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ORIGINAL PAPER

The Effect of Spiritual Support with Virgin Mary's Hand Plant and Surah Maryam on Labor Pain, Labour Worries, and Satisfaction in Türkiye

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Abstract

This randomized controlled trial was conducted to determine the effect of spiritual support provided through the Virgin Mary's Hand Plant and Surah Maryam during labor on labour worries, labor pain, and maternal satisfaction. The study is conducted with 120 primiparous in a province in eastern Türkiye. Advanced analysis showed that there was no statistically significant difference in pain levels between women who listened to Surah Maryam and those who used the Virgin Mary's Hand Plant; however, both groups showed statistically significant differences compared to the control group ($F = 192.368$, $p = 0.00$). Regarding labour worries and satisfaction, no significant differences were found between the experimental groups, yet both were statistically significant compared to the control group ($F = 445.976$, $p = 0.00$; $F = 224.775$, $p = 0.00$). It is recommended that women be allowed to use spiritual practices and non-pharmacological methods of their own choice during labor, thereby contributing to a more positive experience of labor pain, reducing labour worries, and enhancing birth satisfaction.

Keywords Virgin Mary's Hand Plant · Surah Maryam · Labor Pain · Labour Worries · Birth Satisfaction

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Introduction

Health is influenced not only by biological and environmental factors but also by cultural ones. Culture is present wherever humans exist and in every aspect of human life. What we eat, how we dress, and the rituals related to bodily care are all shaped by culture. At the same time, culture is a learned phenomenon passed down from generation to generation through values, beliefs, and behavioral patterns forming the way of life of a community (Bolsoy & Sevil, 2006).

The Qur'an, the holy book of Muslims, encompasses all aspects of human life (Ghanei, 2012). Allah states: "We send down in the Qur'an that which is a healing and mercy for the believers" (Al-Isra, 82; Makarem, 2001). The rhythmic tone of the Qur'an acts as a form of mystical music that affects the brain and stimulates alpha waves, thereby contributing to endorphin secretion (Khatoni, 1997). Consequently, it raises the stress threshold, alleviates negative emotions, creates a sense of relaxation, and strengthens the immune system (Li & Dong, 2012).

Previous clinical trials have shown that listening to the Qur'an is effective in reducing labor pain (Mirmolaee, 1998), anxiety, postoperative cesarean pain (Mirbagher & Ranjbar, 2010) and the duration of the active phase of labor (Mirmolaee, 1998). The positive effects of music on childbirth have also been demonstrated in various studies (Chang & Chen, 2005). Specifically, music has been found to reduce labor pain (Simavli et al., 2014a, 2014b) as well as the intensity of anxiety during and after cesarean birth.

The Virgin Mary´s Hand Plant

Türkiye is a country with a rich variety of cultures, shaped by numerous civilizations throughout history. Despite the advances in modern medicine brought by technology, traditional health practices rooted in cultural beliefs continue to be widespread in this region (Erenoğlu et al., 2017). Since ancient times, many civilizations in Anatolia have used certain plants for therapeutic purposes. One such plant is Anastatica hierochuntica, known as Kaff Maryam in Arab countries, Sanggul Fatimah in Malaysia, and Fatma Ana Eli, Havva Ana, or Meryem Ana Eli (Virgin Mary's Hand) in Anatolia. It is traditionally believed to facilitate childbirth and therefore, is often used during labor. The dual naming of the plant as both Fatma Ana Eli and Meryem Ana Eli reflects how Anatolia has been influenced by multiple religions, and how these religious beliefs have shaped folkloric practices (Erenoğlu et al., 2017; Zin et al., 2017).

In many regions of Anatolia, beliefs regarding the Virgin Mary's Hand plant persist. It is thought to hold superior power during childbirth. A common practice involves placing the plant in a bowl of water during labor; as the plant gradually unfolds, it is believed that childbirth will become easier and that the baby will be delivered smoothly, like the flow of water. In some traditions, the water is given to the laboring woman to drink in small sips, while the midwife massages her

back, saying: "This is not my hand but the hand of the Virgin Mary," as a form of suggestion and reassurance (Gün & Şahinoğlu, 2017). When placed in water, the root of the Virgin Mary's Hand plant opens in a shape resembling fingers, and it is believed to assist uterine contractions. For this reason, it is widely used in Anatolia (Kömürcü & Gençalp, 2002).

