

## ORIGINAL ARTICLE

# The Effect of Mozart's Music, Kitaro Instruments, and Spiritual Music on Menopausal Depression

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## ABSTRACT

**Introduction:** In menopause, women experience various physical and psychological changes such as weight, blood pressure and depression. Even though there is proof that weight, high blood pressure and depression were a problem, only a few give attention to this fact. This paper aims to analyze the effect of Mozart's music, Kitaro instruments, and spiritual music on menopausal depression. **Materials and methods:** This research employed the quasi-experiment with a pretest-posttest design. Population are women who have menopause. Sample are menopause women and agree to join this research. Sample are 60 women, with 20 women each group. There was 3 groups with different intervention. Group A given Mozart's music, group B given Kitaro Instrument and group C given spiritual music. Each piece of music was given 30 minutes each day for three constructive weeks. Body weight, blood pressure and depression were measured before and after 3 weeks of intervention. **Results:** The mean body weight of group A (Mozart's music), pre- and post-test was higher than that of other music intervention groups. The blood pressure of group A (Mozart's music) was better compared to that of other music intervention groups. There was a decrease in the systole mean pre- and post-test by 9 mmHg while the diastole decreased by 3 mmHg. Spiritual Music was better at decreasing depression compared to other groups. Kitaro music was good to decrease depression but still under the spiritual music. **Conclusion:** Mozart's music was better at increasing body weight and decreasing blood pressure. Meanwhile, Spiritual Music was better at decreasing depression.

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negative impacts to the quality of life. Apart from that, it increases the occurrences of illnesses and death (2). Even though there is proof that depression is a problem, only a few give attention to this fact (3).

## INTRODUCTION

Menopause is a gradual transition process from a productive period to a non-productive period due to a lack of estrogen and progesterone hormones (1). Menopause is a critical period in a woman's life that commonly starts between ages 45 to 55 years old. In menopause, women experience various physical and psychological changes. This may result in various symptoms, such as excessive perspiration, an increase in heart beat rate, migraines, becoming easily offended, fatigue, and feeling demotivated. In this period, women usually feel that they have become old and they are afraid that they cannot fulfill the sexual desires of their husbands, which leads to depression. The impacts of depression in menopausal women are very detrimental. Untreated depression may result in an increase in the usage of health and medical facilities, which brings

The illness of depression can be handled using non-pharmacological or psychological therapies, such as interpersonal therapy, group counselling and social support, Homor therapy, cognitive therapy, and music relaxation therapy. Depression can also be handled through changes in life patterns such as doing sports, dieting, praying, having the courage to change, and recreation (4).

From initial research conducted by village midwives through a social approach in Puntukdoro Village, Magetan Regency, East Java Province, Indonesia, it was found that women experienced symptoms such as suffering from insomnia, a feeling of being pressured, experiencing fatigue, feeling aches and pains, disorders in undergoing sexual intercourse, and having a history of hypertension. The women in that village are hard workers. They work as farm workers from 6 a.m. to 4

p.m. Sometimes, the produce obtained from the harvest is not according to the plan. Therefore, many of them complain and this increases their blood pressure. Thus, the researcher is interested in studying the level of depression in menopausal women in that area.

Music can be used as an alternative way to minimize complaints during menopause, for example lowering blood pressure and depression. Music therapy has good potential as a complementary therapy, as a facilitator, and even as a non-pharmacological alternative therapy. The addition of musical therapy in treating depression patients can increase the analgesic effect, which is an effect of comfort that can decrease the level of depression as well as increase one's confidence. In this study, 3 types of music were used, namely Mozart, Kitaro and religious music. This research aims to analyze the effect of Mozart's music, Kitaro instruments, and spiritual music on menopausal depression. The specific aim of this research is to analyze the effect of Mozart's music, Kitaro instruments, and spiritual music on menopausal depression before and after treatment and analyze the effectiveness of changes in the level of depression between the intervention group and the control group.

