



COMPARISON OF LISTENING MOZART MUSIC WITH MUROTAL AL QURAN ON THE PAIN OF HYPERTENSION PATIENTS

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ABSTRACT

The number of people with hypertension is increasing over time. The most frequent complaint experienced by people with hypertension is pain. Complications of pain can be avoided through correct pain management. Listening to music and murotal Al Quran on some researches can provide a relaxation effect that potentially reduces pain. This study was aimed to identify differences effect in listening mozart music with murotal Al Quran in order to purifying pain of hypertensive sufferers. This research was quasi experiment with pre-test and post-test with two groups design. Data were collected using consecutive sampling technique with 15 respondents for each group. Pain measurement was taken twice before and after listening to music mozart or murotal Al Quran for 15 minutes. Statistic test using mann whitney showed that there was significant mean difference of pain before and after treatment in the murotal group of Al Quran (value $p = 0,002$). While in the mozart group the difference of pain before and after treatment was not significant ($p = 0,051$). Listening to murotal Al Quran is more effective in reducing pain in hypertensive sufferers compared to that in mozart music.

Keywords: hypertension, mozart music, murotal Al Quran, pain

ABSTRAK

Jumlah penderita hipertensi terus mengalami peningkatan. Salah satu keluhan yang sering dialami oleh penderita hipertensi adalah rasa sakit. Komplikasi dari nyeri dapat dihindari melalui manajemen nyeri yang benar. Mendengarkan musik dan murotal Al Quran pada beberapa penelitian dapat memberikan efek relaksasi yang berpotensi mengurangi rasa sakit. Penelitian ini bertujuan untuk mengidentifikasi perbedaan dalam efek mendengarkan musik mozart dengan murotal Al Quran dalam memurnikan rasa sakit penderita hipertensi. Penelitian ini merupakan eksperimen semu dengan pre test dan post test dengan dua desain kelompok. Data dikumpulkan menggunakan teknik consecutive sampling dengan 15 responden untuk setiap kelompok. Data nyeri masing-masing responden diambil dua kali sebelum dan sesudah mendengarkan musik mozart atau murotal Al Quran selama 15 menit. Uji statistik menggunakan mann whitney menunjukkan bahwa ada perbedaan rerata nyeri sebelum dan sesudah perlakuan pada kelompok murotal Al Quran (nilai $p = 0,002$). Sedangkan pada kelompok mozart perbedaan nyeri sebelum dan sesudah perlakuan tidak signifikan ($p = 0,051$). Mendengarkan murotal Al Quran lebih efektif dalam mengurangi rasa sakit penderita hipertensi dibandingkan dengan musik mozart

Kata kunci : hipertensi, musik mozart, murotal Al Quran, nyeri

BACKGROUND

Hypertension has become a global problem and is one of the important factors as the trigger of Non Communicable Diseases such as heart disease, stroke and others that are currently the number one cause of death in the world (Budiyanto, 2015). To date, hypertension is still a big challenge in Indonesia with a prevalence of 25.8% (Depkes RI, 2013).

Hypertension or high blood pressure is an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg in two measurements with an interval of five minutes in a moderately restful state. Hypertension is a silent killer where symptoms can vary with each individual and are almost identical to other diseases such as headache / heaviness in the back of the neck, vertigo, palpitations, fatigue, blurred vision, ringing ears (tinnitus) and epistaxis (Badan Penelitian dan Pengembangan Kesehatan, 2013).

Headache is one of the most common symptoms in patients with hypertension. Symptoms that are often experienced hypertension sufferers in America include headaches (40%), palpitations (28.5%), pain (20.4%), dizziness (20.8%) and tinitus (13.8%) (Syiddatul B, 2017). Based on the survey conducted by Rizaldy (2013) in Syiddatul (2017), among people over 60 years old, the most frequent symptoms experienced is neck pain. Pain management in elderly hypertension is a matter that needs attention because a correct pain management can control pain and may avoid complications.

Inadequate treatment of hypertension can trigger damage to various organs of the body such as heart, brain, and kidneys. Stroke, kidney failure and heart attack are some serious health problems that can appear in people with hypertension. Therefore, a proper handling of hypertensive patients is needed (Annesi et al., 2014).

