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The Influence of Listening to the Holy Quran on Maternal and Newborn Health in Iran: A Systematic Review

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ABSTRACT

Given that numerous clinical trials in the field of obstetrics have been conducted on the effect of the Quranic voice on maternal and neonatal health in Iran, a systematic review was undertaken to assess the efficacy of the Quranic voice in the domain of maternal and neonatal health in Iran. A systematic search was conducted in Scopus, Web of Science, and in the Persian databases SID, Iranmedex, Irandoc, Magiran, and Quranic journals and resources up to March 2022. Relevant keywords were utilized to identify research articles. In this study, 46 clinical trials were reviewed, of which nine were ultimately included in the analysis. In general, studies have been conducted with four objectives: the effect of the Quranic voice on pain, anxiety, therapeutic processes and vital signs. The results of our study indicated that the majority of studies conducted in this field aimed to reduce pain. All studies conducted in this field, with one exception, demonstrated positive efficacy. Considering that numerous and highly reputable articles have been conducted in this domain and predominantly demonstrate the effectiveness and efficiency of the voice of the Holy Quran, it can be proposed as a complementary treatment option for women. Given that existing studies in this field are limited to specific areas, there is a need for further research. Finally, the heterogeneity of the study duration precludes the conduct of a meta-analysis in this study.

Keywords: Quranic Recitation, Clinical Trial, Mothers, Neonates

Introduction

Women and children are more vulnerable to psychological stress than other population groups [1]. Maternal anxiety and severe pain during vaginal delivery may adversely affect fetal, maternal, and labor progression. Identifying maternal anxiety levels and providing support can relieve labor pain and anxiety while improving maternal adaptation to the birthing process. Over 90% of pregnancy-related distress arises from labor pain [2].

Promoting vaginal delivery remains a cornerstone of healthcare policies because of the risks associated with cesarean section (CS) [3]. Managing labor pain and associated fear can significantly decrease unnecessary CSs and their complications [4]. Based on some studies, fear and anxiety play a critical role in labor pain perception, and their alleviation creates physical/psychological calmness and decreases pain severity during the delivery stages [5].

Stress and anxiety are also significant mental health concerns [6]. Women endure twice the anxiety prevalence of men due to pregnancy- and delivery-related stressors [7]. Sadock reported anxiety rates of 13-15% across gestational stages [8]. Pregnancy- and delivery-related anxiety may lead to harmful effects. For example, prolonged anxiety stimulates the autonomic nervous system, creating smooth muscle contractions (e.g., arterial constriction), which can decrease placental perfusion and lead to abnormal fetal heart patterns and preterm labor [9].

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Pain and anxiety relief approaches can be categorized into pharmacological and non-pharmacological interventions [10].

Currently, non-pharmacological interventions, such as auditory stimulation through pleasant sounds or music therapy, are increasingly preferred for pain and anxiety relief [11]. The therapeutic use of sound dates back to ancient civilizations, with Egyptian, Greek, Chinese, Indian, and Roman texts documenting music as a healing instrument [11, 12]. Other studies have confirmed the effect of music therapy on decreasing anxiety and agitation in patients with Alzheimer's disease [13], cancer [14], surgical patients [11], and intensive care unit (ICU) admissions [15, 16]. According to some reports, music lowers serum cortisol levels [2] by decreasing amygdala activation and diminishing fear and distress [17].

Human nature is inherently inclined toward rhythm and harmony. The calming properties of music have traditionally been recognized and employed for mental health enhancement. As an effective, low-cost, and uncomplicated intervention, music can stimulate physiological and psychological responses in the listener and inhibit sympathetic and parasympathetic activity of the central nervous system (CNS), resulting in decreased stress and modulating emotions [18, 19].

The rhythmic recitation of the Holy Quran is among the most sublime dimensions of its linguistic miracle, serving as a spiritually uplifting melody [20]. As one of the most captivating musical modalities, the soul-nourishing cadence of the Holy Quran decreases patient anxiety [12, 15].

Contemporary health definitions increasingly focus on spiritual dimensions, suggesting incorporating spiritual well-being into the World Health Organization (WHO) health framework [6]. Some studies have indicated that Quranic recitation affects physiological responses, including oxygen saturation and respiratory rate [21]. Other studies have reported a significant impact on anxiety [22], stress [23], and pain alleviation [24].

