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Can taping reduce menstrual pain, distress, and anxiety? A systematic review and meta-analysis

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Abstract

Nowadays, Primary dysmenorrhea (PD) is a common problem with varying degree of symptoms in women. The present study is aimed to provide evidence for effect of taping on pain and related symptoms of primary dysmenorrhea such as menstrual distress and anxiety, along with effect of duration of given intervention on pain.

The electronic databases such as PubMed and Cochrane library were searched from inception to February 2021, using appropriate keywords related to the study condition and outcome measures. Eight studies were selected for review based on the inclusion and exclusion criteria of the study. The methodological quality and risk of bias was assessed by "Physiotherapy Evidence Database (PEDro) scale" and Cochrane collaboration tool for risk of bias assessment, respectively.

The findings from their analysis suggested that taping was significantly reducing pain ($p = 0.0004$), menstrual distress ($p = 0.02$) and anxiety level ($p < 0.00001$) in individual who received taping when compared to the individuals who did not received taping as an intervention. In addition, subgroup analysis based on total duration of taping intervention revealed that short-term taping (<1 month) was significantly effective ($p < 0.00001$) in reducing pain as compared to long-term taping (>1 month) ($p = 0.12$).

The study concluded that taping can be used as an effective short-term treatment method to reduce pain, menstrual distress and anxiety level among individuals with primary dysmenorrhea.

Keywords: psychological distress, dysmenorrhea, physical therapy, adhesive tape

Introduction

Menstrual pain and its associated discomfort are very common in women. It is usually termed *dysmenorrhea*, and as primary or secondary, depending on the absence or presence of any underlying pathology. Though the exact cause is not known, it is believed to arise following to release of prostaglandins and vasopressin. These cause pain by increasing uterine contractions, leading to cramps and spasm [1,2]. It prevalence has been reported to range from25% to 90% in women [3], and between 50% and 87.8% in India [4,5]. It may also be associated with other symptoms like diarrhea, fatigue, nausea, low back pain and mood swings, as well as withdrawal of usual activities[5,6], which negatively affect the quality of life of patients [7].

Both pharmacological and non- pharmacological treatment choices are available. Of these, the most

common pharmacological interventions include analgesics, non-steroid anti-inflammatory drug (NSAID) or the combined oral contraceptive pill (COC) [5,6]. In contrast, the non-pharmacological treatment options include alternative therapies and physiotherapy treatments such as heat therapies, transcutaneous electrical nerve stimulation (TENS), relaxation training, mobilization and taping, such as kinesiotaping. The latter options are generally preferred by women over pharmacological options [8-11] as they have been reported to have fewer adverse effects [12].

One method recommended for treating dysmenorrhea in physiotherapy is kinesiotaping. It is believed to act by providing support to weak muscles and stimulating muscle activity. It also reduces pain and increases lymph and blood flow by activating the skin-organ reflex and by lifting the skin from the fascia. However, a randomized control trial yielded inconsistent findings for the same, possibly because of small sample size [13]. In addition, while some studies found kinesiotaping (KT) to be effective in reducing pain, others did not report any significant improvement [14,15].

Therefore, the aim of the current systematic review and meta-analysis is to determine the effectiveness of taping in relieving pain and associated discomfort in women with primary dysmenorrhea or Premenstrual syndrome (PMS). It also examines the effect of the duration of kinesiotaping on pain reduction efficacy, and its specific effect on anxiety and menstrual distress questionnaire (MDQ) score. This study aimed to provide a systematic review and meta-analysis of the evidence examining the effectiveness of kinesiotaping as a treatment for menstrual pain and discomfort like PMS. It also tried to examine the effect of taping along with other treatment options like hot packs, medications on relieving menstrual pain and discomfort.

Materials and methods

This systematic review and meta-analysis was developed according to the guidelines of the Preferred Reporting Item for 'Systematic Reviews and Meta-Analyses (PRISMA)' [16]. The protocol of this systematic review and meta-analyses was registered under 'The International Prospective Register of Systematic Reviews (PROSPERO)' with identification number CRD42021241494.

