women by group.

Obstetric Characteristics	Intervention group (*n*=32)		Placebo group (*n*=32)		Test/p
	n	%	n	%	
Number of pregnancies (including the present)					
One	12	37.5	14	43.8	χ^2=1.104 p= 0.576
Two	15	46.9	11	34.4	
Three and over	5	15.6	7	21.8	
Number of vaginal births					
Zero	27	84.4	28	87.5	χ^2=0.127 p=0.721*
One	5	15.6	4	12.5	
Number of caesarean section births (including the present)					
One	15	46.9	19	59.4	χ^2=1.071 p=0.585
Two	11	34.4	9	28.1	
Three and over	6	18.8	4	12.5	
Indication for Caesarean section					
Medical	16	50.0	15	46.9	χ^2=0.063 p=0.802*
Individual request	16	50.0	17	53.1	
Previous surgical experience					
Yes	19	59.4	18	56.2	χ^2=0.064 p=0.800*
No	13	40.6	14	43.8	

χ^2: Chi-square test; *: Fisher's exact test, p < 0.05 indicates statistical significance.

Table 3. Postoperative pain and comfort scores by group.

Variable and Time Point	Intervention group (*n*=32)		Placebo group (*n*=32)		Between-Group Comparison
VAS Score	**M±SD**	**Min-Max**	**M±SD**	**Min-Max**	**Test[b] / p**
Baseline (before intervention)	8.03±1.28	6-10	7.12±1.97	2-10	**t = 2.190 p = 0.030***
1st hour (after intervention)	6.65±1.23	5-9	6.56±1.86	3-10	t = 0.220 p = 0.828
24th hour (after intervention)	5.90±1.06	4-8	6.41±1.80	2-10	t = -1.360 p = 0.179
48th hour (after intervention)	5.40± 0.98	3-8	6.25±1.76	2-10	t = -2.370 **p = 0.021***
Within-Group Change (Post-Intervention)[a]	**F=28.704 p < 0.001***		F=1.703 p=0.201		
PCS Score	**M±SD**	**Min-Max**	**M±SD**	**Min-Max**	**Test/p**
Before Discharge	3.66±0.29	2.88-4.25	3.62±0.23	3.0-3.92	t = 0.570 p = 0.572

Note: VAS = Visual Analog Scale; PCS = Perianesthesia Comfort Scale. a=p-value for within-group change at three post-intervention time points (1 hour, 24 hours, 48 hours) obtained from repeated measures ANOVA for each group; b=Student t-test, *p < 0.05 indicates statistical significance.

Table 4. Participants' satisfaction with kinesio taping.

Satisfaction Status	Intervention group (n=32)		Placebo group (n=32)		Test/p
	n	%	n	%	
Satisfied	24	75	14	43.8	χ^2=6.478 **p=0.011***
Neutral	8	25	18	56.2	

a: Chi-square test statistics, *Significant at the 0.05 level.
Note: No participants selected "dissatisfied"; therefore, this category was not included in the table.

DISCUSSION

The increasing global prevalence of surgical interventions, including cesarean sections, brings a host of short and long-term challenges. Severe postoperative pain is one of the most significant issues, capable of delaying recovery, impairing mother-infant bonding, and negatively impacting a woman's overall comfort and satisfaction (28). This has led to a growing interest in non-pharmacological methods to supplement traditional pain management (5). Within this framework, our study aimed to evaluate the efficacy of a novel kinesio taping technique on acute incisional pain, comfort, and satisfaction following cesarean section.

The primary finding of this study is that the kinesio taping application resulted in a significantly greater reduction in pain compared to a placebo, with the most pronounced difference observed at the 48-hour mark. This result is crucial as it suggests that the therapeutic benefits of kinesio taping are not merely immediate but are sustained over a longer period. The underlying mechanism for this analgesic effect is likely multifactorial. By creating space between the skin and underlying tissues, the tape is thought to decompress fascial layers, which can reduce pressure on neurological pain receptors and improve local circulation (29). This mechanical stimulation can also activate the Gate Control Theory of pain, where sensory input from the tape travels to the spinal cord and "closes the gate" to nociceptive signals, preventing them from reaching the brain (30). Notably, despite higher scores at Baseline (before intervention), the intervention group achieved more significant reductions, leading to lower pain at 48 hours. This is attributed to the alleviation of mechanical tension on the surgical incision during mobilization, consistent with the biomechanical approach described in our methodology.