One complaint that is often felt by people with hypertension and that can exacerbate hypertension is pain or discomfort in the body. This pain sensation

will trigger the release of stress hormones which stimulates the sympathetic nervous system. Both mechanisms will trigger the occurrence of vasoconstriction that further worsen the condition of hypertension. Thus, the management of pain in people with hypertension is very important (Awaludin, Upoyo, & Purnawan, 2013).

The use of pharmacological methods in the treatment of pain has proven to reduce or eliminate pain quickly. However, there are side effects that are bad for health and will increase weight if used continuously in the long term. Therefore, non-pharmacologic methods are needed to reduce or eliminate pain complaints in hypertension patients. Non-pharmacological therapy that can be used as a complementary therapy to reduce pain is music therapy and murotal Al Quran (Joke, Cheryl, & Noah, 2013; Taha, Alshaikhli, Yahya, Pammusu, & Alarabi, 2014).

van Dyck et al. (2017) stated that classical music (mozart) is believed to have positive effects on human life through the strains of the tone mechanism. The influence of classical music (mozart) are as entertaining effect, learning support effect and as an enriching effect. Classical music (mozart) with a gentle rhythm can affect the heart rate so that it creates calmness that is heard through the ear. This will immediately enter the brain and immediately processed so as to produce a very good effect on one's health (Aini, Hariyanto, & Ardiyani, 2017).

Murotal therapy can provide serenity, calmness and reduce anxiety. This peaceful and comfortable condition stimulates expenditure neurotransmitter analgesia (endorphin, enkhepalin, dinorpin) there by reducing pain (J Elzaky, 2011; Abu-Ras & Laird, 2011). Giving reading verses holy Quran (murottal) by reading Juz 'Amma by the Sheikh Al-Ghomidy from The Middle East played through tape recorder and earphone to patient post hernia surgery every 6 hours for three times with 15 minutes each after obtaining analgesic administration can be used as spiritual healing for moslem patients to reduce pain post hernia surgery (Sodikin, 2012).

This study aimed to compare influence of listening to mozart music and Quran in reducing pain in hypertension patients. Murottal therapy surah Ar-Rahman can lower blood pressure in patients with hypertension. Murottal therapy Surah Ar Rahman is also free of side effects which is safe and is easy conducted (Mayrani and Hartati, 2013 in Widyastuti, Hastuti, & Adiningsih, 2015). Al-Qur'an chants physically contains an element of human voice which is an amazing healing instrument that can easily be accessed. Its sound can reduce hormones stress, activate natural endorphins, increase feeling of relaxation, and distract from fear, anxiety and tension, improve body chemical system so that lower blood pressure as well slow breathing, heart beating, pulse and brain wave activity (Siswatinah, 2011). According to Campbell (2001) in Salim (2013) various tempo musics have physiological effects on the body, including on heart rate and blood pressure by beating following the frequency, tempo and volume of music. The heart tends to follow and try to match the tempo of a sound.

Surah Ar-Rahman used in the research of Widyastuti, Hastuti and Adiningsih (2015) has a duration of 11 minute 19 seconds with a tempo of 79.8 beats per minute (bpm). Tempo 79.8 bpm is a slow tempo with ranges between 60 to 120 bpm. Slow tempo is the same tempo with a human heartbeat, so the heart will synchronize the beats according to the tempo of the sound (Mayrani & Hartati, 2013). This is in line with research conducted by Salim (2013) about the influence of tempo and fast music slow to blood pressure and heart rate, which results that fast tempo can increase blood pressure and heart rate frequency, whereas slow tempo music has an effect the opposite can be lower blood pressure and frequency heart rate and brain waves (van Dyck et al., 2017).

METHOD

This research used quasi experiment design with approach of two groups pre & posttest design. The

variables observed were pain scale performed before and after respondents were given treatment. The pain scale used is Visual Analog Scale (VAS) as previous research has been done by Awaludin et al (2013).

