

# The Effect of Ice Massage Applied to the SP6 Point on Labor Pain, Labor Comfort, Labor Duration, and Anxiety: A Randomized Clinical Trial

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**Introduction:** Acupressure and cold application are nonpharmacologic methods that midwives can use for labor pain. The purpose of this study was to determine the effects of ice massage applied to the SP6 acupressure point during labor on labor pain, labor comfort, labor duration, and anxiety.

**Methods:** A single-masked, randomized controlled trial was conducted with 100 nulliparous women, including 50 in the intervention group and 50 in the control group. Rotational ice massage was applied to the SP6 point on both legs of the pregnant women in the intervention group at 4 to 5 cm, 6 to 7 cm, and 8 to 9 cm dilation amounts during 3 contractions. Routine oxytocin was administered to all pregnant women to promote progress of labor. Standard midwifery care was provided to the control group. Data were collected using a Personal Information Form, the Visual Analog Scale (VAS), a partograph form, the Childbirth Comfort Questionnaire (CCQ), and the State-Trait Anxiety Inventory State subscale.

**Result:** The VAS pain scores of the pregnant women in the intervention group were significantly lower compared with the control group following the intervention at dilatations of 4 to 5 cm, 6 to 7 cm, and 8 to 9 cm ( $P = .001$ ,  $P = .003$ ,  $P < .001$ , respectively). The total CCQ and comfort level scores of the pregnant women in the intervention group at 8 to 9 cm cervical dilatation were significantly higher than the control group ( $P = 0.044$ ,  $P = .027$ , respectively). Additionally, as the anxiety levels of the pregnant women increased, their total comfort scores decreased ( $P < .05$ ).

**Discussion:** Ice application to the SP6 point during stage 1 of childbirth reduced labor pain, increased comfort, and reduced anxiety levels. No adverse events were found in the intervention group with ice massage applied to the SP6 point. Therefore, this method can be used as a safe and effective midwifery intervention in childbirth.

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**Keywords:** SP6 acupoint, ice massage, labor pain, comfort, duration of labor, anxiety

## INTRODUCTION

Managing labor pain, increasing comfort, and reducing anxiety are among the basic elements of midwifery care.<sup>1–6</sup> Pharmacologic methods that reduce labor pain have various side effects on fetal and maternal health.<sup>3,7</sup> Therefore, non-pharmacologic methods, which usually have no side effects for the fetus and the woman and provide comfort, should be offered among the different options for pain management. There are plenty of nonpharmacologic methods that midwives

can use during labor, including acupressure, cold application, and massage. These techniques have the potential to reduce labor pain, shorten the duration of labor, and alleviate anxiety.<sup>2,8,9</sup>

Acupressure involves pressure applied to acupuncture points, and it is known as acupuncture without needles. According to beliefs in traditional Chinese medicine, the vital energy of the body, which regulates bodily functions, flows through channels called meridians. By applying pressure to certain points in the body, these channels can be unclogged. Acupressure is based on distributing the energy density on these points, thereby relieving the organs that are connected to these points. In acupressure, pressure can be applied using hands, fingers, and ice bags. Acupressure regulates blood flow and increases the secretion of oxytocin and endorphin by enabling vasodilation, and it reduces the release of adrenaline and noradrenaline. Stimulating large intestinal (L14), spleen (SP6), and bladder 67 (BL67) points reduces labor pain and strengthens uterine contractions.<sup>7,10–14</sup> In previous studies, it has been shown that acupressure applied to the SP6 point, which is located 3 to 4 fingers above the posterior malleolus bone, reduces labor pain and shortens labor duration.<sup>7,11,15–19</sup> However, health care professionals must undergo extensive training and certification to apply acupressure. This

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## Quick Points

- ◆ Acupressure ice massage is a nonpharmacologic method to treat labor pain that can be used by midwives without specialized training.
- ◆ Ice massage applied to the SP6 acupressure point in the first stage of labor reduces labor pain and increases comfort.
- ◆ This study provides preliminary evidence to support use of SP6 acupressure ice massage to reduce labor pain.