Beyond the statistical findings, it is essential to consider the clinical impact of the observed pain reduction. Although the point difference between groups at 48 hours is relatively small, its practical significance is reflected in the significantly higher satisfaction levels within the intervention group. In nursing practice, especially during the first 48 hours post-cesarean, any reduction in pain intensity is crucial as it can facilitate early mobilization, improve maternal-infant bonding, and enhance the mother's confidence in self-care (3). Therefore, the findings suggest that distal kinesio taping provides a meaningful clinical advantage by making the immediate postoperative period more tolerable for the patient.

Although the placebo group had a higher BMI, a factor generally linked to increased pain perception (31), further statistical control revealed that this difference did not influence the study outcomes. These findings indicate that the clinical benefits of distal KT are independent of body weight, aligning with research showing its effectiveness across various obesity grades (32).

Our results align with the broader literature demonstrating the effectiveness of kinesio taping for postoperative pain in various surgical contexts, including cervical spine surgery, mandibular third molar surgery, liposuction, abdominal surgery and lobectomy (7-10,15,21).

It has been reported that kinesio taping after lung lobectomy is a safe and effective auxiliary technique for chest pain control (15). Similarly, it has been suggested that kinesio taping could be an alternative treatment for alleviating pain after shoulder arthroscopy, although no significant reduction in swelling was observed (33). A systematic review and meta-analysis provided evidence that kinesio taping is effective in reducing pain scores and swelling within two weeks following anterior cruciate ligament reconstruction (34). Furthermore, it was shown that the kinesio taping method applied after abdominoplasty contributed to the reduction of edema, the increase of tissue support, and wound healing (35). However, in contrast to our study, some findings indicated that kinesio taping after lumbar disc surgery did not show a significant advantage in pain control, analgesic reduction, or wound healing (26).

However, the application of kinesio taping for acute cesarean incisional pain remains a relatively unexplored area. Most postpartum kinesio taping studies have focused on addressing issues like lumbopelvic instability or back pain well after the surgical incision has healed (11,36), not on managing acute pain from the incision itself. To our knowledge, only one other study has directly targeted acute post-cesarean incisional pain with kinesio taping and, similar to our findings, they reported a significant reduction in pain (14). Our study builds on this limited evidence by introducing a novel taping technique that avoids direct contact with the sensitive surgical area, offering a practical and innovative approach for clinicians.

A particularly interesting finding was the modest, albeit not statistically significant, decrease in pain observed in the placebo group. This still underscores the potential influence of non-specific therapeutic factors, such as the attentive presence of the nurse, the tactile sensation of the tape, and the psychological comfort of receiving a dedicated intervention. This observation aligns with research by Kalinowski and Krawulska (27), who also identified a placebo effect from non-tensioned taping, although the effect in our study did not reach statistical significance. The clear divergence in pain scores between our groups, coupled with the significant and continuous pain reduction in the kinesio taping group, strongly suggests that the specific, tension-based mechanism of kinesio taping offers a robust and sustained therapeutic advantage that is clearly distinct from these non-specific effects.

Regarding the secondary outcomes, we found no significant difference in comfort scores between the groups, even though both reported moderate-to-high levels. This phenomenon might be explained by the holistic nature of comfort, which encompasses psychological well-being. The very act of receiving attentive care and intervention whether real or sham likely elevated the comfort levels in both groups, a concept supported by Behbahani et al. (37), who noted kinesio taping's strong psychological benefits. In contrast, patient satisfaction was significantly higher in the kinesio taping group. This suggests that while general comfort can be influenced by psychological factors, patient satisfaction in a postoperative setting is more directly tied to the tangible outcome of effective pain relief.

The primary limitations of this study include its single-center design, limited sample size, and the lack of assessor blinding. Additionally, the lack of monitoring individual analgesic doses and the absence of substratum stratification are other limitations. Future research should involve multicenter, double-blind trials with larger samples and long-term outcomes.

CONCLUSION

In conclusion, this study suggests that kinesio taping can be an effective, safe, and non-invasive method for reducing acute pain at 48 hours and improving satisfaction following a cesarean section. A specific contribution of this research is demonstrating that pain reduction can be achieved through a distal application technique; by activating biomechanically connected muscles away from the surgical field, it is possible to alleviate strain without direct contact with the sensitive incision site. To the best of our knowledge, this approach addresses a notable gap in the literature and demonstrates the feasibility of integrating distal taping as a supportive adjunct in postoperative nursing care. However, to enhance the generalizability of these findings and to evaluate long-term effects and cost-effectiveness, further multi-center trials with larger sample sizes and longer follow-up periods are warranted.

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