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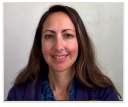

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Clinical Trial

The effect of therapeutic touch on labour pain, anxiety and childbirth attitude: A randomized controlled trial ☆

Sukran Ertekin Pinar [a,*], Gulbahtiyar Demirel [a]

[a] Sivas Cumhuriyet University, Faculty of Health Sciences, Sivas, Turkey

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ABSTRACT

Introduction: Touching ensures physical, emotional and spiritual relaxation, confidence, peace, calmness and well-being, and increases self-esteem. The aim of this study was to determine the effect of therapeutic touch on labour pain, anxiety and childbirth attitude.

Methods: This randomized controlled trial consisted of 80 (intervention group: 40; control group: 40) women attending the maternity unit of a public hospital in Sivas, Turkey between 1 July and 30 December 2019. The first therapeutic touch application was performed in the active phase of the first stage of labour, for 15 min and the second was conducted during the second stage of labour. Data were collected using a Personal Information Form, Visual Analogue Scale, State Anxiety Inventory and Childbirth Attitudes Questionnaire. The forms were completed twice, in the latent phase of the first stage of labour (first follow-up) and in the fourth stage of labour (second follow-up). The results were evaluated with a 95% confidence interval and effect size.

Results: Effect size at 95% confidence interval after therapeutic touch was determined as -1.65 (-2.14 / -1.13) for Visual Analogue Scale, -3.33 (-3.96 / -2.62) for State Anxiety Inventory and -2.98 (-3.59 / -2.32) for Childbirth Attitudes Questionnaire.

Conclusion: Women in the intervention group reported a decrease in pain and anxiety levels, and more positive attitudes towards childbirth after therapeutic touch. The control group showed an increase in pain scores, and no change in anxiety and attitude scores.

1. Introduction

Although birth is accepted as a normal physiological event, it is a process in which negative feelings such as pain, fear and anxiety are experienced. A high level of pain may be experienced during labour [1,2,3], and many unknown conditions in the birth process increase the level of anxiety [4]. It was found in a previuos study that 14.5% of women experienced mild anxiety, 9.4% moderate anxiety and 8.7% experienced severe anxiety during labour [5]. In the study carried out by Curzik and Begic (2011), it was determined that as the state anxiety score increased, labour pain also increased [6]. Anxiety causes fatigue by causing stretching of the pelvic muscles, and reduces a woman's ability to cope with pain [7].

Effective management of labour pain affects a woman's perception of birth, mental well-being and satisfaction with birth [2,8]. In one study, 7% of women stated that they had a negative birth experience [8]. Practices such as massaging, helping with breathing and pushing, providing privacy, positioning and providing psychological support can be performed in order to reduce a woman's pain, anxiety and stress during childbirth, in order to help her have a positive birth experience [9,10,11]. One of these practices is therapeutic touch (TT).

TT is an approach aims at regulating, increasing, balancing and preserving energy in order to improve disease or symptoms caused by imbalance in vital energy fields [12]. Touching is a way of expressing feelings and is a basic human need [13]. Communication through touch is simple, honest and direct [12]. Touching a patient provides physical, emotional and spiritual relaxation. It improves physiological health, makes the person feel valuable, provides confidence, peace and quiet, and increases self-esteem [7,9,14,15,16]. Nurses, midwives and doctors, who are important health professionals, use touch in the implementation of some procedures and treatments in their working lives [4]. Touching is considered therapeutic only when it is sincere, frank, empathic and caring [9]. For this reason, the quality of touch is important for patients as well as the touch itself [14]. It is stated that a touch for about 15–20 min is sufficient for TT that does not require an invasive procedure [4,9]. This method does not require any preparation other than heating

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* Corresponding author.
E-mail address: sepinar09@gmail.com (S.E. Pinar).

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the hands to the same temperature as the body temperature. Touching the hand of the individual is the most commonly used type of touching, but also the arms, forehead, hair and shoulders are the most touched parts of the body [4,15].