presents a significant barrier for midwives to use this method. Furthermore, acupressure application can be tiring for midwives. There is therefore a need for alternative methods to stimulate acupressure points that do not require extensive training and certification.<sup>7</sup>

The gate control theory explains the mechanism of action of massage and cold therapy. According to the gate control theory, the passage of pain signals is blocked by competing sensations at the level of the spinal cord. Additionally, cold or massage applications during labor increase serotonin and dopamine levels. This results in the resolution of muscle spasms, increased comfort, distraction of mental attention from pain, facilitated energy flow in acupuncture points, and reduced anxiety.<sup>2,3,12,13,20</sup> Cold therapy and massage are harmless procedures for both the fetus and the woman, and the continuation of the process is under the direct control of the woman. These procedures do not affect childbirth negatively, and they do not have any side effects or allergy risks.<sup>3,21</sup>

Ice massage application on acupressure points has various effects, such as facilitating energy flow at acupressure points and relieving pain perception and muscle tension by stimulating peripheral nerve receptors.<sup>3,22</sup> Most of the research on ice massage to reduce labor pain has focused on the Hegu acupressure point on the hands.<sup>12,13,20</sup> Various durations of ice massage applied to the Hegu point have been shown effective for reducing labor pain, including 20 minutes,<sup>13,23,24</sup> 10 minutes divided into 2-minute segments, followed by a 15-minute break;<sup>12</sup> 30 minutes;<sup>8,25</sup> and 80 minutes.<sup>21</sup> Only one study has examined the effects of cold application to the SP6 point on labor pain. Nehbandani et al found that 30 minutes of cold and hot massage applied to the SP6 point in the first stage of labor reduced the labor pain levels 30 and 60 minutes after the intervention when compared with a warm massage group. However, labor comfort, labor duration, and anxiety levels were not measured in this study.<sup>3</sup> Therefore, the purpose of the current study was to determine the effects of ice massage applied to the SP6 point on labor pain, labor comfort, labor duration, and anxiety during labor.

## METHODS

### Design and Setting

This study was conducted as a randomized controlled trial in the delivery room of Atatürk City Hospital located in the Balıkesir province of Turkey between December 2021 and July 2022. In Turkey, midwives work in a variety of settings, including family health centers, outpatient clinics, and labor and delivery wards. The midwives who work in labor and delivery do not provide antenatal care. In the labor and delivery unit in

which the study was conducted, the pregnant woman whose labor has started is taken to a private room, where she stays for up to 2 hours after birth. Every woman in labor is accompanied by a midwife who provides support during childbirth. The midwives who conducted this study managed the participants' labors and births and performed the cervical examinations every 2 to 3 hours. In this setting, standard midwifery care includes monitoring progress in labor (cervical dilatation and effacement and fetal descent), continuous electronic contraction and fetal heart rate monitoring, and monitoring of vital signs. Additionally, pregnant women are provided with information on breathing and pushing techniques. In the hospital, augmentation of labor with oxytocin is routinely used to promote labor progress. Four drops per minute of 10 IU/mL oxytocin was administered to all participants at 4 to 5 cm cervical dilatation. The oxytocin rate was increased by 4 drops per minute every 20 minutes. The maximum dose of application was 40 drops per minute. The participants in the control and intervention groups did not receive any analgesics. Apart from breathing exercises, no additional techniques were used to manage labor pain.

### Participants

The study was implemented according to the Consolidated Standards of Reporting Trials (CONSORT) scheme (Appendix 1). The sample size required for the study was calculated by using the G\*Power 3 software. Based on previous studies in which ice massage was applied to acupressure points during labor (effect size 0.601)<sup>12</sup> we calculated that a sample size of 100 (50 in the intervention group and 50 in the control group) would have a power of 84% with a significance value ( $\alpha$ ) of 0.05 to detect a difference between groups.