In a study conducted by Yalçin, it was reported that 77.9% of women in Karaman used the Virgin Mary's Hand plant to facilitate childbirth as part of traditional practices before, during, and after delivery, as well as for newborn care (Yalçin, 2012). Similarly, in a study by Taşhan and Koyuncu, 7% of women in Eastern Anatolia stated that they drank water in which the Virgin Mary's hand plant had been soaked to accelerate labor and that they found it effective in facilitating childbirth (Taşhan & Koyuncu, 2017) Fig. 1

Pregnant women experience anxiety during labor due to the perception that a potential danger may occur (Cetişli, Zirek, & Abali, 2016). This anxiety often stems from insufficient knowledge about what may happen during labor, with birth-related anxiety peaking in the third trimester (Ternström et al., 2015; Handelzalts et al., 2015). While primiparous women experience fear of the unknown regarding what lies ahead, multiparous women often fear that complications may occur during the pregnancy process (Stoll et al., 2016). Therefore, the levels of fear and anxiety vary among women (Arfaie et al., 2017; Küçükkaya, 2018).

The aim of the methods used to relieve fear and pain during childbirth is to control or help manage labor pain without causing any adverse effects on the mother or the baby (Yeşildağ & Gölbaşi, 2018). The neural mechanisms of labor pain form the basis for appropriately reducing the perceived intensity of labor pain (Kömürcü et al., 2013). In the literature, labor pain management methods are generally categorized into pharmacological and non-pharmacological approaches. The essential qualities sought in these methods are simplicity, safety, and protection of fetal health (Brown et al., 2001; Mucuk, 2010). While pharmacological treatments primarily target somatic pain, non-pharmacological methods address the emotional, cognitive, behavioral, and sociocultural dimensions of pain (Ünalmiş et al., 2017). Non-pharmacological methods are techniques that promote relaxation and minimize the perception of pain without the use

Fig. 1 Virgin Mary's hand plant

of medication, and they are considered complementary to pharmacological treatments (Brown et al., 2001; Field et al., 1997; Ünalmiş et al., 2017).

Recent evidence-based studies have demonstrated the effectiveness of non-pharmacological methods in reducing labor pain (Miake-Lye et al., 2019; Smith et al., 2018; Sözer et al., 2019). Due to the adverse side effects of pharmacological methods, the use of non-pharmacological techniques has been increasingly recommended (Kömürcü et al., 2013). Based on this premise, the present study investigated the effects of listening to the Holy Qur'an and the use of the Virgin Mary's Hand plant on labour worries and pain.

Materials and Methods

Type of the Study

This research was conducted using a randomized controlled design. A randomized controlled trial (RCT) was conducted (Clinical Registry Number: NCT07175337). The study was carried out in the delivery unit of Erzurum Training and Research Hospital between September 2024 and May 2025.

Participants

A total of 132 primiparous pregnant women ($n = 132$) who met the inclusion criteria were recruited. Eligible participants were primiparous, at term ($\geq$ 37 weeks), aged between 18 and 40 years, with a singleton pregnancy, and no obstetric or medical complications. Women who had received oxytocin or its derivatives for induction or augmentation of labor were excluded from the study. Women who declined participation or had hearing impairments that prevented listening to audio interventions were excluded. Participants were randomly assigned to three groups: Surah Maryam group ($n = 44$), Virgin Mary's Hand Plant group ($n = 44$), and control group ($n = 44$). Each group was completed with 40 pregnant women after losses from the study due to various reasons.

Inclusion Criteria: Muslim, literate, primiparous, at term pregnancy (37–40 weeks), having a single fetüs, no pregnancy complications, no condition preventing vaginal delivery, cephalic presentation, cervical dilatation of 5 cm (early active phase), no diagnosed psychiatric disorder, willing to participate in the study.

