

# Investigating the Effect of Adhan on Anxiety and Pain Level in Patients after Cesarean Operation by Spinal Anesthesia: A Prospective Clinical Trial Study

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## Abstract

**Background and Objective:** Severe pain and post-surgical anxiety cause unpleasant psychological and physical complications. Today, the common method used for relieving pain and anxiety is the use of medication. However, due to the side effects associated with anesthetics, there is a greater desire for a non-drug method including music therapy. The aim of the present study was to investigate the effect of Adhan on anxiety and pain in patients undergoing caesarean section by spinal anesthesia.

**Methods:** In a clinical trial study, 64 women, who were candidates for caesarean section in Mahdiah hospital in Tehran from 2016 to 2017, were selected for the purpose of the study by random sampling method and assigned to two groups of 32, one as the experimental and the other as the control group. Adhan was played for one group but not for the control group. Data were collected using a questionnaire and pain visual analogue. The collected data were analyzed using independent samples t-test. In this study, the value ( $P < 0.05$ ) was considered statistically significant. In this study, all the ethical considerations have been observed and no conflict of interest was reported by the authors.

**Results:** One hour after operation, the mean score related to anxiety was found to be significantly lower in the experimental group than the control group ( $P < 0.001$ ). Pain mean score in the baseline time was not significantly different ( $P = 0.20$ ), but 15 minutes ( $P < 0.001$ ), 30 minutes ( $P = 0.006$ ) and 60 minutes ( $P = 0.04$ ) after the operation it was significantly lower in the experimental group than the control group.

**Conclusion:** In the present study, the tone of Adhan could efficiently decrease anxiety and pain.

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## Summary

### Background and Objective

The Qur'an covers all aspects of human life. Treatment of diseases may be one of the many effects of its divine verses. Acute pain and anxiety after caesarean section are the unpleasant conditions that most women experience can lead to undesirable mental and physical effects. Caesarean section surgery affects the mother and

the fetus from the beginning to the end. Postoperative pain can increase the patient's stay in recovery (1, 2). Medications are commonly used for relieving the pain and anxiety, which, due to the complications of anesthetics, today there is a higher tendency to use non-medical methods such as music therapy. Adhan is one of the most beautiful, the sweetest and the most natural music in the Muslim world (3). This monotheistic slogan is the first utterances to be read in the ears of beloved newborn child and saying Adhan aloud in

the houses has been highly recommended by religious experts especially when one is inflicted by a disease (4).

## Methods

**Compliance with ethical guidelines:** In order to observe the moral principles, in all the study phases were completed with satisfaction and awareness of the patients. Before conducting the study, complete information was provided to the participants about the purpose of the study and how the study would be carried out. They were also assured that all their information would be kept confidential.

During a controlled clinical trial, 64 women, who were candidates for caesarean section in Mahdih hospital in Tehran, were selected by random sampling method. For one group, Adhan was administered but for the second group, it was not. Each patient was visited one hour before surgery and one hour after caesarean section. Zung test was used to estimate anxiety severity (5). For accurate measurement and evaluation of pain, blood pressure and heart rate parameters were used. Patients were asked to show their pain on a 10 cm ruler (ranging from zero indicating no pain, to 10 indicating the most severe pain experienced so far) to determine pain intensity by analogue visual acuity. Data were analyzed using independent samples t-test.

## Results

The results of independent samples t-test pointed to no significant difference between mean score of anxiety between the two groups one hour before operation ( $P=0.11$ ). But one hour after operation anxiety was significantly lower in the test group ( $P<0.001$ ). Meanwhile, the results of paired samples t-test showed that the mean anxiety score in the experimental group was significantly reduced one hour after the operation ( $P<0.001$ ). However, in the control group it increased significantly one hour after the operation ( $P=0.003$ ). Independent samples t-test showed that there was no significant difference between mean score related to pain in the base time between the two groups ( $P=0.20$ ), but 15 minutes ( $P<0.001$ ), 30 minutes ( $P=0.006$ ) and 60 minutes ( $P=0.04$ ) after the operation, it was significantly lower in the test group. The results further showed that there was no significant difference between mean heart rate in the baseline time between the two groups ( $P=0.53$ ), but it was significantly lower in experimental group in other times ( $P<0.05$ ).