The inclusion criteria were singleton pregnancy, a healthy fetus, 38 to 40 weeks' gestation, expecting a vaginal birth, cephalic presentation, being in stage 1 of childbirth, and having 4 to 5 cm of cervical dilation. Exclusion criteria were multiparity, multifetal gestation, high-risk pregnancy, and an arrival at the hospital beyond 5 cm cervical dilatation. High-risk pregnancy was defined as a diagnosis with any complication during the current pregnancy or and those who were diagnosed with childbirth complications. The research team consisted of researchers experienced in the management of childbirth.

Randomization for pregnant women who met the inclusion criteria was achieved by using the random sequence generator on the random.org website. Ice massage was applied to the SP6 points of the participants in the intervention group, whereas those in the control group were provided with standard midwifery care.

## Measures

Baseline demographic and health characteristics were collected using a Personal Information Form (PIF). The primary outcomes included severity of labor pain, state anxiety during labor, and duration of the active phase of labor (4–10 cm cervical dilatation). The secondary outcome was comfort level during labor.

### Personal Information Form

The form consisted of 22 questions inquiring about the sociodemographic, gynecological, and pregnancy characteristics of the participants. The form included conditions such as dysmenorrhea, which could affect participant pain perception and tolerance.

### Visual Analog Scale

The Visual Analog Scale (VAS) was used to measure labor pain. The VAS is made up of a vertical line ranging from 0 to 10.<sup>26</sup> In this study, VAS was used before the intervention at 4 to 5 cm cervical dilatation and after the intervention at 4 to 5 cm, 6 to 7 cm, and 8 to 9 cm cervical dilatation.

### State-Trait Anxiety Inventory: State Anxiety Subscale

The State-Trait Anxiety Inventory (STAI) was developed by Spielberger et al to measure state anxiety (how one feels at the moment) and trait anxiety (how one generally feels). The Turkish version of the STAI was validated by Oner and Le Compte.<sup>27,28</sup> The State Anxiety subscale consists of 20 4-point Likert-type items (1, almost never; 4, almost always). Items express either negative or positive emotions. The subscale total score is the sum of all items, with positive emotion items reverse scored. The subscale scores range between 20 and 80. A higher score indicates a higher level of state anxiety. In the current study, the reliability (Cronbach's alpha) of the scale was.78.

### Childbirth Comfort Questionnaire

The Childbirth Comfort questionnaire (CCQ) scale was developed by Schuiling and Sampselle to determine comfort levels in childbirth.<sup>29</sup> The validity and reliability of the Turkish form of the scale were determined by Potur et al.<sup>30</sup> This 9-item scale consists of 3 dimensions: physical (items 2–4 and 6), environmental (items 1, 5, and 9), and psychospiritual (items 7 and 8), as well as 2 levels: relief (items 2, 8, and 9) and transcendence (items 1 and 3–7). Each item is rated on a 5-point Likert-type scale from absolutely disagree (1) to absolutely agree (5). Total scale scores range between 9 and 45. A higher score indicates a higher level of comfort. The reliability (Cronbach's alpha) of the Turkish version of the scale is.75.<sup>30</sup> In the current study, the reliability was.72. CCQ was administered 2 times in the study, once at 4 to 5 cm cervical dilatation before the intervention and once at 8 to 9 cm dilatation after the intervention.

### Data Collection

Potential participants were informed about the study by a research midwife during early labor when their pain levels were low, and their consent was obtained. Participants completed

the PIF, VAS, and CCQ after enrollment at 4 to 5 cm cervical dilatation before any intervention. Each group was provided with standard midwifery care, and the intervention implemented among the participants in the intervention group at 4 to 5 cm, 6 to 7 cm, and 8 to 9 cm dilatation during 3 contractions. Immediately after the intervention at each time point, participants completed the VAS. Additionally, following the intervention at 6 to 7 cm of cervical dilatation, participants completed the STAI-State Anxiety subscale between the contractions. Following the intervention at 8 to 9 cm dilatation, participants completed the CCQ. The participants in the control group completed the same measures as the experimental group at the corresponding cervical dilatations (Figure 1).