**MATERIALS AND METHODS**

**Study Design**

This research employed the quasi-experiment with a pretest-posttest design. An intervention group was given therapy using Mozart's music, Kitaro instruments, and spiritual music. This study was held in Magetan regency, East Java, Indonesia on March 2023 until November 2023. Sample was menopause women and agree to join this research chosen by consecutive sampling. Informed consent used written informed consent. Total sample was 60 menopause women, with 20 women each groups. There was 3 groups with different intervention. Group A given Mozart's music, group B given Kitaro Instrument and group C given spiritual music. Each piece of music was given 30 minutes each day for three constructive weeks. Body weight, blood pressure and depression were measured before and after the intervention.

**Data Collection And Analysis**

To collect data for this study, we used a developed questionnaire consist of name, age, address, and other assessment including body weight, blood pressure and MRS. A digital scale was used for measure body weight and sphygmomanometer was used for measure blood pressure. The instrument for measuring depression was used the Menopause Rating Scale (MRS) questionnaire.

After data collected, we sought the mean pre- and post-intervention which was then examined using the t-test statistic examination.

**Ethical Clearance**

This study was approved by Research Ethics Committee, Poltekkes Kemenkes Surabaya No.EA/1969/KEPK-Poltekkes\_Sby/V/2023.

**RESULTS**

**Respondent characteristics based on age**

The majority of respondents were 45-55 years old, 65% in group A, 60% in group B, and 40% in group C. The homogeneity test showed a result of 0.26 (>0.05). This means that each group were similar.

**Table I: Respondent characteristics based on age**

Age characteristics of respondents (years)	Group A		Group B		Group C		Total		Homogeneity
	F (x)	%	F (x)	%	F (x)	%	F (x)	%	
<44	2	10	7	35	4	20	13	21.7	0.26
45 – 55	13	65	12	60	8	40	33	55	
>56	5	25	1	5	8	40	14	23.3	
Total	20	100	20	100	20	100	60	100	

**Respondent characteristics based on body weight**

It was shown that group A (Mozart Music) experienced a body weight increase of 1000 grams from the Mean of the pre- and post-treatment. The p-value was 0.000 < 0.05. Then, Group B (Kitaro Instrument) experienced a body weight increase of 0.5 grams from the Mean of the pre- and post-treatment. The p-value was 0.000 < 0.05. Next, group C (Spiritual Music) experienced a body weight increase of 0.45 grams from the Mean of the pre- and post-treatment. The p-value was 0.000 < 0.05.

**Table II: Respondent characteristics based on body weight**

Group	Pre-	Post-	Δ	t	Lower	Upper	p (value)
	Mean ±SD	Mean ±SD					
Group A	52.6 ±9.92	53.6 ±9.34		25.6	48.00	57.29	0.000
Group B	58.7 ±14.7	58.75 ±14.72		17.8	51.8	51.86	0.000
Group C	58.3 ±10.8	58.75 ±11.04		23.7	53.5	63.9	0.000

**Respondent characteristics based on blood pressure**

It was shown that group A (Mozart Music) experienced a blood pressure decrease by 9 mmHg from the systole means of the pre- and post-treatment. There was an increase of the diastole mean by 3 mmHg. Then, Group B (Kitaro Instrument) experienced a blood pressure decrease by 5 mmHg from the systole means of the pre- and post-treatment. There was an increase of the diastole mean by 1 mmHg. Lastly, Group C (Spiritual Music) experienced a blood pressure decrease by 5 mmHg from the systole means of the pre- and post-treatment. There was an increase of the diastole mean by 3 mmHg.

**Table III: Respondent characteristics based on blood pressure**

Group	Pre-	Post-	Pre-	Post-
	Mean ±SD Systole	Mean ±SD Systole	Mean ±SD Diastole	Mean ±SD Diastole
Group A	145±25.7	136±17.8	92±11.3	89±12.3
Group B	140±27.2	135±22.4	90±16.1	89±12.7
Group C	135±29.1	130±26.2	86±16.9	83±15.4

**Respondents' level of depression**

Results showed that the level of depression of Group A (Mozart Music) experienced a decrease of 11.3 from the mean of the pre- and post-treatment with a p-value of  $0.000 < 0.05$ . Then, results showed that the level of depression of Group B (Kitaro Instrument) experienced a decrease by 7.3 from the mean of the pre- and post-treatment with a p-value of  $0.002 < 0.05$ . Next, results showed that the level of depression of Group C (Spiritual Music) experienced a decrease of 12.5 from the mean of the pre- and post-treatment with a p-value of  $0.018 < 0.05$ .