Data sources and search strategy

A comprehensive search was performed of the electronic databases PubMed and Cochrane Library (Cochrane Central Register of Controlled Trials) from inception to February 2021for eligible randomized controlled trials (RCTs). Once these were thoroughly searched for all relevant trials, Google Scholar was also searched for any missing or related articles not captured in the electronic databases. The included trials were also subjected to forward and backward citation searches.

MeSH terms and free-text terms relating to the topic, with keywords such as premenstrual syndrome, PMS, menstrual, menstruation and dysmenorrhea, further combined with intervention terms like kinesiotaping, tape and taping, were searched and reviewed according to the 'Participant Intervention Comparison Outcome (PICO)' strategy. The search queries included appropriate keywords and Boolean operators like AND, OR related to the conditions of interest. The operator 'OR' was used within same type of keywords while the operator 'AND' was used between the groups. The search strategy is presented in more detail in Table 1.

Criteria for considering the studies for review

RCTs that treated or assessed any outcome measure of pain and menstrual symptoms, either during the same, or the next two menstrual cycles, were included. The inclusion criteria comprised studies performed on women of any age with Primary Dysmenorrhea, Premenstrual syndrome, menstrual pain or menstrual symptoms treated with a therapeutic tape application. Furthermore, only full text articles published in the English language were included. Any studies based on patients with any major medical history, recent injuries or surgeries were excluded. In addition, studies that

Tab. 1. The search strategy and results in different databases

Search terms in **PubMed**	Search terms in **Cochrane Library**
#1 Title & abstract (Kinesiotaping, Kinesio-taping, Tape, Taping) with OR operator resulted in 18,477 results. **#2** Title & abstract (Premenstrual Syndrome, PMS, Menstrual, Menstruation, Dysmenorrhea) with OR operator resulted in 57602 results.	**#1** Title, abstract & Keywords (Kinesiotaping, Kinesio-taping, Tape, Taping) with OR operator resulted in 6151 results. **#2** Title, abstract & Keywords (Premenstrual Syndrome, PMS, Menstrual, Menstruation, Dysmenorrhea) with OR operator resulted in 12479 results.
#1 AND #2 resulted in 40 results.	**#1 AND #2** resulted in 70 results.

were not in the English language, and reviews, systematic reviews, meta-analysis, proceedings papers, conference abstracts, case reports, editorials and letters to editors were also excluded.

Study selection and data extraction

All titles and abstracts were independently screened by two investigators (AP and UP) before the full-text articles were reviewed. Any duplicate record among the total articles were discarded and only one was kept for further review. The other two investigators (SJ and VSY), again reviewed these articles and any discrepancies and inconsistencies were discussed and resolved together by all the authors (AP, UP, SJ, VSY). If any information was not available in the study, the respective authors of the included studies were contacted to obtain the relevant data; among these, only those studies whose authors corresponded back were included in the final analysis. Any disagreements were resolved by consensus of all authors. The selection process is recorded in the flowchart given in Figure 1, as recommended by the PRISMA guidelines.

The extracted data included the country where the study was performed, the type of study, inclusion and exclusion criteria, the protocol followed by intervention and control groups, outcome measures evaluated in the study, duration of study, and results of the study. The characteristics of the included studies are shown in Table 2.

Methodological quality and risk of bias assessment

The methodological quality of the included studies was assessed using the PEDro (Physiotherapy Evidence Database)rating scale. It is an eleven point scale used for assessing the internal quality and validity of randomized control trials. However, the true score is given out of 10 points, as the first assessment question is not assessed in the final calculation for quality assessment. Studies having a score of 6 and above are considered as high quality, those between 4-5 as fair, and those below 4 as poor quality [17,18]. As per the PEDro scoring, amongst the eight studies included in the meta-analysis, five were of high quality, and three were of fair quality (Tab. 3).

For all eight studies included in this review, the risk of bias was assessed using Cochrane Collaboration's modified tool (Tab. 4). This assessment tool consists of seven primary sources for bias: random sequence generation, allocation concealment, selective reporting, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, and other sources of bias. These were evaluated independently by the authors to classify the risk of bias as "high risk", "low risk" or "unclear risk".

