

## ORIGINAL ARTICLE

# The Effect of Ayurvedic Classical Music Therapy on the Level of Anxiety in Primary Infertility Mother at the Working Area of Medan Johor Puskesmas in 2020

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## ABSTRACT

**Introduction:** Infertility is not only caused due to female reproductive disorders. Several studies shows both husband and wife can be responsible for infertility. Infertility can also be due to idiopathic causes. The Agency for Health Research and Healthcare Quality in Ronchester, Minnesota recommended that anxiety management deals with relaxation therapies such as music and nature sounds. The purpose of this study was to determine the effect of classical Ayurvedic music therapy on anxiety levels in primary infertility mothers at Medan Johor Puskesmas in 2020. **Methods:** This research is a quasi-experimental study design and used a pre-test post-test nonequivalent group. The research subjects consisted of 20 primary infertility mothers in the Medan Johor Puskesmas in 2020. **Results:** The results showed that the average (mean)± standard deviation (SD) score before Ayurvedic therapy was 26.9500±2.48098 and after ayurvedic classical music therapy the average decreased to 17.9000±2.38195, this result showed a decrease in the mean value after giving ayurvedic classical music therapy. The results of statistical tests with paired *t*-test for samples in one group (paired sample test) showed the value of  $p=0.000$  ( $p<0.05$ ) and  $t$  count = 11.768 >  $t$  table 1.734 which proved that there was a significant difference between before and after giving Ayurvedic therapy on the level of anxiety in mothers with primary infertility. **Conclusion:** Present study shows that there is an effect of Ayurvedic music therapy on anxiety levels in primary infertile mothers in the Medan Johor Health Center 2020.

**Keywords:** Music, Ayurveda, Anxiety, Primary Infertility

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## INTRODUCTION

The history of Ayurveda was first pioneered by Dhanvantari around 1,500 BC. But, it was only around 200 BC that Ayurvedic medicine was presented in a written and comprehensive form. Experts estimate that ayurveda has a long lasting history (1). Infertility is not only due to the disorder in female reproductive disorders. Husbands contribute 25-40% of the incidence of infertility, wives 40-50%, both 10%, and idiopathic 10%. This proves that infertility is not only due to the fault of the woman (2). Infertility is the inability or decreased ability to produce offspring. Actually family planning for health is never complete without overcoming infertility problems. From a health point of view, family planning

must include the prevention and treatment of infertility (2).

Reproductive health problems that need to be addressed include infertility, sexually transmitted diseases (SDS), Premenstrual syndrome (PMS), pelvic inflammatory diseases (PID), and unwanted pregnancy and abortion. Infertility is a condition in which a married couple is not able to have children, even though they have had sexual intercourse 2-3 times a week for a period of one year, without using any kind of contraception (2,3). One research found that 20% of women suffered from violence and torture on account of being suspected of infertility (4). The anxiety felt by each infertile partner is quite reasonable due to various factors. For example, it can be due to pressure from family, relatives, and acquaintances (5).

For the society of Indonesia, this kind of question is a natural thing because in Indonesian system a husband

and wife are part of a large family, so this seems to be a common problem. Pressure from outside parties is often the source of problems in husband-wife relationships (3,5).

This matter of infertility is a very sensitive matter. This causes a lot of anxiety if a woman does not get pregnant. The Agency for Health Research and Healthcare Quality in Ronchester, Minnesota recommends that anxiety management can be accomplished with relaxation therapies such as music and nature sounds (1). Music of Nature's sound is a new type of music that has developed as a result of modernization of sound recording technology. This is an integrative form of classical music with natural sounds. The composition of these sounds are produced by natural phenomena, such as wind, rain, sea, rivers, animals and birds. Natural sounds also have different tempo, pitch, and rhythm that is generally slow or notes that are not suddenly high. Humans have a close relationship and contact with nature which is beneficial for health(1). Wilson in his book biophilia states that humans have an innate attraction to nature. As result their interactions with nature have a therapeutic effect. But the use of these natural sounds in clinical settings is still rare (6).

Infertility is not only happening due to female reproductive disorders so from this it can understand that infertility is not only fault of the woman or wife (3). From another research conducted in the Medan Johor Puskesmas, it was found that there were 15 mothers who experienced infertility and 5 of them were anxious about their condition because they received psychological pressure not only from among themselves, but also from their families and the community (7). It has also been reported that lavender and rose aromatherapy reduce pain and anxiety among postoperative patients (8). Therefore, the aim of this study is to determine the effect of ayurvedic therapy on the level of anxiety in women who experience infertility.