The pain and anxiety experienced by a woman at birth reduces her self-confidence, thus women may prefer a Caesarean section by feeling inadequate themselves [7]. Therapeutic touch with its healing and relaxing effects is a patient-centred, holistic and evidence-based method [17,18,19]. The support provided by therapeutic touch to a woman giving birth increases her ability to cope, makes her think positively about the birth experience, decreases the delivery time, the need for analgesics and the possibility of intervention in the delivery, and increases the satisfaction of the mother [9]. There are studies in the literature reporting that therapeutic touch reduces pain and anxiety levels, provides relaxation and increases well-being [1,7,17,18,19,20,21], and there are a limited number of studies using therapeutic touch at birth [4,9]. The findings from this research may contribute to obtaining evidence-based information and may be useful in planning childbirth practices. The aim of this trial was to evaluate whether therapeutic touch applied during childbirth reduced the perception of labour pain and the anxiety levels in women and increase positive attitudes towards childbirth.

2. Materials and methods

2.1. Design and sample

This randomized controlled experimental research was conducted in the maternity unit of a public hospital in Sivas, Turkey between 1 July and 30 December 2019. In a study, the mean Visual Analogue Scale score of women in the active phase of labour was 6.43±1.47 in the intervention group and 8.20±1.28 in the control group [22]. According to the power analysis conducted based on the study by Ipek (2014) [22], the sample composed 28 women at $\alpha = 0.05$ significance level, at 1-$\alpha = 0.95$ confidence interval, at $\beta = 0.10$ level and at 1-$\beta = 0.90$ power. However, 40 women were included in each group in order to increase the power of the result by keeping the number of samples high in the study. We generated the two comparison groups using simple randomization, with an equal allocation ratio, by referring to a random-number table. The research was completed with 80 women (intervention group: 40; control group: 40) (Fig. 1).

2.2. Inclusion criteria

- First pregnancy
- Not a high-risk pregnancy
- Having no health problems with the baby or herself
- Having a single foetus
- Ready for a vaginal delivery
- Not receiving infertility treatment
- No chronic physical or psychiatric diagnosis
- Not receiving an oxytocin induction
- Not using any other alternative therapies such as aromatherapy
- Agreeing to participate in the research

2.3. Data collection tools

Personal Information Form: This form contains a total of 17 questions requesting information such as the woman's age, occupation, educational status, marriage year, perception of income status and smoking status.

Visual Analogue Scale (VAS): This scale used in the assessment of pain intensity was developed by Price et al. (1983) [23]. The score is determined by measuring the distance on a 10 cm line between point 0 "no pain" and 10 "unbearable pain". It is applied by marking a point corresponding to the intensity of pain felt by the individual. The distance between the marked point and the lowest end of the line is measured in centimetres and the numerical value found indicates the pain intensity of the patient.

State Anxiety Inventory (SAI): The inventory developed by Spielberger et al. (1970) is a self-report instrument consisting of short assessments [24]. The validity and reliability study of the inventory was done by Öner and Lecompte (1983) in Turkey. This four-point Likert-type inventory is evaluted in a range between "Almost Never" and "Almost Always". The SAI consists of 20 items and requires an individual to describe how he/she feels at a certain time and under certain conditions, and to respond by considering their feelings about the situation. Higher scores indicate greater anxiety, with 0–19 points indicating "no anxiety", 20–39 points "mild anxiety", 40–59 points "moderate anxiety" and 60–79 points "severe anxiety". In the validity and reliability study, the Cronbach's alpha coefficient of the inventory was found to be between 0.94 and 0.96 [25]. In our study, the Cronbach's alpha coefficient of the scale was determined as 0.88 in the first follow-up.