### Intervention

Ice massage was performed when the participant was at 4 to 5 cm, 6 to 7 cm, and 8 to 9 cm dilatation during 3 contractions. After the participant chose a comfortable position, the midwife identified the SP6 point on both legs and performed ice massage using rotational movements. The SP6 point is located 3 to 4 fingerbreadths above the posterior malleolus bone, in the ankle (Figure 2). To prevent the direct contact of ice with the skin, the ice was wrapped in gauze. Standard midwifery care was provided to the participants in both groups.

### Ethical Considerations

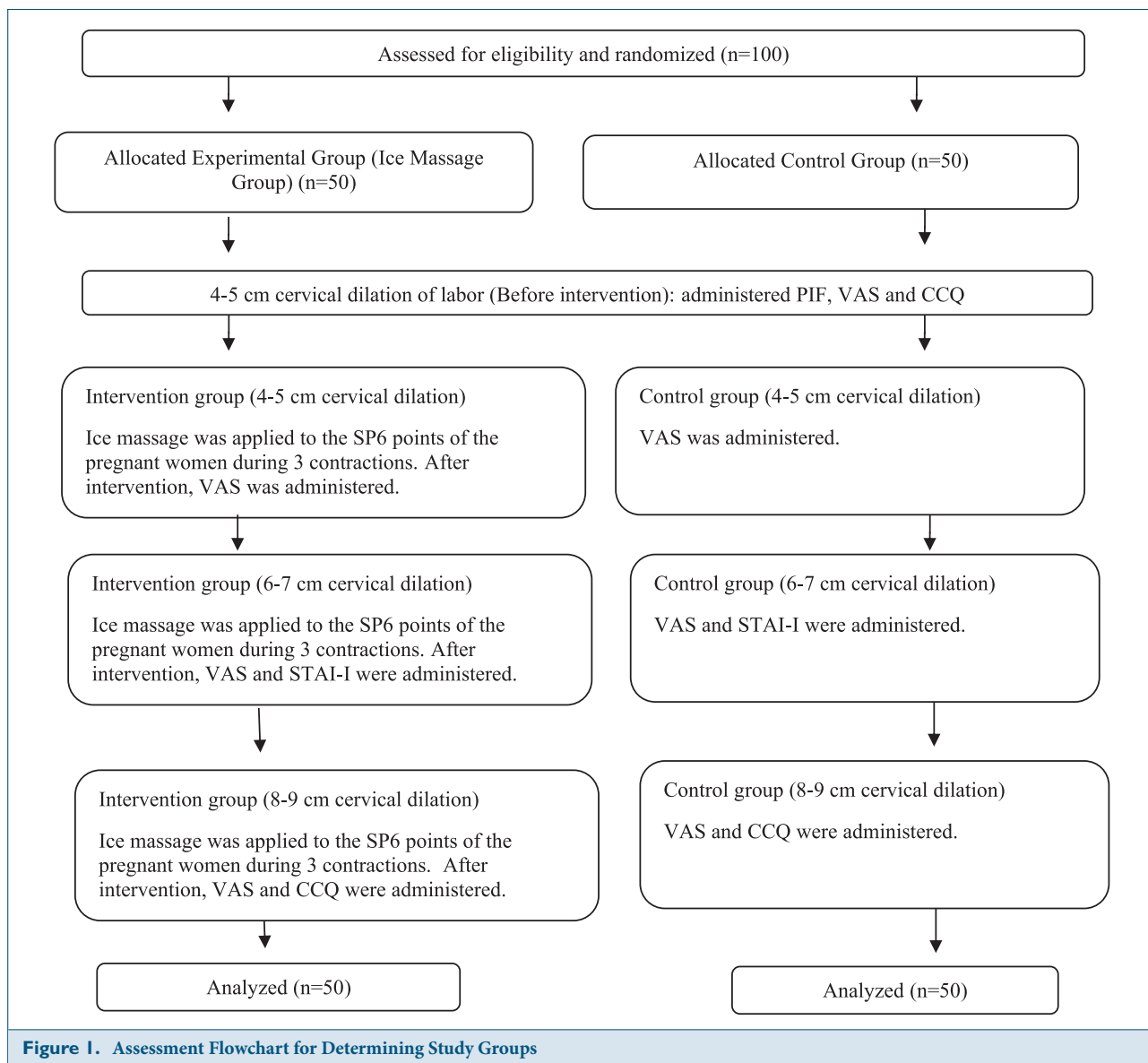
Approval for the study was obtained from the Medical Faculty Clinical Research Ethics Committee (2021/32), and permission was obtained from the Provincial Directorate of Health (E-51829602-604.01.02). The participants were informed about the purpose of the study and confidentiality of their identifying information, and their written consent was obtained. The study was registered in the ClinicalTrials.gov Database (NCT05676879).