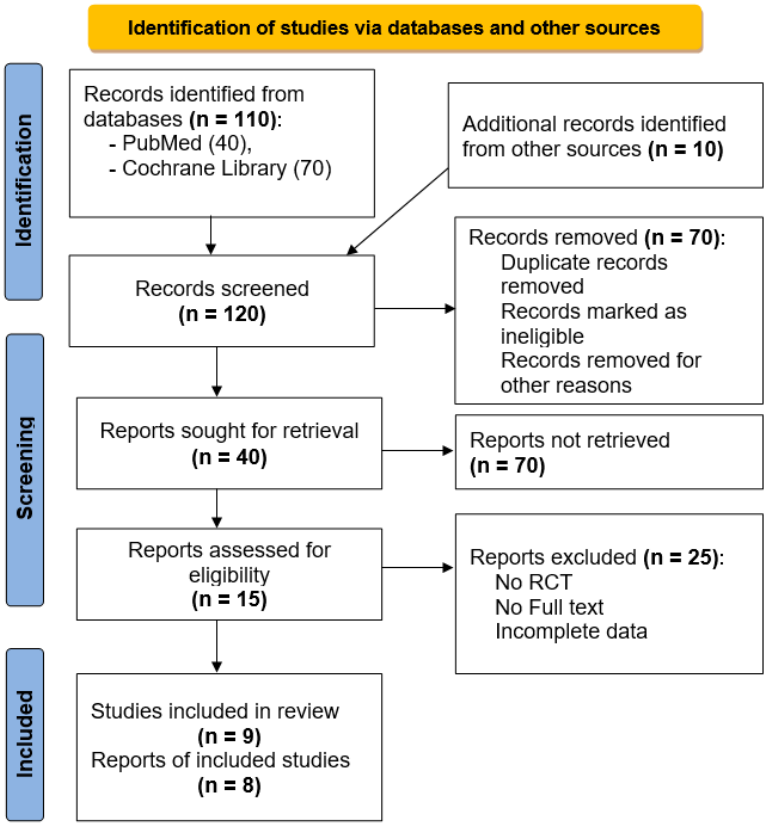

Fig. 1. PRISMA 2020 flow diagram for systematic reviews

Tab. 2. Shows the characteristics of studies included in this systematic review

S. No.	Author/Country	Study Design	N/Groups	Duration/Follow up	Outcome measures	Conclusion
1.	Forozeshfard et al., 2016 [19] Iran	Cross over study	2 groups with 32 females • KT in 1st menstrual cycle, nothing in next • Nothing in 1st menstrual cycle, KT in next	Data collected on 3rd day of menstrual cycle for two consecutive months	• Pain, • Disability	KT was effective in reducing menstrual LBP in young females
2.	Lee and JuChae, 2016 [20] Korea	Pretest-posttest design with nonequivalent control group	51 female university students, • Experimental group (n = 26)- Balance taping (Self-administered) • Control group (n = 25)	Balance taping applied for 4 weeks	• Pain • Distress	Dysmenorrhea significantly decreased in taping group
3.	Hanife et al., 2020 [21] Turkey	Prospective randomized controlled study	60 women • Experimental group (n = 30)- KT& LF • Control group (n = 30)- LF	3 months cycles for Evaluation, treatment & follow up respectively	• Pain • Distress • Quality of life	Pain decreased while body awareness & quality of life increased more in KT group
4.	Celenay et al., 2020 [14] Turkey	RCT	45 women • Experimental group (n =15)- KT with ligament technique • Sham group (n =15)- sham taping • Control group (n = 15)- no taping	KT was performed 2/week from the estimated day of ovulation up to start of next period Pre & post readings taken	• Pain • Anxiety	KT reduced pain & anxiety. Also some menstrual complaints in women
5.	Lim et al., 2013 [22] Korea	RCT	34 women into three groups: • Experimental group 1 (n = 11)- kinesiotaping • Experimental group 2 (n = 10)- Spiral taping • Control group (n = 13)- no taping	Taping for a total of 6 times- 2 times/week for 3 weeks starting from 14 days before menstruation until its end	• Pain • Distress	Kinesiotaping reduced menstrual pain, spiral taping alleviated menstrual pain & PMS
6.	Choi, 2017 [23] Republic of Korea	RCT	32 females • Experimental group 1 (n = 11)- Taping + hot pack • Experimental group 2 (n = 10)- Taping only • Control group (n = 11)- Hot pack	Readings 2 weeks before &on most painful day of menstruation. KT/hot pack therapy -10 days before the start of periods. Same interventions for next month	• Distress	Significantly reduced PMS in taping with hot pack group
7.	Boguszewski et al., 2020 [15] Poland	RCT	44 women in 3 groups • Group 1 (n = 16)- elastic KT • Group 2 (n =14)- placebo - inelastic tape • Group 3 (n = 14) - no intervention	5 days intervention: 1st day data taken in every 2-hour intervals in day and every day for next 5 days	• Pain • Anxiety	KT significantly reduced menstrual pain in women
8.	Tomás-Rodríguez et al., 2015 [24] Spain	Randomized, single-blind, two armed clinical trial	129 Spanish women with PD (4 menstrual cycles). • Experimental group (n = 75)- Medical tape • Control group (n = 54)- Bandage patch	In 2 phases, with 2 menstrual cycles in each (total 4 menstrual cycles):	• Pain • Number of tablets taken	The intervention group reported less pain than pharmacological therapy also had lower intake of tablets