Exclusion Criteria: Multiparous, high-risk pregnancy, planned cesarean delivery, development of complications during labor, women who received oxytocin or other pharmacological induction/augmentation, use of narcotic analgesics, sedatives, or other pain relief methods, diagnosed psychiatric disorder.

Randomization

The assignment of participants to the experimental and control groups was performed through randomization. For this purpose, the Random Integer Generator method under the "Numbers" section of the website random.org was used to

generate a single column of integers between 1 and 132. Based on the numbers 1, 2, and 3, pregnant women who applied to the clinics were randomly assigned to groups. At the beginning of the study, a draw was conducted to determine which number corresponded to which group. The Consolidated Standards of Reporting Trials (CONSORT) (Boutron et al, 2017) flow diagram is presented in Figure 2.

Ethical Considerations

Before starting the research, approval from the Ethics Committee (B.30.2.ATA.0.01/U99, Date:06.07.2023) and official permission from the Provincial Health

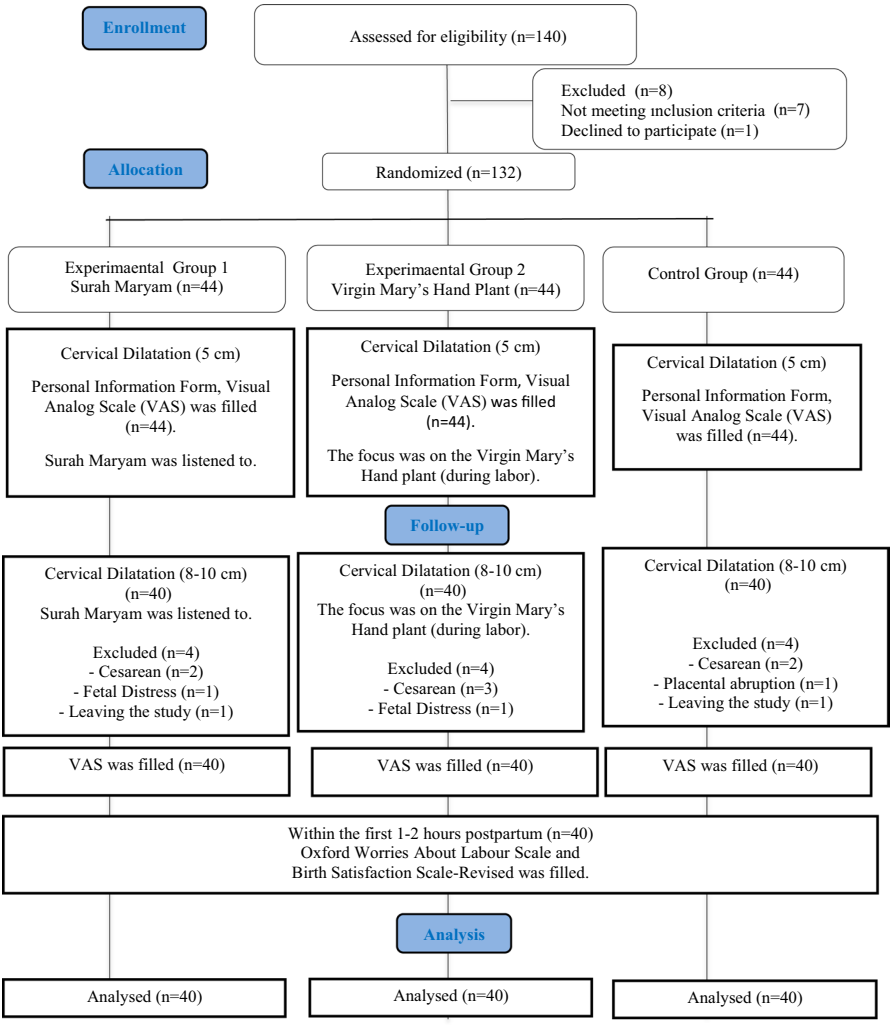

Fig. 2 CONSORT diyagram

Directorate where the research would be conducted were obtained. Written informed consent was obtained from all participants prior to enrollment in the study. Individuals who met the research criteria and wished to support the research were informed about the research, fulfilling the principle of "Informed Consent." They were informed that they were free to choose whether or not to participate, fulfilling the principle of "Respect for Autonomy." They also stated that participant information would be kept confidential, fulfilling the principle of "Confidentiality and Protection of Confidentiality." Written and verbal consent was obtained from participants after they were informed. Because individual rights must be protected in the research, the Helsinki Declaration of Human Rights was adhered to throughout the study.