Some studies have addressed interventions to reduce environmental stressors and provide early supportive care, aiming to prevent neurobehavioral impairments among preterm neonates given the high prevalence of preterm births and the critical significance of early brain development. Auditory function is among the first sensory systems developed in the fetus, with auditory responses established in the brainstem and auditory cortex by gestational weeks 26-28. Some studies have shown that rhythmic auditory stimulation (e.g., music or lullabies) decreases physiological instability and stress, thereby improving physiological function and neurobehavioral development in infants. Music and sound therapies are among the most significant approaches in complementary medicine, with Quranic recitation characterized by its unique melodic structure, representing one of the most attractive auditory interventions [21, 25].

Complementary medicine enhances medical treatment, with sound therapy (dependent variable) serving as an essential modality. This modality emphasizes that bodily tissues and cells respond to patterns of expansion and compression using specific methods. Sound therapists aim to preserve and enhance health oscillations by directing synthesized waves to the damaged areas [26].

Many clinical trials have assessed the efficacy of Quranic recitation in maternal and neonatal health. This study aimed to evaluate the Iranian clinical trials in this field.

Materials and Methods

A systematic search was performed across Scopus, Web of Science, Google Scholar, Embase, and Cochrane, along with databases such as SID, Iranmedex, Irandoc, Magiran, and Quranic journals, and resources without time limits until March 2023.

Then, the keywords "Labor pain," "Quran," "Holy book," "Delivery," "NVD," "C/S," "Cesarean section," "Neonate," "Anxiety," and "Clinical trial" were utilized to identify research articles. Next, the Jadad scale was used to

examine the quality of the included articles [27].

The Jadad scale addresses studies based on randomization bias risk, patient follow-up, and blinding, with scores ranging from zero (minimum) to five (maximum). Studies scoring ≥3 on the Jadad scale were included through a keyword search, title screening, and abstract review.

Following abstract or full-text review, studies that failed to meet the inclusion criteria or were identified as duplicates were excluded. Abstract data were employed for unavailable full texts, and articles were excluded when abstracts contained insufficient information for analysis.

The final inclusion required studies to be Iranian clinical trials assessing the effect of Quranic recitation on maternal-neonatal health. Studies evaluating other religious aspects or alternative Quranic applications (e.g., doctrinal education, recitation, or textual study) were excluded.

Finally, nine studies were selected for inclusion in the systematic review following the removal of duplicate, irrelevant, and low-quality articles (Fig. 1).

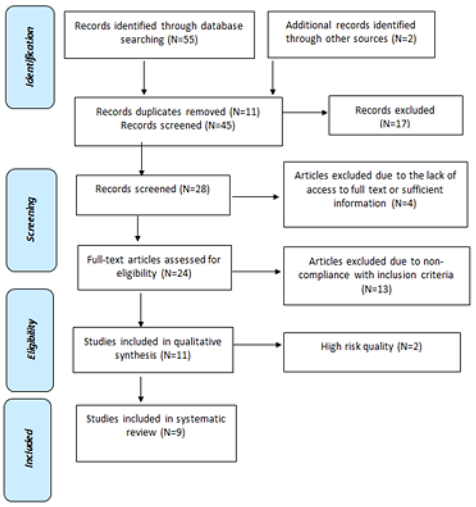

Fig. 1. selection flowchart for systematic literature review (SLR)

Results

The systematic review included two studies on the efficacy of Quranic recitation for pain relief (during labor and vaginal delivery) and four on anxiety reduction (two involving CS and two focusing on labor and vaginal delivery). In addition, two studies evaluated the efficacy of Quranic recitation in therapeutic processes. In contrast, three studies examined its effects on vital signs and physiological responses, all of which were briefly reviewed. One study investigated the efficacy of Quranic recitation on three of the abovementioned outcomes [28], all of which are referenced here. Most studies have used headphones for blinding to address the efficacy of Quranic recitation on pain relief, stress control, anxiety reduction, therapeutic processes, vital signs, and physiological responses. Results revealed that anxiety reduction was the most frequently studied outcome. Most studies utilized controlled clinical trial designs with pre- and post-treatment comparisons. However, some studies have compared Quranic recitation with other interventions such as music therapy. The interventions lasted 20-45 minutes per session, with some continuing for three consecutive days. All studies, except one [29], indicated significant efficacy.Studies conducted in this field were analyzed, as shown (Table 1).