KT- kinesiotaping, LF- lifestyle changes, LBP- low back pain, VAS- visual analog scale.

Tab. 3. The methodological quality assessment of included studies (PEDro scoring)

PEDro Score		1	2	3	4	5	6	7	8	9	10	11	Total
S. No.	Author/Article detail	Eligibility criteria	Random allocation	Concealed allocation	Baseline Similarity	Subject blinded	Therapist Blinded	Assessor blinded	>85% subjects in end	Intention to treat	B/w group statistical analysis	Point measures & measure of variance	Out of 11
1	Forozeshfard et al., 2016 [19]	Yes	Yes	No	Yes	No	No	Yes	Yes	Unclear	Yes	Yes	7/11
2	Lee and JuChae, 2016 [20]	Yes	Yes	No	Yes	No	No	Yes	Yes	Unclear	Yes	Yes	7/11
3	Hanife et al., 2020[21]	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	8/11
4	Celenay et al., 2020[14]	Yes	Yes	No	Yes	No	No	No	Yes	No	Yes	Yes	6/11
5	Lim et al., 2013[22]	Yes	Yes	No	Unclear	No	No	No	Yes	No	Yes	Yes	5/11
6	Choi, 2017[23]	Yes	Yes	No	Yes	No	No	No	Unclear	No	Yes	Yes	5/11
7	Boguszewski et al., 2020 [15]	Yes	Yes	No	Unclear	No	No	No	Yes	No	Yes	Yes	5/11
8	Tomás-Rodríguez et al., 2015 [24]	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes	Yes	6/11

Tab. 4. The risk of bias assessment of included studies

S. No.	Author/Article detail	Random sequence generation	Allocation concealment	Selective reporting	Blinding of participants and personnel	Blinding of outcome assessment	Incomplete outcome data	Other sources of bias
1.	Forozeshfard et al., 2016 [19]	Low	Unclear	Low	Unclear	Low	Low	Low
2.	Lee and JuChae, 2016 [20]	Low	Unclear	Low	Unclear	Low	Low	Low
3.	Hanife et al., 2020 [21]	Low	Low	Low	High	Low	Low	Low
4.	Celenay et al., 2020 [14]	Low	High	Low	Low	High	Low	Unclear
5.	Lim et al., 2013 [22]	Low	High	High	High	High	Low	Unclear
6.	Choi, 2017 [23]	Low	High	Low	High	High	Low	High
7.	Boguszewski et al., 2020 [15]	Low	High	Low	High	High	Low	High
8.	Tomás-Rodríguez et al., 2015 [24]	Low	High	Low	Low	High	Low	Low