## Conclusion

In the present study, the sound of Adhan efficiently decreased anxiety and pain. In Iran, various studies have been carried out in which, the Holy Quran has been used to reduce the anxiety and achieve the desired results (6). In a study by Azizi et al., it was shown that spiritual therapy, based on religious teachings, is effective in reducing anxiety (7). In another study by Dang et al., the effect of music on cesarean section, ICU and mastectomy was studied and found to be effective in reducing pain and anxiety, as in the present study (8, 9). Nelson's review of 42 randomized clinical trials of anti-anxiety and pain relief effects in a variety of medical systems showed that half of these studies emphasized the beneficial effects of music (10). In a study by Shabanloei et al. (11) on patients undergoing bone marrow biopsy, the results indicated a decrease in pain and anxiety of patients during treatment in the group that listened to music during treatment. This result is consistent with the findings of Nanbakhsh et al.'s (12) study on 20 pregnant women at the time of delivery, and also the present study. In Heidari and Shahbazi's study on 60 patients undergoing endoscopy, the patients were divided into three groups: Quran, music and control. The results of this study showed that listening to the Quran and music had a positive effect on the level of anxiety in the patients. In the Quran group, lower anxiety was reported compared to the other groups, which was matched with the findings of the present study (13).

As mentioned above, post-operative complications associated with the caesarean section such as pain and anxiety, and the use of pain relief medications affect maternal and fetal health. Therefore, according to the results of the present study, Adhan can reduce pain and anxiety in patients undergoing cesarean section.

The present study was constrained by some limitations including: 1. health personnel talking with the patients while they were listening to Adhan, 2. patient idling behind the door of the operating room, 3. unfamiliarity of the treatment staff with therapeutic methods particularly the use of Adhan, 4. failure to observe relative silence in the operating room environment, 5. incorrect culture development in the society regarding Adhan in mosques and, consequently, reflection of the relatively negative attitude of some patients and medical personnel toward the impact of Adhan. Physicians can include listening to Adhan in the initial instructions in the file if the patient wishes.

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### Ethical considerations

This study was registered with the code IRCT20180304038948N1 in the Iranian Clinical Internship Registration Center. The ethics committee of Shahid Beheshti University of Medical Sciences has confirmed this article with the ethic code IR.SBMU.MSP.REC.1396.504.

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### Conflict of interest

The authors of the article did not report any conflicts of interest in this study.

### Authors' contributions

The first author was the supervisor of the study and had supervision over and cooperated in all stages of the research. The second author was the corresponding author and the third author was the statistical author consultant in the study.

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## دراسة مدى تأثير صوت الأذان على مستوى القلق والألم لدى المرضى بعد الولادة القيصرية بطريقة التخدير النخاعي: دراسة تجريبية سريرية مستقبلية

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### الملخص

### معلومات المادة

**خلفية البحث وأهدافه:** إن الألم الشديد والقلق الذي يحصل بعد العملية القيصرية يؤدي الى آثار نفسية وجسمية سلبية، فالطريقة الشائعة لتسكين الألم والقلق هي استخدام الأدوية، لكن نظراً للأعراض الجانبية لأدوية التخدير، فقد أصبحت اليوم الرغبة في استخدام طرق غير دوائية مثل العلاج بالموسيقى أكبر. تمت هذه الدراسة بغرض تقييم مدى تأثير صوت الأذان على مستوى القلق والألم لدى المرضى بعد الولادة القيصرية بطريقة التخدير النخاعي.

الوصول: ١٧ ربيع الاول ١٤٤٠  
وصول النص النهائي: ١٣ جمادى الاولى ١٤٤٠  
القبول: ٢٩ جمادى الاولى ١٤٤٠  
النشر الإلكتروني: ٢٩ شوال ١٤٤١

### الكلمات الرئيسية:

الألم

التخدير النخاعي

صوت الأذان

العملية القيصرية

القلق

**منهجية البحث:** في هذه الدراسة التي تمت بطريقة تجريبية سريرية، تم اختيار ٦٤ امرأة مسلمة متطوعة لإجراء عملية قيصرية في مستشفى المهدي في طهران عام ١٤١٨-٢٠١٧ بطريقة أخذ العينات العشوائية، وتم تقسيمهن إلى مجموعتين من ٣٢ حالة وشاهد. تم تشغيل صوت الأذان لإحدى المجموعتين بينما لم تسمع المجموعة الثانية صوت الأذان. كانت اداة جمع البيانات، استمارة والتناظر البصري للألم، ومن ثم تم تحليل المعطيات وتجزئتها باستخدام اختبار  $t$  المعتمد والاختبارات غير المعيارية. كما كانت القيمت الإحصائية  $P$  ذات دلالة احصائية ( $P < 0.05$ ). تمت مراعاة جميع الموارد الأخلاقية في هذا البحث وضافة الى هذا فإن مؤلفي البحث لم يشيروا الى اي تضارب في المصالح.