Childbirth Attitudes Questionnaire (CAQ): This questionnaire was developed by Lowe (2000) to measure the fear of childbirth [26]. The validity and reliability study was done by Dönmez et al. (2014) in Turkey. This four-point Likert-type questionnaire consists of 16 items and high scores indicate greater anxiety. Scale scores are calculated by taking the average of the 16 items. The items on the scale are scored as follows: "1 = No anxiety", "2 = Low anxiety", "3 = Moderate anxiety" and "4 = High anxiety". Each item on the scale is scored between 1 and 4. In the validity and reliability study of the scale, the Cronbach's alpha coefficient was 0.82 [27], and in our study it was found to be 0.84 in the first follow-up.

2.4. Procedure

Women who fulfilled the research criteria were approached when they were admitted to the maternity unit, the purpose of the study was explained and informed consent was obtained from the women who agreed to participate in the study. Women in the intervention and control groups who agreed to participate in the study filled in the Personal Information Form providing there were no contractions in the latent phase of the first stage of labour. The VAS, SAI and CAQ were completed in the active phase by the researcher using a face-to-face interview method (First follow-up). It took 10–15 min to fill in the forms.

Therapeutic touch was applied twice to the women in the intervention group in addition to routine practices (history taking, physical examination, laboratory tests, drug applications, delivery and discharge services). The first application was performed in the active phase of the first stage of labour, and the second was done in the second stage of labour. The duration of therapeutic touch was determined as 15 min in accordance with the literature [4,9,19]. Since touching the hand of the individual [4,15] is the most widely used type of touch, hands are also used in our practice for therapeutic touch. The therapeutic touch application and monitoring were constantly performed by the same researcher to ensure standardization throughout the application. Before the application, the therapist ensured that their hands were at normal body temperature and not touched with cold hands. The women were told before the application that the therapeutic touch intervention would be applied to their hands for 15 min. The therapeutic touch was performed without applying pressure by using rhythmic and soft movements on the hand of the woman who placed her hand between the researcher's hands without giving pressure. The VAS, SAI and CAQ were repeated in the fourth stage of labour, at a time when the woman felt well and ready in her room after delivery (Second follow-up) (Fig. 2).

No attempt was made to provide touch to the women in the control group, except for routine practices in the maternity unit. Forms were given to women in the control group twice, at first and second follow-up (Fig. 2).