Data analysis

RCTs which investigated the effect of kinesiotaping on menstrual pain and menstrual symptoms were selected for meta-analysis. The main outcome measures were pain/dysmenorrhea and menstrual symptoms, such as quality of life and anxiety, using any questionnaire. After extraction of data from all the included studies, the results of the outcome measures were combined, and the standard mean differences (SMD) and change in standard deviations (SDs) for pain, menstrual distress and anxiety level were calculated with 95% confidence intervals ($p \leq 0.05$). The heterogeneity between the relevant studies for all the outcome measures was assessed by the standard Chi square test and the I^2 coefficient which indicates the presence of heterogeneity; the result measures the percentage of overall variation among the included studies due to true heterogeneity rather than chance. The values for I^2range from 0%-100% where the heterogeneity of 0-25% is considered as low, 26-75% moderate and 76-100% as substantial. The statistical analysis and forest plots were generated using the Review Manager Software (RevMan, version 5.3).

Results

Study characteristics

The study included eight trials, with a total of 427 participants. Of these eight trials, three were from Korea, two from Turkey and one each from Spain, Poland and Iran. Most of the studies were randomized controlled trials (RCT) with one as a crossover RCT [19]. Sample size across the trials ranged from 32-129 women. The participants in the included trials were in their 20s and 30s with age range of 18-35 years, with some studies giving the mean age with regard to intervention [1−5,7], while two trials mentioned the age brackets or age range for participants but not the average [6,8]. Most trials did not specify the location of recruitment of the trial participants, however, some of them indicated recruiting university students within a particular age range as the inclusion criteria [8,2]. Some studies clearly mentioned recruiting nulliparous women [14,19,22,24] or unmarried women [19,22] while others did not specify this [20,21,23,15].

Outcome measures

Women were evaluated for pain [14,15,19−21,24] using either a visual analog scale (VAS) or McGill pain questionnaire(MPQ). One study also assessed pain in terms of decrease in intake of tablets consumed for pain relief. Most studies measured pain using VAS while one used both VAS and MPQ [19]. Disability index and distress/quality of life were assessed using the Oswestry disability index (ODI)[19], Menstrual Distress Questionnaire(MDQ) [20,22,23]and SF-36 [21].Two studies also measured anxiety using the State Trait Anxiety Inventory-STAI [14] and the Spielberger state-trait anxiety inventory [15].The duration of studies varied from five days [15] to four months [24].

Intervention type

Four studies had two intervention groups [19-21,24] while the other four had three intervention groups each [14,15,22,23]. At least one intervention in each study was based on taping. Some of the studies used different names, such as balance taping[20] or spiral taping [22] for the taping intervention; however, the same mechanism of taping was used for all studies. In the cross-over RCT study, KT was applied in both groups, but in an alternating sequence for two months[19]. One study included lifestyle changes along with KT and control [21]. Two studies also compared sham taping[14,15] as an intervention with KT and a control group. One study used KT with ligament technique [14], while another compared KT with and without hot pack application [23].

Data synthesis

All included trials reported the effect of KT on reducing either pain or any other discomfort associated with primary dysmenorrhea. However, in most cases, the data presentation was not very clear, and could be ambiguous at places. This led to the inclusion of fewer studies when assessing the selected outcomes for treatment effects. The meta-analysis was performed for the following outcome measures: pain (VAS), Menstrual Distress Questionnaire (MDQ) and anxiety level, i.e. State-Trait Anxiety Inventory (STAI), using Review Manager Software (RevMan 5.3).

Pain

In most of the studies, pain was assessed using Visual Analogue Scale (VAS). Figure 2 shows the comparison of mean differences of pain between the individuals who have received kinesiotaping treatment and who did not.