1. Pain relief

Some researchers have studied the effect of Quranic recitation on pain severity during the first stage of active labor through controlled trials with methodological differences. Esmaeili et al. applied simultaneous visual-auditory Quranic verse presentation through headphones for 20 minutes [30], whereas Bayrami et al. only employed audio delivery for 30 minutes [28]. Both interventions significantly decreased perceived maternal pain severity.

2. Stress control and anxiety reduction

Most studies have focused on reducing anxiety before CS and vaginal delivery. Some researchers have analyzed the effect of Quranic recitation on maternal anxiety during CS. AjorPaz et al. used Quranic recitation through

headphones for mothers for 20 min before CS [31], while Allameh et al. requested the intervention group to listen to Quranic recitation during the spinal anesthesia procedure through headphones, continuing for ten minutes postoperatively, representing significant anxiety reduction among mothers in both groups [32]. Others assessed the effect of Quranic recitation on anxiety levels during the first stage of labor, delivering the recitation through headphones for 45 min. A significant difference was found in the serum cortisol levels between the intervention and control groups. Sahmeddini et al. revealed a significant anxiety reduction among subjects with substantial prior familiarity with the Quran [2], while Kadkhodaei et al. compared Quranic recitation with soft music. The results indicated significantly decreased scores on the state-trait anxiety scales in the Quranic group, while no such effect was reported in either the music or control group [33]. Thus, Quranic recitation can be utilized to reduce anxiety during both vaginal and cesarean deliveries.

3. Therapeutic processes

Kaboosi et al. evaluated the effect of Quranic recitation and music on intrauterine insemination (IUI) success rates. To this end, infertile female candidates for IUI were selected through purposive sampling and randomly divided into three groups: Quranic recitation, music, and control. The intervention groups listened to Quranic recitation or music for ten minutes before until ten minutes after the IUI procedure. The Quranic recitation group exhibited the highest success rate (16.36%), followed by the music (9.52%), and control (5.35%) groups. A significant difference was observed between the Quranic recitation and control groups ($p=0.007$) in terms of the therapeutic response. However, no significant differences were identified between the music and control groups ($p=0.18$) or between the Quranic recitation and music groups ($p=0.01$). Based on these results, Quranic recitation was more effective than music in improving infertility treatment outcomes [12]. Bayrami et al. examined the effect of Quranic recitation on labor duration. The results showed a significantly shorter first stage of labor in the intervention group listening to Quranic recitation for 30 min compared to the control group ($p<0.001$) [28]. Therefore, Quranic recitation may serve as an effective nonpharmacological intervention to improve IUI success rates and decrease the duration of the first stage of labor.

4. Vital signs and physiological responses

Keshavars et al. investigated the effect of Quranic recitation on physiological responses among preterm neonates admitted to ICUs, whereas Taheri et al. compared the efficacy of Quranic recitation and lullabies on heart rate variations among those hospitalized in the neonatal intensive care unit (NICU). Keshavars et al. argued that 20-minute Quranic recitation significantly improved oxygen saturation percentage while decreasing respiratory and heart rates during intervention and for ten minutes post-intervention [25]. However, Taheri et al. found significantly lower heart rate variations at minute 20 on the second day of intervention in the lullaby group than in the control and Quranic recitation groups ($p=0.016$), indicating that lullabies may be more effective than Quranic recitation for heart rate reduction in neonates. According to researchers, further studies should be conducted in this field [29].

Bayrami et al. addressed the effects of Quranic recitation on maternal vital signs and neonatal Apgar scores. In the intervention group, Quranic recitation was administered through headphones for 30 min during the first stage of active labor, followed by monitoring and recording of vital signs. Significant differences in pulse rate, respiratory rate, and blood pressure were found between the control and intervention groups ($P<0.001$). Furthermore, the results indicated a significant difference in neonatal Apgar scores between intervention and control groups ($p=0.03$) [28].

Further studies should be conducted in this field by controlling for confounders, given that one study exhibited more pronounced effects in the lullaby group and Quranic recitation failed to significantly affect the preterm neonates' heart rate.