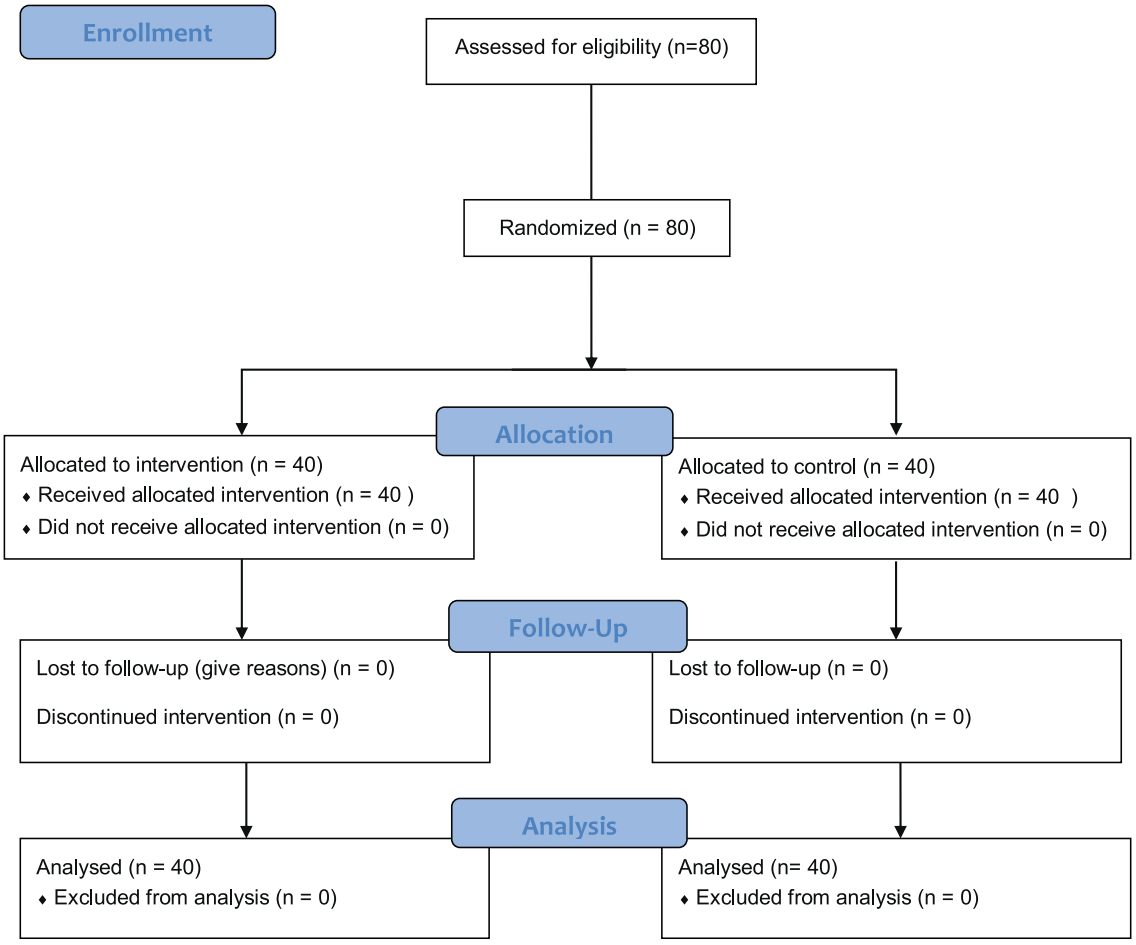

Fig. 1. CONSORT diagram for trial.

2.5. Statistical analysis

Data were evaluated by using the SPSS 23.0 package program. Whether the data showed normal distribution was examined using the Kolmogorov-Smirnov test. In the data analysis, the percentage distribution for socio-demographic factors, the mean and standard deviation were used in the evaluation of scale scores. A chi-square test and *t*-test in independent groups were used in inter-group comparisons in terms of socio-demographic and pregnancy-related characteristics of women, and a *t*-test was used in comparing the mean scores of the groups at follow-up. The effect size was calculated with the Cohen's d index. The results were evaluated with effect size at 95% confidence interval and a significance level of $p < 0.05$.

2.6. Ethical considerations

Ethical approval (decision no: 2018–09 / 13) was obtained from the university's Non-Interventional Clinical Research Ethics Board and written permission (registration no: 93,848,782 / 799) was obtained from the hospital where the study was conducted. The purpose of the study was explained by the researchers and informed consent was obtained from the individuals who agreed to participate in the research. The women were told that their names would not be written on the forms, that their information would be kept confidential, that the data obtained would be used only for research and that they could withdraw from the research at any time. The research was carried out in accordance with the principles of the Declaration of Helsinki.

2.7. Clinical trial registration number

The study was registered at the ClinicalTrials.gov (NCT04543487).

3. Results

3.1. Characteristics of the participants

The mean age of the women in the intervention group was 26.6 ± 5.52 (range: 19–38), 57.5% were primary school graduates and 90% did not work, while 77.5% of the women had a nuclear-type family, 70% of them had been married for 1–5 years and 92.5% of them had people in their family to support them. The mean age of the women in the control group was 25.07 ± 5.22 (range: 19–41), 42.5% were primary school graduates and 86.2% did not work, while 71.2% of the women had a nuclear-type family, 72.5% of them had been married for 1–5 years and 95% of them had people in their family to support them. The socio-demographic and pregnancy-related characteristics of the pregnant women in the intervention and control groups were similar and there was no statistically significant difference between the groups ($p > 0.05$).

3.2. VAS, saı and caq scores of the participants

When the VAS scores of the women in the intervention and control groups were examined, it was found that there was no statistically significant difference between the groups before therapeutic touch (first follow-up) ($p = 0.066$). There was a statistically significant difference between the intervention and control groups after therapeutic touch

Table 1
Visual Analogue Scale mean scores of women in the intervention and control groups.