### Data Analysis

The Kolmogorov-Smirnov test was used to assess the normal distribution of the data. The Mann-Whitney U test, which is suitable for data that is not normally distributed, was used to test differences between means of labor pain, labor comfort, and state anxiety. The Friedman test was used to compare changes within groups in the pain perceptions as labor progressed. The significance of differences between pain levels during 4 to 5 cm of cervical dilatation and those at other cervical dilatations was determined using the Wilcoxon signed-rank test. To compare labor duration between groups, an independent-samples *t*-test was performed. Finally, a Spearman's rho correlation was used to measure the relationship between state anxiety levels and comfort levels in labor.

## RESULTS

Sociodemographic, gynecological, and pregnancy characteristics of the participants are shown in Table 1. None of the participants experienced adverse labor events, had a cesarean birth, required neonatal intensive care, or had Apgar scores less than 7 at 5 minutes. All participants completed the study, and there were no missing data (Figure 1). No participants were dropped from the study due to prolonged or rapid labor.



**Figure 1.** Assessment Flowchart for Determining Study Groups

Abbreviations: CCQ, Childbirth Comfort Questionnaire; PIF, Personal Information Form; STAI-I, State-Trait Anxiety Inventory; VAS, Visual Analog Scale.

According to the Kolmogorov-Smirnov test results, the VAS, STAI-I, and CCQ scores of the participants were not normally distributed ( $P < .05$ ). After the first round of intervention at 4 to 5 cm of cervical dilatation, the mean VAS scores of the intervention group were significantly lower than the control group (4.16 vs 4.66;  $P = .001$ ; Cohen's  $d$ , .60). Differences in pain scores continued to be significant at 6 to 7 cm of dilatation (7.34 vs 8.20;  $P = .003$ , Cohen's  $d$ , .56) and at 8 to 9 cm of dilatation (8.26 vs 9.44;  $P < .001$ ; Cohen's  $d$ , .86). As labor progressed, the mean pain scores in both groups increased ( $P < .001$ ). There was no significant difference in the duration of labor between groups ( $P = .805$ ; Table 2).

Mean state anxiety scores were not significantly different between groups at 6 to 7 cm dilatation ( $P = .364$ ). Mean comfort (total CCQ score) was not significantly different between the intervention and control groups at baseline (4-5 cm dilatation) before intervention (29.84 vs 30.14;  $P = .438$ ). At 8 to 9 cm of cervical dilatation, the mean comfort (total CCQ

score) was significantly higher in the intervention group than in the control group (29.24 vs 27.40;  $P = .044$ ; Cohen's  $d$ , .48). Among the comfort subscales, only the relief comfort level ( $9.56 \pm 0.92$ ) was significantly higher in the intervention group than in the control group (9.56 vs 9.00;  $P = .027$ ; Cohen's  $d$ , .57; Table 3).