Data Collection Tools

Personal Information Form

Consisted of 15 questions regarding the sociodemographic characteristics, pregnancy, and birth history of the participants.

Visual Analog Scale (VAS)

VAS is used to measure perceived pain. It consists of a 10 cm (100 mm) line with one end labeled “no pain” and the other “worst possible pain.” The participant marks a point on the line corresponding to the intensity of their pain. The distance in millimeters from “no pain” to the mark is measured and recorded as the pain score. Cline et al. (1992) reported that vertical orientation was better understood by patients. The scale was originally developed by Price et al. (1983). Eti-Aslan (1998) found that VAS was more sensitive in the evaluation of postoperative (acute) pain.

Oxford Worries About Labour Scale (OWLS)

Developed by Redshaw, Martin, Rowe, and Hockley (2009) to assess women’s worries related to the childbirth process. The Turkish validity and reliability study was conducted by Erkal and Özentürk (2016). The scale consists of 10 items rated on a 4-point Likert scale: (1) Very worried, (2) Fairly worried, (3) Not very worried, (4) Not at all worried. Scores are calculated from the total (minimum = 10, maximum = 40). The Cronbach’s alpha reliability coefficient of the Turkish version was found to be 0.83 (Erkal Aksoy & Özentürk, 2016). In this study, the Cronbach’s alpha value of the questionnaire was found to be 0.75.

Birth Satisfaction Scale-Revised (BSS-R)

The original Birth Satisfaction Scale was developed by Martin and Fleming (2011) to assess women’s satisfaction with childbirth. In 2013, Martin and Martin revised the scale by reducing the number of items, resulting in the Birth Satisfaction

Scale-Revised (BSS-R). The BSS-R is a 10-item Likert-type scale rated as: Strongly agree (4 points), Agree (3 points), Neutral (2 points), Disagree (1 point), Strongly disagree (0 points). Items 2, 4, 7, and 8 are reverse-scored. The total score ranges from 0 to 40, with higher scores indicating greater satisfaction. The scale has three subdimensions: Quality of Care (communication, support from healthcare providers, and cleanliness of the delivery room), Women's Personal Attributes (sense of control and anxiety during childbirth), and Stress Experienced During Labor (perceived stress and duration of labor). The Cronbach's alpha reliability coefficient of the Turkish version was reported as 0.72 (Gökmen, 2017). In this study, the Cronbach's alpha value of the questionnaire was found to be 0.70.

Study Groups

Surah Maryam Group

In the Surah Maryam Group, pregnant women admitted for delivery were provided with the recitation of Surah Maryam for spiritual support in addition to routine midwifery care. The recitation was played via a tape recorder in the delivery room at a comfortable volume, ensuring that only the mother could hear it. When the cervix was dilated by 5–10 cm, each pregnant woman listened to the recitation of the Surah Maryam for fifteen minutes via the tape recorder. Headphones were not used, and the recitation was not read aloud by staff but provided as an audio recording. The recording was played twice during the labor process, and the women were continuously monitored throughout.

Virgin Mary's Hand Plant Group

Pregnant women were monitored throughout labor, and in addition to routine midwifery care, the Virgin Mary's Hand plant (Anastatica hierochuntica) was placed in water and allowed to open, starting from cervical dilatation of 5 cm. Women were encouraged to associate the gradual opening of the plant with the opening of the birth canal, thus providing spiritual support.

Control Group

Only routine midwifery care was provided during labor.