VAS	Intervention Group (n:40) $X \pm SS$	Control Group (n:40) $X \pm SS$	Effect Size (%95 CI)
First follow-up	8.62±1.39	7.90±1.61	0.48 (0.03 / 0.92)
Second follow-up	6.05±1.43	8.35±1.36	−1.65 (−2.14 / −1.13)

Effect Size: Cohen's d index; VAS: Visual Analogue Scale.

Table 2
State Anxiety Inventory mean scores of women in the intervention and control groups.

SAI	Intervention Group (n:40) $X \pm SS$	Control Group (n:40) $X \pm SS$	Effect Size (%95 CI)
First follow-up	58.97±9.88	59.92±9.40	−0.10 (−0.54 / 0.34)
Second follow-up	34.02±3.64	59.35±10.15	−3.33 (−3.96 / −2.62)

Effect Size: Cohen's d index; SAI: State Anxiety Inventory.

Table 3
Childbirth Attitudes Questionnaire mean scores of women in the intervention and control groups.

CAQ	Intervention Group (n:40) $X \pm SS$	Control Group (n:40) $X \pm SS$	Effect Size (%95 CI)
First follow-up	3.30±0.45	3.27±0.37	0.07 (−0.37 / 0.51)
Second follow-up	2.02±0.29	3.22±0.49	−2.98 (−3.59 / −2.32)

Effect Size: Cohen's d index; CAQ: Childbirth Attitudes Questionnaire.

(second follow-up), and the mean scores of the intervention group were lower than those of the control group ($p = 0.001$). While the effect size was 0.48 (0.03 / 0.92) at the 95% confidence interval at the first follow-up, it was found to be −1.65 (−2.14 / −1.13) at the second follow-up (Table 1).

When the SAI scores of the women in the intervention and control groups were examined, it was found that there was no statistically significant difference between the groups before therapeutic touch (first follow-up) ($p = 0.691$). There was a statistically significant difference between the intervention and the control group after therapeutic touch (second follow-up), and the SAI mean scores of the intervention group were lower than those of the control group ($p = 0.001$). While the effect size was −0.10 (−0.54 / 0.34) at the 95% confidence interval at the first follow-up, it was found to be −3.33 (−3.96 / −2.62) at the second follow-up (Table 2).

When the CAQ scores of the women in the intervention and control groups were compared, it was found that there was no statistically significant difference between the groups before therapeutic touch (first follow-up) ($p = 0.732$). There was a statistically significant difference between the intervention and the control group after therapeutic touch (second follow-up), and the CAQ mean scores of the intervention group were lower than those of the control group ($p = 0.001$). While the effect size was 0.07 (−0.37 / 0.51) at the 95% confidence interval at the first follow-up, it was found to be −2.98 (−3.59 / −2.32) at the second follow-up (Table 3).

4. Discussion

Therapeutic touch can have a positive effect on physiological variables, reducing pain and the need for analgesic use [16,21]. In a study investigating the effect of therapeutic touch on pain, it was stated that it can be used as a nursing intervention in the treatment of pain since there is no risk detected in therapeutic touch [20]. The purpose of therapeutic touch during labour is to provide safe care [9]. Thus, with the supportive effect of touch, the women felt safe and thought that they were able to cope with the pain more positively. In a study conducted with 30 women who gave birth, it was concluded that holding the women's hand was the most important touch in terms of therapeutic value and was useful in reducing pain. In the same study, 77% of women said that they felt "less pain" and 40% said they needed fewer painkillers when touched during childbirth [4]. In another study using therapeutic touch during labour, it was found that there was a significant decrease in the pain, pain threshold, pain scores and VAS scores of women in the intervention group [9]. In addition, it was found that pain levels decreased during labour in studies investigating the effect of massage, which is one of the applications performed using touch [1,3,7,10,11,22,28,29,30,31,32]. In this study, which was conducted to determine the effect of therapeutic touch on labour pain, anxiety and childbirth attitude, it was observed that the pain scores of women after therapeutic touch decreased and the pain scores of women to whom therapeutic touch was not applied increased. Based on our research and other research results, it can be suggested that therapeutic touch could be offered as an independent application for use during labour in the management of pain. In addition, in a study [33] midwives who received complementary and alternative medicine training stated that alternative methods were more useful in reducing pain during delivery, emphasizing the importance of the subject.