Among seven studies, the individuals who participated in the intervention group i.e. kinesiotaping group reported significant improvement in pain

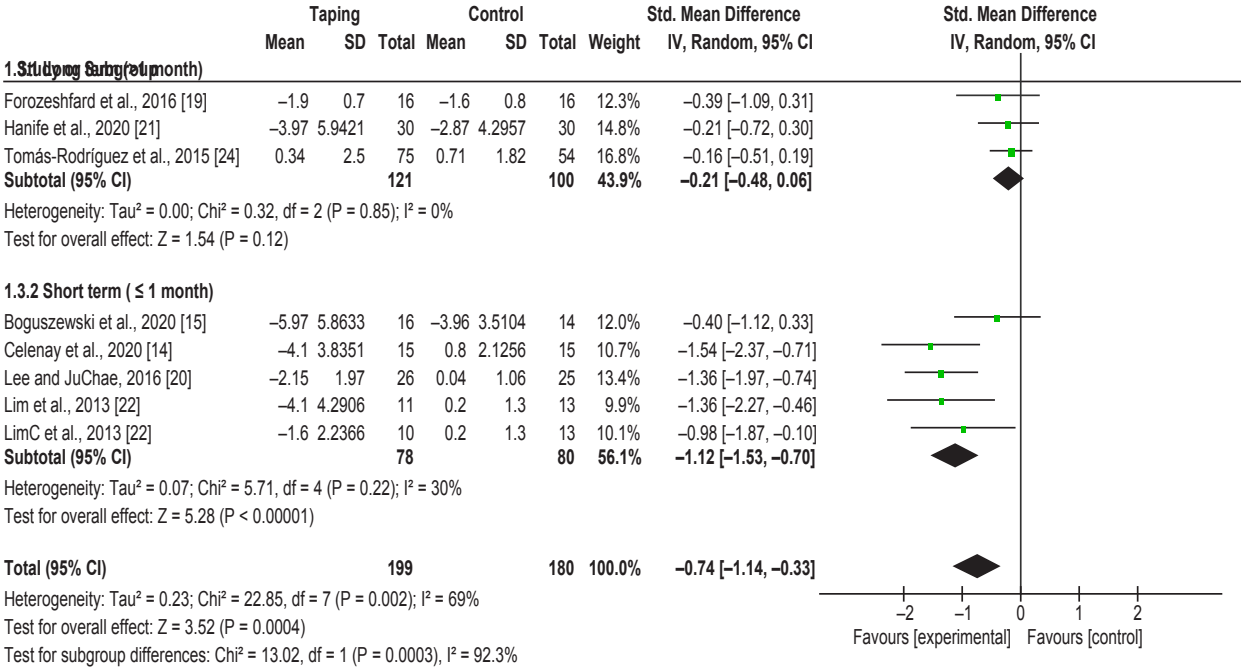

Fig. 2. Forest plot for Pain- mean differences between experimental and control groups

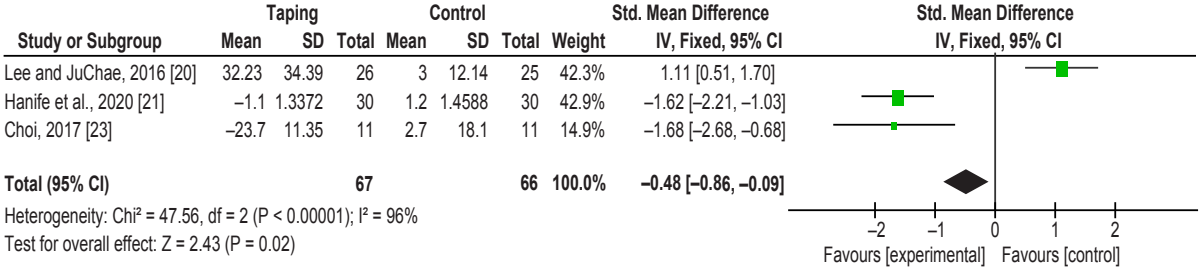

Fig. 3. Forest plot for Menstrual Distress Questionnaire (MDQ)-mean differences between experimental and control groups