Table 1. Clinical trials conducted on the efficacy of Quranic recitation on obstetrics and gynecology

Author	Intervention domain	Samples, and groups	Intervention and scale		Results	Jadad score
Esmaeili et al [30]	Pain severity during the first stage of active labor	Primi parous women N=51 N=51	Visual Analogue Scale	Randomized controlled trial/In the intervention group, 20-minute recitations of Surah Maryam were administered hourly through synchronized visual display and audio headphones during the first stage of active labor. Both groups were monitored for pain severity and maternal-fetal vital signs.	The results represented a significant difference between the control and intervention groups in terms of the duration of the first stage of labor, as shown by the independent t-test. The intervention group exhibited a >100-minute decrease in mean first-stage labor duration compared to controls. The intervention group endured less pain severity.	3
Kaboosi et al. [12]	IUI success	Quranic recitation (N=110) and music (N=105) N=112	Examination, observation, and testing	Clinical trial/The subjects received either Quranic recitation (Tarteel of Surah Maryam recited by Sheikh Saad Al-Ghamdi) or piano music (Richard Clayderman's "Night Serenade") from ten minutes before until ten minutes after IUI.	The IUI success rates differed across the Quranic recitation (16.36%), control (5.35%), and music (10.0%) groups, with the first intervention exhibiting greater efficacy than the other two.	4
AjorPaz et al [31]	Maternal pre-cesarean anxiety levels	N=50 N=30	Spielberger State-Trait Anxiety Inventory (STAI)	In the intervention group, the subjects listened to selected Quranic verses (Surah An-Naba', Al-Waqi'ah, and Ar-Rahman) recited by Abdul Basit 'Abd us-Samad through headphones for approximately 20 minutes before CS initiation.	The intervention group showed a significant decrease in anxiety levels.	4
Keshavars et al. [25]	Physiological responses and vital signs among preterm neonates	N=60 N=60	Heart and respiratory rate, (SpO_2)	In the Quranic recitation group (verses 7-23 of Surah Yusuf recited by Sheikh Shahat Muhammad Anwar), oxygen saturation and heart and respiratory rates were measured during the 20-minute intervention and for ten minutes post-intervention.	Oxygen saturation increased during the intervention and ten minutes post-intervention, while heart and respiratory rates showed declining trends. Heart rate was lower at the end of the intervention, while respiratory rate was lower ten minutes after the intervention.	5
Sahmeddini et al [2]	Anxiety in the first stage of labor	N=30 N=30	Spielberger STAI and cortisol level measurement	In the intervention group, the subjects listened to Quranic recitation through headphones for 45 minutes, while the control group wore headphones without audio playback.	Anxiety levels significantly decreased in the Quran listening intervention. The median differences in anxiety scores before and after intervention exhibited a declining trend among the subjects with high, moderate, and low Quran familiarity.The groups reported A significant difference in serum cortisol levels.	5
Kadkhodaei [33]	Anxiety reduction among women with vaginal delivery	Quranic recitation (N=27) and music (N=27) groups N=27	Spielberger STAI	The Quran recitation group obtained 45 minutes of Surah Yusuf audio, while the music group listened to Arend Stein's gentle and indomitable music from the album TopHis zum Entspannen Vol.1.	The Quranic recitation group showed a significant decrease in state/trait anxiety scores. However, no significant reductions were found in the control or music groups.	5

Taheri et al [9]	Heart rate of neonates	Quranic recitation and lullaby groups (N=42) N=26	Heart rate variability (HRV)	Double-blind clinical trial/Neonates in the intervention group obtained 20-minute daily sessions of Surah Yasin (verses 1-83) recited in Tarteel style by Sheikh Shahat Muhammad Anwar for three consecutive days, while the lullaby group received 20-minute daily sessions of non-musical male-voiced lullabies, with vocal characteristics matched to the Quranic recitation to ensure consistency. Neonatal HR was recorded at baseline, 10/20 minutes during, and 20 minutes after the intervention.	The mean heart rate in the lullaby group at 20 minutes on day two significantly decreased compared to the control and Quranic recitation groups.	5
Bayrami et al [28]	Labor pain Labor length Maternal-neonatal vital signs	Quranic recitation group (N=30) N=30	Visual Analogue Scale	A controlled clinical trial/Surah Ar-Rahman recited by Abdul Basit Abd Us-Samad was played for the intervention group during the 4-6 and 7-10 cm cervical dilation stages of labor, with subsequent vital sign checks and 30–120-minute pain measurements.	1. The intervention and control groups showed different pain levels throughout active labor. 2. The first stage of labor duration was shorter in the intervention group than in the controls. 3. Significant differences were identified between intervention and control groups regarding pulse and respiratory rate, blood pressure, and neonatal Apgar scores.	3
Allameh et al[32]	Vital signs Post-cesarean pain Anxiety	Quranic recitation (N=32) N=32	Visual Analogue Scale, pain and satisfaction Assessment, and Zung self-rating anxiety scale (SAS)	Controlled clinical trial/The intervention group obtained continuous Quranic recitation through headphones during the surgery, which continued until ten minutes postoperatively, while the control group received no audio intervention.	The intervention group exhibited less recovery duration compared to the controls. The intervention group demonstrated significantly lower arterial blood pressure compared to controls. Post-cesarean pain scores were significantly lower in the intervention group at one, two, and 24 hours compared to controls. Anxiety scores were significantly lower in the intervention group during and one hour after cesarean compared to controls.	4