## MATERIALS AND METHODS

This research was a quasi-quantitative experiment with a pretest and posttest nonequivalent group design. This study was conducted to determine the symptoms or effects that arise as a result of anxiety and then its consequent treatment given by Ayurvedic Music Therapy that influences the anxiety of infertile mothers. In this study, measurements will be carried out during the pre-test and post-test using the Hamilton Rating Scale for Anxiety (HRS-A) measurement. HRS-A is used to see the severity of anxiety disorders, consisting of 14 research items according to existing anxiety symptoms (9,10,11). The research subjects in this study were 20 primary infertile mothers in the Medan Johor Community Health Center as respondents who would be given Ayurvedic music therapy intervention. The study was conducted by examining the anxiety of primary infertile mothers

before (pre-test) giving Ayurvedic music therapy. It was observed that Ayurvedic music therapy was administered for 2 weeks in the morning and evening, then the anxiety of infertile mothers was measured after (post-test) intervention was carried out. This study was approved by Research Ethics Committee, STIKes Mitra Husada Medan, Indonesia No. 579/STIKes-MHM/I/VI/2020 dated 4 June 2020.

## RESULTS

Table I shows the characteristics of the respondents in this study. It was found that among 20 respondents most are at the age of 25-35 years as many as 13 respondents (65%). The frequency distribution of respondents based on education reveal that the majority of the respondents were in high school, 11 respondents (55%). The frequency distribution of respondents based on work show that majority are in self-employed jobs, namely 9 respondents (45%).

**Table I: Distribution Frequency of Respondent's Characteristic**

Variable	Total	Percentage (%)
<b>Age</b>		
< 25 Years Old	6	30
25 - 35 Years Old	13	65
> 35 Years Old	1	5
Total	20	100
<b>Education</b>		
SD	1	5
SMP	6	30
SMA	11	55
PT	2	10
Total	20	100
<b>Profession</b>		
PNS	1	5
Entrepreneur	6	30
Enterpriser	9	45
Farmer	2	10
Didn't work	2	10
Total	20	100

Table II shows that the average score of not doing Ayurvedic therapy was  $26.95 \pm 17.90$  which is higher in comparison to average score doing Ayurvedic Therapy. Table III shows the result of data normality test before Ayurvedic classical music therapy with  $p=0.352$  ( $p>0.05$ ) and after Ayurvedic classical music therapy using Shapiro-Wilk test  $p=0.115$  ( $p>0.05$ ). Authors used the bivariate test with normally distributed data.

Based on Table IV, the paired  $t$ -test results show  $p$  value  $=0.000$  ( $p<0.05$ ) and  $t$  count = 11,768 > from  $t$  table = 1.734 which proves that there is an effect of Ayurvedic music therapy on the level of anxiety in mothers with primary infertility in the region at Medan Johor Public Health Center 2020.

**Table II: Anxiety level before and after Ayurvedic Therapy**

Therapy of Ayurveda	N	Anxiety level		
		Mean	Std Deviation	Std. Error Mean
Not doing	20	26.95	2.48	0.55
Doing	20	17.90	2.38	0.53

**Table III: Data of Normality Test: Effect of Giving Classical Music Therapy Ayurveda in anxiety level on Respondents**

Category	N	Mean	Value P
Before therapy of Ayurvedic Classical music	20	26.95	0.352
After therapy Ayurveda Classical music	20	18.45	0.115

**Table IV: The Effect of Ayurvedic classical music therapy on Anxiety Level of Infertile Primary Mother**

Category	N	Mean	T	Value P
Before therapy of Ayurvedic Classical music	20	26.95	11.768	0.000
After therapy of Ayurvedic Classical music	20	18.45		

## DISCUSSION

### Characteristics of research subjects

Based on the characteristics observed it was found that the majority were 25-35 years old, the majority had high school education and the majority had self-employed jobs.

### Level of anxiety before and after Ayurvedic Therapy

According to Table IV the average anxiety score before Ayurvedic therapy is  $26.95 \pm 17.90$  which is higher than the average after Ayurvedic therapy. Anxiety is a feeling of fear that is unclear and unsupported by the situation. Anxiousness is an individuals feelings when the patient uncomfortable or afraid, but will not be able to understand the reason for such a condition. Anxiety has no clear, identifiable stimulus (8). Anxiety occurs as a result of excessive autonomic reactions with immediate action of sympathetic nervous system that increases the release of catecholamine and nor epinephrine (5). Anxiety affects thinking, perception and learning. Anxiety tends to cause confusion and distortion of perceptions of time and space. This distortion can interfere with the learning process by reducing concentration, memory, and interfering with the ability to connect one thing to another, namely making associations (3).