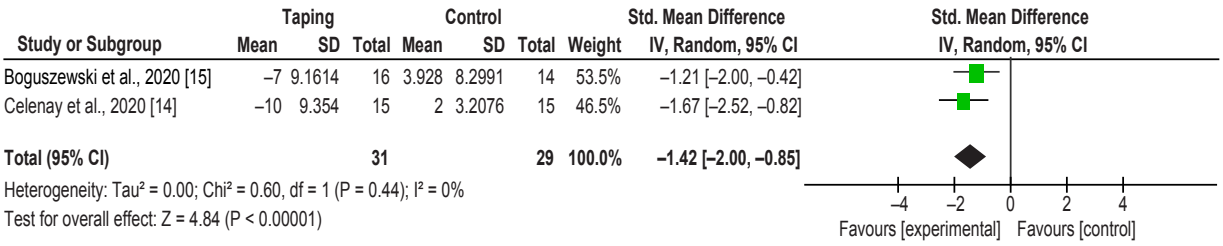

Fig. 4. Forest plot for anxiety level- mean differences between experimental and control groups

(SMD = –0.74; 95% CI = -1.14 to –0.33; n = 379; studies = 08; I^2 = 69%; z = 3.52; p = 0.0004) when compared to those who did not receive any taping. There is moderate amount of heterogeneity (I^2 = 69%) present for difference in pain. Further, a subgroup analysis was also performed, in which two subgroups were formed based on the intervention duration, *viz.* short term (<1 month) and long term (>1 month). The results of subgroup analysis suggested that effect of short term intervention (taping) was found to be significant for pain (p < 0.00001); however, the long term effect (>1 month) was not (p = 0.12).

Menstrual Distress Questionnaire (MDQ)

In three of the studies, menstrual distress was measured using Menstrual Distress Questionnaire (MDQ). Figure 3 compares the mean differences in Menstrual Distress Questionnaire (MDQ) score between the individuals who received kinesiotaping treatment and those who did not.

Among three studies, the individuals who participated in the intervention group and control groups both showed significant improvement in Menstrual Distress Questionnaire (MDQ). However, a comparison of the two groups revealed no significant difference in menstrual distress (SMD = –0.48; 95% CI = –0.86 to –0.09; n = 133; studies = 03; I^2 = 96%; z = 2.43; p = 0.02). High heterogeneity (I^2 = 96%) was noted for the MDQ score between the studies.

Anxiety level

In two of the studies, anxiety level was assessed using the State-Trait Anxiety Inventory (STAI). The mean differences of STAI between the individuals who received kinesiotaping treatment and those who did not are compared in Figure 4.

Among two studies, the individuals who participated in the intervention group and control groups both showed significant improvement in STAI score. However, no significant difference in menstrual distress was observed (SMD = –1.42; 95% CI = –2.00 to –0.85; n = 60; studies = 02; I^2 = 0%; z = 4.84; p < 0.00001). A higher amount of heterogeneity (I^2=0%) was noted for the difference in STAI score.

Discussion

The aim of the current systematic review and meta-analysis was to investigate the effectiveness of therapeutic taping as a treatment option for menstrual pain and discomfort. The effect of taping was primarily seen for primary dysmenorrhea or PMS. Our findings suggest that taping may be effective in reducing pain, menstrual distress and anxiety in women with primary dysmenorrhea. In addition, the review obtained moderate quality evidence that kinesiotaping may be effective at reducing menstrual distress and anxiety caused by dysmenorrhea, and in reducing pain due to dysmenorrhea.

One major side effect and symptom of dysmenorrhea is usually reported by women in varying capacities is pain [25]. Pain can have a negative impact on overall quality of life and can cause distress or anxiety in women of all ages and ethnicities [26,27,28]. Our present findings suggest that KT is an effective treatment technique to reduce pain in dysmenorrhea in both the short and long term. When comparing the duration of application, short term application of KT was found to be more effective than long term application. This finding can be useful in estimating the appropriate duration of KT application in women to obtain the desired effect of pain relief in dysmenorrhea. This is an important consideration, as some minor reactions can occur in response to taping such as skin allergies or symptoms like dizziness [29]. Nevertheless, these effects are very mild, and similar to those of the pharmacological treatments usually adopted for PD. In addition, pharmacological agents typically have more adverse effects such as gastric irritation, nausea and vomiting, and can cause kidney and liver damage if used for long periods.