Statistical Analysis

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics (mean, standard deviation, frequency, and percentage) were used to summarize the participants' demographic and obstetric characteristics. Normality was assessed using the Kolmogorov–Smirnov test. For comparisons between groups, one-way ANOVA was employed for normally

distributed data, and the Kruskal–Wallis test was used for non-normally distributed data. Post-hoc analyses were conducted to identify differences between groups. A significance level of $p< 0.05$ was accepted.

Results

In the study, the mean age of the pregnant women in the control group was 24.37 ± 2.07, while it was 23.55 ± 1.98 in the experimental group 1 and 23.57 ± 1.46 in the experimental group 2. When the distribution of participants was examined in terms of educational level, no statistically significant difference was found among the three groups ($\chi^2 = 3.326$, $p = 0.190$). The proportions of individuals with high school and university or higher education were similar across all groups. When the descriptive characteristics of the control, experimental 1 (those who listened to Surah Maryam), and experimental 2 (those who used Virgin Mary's Hand) groups were compared, it was observed that the groups were homogeneous in terms of sociodemographic and obstetric characteristics (Table 1).

According to the first VAS measurement performed during the early active phase of labor (cervical dilatation 5 cm), there was no statistically significant difference in pain scores among the groups ($F = 1.936$, $p = 0.149$). When the control, Surah Maryam listening, and Virgin Mary's Hand groups were compared in terms of labor pain, labour worries, and birth satisfaction, statistically significant differences were observed among the groups ($p < 0.05$). Specifically, in the later stage of labor (cervical dilatation 8–10 cm), the mean pain score (VAS 2) of the control group was significantly higher than that of the intervention groups. Similarly, in terms of labour worries, the control group had a significantly lower mean score, indicating that individuals in the intervention groups experienced less worries about childbirth. Regarding birth satisfaction, the intervention groups scored significantly higher than the control group Table 2.

Further analysis showed that there was no statistically significant difference in pain scores between the Surah Maryam and Virgin Mary's Hand groups; however, both intervention groups differed significantly from the control group (F = 192.368, p = 0.000). No significant difference was found between the intervention groups in terms of labour worries and birth satisfaction, although both were statistically significant compared to the control group (F = 445.976, p = 0.000; F = 224.775, p = 0.000).

These findings indicate that listening to Surah Maryam and using the Virgin Mary's Hand plant were effective in reducing pain, controlling worries, and increasing birth satisfaction, especially during the later stages of labor. Both intervention methods positively influenced the labor process and produced statistically significant differences fig. 3

In the study, the levels of pain experienced during labor (VAS), labour worries (Oxford Worries About Labour Scale), and birth satisfaction (Birth Satisfaction Scale) were compared between the experimental and control groups. The mean scores for each variable are presented in the corresponding figure.

Table 1 Sociodemographic and obstetric characteristics of the participants (n=120)

Characteristics	Control (n=40)	Experimental 1 (Surah Maryam) (n=40)	Experimental 2 (Virgin Mary's Hand Plant) (n=40)	Test value
Age	X̄±SD	X̄±SD	X̄±SD	F=2.54
	24.37±2.07	23.55±1.98	23.57±1.46	p=0.083
Gestational week	38.10±0.70	38.27±0.59	38.22±0.61	F=0.78 p=0.459
	n %	n %	n %	
Education level				
High school	27 67.5	22 55	19 47.5	χ^2= 3.326[a] p=0.190
University and above	13 32.5	18 45	21 52.5	
Family type				
Nuclear	29 72.5	28 70	20 50	χ^2= 5.291[a]
Extended	11 27.5	12 30	20 50	p=0.071
Income status				
Equal to expenses	25 62.5	21 52.5	19 47.5	χ^2= 1.880[a]
More than expenses	15 37.5	19 47.5	21 52.5	p=0.391
Pregnancy intention				
Yes	31 77.5	34 85	35 87.5	χ^2= 1.560[a]
No	9 22.5	6 15	5 12.5	p=0.458
Regular antenatal care				
Yes	28 70	29 72.5	29 72.5	χ^2= 0.082[a]
No	12 30	11 27.5	11 27.5	p=0.960