There was a significant negative correlation between state anxiety levels at 6 to 7 cm and labor-related comfort levels at 8 to 9 cm in the intervention ( $r$ ,  $-.385$ ;  $P = .006$ ) and control groups ( $r$ ,  $-.522$ ,  $P < .001$ ). As the state anxiety levels increased, labor comfort levels decreased.

## DISCUSSION

Most women experience pain, anxiety, and fatigue in childbirth, which can affect their comfort level and labor progress negatively. Midwifery care in childbirth aims to reduce the

**Table 1. Sociodemographic, Gynecological, and Obstetric Characteristics of Participants (N = 100)**

	Intervention Group (n = 50)	Control Group (n = 50)
<b>Age, mean (SD)</b>	23.86 (3.44)	23.42 (3.41)
<b>Level of education, n (%)</b>		
Primary School	3 (6.0)	1 (2.0)
High School	24 (48.0)	28 (56.0)
University	23 (46.0)	21 (42.0)
<b>Employed, n (%)</b>		
Yes	12 (24.0)	12 (24.0)
No	38 (76.0)	38 (76.0)
<b>Income status, n (%)</b>		
Income < expenditures	6 (12.0)	4 (8.0)
Income = expenditures	38 (76.0)	37 (74.0)
Income > expenditures	6 (12.0)	9 (18.0)
<b>Place of residence, n (%)</b>		
City	25 (51.0)	28 (56.0)
District	19 (38.8)	14 (28.0)
Village	5 (10.2)	8 (16.0)
<b>Dysmenorrhea history, n (%)</b>		
Yes	19 (38.0)	11 (22.0)
No	24 (48.0)	28 (56.0)
Sometimes	7 (14.0)	11 (22.0)
<b>Planned pregnancy, n (%)</b>		
Yes	48 (96.0)	46 (92.0)
No	2 (4.0)	4 (8.0)
<b>Fear of childbirth, n (%)</b>		
Yes	35 (70.0)	35 (70.0)
No	15 (30.0)	15 (30.0)
<b>Number of antenatal visits, mean (SD)</b>	11.80 (4.00)	11.36 (4.25)
<b>Number of abortions, n (%)</b>		
0	45 (90.0)	44 (88.0)
1-2	5 (10.0)	5 (10.0)
3+	0 (0.0)	1 (2.0)

perceived pain of the pregnant woman and provide physical and emotional comfort for them.<sup>1,2,13</sup> In this study, ice massage applied to the SP6 point at 4 to 5 cm, 6 to 7 cm, and 8 to 9 cm cervical dilatation reduced perceived labor pain. In other studies, the labor pain levels of cold massage groups have been found to be significantly lower than control groups.<sup>3,8,12,13,21,23–25</sup> The continual stimulation of acupressure points in labor can increase vital energy flow in the meridians, and thus provide more considerable therapeutic effects.<sup>21</sup> In studies similar to this study in which acupressure was applied to the SP6 point, it has been reported that labor pain levels of intervention groups are lower compared with those of control groups.<sup>7,11,16–19</sup> Reduced labor pain will lead to positive childbirth-related emotions, the woman's participation in labor, and birth without pain medications. The current study supports use of ice massage to the SP6 acupressure point as an additional option for midwifery support of women in la-

bor. More research is needed to confirm the effectiveness of ice massage to reduce labor pain and anxiety and increase comfort. Future studies should compare the effectiveness of ice application to the SP6 point to other nonpharmacologic methods in reducing labor pain.