Pain is the most commonly reported major symptoms presented during menstruation. Similarly, pain was the primary outcome measure in all the studies included in this meta-analysis. The application of KT

over an area has an effect on the underlying skin and muscles in the form of contraction and relaxations that occur underneath the KT, leading to increased blood supply and a reduction in pain. The overall effect of KT application on pain demonstrated moderate heterogeneity; in addition, following division into long-term and short-term KT subgroups, low heterogeneity was noted for short-term use and none for long-term application. By these findings we can safely say that taping can be used as a treatment of choice for reducing menstrual pain in women with dysmenorrhea, and one which is also effective in the short term. This could be beneficial for those subjects who could have any kind of minor allergies to tape and therefore could not apply it for longer durations.

In addition, the present review reports moderate quality evidence that suggests KT may be effective on anxiety during dysmenorrhea. This is of significance as the presence of anxiety or related psychological stress in women relates to exacerbation of dysmenorrhea and vice versa [30,31]. Persistent pain could also result in development of stress, and related somatic symptom disorders in women with PD [32]. The anxiety brought on by pain during menstrual periods could be a major reason for stress in women. Our findings suggest such unpleasant outcomes may be relieved by the application of therapeutic tape.

The analysis also evaluated the effect of KT on distress in women with dysmenorrhea. There was moderate quality evidence that suggested that KT was significantly effective against distress; however, the included studies had high heterogeneity with moderate quality evidence. The presence of a small sample size, area of application of KT, the amount of stretch applied during application of KT, the outcome measures recorded during different phases of menstruation and treatment duration varied between the included studies. This could have resulted in high measures of heterogeneity. In addition, dysmenorrhea could present to varying capacities and degrees, and therapeutic taping is found to be effective in preventing these symptoms. Hence, generalizing a single particular technique or treatment application as a 'one size fits all' strategy, might not be appropriate. As such, further meticulously planned, randomized controlled studies are needed which could span the various stages of the menstrual cycle. Also, there is a need to evaluate various types of techniques of therapeutic taping for different areas of body known to be affected by menstrual pain.

However, very few clinical trials explore the effect of KT on anxiety or distress and therefore, more research in this area is warranted. Indeed, at the time of registration of the review, we did not identify any similar study that assessed the effect of KT on pain, distress and anxiety.

Various lifestyle interventions and alternative medicine have reported to be effective in treating dysmenorrhea [33,34]. Women have been found to have distorted body image due to PD, and treatment by certain physiotherapeutic approaches like heat therapy, spinal manipulations and electrotherapy, as well as KT, are reported to be effective [21].

The strengths of the study include its comprehensive literature search for relevant data published from database inception until the review was planned. It also evaluates the effect of KT on pain with regard to the duration of the application, allowing any reactions due to KT, if any, to be avoided in select patients. It is important to note that half of the studies included in the review were of moderate quality (PEDro); as such, future RCTs with better methodological quality can be planned to determine the effect of KT on selected parameters associated with dysmenorrhea.

However, the study also has some limitations. The included studies used varying treatment durations and different areas of KT application for treating study parameters. The treatment also varied between studies with regard to the day of the menstrual cycle, and had different follow up periods, which might have contributed to the heterogeneity observed in the pooled estimates.

Conclusions

Based on this systematic review and meta-analysis, we conclude that there is moderate to high quality evidence that KT is effective in reducing pain, distress and anxiety in dysmenorrhea. In addition, while it is effective in reducing pain in both the long and short term, it appears to have significantly more efficacy in the short term. Additionally, it is equally effective in reducing anxiety and distress in women. However, better quality studies with larger sample sizes and longer follow up periods could be planned to draw better conclusions of the effectiveness of KT in dysmenorrhea. Taping is rarely a treatment choice for menstrual problems. However, our findings indicate that taping could help in reducing menstrual pain along with anxiety and distress in women, and hence, it could be a cost effective, non-invasive, easy-to-apply and acceptable treatment option by women, and one that does not hinder their daily physical activity in any form. Hence, it should be considered as a treatment option for menstrual problems like primary dysmenorrhea and premenstrual syndrome in women.

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Conflicts of Interest
The authors declare no conflict of interest

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