**Table IV: Respondents' level of depression**

Group	Pre-	Post-	Lower	Upper	p (value)
	Mean±SD	Mean±SD			
Group A	18.1±9.58	6.8±3.6	8.0	14.4	0.000
Group B	15.7±8.99	8.4±5.7	4.8	9.7	0.000
Group C	19.8±6.57	7.3±3.1	9.9	15.3	0.018

**DISCUSSION****Respondent characteristics based on age**

The largest age group of respondents were 45 to 55 years old, which reached 55% of the total respondents. This age group is a critical and complex period in women's lives as they are experiencing a gradual transition process from the productive period to the non-productive period. They experience many physical changes that will then influence their psychological health. This may result in various symptoms, such as excessive perspiration, increasing heartbeat rate, migraines, being easily offended, feeling fatigued, and feeling demotivated. In this period, women usually feel that they have become old and they are afraid that they cannot fulfill the sexual desires of their husbands.

Women usually experience menopause when they face a decline in fertility. This causes them to feel worried, anxiety, and – to some — even depression (1). Research results showed that menopausal women have a greater chance of experiencing depression during menopause compared to the previous periods in their lives. The forms of depression in menopausal women can be seen in their declining confidence in the abilities of their reproductive organs. They may feel sad and even depressed because they feel less attractive or because they are suffering from chronic diseases. Apart from that, they may feel pressured as all of their activities and roles

have been taken over by other people.

**Respondent characteristics based on body weight**

Results showed that the weighted mean of the Mozart music intervention group was greater than that of other musical groups (Kitaro instruments and spiritual music). Listening to Mozart's music may create a calm and peaceful ambience in the listener's body. Mozart's music has a light melody that is neither flat nor complicated. Apart from that, it does not evoke a sharp decrease or increase in emotions. It is not too soft either. Thus, it can regulate and influence the flow of electrical waves in the right and left brains. This creates a balance that may lead to a calm and peaceful condition.

When listening to Mozart's music, the impulse listened to will be delivered by afferent nerves that regulate the listening function of the subconscious brain. This will change the brain waves into alpha brain waves. The level of serotonin as a transmitter that is responsible for the events of hunger and mood changes increases (5). Then, the serotonin in the body will be changed into the melatonin hormone that has regulatory effects on body relaxation. It will decrease the depression felt by respondents due to a change in mood (6,7).

Music can influence the autonomous nervous system (the sympathetic and the parasympathetic nervous systems). Thus, it gives a relaxation response in the body. Eating while listening to music can significantly increase the appetite of menopausal women, resulting in an increase in their body weights.

**Respondent characteristics based on age**

In an initial research, it was found that 30% of respondents experienced hypertension. Then, it was shown that the systole and diastole blood pressure of respondents who listened to Mozart music experienced a significant decrease. The systole decreased by 9 mmHg, while the diastole decreased by 3 mmHg. Mozart's music is a health therapy treatment that aims to increase the physical and mental capabilities of a person. It has positive impacts in decreasing blood pressure (hypertension).

Hypertension may be influenced by several factors, including age, gender, and lack of physical activity (8). Based on the age factor, this is in line with the previous research that was exposed by Kartikasari (9). She found that people over 60 years of age are at a greater risk of suffering from hypertension by 11.340 times compared to people under 60 years of age. According to Nurarif and Kusuma (10), an aged person will experience declines in their bodily functions. For instance, the elasticity of their aorta walls will decline, their heart valve will thicken and stiffen, the ability of their heart to pump blood will decrease by 1% each year after 20 years, and the elasticity of their blood veins will decrease which will

increase the resistance of the capillary blood veins. This results in an increase in the blood pressure.

Based on gender, Rustiana (11) found that the prevalence of hypertension is greater in women than men. According to Dalimartha (12), women experience an increase in blood pressure after experiencing menopause. This is because, during menopause, the level of estrogen hormone decreases, which may result in endothelial functions. Therefore, the activities of the sympathetic nerves increase, which will then issue a renin stimulant. The renin stimulant will be changed into angiotensin 2. Thus, this leads to vasoconstriction which will increase the blood pressure.