In the current study, ice massage applied to the SP6 point was found to have no significant effect on labor duration. No other studies have examined whether ice massage applied to the SP6 point affects labor duration. However, trials of ice massage to the Hegu point found that ice massage shortened the duration of the first stage of labor by 82 to 120 minutes.<sup>21,24,25,31</sup> This difference in effect may be because of differences in the location of the ice massage. Acupressure, rather than ice massage, to the SP6 point has also been shown to reduce the duration of labor by 21 to 163 minutes.<sup>7,16,18,32</sup> Acupressure is believed to stimulate the secretion of oxytocin from the pituitary gland, which stimulates uterine

**Table 2. Labor Pain Levels of Nulliparous Women (N = 100)**

	Intervention Group (n = 50)	Control Group (n = 50)	P Value	Effect Size Cohen's <i>d</i>
<b>Pain level (VAS), mean (SD)</b>				
4-5 cm cervical dilatation, before intervention <sup>a</sup>	4.36 (0.59)	4.54 (0.95)	.166	
4-5 cm cervical dilatation, after intervention <sup>a</sup>	4.16 (0.68)	4.66 (0.96)	.001	.601
6-7 cm cervical dilatation, after intervention <sup>a</sup>	7.34 (1.54)	8.20 (1.53)	.003	.560
8-9 cm cervical dilatation), after intervention <sup>a</sup>	8.26 (1.48)	9.44 (1.24)	<.001	.864
<i>Within-group changes over time, P<sup>b</sup></i>	<.001	<.001		
<b>Labor duration, mean (SD), h</b>				
4-10 cm cervical dilatation <sup>c</sup>	4.78 (0.88)	4.74 (0.72)	.805	

Abbreviation: VAS, visual analog scale.

<sup>a</sup>Mann-Whitney U test.

<sup>b</sup>Friedman Test (Wilcoxon Signed-Ranks Test).

<sup>c</sup>Independent samples t-test.

**Table 3. State Anxiety and Comfort Levels of Nulliparous Women (N = 100)**

	Intervention Group (n = 50) Mean (SD)	Control Group (n = 50) Mean (SD)	P Value <sup>a</sup>
<b>Anxiety</b>			
State anxiety score (6-7 cm cervical dilatation)	45.52 (6.46)	46.54 (9.54)	.364
<b>Comfort</b>			
Total comfort score (4-5 cm cervical dilatation)	29.84 (3.69)	30.14 (4.34)	.438
Total comfort score (8-9 cm cervical dilatation)	29.24 (3.49)	27.40 (4.17)	.044
<b>Comfort subscales</b>			
Physical comfort (4-5 cm cervical dilatation)	13.92 (2.84)	14.34 (3.61)	.290
Physical comfort (8-9 cm cervical dilatation)	13.40 (2.97)	12.10 (3.35)	.092
Psychospiritual comfort (4-5 cm cervical dilatation)	4.88 (1.28)	4.72 (1.26)	.698
Psychospiritual comfort (8-9 cm cervical dilatation)	4.70 (1.03)	4.38 (1.15)	.316
Environmental comfort (4-5 cm cervical dilatation)	11.04 (1.42)	11.08 (1.46)	.857
Environmental comfort (8-9 cm cervical dilatation)	11.14 (1.27)	10.92 (1.45)	.234
<b>Level of comfort</b>			
Relief (4-5 cm cervical dilatation)	9.96 (1.33)	9.56 (1.09)	.153
Relief (8-9 cm cervical dilatation)	9.56 (0.92)	9.00 (1.04)	.027
Transcendence (4-5 cm cervical dilatation)	19.88 (3.12)	20.58 (3.63)	.139
Transcendence (8-9 cm cervical dilatation)	19.68 (2.97)	18.40 (3.45)	.072

<sup>a</sup>Mann-Whitney U test.

contractions and thereby shortens labor duration.<sup>7,19,32</sup> It is possible that because pressure is not applied to the SP6 point in ice massage as much as it is applied in acupressure, the secretion of oxytocin from the pituitary gland is not stimulated. Additionally, because oxytocin augmentation is routinely administered in the hospital where the study was conducted, any potential impact of ice massage on endogenous oxytocin production on labor duration would be diminished.