It has been stated that therapeutic touch provides relaxation, enhances positive mood and reduces anxiety [16,21]. Thus, anxiety levels can be reduced by reassuring touch [15,34]. In a systematic review study, it was concluded that therapeutic touch as a non-invasive method is useful in reducing anxiety [35]. In our study, there was a decrease in the anxiety scores of women after therapeutic touch, and no change in the anxiety scores of women in the control group. Similarly to our research finding, Chang et al. (2002) found that methods such as massage and touch during labour decrease the level of anxiety [1]. In another randomized controlled trial conducted in Turkey with a control group of 30 and a experimental group also of 30, the sacral massage applied during childbirth was found to reduce women's anxiety [7]. In a systematic review analysing seven studies, it was reported that massage performed in the first stage of labour in particular was effective in decreasing the level of anxiety and stress [11]. In addition, some studies found that massage applied to primiparous women as a non-pharmacological in-

tervention was useful in preventing anxiety and fear caused by vaginal birth [36,37]. The findings obtained from these studies support our research findings.

A high perception of control and support provided at birth can improve birth outcomes and increase maternal satisfaction. It has been stated that as the perception of support increases, women's perceptions of birth also improve, and anxiety and negative moods decrease [38]. In our study, there was an improved attitude of women after therapeutic touch, and there was no change in the attitude scores of women in the control group. In one study, it was reported that therapeutic touch applied to a woman's hand was useful in coping with the experience of birth [4]. In a systematic review involving six articles and 326 women, it was concluded that massage played an important role in developing the emotional experience at birth [30]. In different randomized controlled studies, it was found that massage performed during labour increased maternal satisfaction and was effective in producing a positive birth perception [7,28,32,37]. These findings in the literature were in line with the findings obtained from our study and it was thought that therapeutic touch might be beneficial in developing a positive birth perception.

This research has several limitations as the findings relate to a only a small sample of Turkish women who gave birth in a specific public hospital in Turkey. The findings cannot be generalized to all women who give birth.

5. Conclusion

This study was completed with 80 women by including 40 women in the intervention and control group. These 80 women who met the research criteria agreed to participate in the study. There is no woman who does not want to participate in the study. The results were evaluated with a 95% confidence interval and effect size. There was a decrease in women's pain and anxiety levels after therapeutic touch and their attitudes towards labour were found to be positive. There was an increase in the pain levels and no change in the anxiety and attitude levels of women to whom therapeutic touch was not applied. It is recommended that health-care professionals (nurses, midwives, doctors) should use therapeutic touch as part of their role in reducing pain and anxiety levels which would help in building a positive attitude during labour. It is also recommended that studies should be conducted in different groups, where different variables are evaluated and a variety of therapeutic touch is used such as application to different regions besides hands.

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Author contribution

Sukran Ertekin Pinar: Conceptualization, Methodology, Writing-Original draftpreparation, Writing-Reviewing and Editing, Formal analysis, Supervision. **GulbahtiyarDemirel:** Conceptualization, Methodology, Data curation, Resources, Formal analysis,Supervision. We confirm that the manuscript has been read by all named authors and that there are no other persons who satisfied the criteria for authorship but not listed. We confirm that the enter of authors listed in the manuscript has been approved by all of us.

Corresponding author

We understand that the Corresponding Author is the sole contact for the Editorial process. He/she is responsible for communicating with the other authors about progress, submissions of revisions and final approval of proofs.

Declaration of Competing Interest

The authors have no conflict of interests.

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Data availability

Any additional information can be obtained from the corresponding author on request.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.eujim.2020.101255.

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