Concerning physical activities, research conducted by Anggara (13) found that people who do not regularly carry out sports have a greater risk of suffering from hypertension 44.1 times compared to people who have a regular habit of doing sports. According to Garnadi (8), the lack of physical activities may lead to an untrained heart. The blood veins are stiff and the blood does not circulate well, leading to hypertension.

Listening to classical music can increase the life quality of menopausal women. This is according to the theory delivered by Zuhad (14), who stated that classical music has a tempo of around 60 beats/minute and it is relaxing. If music is too fast, the stimuli will subconsciously be absorbed by the body, making people's bodies follow that rhythm. Thus, by listening to music, the limbic system will be activated and that individual will be relaxed. Here, the blood pressure may decrease. Apart from that, the sound of music can stimulate the body to produce the nitric oxide molecule that can work in the vascular tone to decrease blood pressure (9).

Mozart's music also functions to regulate hormones that are linked to stress, namely adrenocorticotrophic hormone, prolactin hormone, and growth hormone. Thus, it can increase the level of endorphins in the body. This can decrease the level of pain and make a person feel calmer. As a result, it will prevent and decrease hypertension (15).

### **Respondents' level of depression**

Results showed that the level of depression of Group B (Spiritual Music) experienced a decrease of 12.5 from the mean of the pre- and post-treatment with a p-value of  $0.018 < 0.05$ . According to Erkkilä (14) and Siedliecki and Good (15), music therapy has good potential as a complementary therapy, as a facilitator, and even as a non-pharmacological alternative therapy. The addition of musical therapy in treating depression patients can increase the analgesic effect, which is an effect of comfort that can decrease the level of depression as well as increase one's confidence.

Music can have a role as a facilitator, where it can

emotionally touch people and reach their deepest feelings. Thus, it can become an instrument for patients to show their nonverbal expressions. Apart from that, patients are more inclined to open up through music (18). Therefore, musical therapy prevents polypharmacy which is normally carried out in treating menopause.

The brain has four waves with different specifications. The alpha wave is for relaxation. The beta wave is linked to the mind. The theta wave is linked to stress. Meanwhile, the delta wave is linked to sleepiness. In patients with depression, there is a multifunction and malformation of the subcortical limbic and the frontal part of the brain, which results in changes in the biochemical functions. In an electroencephalography study, patients with depression show an asymmetry in the alpha and hypoactivation of the left brain, which results in the psychopathology of the patients' emotions, leading them to suffer from depression (16). In line with *Music Mood and Movement Therapy*, when the sound stimulus (music) arrives in the limbic system, it will call the deepest memories, which results in mood changes. Thus, the right choice in music may bring therapeutic effects in the form of depression treatment (18).

The music therapist uses improvisational, re-creative, or compositional methods. Improvisational methods in music therapy include any experience by which the patient actively participates in spontaneous music-making with the music therapist or with other individuals while playing instruments, vocalising, or sounding their bodies or other objects. Re-creative methods involve reproduction of pre-composed musical material vocally or instrumentally. With compositional methods, the process of composition helps patients generate and refine personal opinions, ideas, and fantasies, and puts them into a workable musical structure. Previous literature, namely from Chan et al. (18), Guetin et al. (19), and Purbowinoto and Kartinah (20) also found that prescribing musical therapy to menopausal women suffering from depression can decrease the levels of depression and make them into healthy, active, and independent women.

### **CONCLUSION**

Mozart's music was better at increasing body weight and decreasing blood pressure compared to Kitaro Instruments and Spiritual Music. Meanwhile, Spiritual Music was better at decreasing the level of depression in menopausal women compared to Mozart's music and Kitaro Instruments. Each music has its advantages, so women can choose music based on their goals. The authors suggest that musical therapy should be given to all menopausal women soon after they give birth. Health services need to prepare facilities and human resources to give relaxation therapy, namely musical therapy as an alternative therapy. Then, nursing education institutions that always follow evidence-based scientific

developments especially those related to nursing should make musical therapy a trend issue and turn it into a local learning material content for students. Lastly, future research on the effectiveness of musical therapy should use menopausal women as subjects.

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