**الكشوفات:** كان متوسط درجة القلق بعد ساعة واحدة من العملية في المجموعة التجريبية أقل بكثير من المجموعة الضابطة ( $P < 0.001$ ). لم تختلف متوسط درجة الألم في الوقت الأساسي بشكل كبير بين المجموعتين ( $P = 0.20$ ) لكن بعد ١٥ دقيقة ( $P < 0.001$ )، ٣٠ دقيقة ( $P = 0.006$ ) و ٦٠ دقيقة ( $P = 0.04$ ) من اجراء العملية كان متوسط درجة الألم في المجموعة التجريبية أقل بكثير من المجموعة الضابطة.

**الاستنتاج:** تشير النتائج الى ان صوت الأذان كان مؤثرا في تقليل مستوى القلق والألم لدى المرضى.

يتم استناد المقالة على الترتيب التالي:

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## بررسی تأثیر نوای اذان در میزان اضطراب و درد بیماران بعد از عمل سزارین با روش بیهوشی اسپینال: مطالعه کارآزمایی بالینی شاهددار

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نشر الکترونیکی: ۱ تیر ۱۳۹۹

### واژگان کلیدی:

اضطراب

بیهوشی اسپینال

درد

سزارین

نوای اذان

### چکیده

**سابقه و هدف:** درد حاد و اضطراب پس از عمل سزارین موجب آثار نامطلوب روانی و جسمانی می‌شود. روش رایج تسکین درد و اضطراب، استفاده از دارو است که به دلیل عوارض داروهای بیهوشی، امروزه تمایل به روش‌های غیردارویی نظیر موسیقی‌درمانی بیشتر است. این مطالعه با هدف تأثیر نوای اذان در اضطراب و درد بیماران بعد از عمل سزارین با روش بیهوشی اسپینال انجام شد.

**روش کار:** در این پژوهش که از نوع کارآزمایی بالینی شاهددار است، ۶۴ نفر از زنان مسلمان داوطلب عمل سزارین در بیمارستان مهدیه تهران در سال ۹۷-۱۳۹۶ با روش نمونه‌گیری تصادفی انتخاب؛ و به دو گروه ۳۲ نفری مورد و شاهد تقسیم شدند. برای یک گروه نوای اذان پخش شد ولی برای گروه دیگر این نوا پخش نشد. ابزار گردآوری داده‌ها پرسش‌نامه و آنالوگ بینایی درد بود و داده‌ها با استفاده از آزمون t وابسته و آزمون‌های غیرپارامتری تجزیه و تحلیل شد. مقدار P نیز از نظر آماری معنی‌دار بود ( $P < 0.05$ ). در این پژوهش همه موارد اخلاقی رعایت شده است و مؤلفان مقاله هیچ‌گونه تضاد منافی گزارش نکرده‌اند.

**یافته‌ها:** میانگین نمره اضطراب یک ساعت بعد از عمل در گروه آزمون به‌طور معناداری کمتر از گروه کنترل بود ( $P < 0.001$ ). میانگین نمره درد در زمان پایه بین دو گروه اختلاف معنادار نداشت ( $P = 0.20$ ) اما ۱۵ دقیقه ( $P < 0.001$ )، ۳۰ دقیقه ( $P = 0.006$ ) و ۶۰ دقیقه ( $P = 0.04$ ) بعد از عمل در گروه آزمون به‌طور معناداری کمتر از گروه کنترل بود.

**نتیجه‌گیری:** نتایج به‌دست‌آمده در این مطالعه نشان می‌دهد که نوای اذان بر کاهش میزان اضطراب و درد بیماران مؤثر واقع شد.

استناد مقاله به این صورت است:

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