Table 2 Comparison of labor pain, labour worries, and birth satisfaction scores across groups

Scales	Control (n=40)	Experimental 1 (Surah Maryam) n=40)	Experimental 2 (Virgin Mary's Hand Plant) (n=40)	Test value
VAS 1st Measurement (Cervical Dilatation= 5 cm)	X̄±SD 4.72±0.750	X̄±SD 4.50±0.64	X̄±SD 4.45±0.59	F=1.936 p=0.149
VAS 2nd Measurement (Cervical Dilatation= 8–10 cm)	9.57±0.549	7.72±0.45	7.67±0.47	F=192.368 p=**0.000**
Labour Worries	15.47±1.76	25.82±1.66	25.37±1.82	F=445.976 p=**0.000**
Birth Satisfaction	13.35±4.57	25.47±2.06	26.45±1.79	F=224.775p=**0.000**

Statistically significant values are indicated in bold letters ($p < 0.05$)

Regarding the VAS scores, the experimental group had a lower mean score compared to the control group. On the VAS, scores of 6 and above indicate severe pain. In this context, the experimental group's mean score being below this threshold suggests that the intervention may have had a pain-reducing effect.

For the labour worries, higher scores indicate lower levels of worries. The experimental group had a higher mean score than the control group, indicating that the level of labour worries was lower in the experimental group.

Examination of the Birth Satisfaction Scale scores revealed that the experimental group had a higher mean satisfaction level compared to the control group. This finding suggests that the applied interventions positively influenced the childbirth experience and increased overall satisfaction.

In conclusion, women in the experimental groups reported experiencing less pain during labor, lower levels of labour worries, and higher birth satisfaction compared to those in the control group.

Discussion

The findings of this study provide insight into the effects of spiritual support, delivered through Anastatica hierochuntica (Virgin Mary's Hand Plant) and the recitation of Surah Maryam, on labour worries, labor pain, and birth satisfaction in pregnant women. This study found that pain levels experienced at cervical dilatations of 5 cm and 8–10 cm were significantly lower in the experimental group, who were instructed to focus on the Virgin Mary's Hand Plant, compared to the control group receiving only standard midwifery care.

In the study by Güzel & Akin (2024), it was found that observing the opening of Anastatica hierochuntica during labor significantly reduced labor pain and the perception of traumatic birth, while increasing comfort levels during and after delivery. Karakoç, Eriç Horasanli & Ayvaci (2023) also reported that the use of A. hierochuntica during labor had a positive effect on both labor pain and duration. In a study by Türkmen,

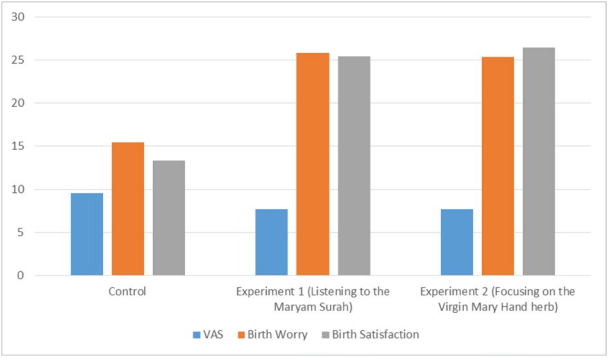

Fig. 3 Mean scores of VAS, labour worries and birth satisfaction according to the experimental and control groups

Çetinkaya et al. (2021), women in the intervention group were asked to focus their attention on the unfolding buds of Mary's flower and to visualize the progression of labor. VAS measurements were taken at specified cervical dilatations (4–5 cm, 6–7 cm, 8–9 cm), and statistically significant differences were found between the groups at all stages ($p < 0.05$). These findings are consistent with the literature. During labor, pregnant women can manage pain by directing their mental focus away from the source of pain. Visualizing cervical dilation and the downward movement of the baby may provide relief. These results may be due to guiding women to focus on the Virgin Mary's Hand Plant to imagine cervical opening and facilitate a positive birth experience.