Discussion

The present study revealed the effect of Quranic recitation on decreasing patient anxiety and pain during diagnostic/therapeutic procedures as well as improving outcomes in fertility treatments in Iran. Some claim that music can decrease patient stress and anxiety during invasive procedures, such as gastroscopy/colonoscopy [34, 35]. Another study highlighted the effect of spirituality-based interventions on reducing anxiety and improving quality of life among pregnant women with diabetes [36]. Furthermore, a clinical trial showed significant effects of Quranic recitation on declining anxiety and depression following cardiac surgery [22].

Vahabi et al. found that music therapy is as effective as a relaxation technique in decreasing patient stress and pain [16]. Music facilitates stress adaptation and triggers soothing responses through anxiety and pain distraction [37].

Some studies have measured serum cortisol levels as an anxiety biomarker, showing significantly lower concentrations in Quran listeners compared to controls, confirming the effect of Quranic recitation on stress

hormones and its therapeutic role in psychological relaxation [2].

In addition, Heidari et al. confirmed the greater efficacy of Quranic recitation of non-vocal music in decreasing endoscopic anxiety [38]. Based on a quasi-experimental study, listening to the Quran can decrease labor pain regardless of religious attitude [39], confirming its positive impact on reducing obstetric fear and anxiety [11]. Another study showed that music therapy and relaxation training reduced stress and anxiety while improving breastfeeding, milk production, and infant growth among Chinese women [40].

Similar studies have been conducted in other countries including Indonesia. Listening to and reciting Surah Ar-Rahman during the third trimester decreased anxiety among pregnant Indonesian women [9]. Other studies have shown that Quranic recitation during active labor reduces anxiety and labor pain among Indonesian mothers. However, some studies conducted in Iran confirmed the positive impact of music therapy in improving patient outcomes [14].

This study focuses explicitly on vulnerable maternal-neonatal populations for whom noninvasive interventions are prioritized. Some studies have confirmed the therapeutic effects of Quranic recitation. Reflecting on health clients' beliefs and convictions and applying spiritual modalities such as listening to Quran verses help maintain and promote patients' mental health because pain is considered a wholly subjective and multidimensional concept, depending on individuals' physical, psychological, social, and religious factors.

This systematic review provides strong evidence supporting Quranic recitation as a low-cost, effective, non-pharmacological, and mystical intervention for improving maternal-neonatal outcomes.

The present study addressed the Iranian research on the efficacy of Quranic recitation on health. Most of the included studies showed methodological adequacy, with Jadad scale scores ≥3. Nearly all relevant studies have reported positive therapeutic effects, although potential publication bias warrants consideration in some cases.

Most reviewed studies failed to focus on adverse effects, which warrant consideration. For instance, employing Quranic recitation as an intervention to increase the success rate of therapeutic processes necessitates the assessment of its effect on people's beliefs in cases where the treatment fails for any reason. The existing literature shows substantial heterogeneity, with specific outcomes supported by only one or two studies, highlighting the need for large-scale trials with expanded sample sizes. Studies in this field have been conducted more extensively than in others, exhibiting acceptable validity. Further examinations are strongly recommended, given their predominantly positive outcomes. However, the limited number of studies makes these results inappropriate for clinical use. The present study failed to assess the effect of other religious interventions due to the broad scope of the review, which warrants further examination. In addition, two authors searched the database to collect relevant studies. Finally, heterogeneity in intervention duration and study protocols deterred meaningful meta-analyses.

Conclusion

Given the substantial body of high-quality studies on its therapeutic benefits for maternal-neonatal health and safe pregnancy outcomes, healthcare providers should incorporate the use of Quranic recitation as a complementary nonpharmacological intervention into standard care protocols.

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Conflict of Interests

Authors declare that they do not have any conflict interests.

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