Comfort promotes positive experiences of relaxation, safety, well-being, hope, and anticipation.<sup>2</sup> Pain relief has been defined as a significant source of comfort and support for women who are giving birth.<sup>33</sup> In the current study, the total scores on the CCQ were higher in women at 8 to 9 cm dilatation who received ice massage to the SP6 point compared with women in the control group. However, no

significant differences were found between the groups in the physical, psychospiritual, and sociocultural subscales of the CCQ or state anxiety levels. Similarly, Mirzaee et al found that acupressure and ice massage applied to the Hegu (LI4) point for 30 minutes did not have a significant effect on anxiety levels during labor.<sup>8</sup> It is possible that the lack of difference in anxiety levels was because both groups received similar amounts of attention and support as part of routine midwifery care in labor. There are no other studies that have examined the effects of ice massage applied to the SP6 point on childbirth comfort; although many studies have investigated the effects of other nonpharmacologic methods on comfort in childbirth.<sup>1,2,34,35</sup> Trials of the application of heat to the sacral region, labor dance, and wood avens flowers, have demonstrated positive effects on the total comfort and



**Figure 2.** SP6 Acupoint

relaxation levels determined at 8 to 9 cm of cervical dilation.<sup>1,2,34</sup> Similarly, Bolanthakodi et al found that practicing yoga in the prenatal period increased the labor-related comfort levels of pregnant women.<sup>35</sup> Nonpharmacologic methods such as cold application, warm application, labor dance, yoga, and focusing can reduce perceived pain levels. Thus, the laboring woman can breathe well, push effectively, and stay in an upright position, enabling active participation. The combination of active participation and decreased pain can lead to increased comfort, which is more than the absence of pain.

Ice massage to the SP6 acupressure point can reduce pain and increase comfort during labor, potentially improving the experience of labor and labor and birth outcomes. However, before this nonpharmacologic approach is widely adopted into practice, more studies need to be conducted to demonstrate its effectiveness and to standardize its use during labor. In the current study, ice massage was applied during 3 contractions at 3 times during the first state of labor. Future trials should investigate the optimization of dose and frequency of this intervention.

### Limitations

This study was conducted in a single hospital in Turkey, which limits the generalizability of the findings to other contexts in which labor and birth care may be very different. In the current study, contextual factors such as the universal use of oxytocin augmentation during the first stage of labor, one to one midwifery support, limited use of pharmacologic pain relief, and very low cesarean birth rates are very different from perinatal care experiences in other countries such as the United States. Further, cultural attitudes toward interventions based on Eastern practices such as acupressure may vary greatly in

other countries. Other limitations to the findings can be attributed to the inability to mask group assignment to the midwife caregivers. Finally, the lack of any difference in state anxiety between the intervention and control group is limited by the lack of a baseline measurement of anxiety level before the intervention.

### CONCLUSION

The results obtained in the study showed that ice massage applied to the SP6 point reduced labor pain and increased comfort levels in labor. However, this intervention did not have any effects on labor duration and anxiety levels. Because pain naturally increases in intensity as labor progresses, ice massage should be repeated at regular intervals. No adverse events associated with the ice massage applied to the SP6 point were found in this study. Therefore, this method can be used as a safe and effective midwifery intervention in labor. Ice massage is a simple, affordable, and accessible approach to help relieve labor pain. Ice massage applied to relieve labor pain and provide comfort can ensure the active participation of women in the labor process and increase their satisfaction with vaginal birth. There is a need for more studies to further demonstrate the effectiveness of ice massage to the SP6 point in larger samples of women in diverse contexts.

### ACKNOWLEDGMENTS

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### CONFLICT OF INTEREST

The authors have no conflicts of interest to disclose.

### SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix S1. Consolidated Standards of Reporting Trials (CONSORT) Checklist

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