The study also showed that listening to Surah Maryam reduced labour worries and pain levels while increasing birth satisfaction. Literature supports this finding: Kocak et al. (2022) reported that recitation of Surah Inshirah during labor positively affected pain, anxiety, and comfort levels in 126 Muslim pregnant women. Similarly, other studies have shown that praying or listening to prayers reduces pain and anxiety in Muslim women undergoing cesarean section with epidural anesthesia (Beiranvand et al., 2014). Another study reported that spiritual well-being reduces fear of childbirth (Bilgiç & Bilgin, 2021). In primiparous women, an Islamic prayer program applied as a midwifery intervention from the 32nd week of pregnancy, with daily 30-minute prayers, was found effective in reducing labor pain (Desmawati et al., 2020). In a study in Indonesia, 30 minute Quran recitations after 3–4 cm cervical dilatation produced significant differences in labor pain experience and behavior between control and experimental groups at the first, second, and third hours (Kongsuwan & Chatchawet, 2019). El-Sayed et al. (2020) reported that, during the active phase at the first, second, and third hours, the Quran group had significantly lower labor pain, anxiety, and hemodynamic parameters compared to the non-Quran group ($p = 0.001$). Akin et al. (2025) found no statistically significant differences between the Surah Maryam group and the control group regarding traumatic birth perception or postpartum depression. Except for the study by Akin et al. (2025), the current findings are consistent with previous literature.

Individuals who use religious and spiritual coping strategies (e.g., prayer, dhikr, worship) during adverse experiences such as pain and anxiety report feeling stronger and more capable of coping with challenging situations. Therefore, it is thought that listening to a sacred text, such as Surah Maryam, during labor helps women experience fewer negative emotions, reduces the need for pharmacological interventions, and increases overall satisfaction. Furthermore, numerous studies in the literature have investigated interventions for pain relief during labor. Methods such as massage, aromatherapy, acupuncture, listening to music, and labor dance have been shown to contribute to a positive childbirth experience (Akin & Saydam, 2020; Eskandari et al., 2022; Gönenç & Terzioğlu, 2020; Simavli et al., 2014a, 2014b).

Limitations

One of the strengths of this study is that, to date, there has been no similar research in the literature evaluating the effects of spiritual care provided with the Virgin Mary's Hand Plant and Surah Maryam on labor anxiety, labor pain, and birth satisfaction. However, the study has several limitations.

First, only primiparous Muslim women were included, which limits the generalizability of the findings to wider populations. Second, women who received oxytocin or other pharmacological induction/augmentation methods were excluded, which may restrict comparability with studies including such cases. Third, data were collected and classified according to the WHO stages of labor, which may not fully reflect variations across different health care systems. The sample size was limited to a single center, which reduces external validity. Another limitation of this study is that the experimental stimuli differed in modality, as the Virgin Mary's Hand Plant is a visual stimulus whereas the recitation of Surah Maryam is auditory/verbal. Although both were selected for their shared symbolic focus on Maryam, this modality difference may limit direct comparability, and future research should employ modality-matched stimuli.

Conclusion and Recommendations

This randomized controlled trial demonstrated the effects of spiritual support provided with the Virgin Mary's Hand Plant (Anastatica hierochuntica) and the recitation of Surah Maryam on labor pain, birth anxiety, and birth satisfaction. The findings indicate that both spiritual interventions significantly reduced labor pain, decreased birth anxiety, and increased birth satisfaction compared to the control group. Although there was no statistically significant difference between the experimental groups, these interventions were shown to positively support the childbirth experience.

Women should be allowed to engage in spiritual practices according to their beliefs and preferences during labor. Healthcare professionals should integrate non-pharmacological and culturally/spiritually based supportive methods into maternity care. To more comprehensively assess the contributions of such practices to the childbirth experience, large-scale studies should be conducted across different cultures and communities. Conditions should be provided in labor wards to facilitate the implementation of spiritual support and non-pharmacological methods, and midwives/healthcare providers should be educated and made aware of these practices.

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Data Availability The data that support the findings of this study are available on reasonable request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Declarations

Conflict of interest The authors have not disclosed any competing interests.

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