In general, there are two theories regarding the etiopathogenesis of anxiety, namely psychological theory and biological theory. Psychological theory

consists of three main groups, namely psychoanalytic theory, behavioral theory and existential theory. Meanwhile, biological theory consists of the autonomic nervous system, neurotransmitters, brain imaging studies, and genetic theory (7).

Music, as a therapy has been studied for a long period of time, to reduce anxiety and has been used because of its great benefits as medicine. Music was found to effect the central nervous system and thus it will helps in reducing blood pressure (12). Another research result found that the classical music effect on blood pressure. It helps to decrease the blood pressure in elderly person (13).

According to the emotional theory of Berlyne (14), listening to music is related to factors such as complexity, familiarity, and a penchant. The degree of music sound will determine whether the music is experienced as enjoyable or not (14).

From another research it was found that the giving musical therapy to the intervention group, namely music with a tempo that corresponds to the heart rate of 60 beats / minute. This was found to reduce anxiety because musical vibrations can stimulate the brain's nerves to oscillate and facilitate physical and psychological wellbeing. Tones stimulate alpha waves which provide a calming, comforting, serene and energizing effect to cover, distract and release tension. One of the soft rhythmic music that can calm the atmosphere is Ayurveda (15).

This study is also in accordance with the research conducted by Paramita et al., where musical therapy interventions were provided to lower anxiety levels among 40 subjects divided into 2 groups. Measurement was done using the State Trait Anxiety Inventory from Y (STAI). The results of data analysis with ANACOVA show that music therapy has an effect on reducing the patient's anxiety level (16).

### The Effect of Ayurvedic Classical Music Therapy on Anxiety Levels in Infertility Mothers

Based on the calculation, it was found that the total score on the initial test was greater than the final test. In the present study results statistical analysis with paired t-test for samples in one group (paired sample test) showed the value of  $p=0.000$  ( $p<0.05$ ) and  $t$  count =  $11.768 > t$  table 1.734 which proved that there was a significant effect between before and after giving Ayurvedic therapy on anxiety levels in mothers with primary infertility in the Medan Johor Health Center 2020. According to research result it can be found that there are changes among mothers with primary infertility, after giving ayurvedic therapy such as feeling comfortable, relaxed and not feeling anxious.

Music with sounds of nature is a new type of music with modernization of sound recording technology,

and an integrative form of classical music with natural sounds. Sound compositions are produced by natural phenomena, such as wind, rain, sea, rivers, animals, and birds. Natural sounds also have different tempos, pitches, and rhythms that are generally slow or a tone that is not suddenly high. Humans have a close relationship and contact with nature which is beneficial for health (1). In addition, music can provide positive feelings and improve mood so that it can automatically increase the ability of clinical self-improvement such as pain and anxiety( 7).

Another research done by Wijayanti's (17) found that the natural musical sound reduce anxiety in patients. According to Chan et al., anxiety can increase stimulation of the sympathetic nervous systems, breathing and oxygen demand. Ayurvedic musical therapy that comes from nature increase the myocardial stimulation and have a good synchronization effect with mechanical ventilation which increase comfort (18).

This controlled trial provides preliminary evidence that classical ayurvedic therapy during pregnancy provides quantifiable psychological benefits. The findings can be used to encourage pregnant women to use this cost-effective method of musical therapy in their daily life to reduce their stress, anxiety and depression. Further research is needed to test the long-term benefits.

## CONCLUSION

Musical therapy is effective in various psychiatric disorders. But research has not been done to assess effect of ayurvedic classical music on anxiety. The use of pharmacotherapy in the psychiatric treatment has some disadvantages. It has side effects like poor compliance to the medication regime and long response time. Therefore, the results of the present research revealed that ayurvedic classical music is effective in reducing anxiety levels and increased well-being levels among women with infertility. From the research results it can be concluded that music has a favorable effect on human body. Recommendations from this study is that the present study is expected to provide therapy in cooperation with the Health Office, especially Ayurvedic therapy to mothers who have primary infertility anxiety levels. Besides, further research in a broader scale is needed to obtain more accurate results.

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