Instruments used in this study are patient identity data questionnaires, Visual Analog Scale (VAS), Omron brand digital tensimeter, mp3 player and head phone. Classical music used is Mozart and murotal Al Rahman. Mozart classical music therapy used is classical music created by Wolfgang Amadeus Mozart who has a tempo of 114.79 beats per minute which is played through digital media players and earphones for 15 minutes. Murotal therapy is Ar Rahman with qory Muzammil Hasballah which has been validated at the Mathematics and Natural Sciences Faculty of Jenderal Soedirman University physics laboratory which has a tempo of 95.99 per minute which is played through digital media players and earphones for 15 minutes. Pain was measured using the VAS values consist of : 0 - 3 = mild pain, 4 - 6 = moderate pain and 7 - 10 = severe pain. Blood pressure was measured using Omron brand digital tensimeter.

The hypothesis formula of this research was if the value of $p < 0,05$ then hypothesis zero (H_0) rejected and hypothesis one (H_1) accepted. This showed a significant difference in mean pain reduction before and after treatment in murotal group of Al Quran and mozart music group.

The sampling technique used was consecutive sampling. Roscoe in Sugiyono (2012) suggested the number of samples for experimental research using the experimental group and the control group, respectively between 10 - 20. Researchers determined the number of samples 15 for each group according to the inclusion and exclusion criteria. The inclusion criteria in this study included: (a) systolic blood pressure >140 mmHg and / or diastolic blood pressure >90 mmHg; (b) ages ≥ 45 years. While the exclusion criteria include: (a) getting another complementary therapy, (b) the patient refuses to participate (c) the presence of

complications.

Differences of pain before and after treatment in mozart group and murotal group of Al Quran were analyzed using Wilcoxon test since data were not normally distributed despite data transformation process (Sopiyudin, 2012). This research has earned the certificate of passing ethical test from Medical Faculty of Sebelas Maret University and RSUD Moewardi Surakarta with number 218 / II / HREC / 2018 dated February 20, 2018.

RESULT

This research was conducted in Sumampir Village of North Purwokerto Subdistrict on March 12 - May 13, 2018. The subjects were hypertension patients in Sumampir Village of North Purwokerto Subdistrict in accordance with the inclusion criteria established by the researcher.

Table 1. Age of Respondent

| Group | Mean | SD | p |
|---------|------|-------|-------|
| Mozart | 73 | 11.86 | 0.871 |
| Murotal | 64.6 | 11.33 | |

Table 1 showed that the mean age of hypertensive patients in the murotal group Ar Rahman was 73 years and in the Mozart music group was 64.6 years. The age characteristics of the respondents of both groups are homogeneous. This was indicated by the p value = 0.871 (> 0.05)

Table 2. Gender Characteristics

| Charact eristics | Treatment | | Control | | p |
|---------------------|-----------|------|---------|------|------|
| | n | % | n | % | |
| Man | 4 | 26.7 | 2 | 13.3 | 0.99 |
| Woman | 11 | 73.3 | 13 | 86.7 | |
| Total | 15 | 100 | 15 | 100 | |

Table 2 showed that both groups have the same or homogeneous sex characteristics. This was indicated by the value p = 0.999.

Table 3. Differences Of Pain Before and After Treatment

| Variable | n | Median | Min- Max | p |
|----------|----|--------|-------------|------|
| Mozart | 15 | 2 | 0 – 4 | 0.05 |
| Before | 15 | 1 | 0 – 3 | |
| After | | | | 1 |

| Variable | n | Median | Min- Max | p |
|----------|----|--------|-------------|------|
| Murotal | 15 | 2 | 0 – 6 | 0.00 |
| Before | 15 | 2 | 0 – 3 | |
| After | | | | 2 |

Table 3 shows that respondents who listened to mozart music did not experience a significant pain decrease (p = 0.051). Different things experienced by the group of respondents who listen murotal Al Quran for 15 minutes who experienced a significant pain decrease. This was evidenced by the value of p = 0.002. These results proved that listening to murotal Al Quran was considered more effective in reducing hypertensive pain compared to listening to mozart music.

DISCUSSION

Age of respondents

The results showed that both groups had a homogeneous age average. The mean age of the two groups was in the elderly age range, ie 73 years for the murotal group and 64.6 years in the mozart group. One of the risk factors for hypertension is age. The high incidence of hypertension in the elderly associated with the presence of increasingly severe atherosclerosis with age. Atherosclerosis which is accompanied by thickening of blood vessels causes decreased elasticity of blood vessels. The stiffness of these blood vessels is then one of the factors of high blood pressure in the elderly (Potter & Perry, 2005).

In addition to being associated with an increased risk of hypertension, age is also associated with a person's susceptibility to experience pain. Old age is related to the vulnerability to things that cause pain. Similarly, an early age is at higher risk of painful exposure resulting from the inability to protect the pain and express it (Potter & Perry, 2005). Although age affects blood pressure in hypertension patients, age characteristics in both groups are homogeneous. So the age factor does not result in bias results, because the age distribution in both groups is the same.

Gender

The results showed that respondents in both groups were dominated by women. However, according to Potter & Perry (2005), theoretically the incidence of hypertension between men and elderly women is relatively the same. This is because in women no longer produce adequate hormone estrogen as before menopause. This estrogen hormone has an effect on blood-staining elastic. If the hormone is reduced, the blood vessels become stiff that leads to an increase in blood pressure. The dominance of elderly women in this study is merely because they are more active in social activities such as Prolanis (The Chronic Disease Management Program) at Puskesmas. This data is consistent with research by Awaludin, Upoyo, & Purnawan (2013), where the number of female respondents was 81,2% out of 16 respondents.

The results showed that the decrease of pain significantly occurred in the group of respondents who listen to murotal AI Quran for 15 minutes (p value = 0.002). While the group of respondents who listened to music mozart for 15 minutes has p value = 0.51, so it can be concluded that there was no significant difference in this group (Sopiyudin, 2012). In previous studies, music therapy is actually proven to reduce pain in some conditions. A research conducted by Zulkhairi, Hendra, & Fauzan (2015) showed that music therapy can reduce pain in patients after suturing the wound. However, in other studies, music therapy did not have an effect on the improvement of pain and anxiety in birth patients who received epidural injections (Drzymalski et al., 2017).

The difference in influence between listening to murotal and listening to music may caused by two things, namely differences in tempo and spiritual effects produced by both methods. According to van Dyck et al. (2017) there is a musical tempo as the main factor considered to be associated with relaxation effects or arousal effects. The lower the musical tempo the stronger the effect of relaxation. It is proven that in

quiet condition, the frequency of heart rate is lower than when listening to music.

Checking the tempo of mozart music and murotal AI Quran is done by using mix master BPM analyzer computer application. The app serves to measure the speed of beats per minute or the tempo of an audio file. Murotal AI Quran used in this research is a surah Ar Rahman with qori (reader) Muzamil Hasbalah. The tempo of murotal AI Quran is 95.99. While the relaxation music of Mozart has a tempo of 114.79. Music with a slow tempo produces a relaxation effect so that it can reduce heart rate, breathing frequency, blood pressure, and anxiety. This condition will inhibit the release of stress hormones while stimulating parasympathetic nervous system and trigger the release of beta endorphin. A decrease in heart rate and dilation of blood vessels cause a decrease in blood pressure while the release of endorphin hormones is useful in reducing the sensation of pain (Van Dyck et al., 2017).

The analgesic effect of listening to Qur'an has been demonstrated in Wahida, Nooryanto, & Andarini (2015) research. The study was conducted on active phase maternity mothers by whispering murotal AI Quran for 15 minutes. The study reinforced evidence that listening to murotal AI Quran can stimulate beta endorphin hormone. This hormone has an important role in inhibiting excitatory pain (Berry, Chapman, Covington, Dahl, & Katz, 2010). Endorphins are endogenous opium peptides that act as neurotransmitters. Endorphin has the same structure with morphin so it is used as a pain reliever (Rokade, 2011).

RESEARCH LIMITATIONS

To create a better relaxation effect, murotal surah Ar Rahmaan therapy requires concentration and confidence, however, in this study researchers were not able to measure the level of concentration and confidence that respondents had during therapy.

CONCLUSION

Listening to murotal surah Ar

Rahman is more effective in reducing pain due to hypertension compared with listening to music mozart. Listening to murotal surah Ar Rahman can be recommended as a complementary therapy option and non pharmacology in reducing pain of patients with hypertension.

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