

**CLASSICAL MUSIC INFLUENCES MENSTRUAL PAIN  
in THE TENTH-GRADE STUDENTS AT SMAN 1 Gedangan  
SIDOARJO**

Firma Hidayanti<sup>1</sup>, R. Khairiyatul Afiah<sup>2</sup>  
Nursing Programme, Faculty of Health Science UNUSA

*E-mail: Satu\_37@ yahoo.co.id*

**ABSTRACT**

*Menstrual pain (Dysmenorrhea) can disturb the daily activities and cause the student's absence at school. The incidence rate of Dysmenorrhea found in SMAN 1 Gedangan (State High School) shows that 83.13% of the tenth-grade female students had Dysmenorrhea. Therefore, this research was purposed to find out the relationship between the classical music therapy and Dysmenorrhea.*

*The design of research was analytic-cross sectional. The population involved 88 tenth-grade female students experiencing Dysmenorrhea on day 1-3 without consuming any pain killers during menstrual period studying at the above-mentioned high school. 72 respondents were taken as the samples by using the simple random sampling technique. The independent variable was the classical music therapy, whereas the dependent variable was Dysmenorrhea. Questionnaires were used to collect data which were finally analyzed by using Fisher's Exact test with the significance level  $\alpha = 0.05$ .*

*The result of study done among 72 respondent show that, most 43(59,7%) respondent listening to Mozart's classical music, and nearly all of them 64(88,9%) respondent did not have Dysmenorrhea after listening the classical music. Furthermore, Fisher's Exact test showed that  $p = 0.164 > \alpha = 0.05$  so that  $H_0$  was accepted describing no relationship between the classical music therapy and Dysmenorrhea.*

*In conclusion, the classical music from Mozart, Beethoven, and Vivaldi can relieve the menstrual pain. Therefore, the female students are expected to use classical music to relieve the menstrual pain to prevent the absence for school.*

**Keywords: Classical music, Menstrual pain**

**Introduction**

Adolescence or puberty links childhood with adulthood. Both physical and psychological growth and development in adolescence happen very fast. Girls reach maturity faster than boys do. One of puberty signs in girls is the occurrence of menstruation (Proverawati and Misaroh, 2009).

Menstruation is the periodic discharge of blood from the uterus caused by the endometrial shedding (Hamilton, 1995). The process of menstruation happens in four stages namely the proliferation, ovulation, secretion,

and menstruation (Proverawati and Misaroh, 2009). For some women, the presence of menstruation causes anxiety and pain (Proverawati and Misaroh, 2009).

Dysmenorrhea is a menstrual pain occurring before and during menstruation, making women unable to work and forcing them to take a rest, which results in degraded performance and a reduction in daily activities (Anurogo, 2011; Proverawati and Misaroh, 2009). Painful menstruation causes disruption of daily activities, reduces the quality of life of individuals and is the leading cause of

absenteeism in adolescent women (Widjanarko, 2006).

The incidence rate of menstrual pain in the world is very high for more than 50% of women in every country suffer from menstrual pain. An epidemiological study on adolescent population (12-17 years) in the United States reported 59.7 % prevalence of menstrual pain. Among those complaining of pain, 12 % had severe pain, 37 % had moderate pain, and 49 % experienced mild pain. This incident cause 14 % of teenagers often do not attend school. Almost two thirds of post menarche teens in the United States suffer from menstrual pain; 10 % of them when beginning to suffer can not go to school (Anurogo, 2011 ). The incidence rate of primary menstrual pain in Indonesia reached 54.89 %, while the rest experienced the secondary type (Proverawati and Misaroh, 2009).

Based on the preliminary studi performed by the researcher by spreading questionnaires in January 2013 to 166 female students of SMA Negeri 1 Sidoarjo Palmares (State High School) who were having periods, 138 (83.13 %) have experienced menstrual pain, whereas the remaining of 28 (16.87 %) have never experienced any menstrual pain. The female students having experienced menstrual pain totaling 62 (44.93 %) managed the menstrual pain by letting the pain get away, 22 (15.94 %) required total rest, 33 (23.91 %) took medication to relieve pain, 17 (12.32 %) drank herbal medicine, and the remaining of 4 (4.35 %) handled it by doing exercise and applying eucalyptus oil to the stomach where pain occurred.

According to Guzetta (1989) in Potter and Perry (2005), the most distraction technique is to listen to music because music can decrease the physiology of pain, stress, and anxiety by diverting one's attention from the pain. Music is proven to give the effects of decreasing the frequency of the heartbeat, reducing anxiety and depression, relieving pain, decreasing blood pressure, and changing the time perception. Classical music (music without vocals, quiet period) is used in music therapy

because this music is capable of producing a change of consciousness status through sound, silence, space, and time (Potter and Perry, 2005). Music can stimulate the increase of endorphin hormones categorized as the morphine-typed substance supplied by the body. Therefore, at the time when peripheral neurons send pain signals to the synapse, the synapses occur between peripheral pain neurons and neurons of the brain in which P substance sends impulses. At that point, endorphin will block the detached P substance from sensory neurons, so transmission of pain impulses in the spinal medulla will be blocked, then reduce menstrual pain sensation (Proverawati and Misaroh, 2009). Music therapy, as one of non-pharmacological therapies, can be used by high school students to reduce menstrual pain. When complaints of pain can be eliminated by using a simple way, it is much better for them to do so than using drugs because drugs will cause dependency on pain reliever effects and cause unwanted side effects. The role of the nurse in handling complaints of menstrual pain is to provide schools with counseling about non-pharmacologic therapy to reduce menstrual pain until the students can find an alternative solution for the reproductive health problems, especially for menstrual pain, which has become their problems.

### **Research Methods**

The type of research is an analytic survey done with a cross-sectional design. The population involves the tenth-grade students of SMA Negeri 1 Gedangan, Sidoarjo having menstrual pain during menstruation on day 1-3 and not taking anti-pain medication during menstrual pain, totaling 88 students. 72 students are taken as the samples of research by using probability sampling, namely simple random sampling technique. The research done in March 2013 is located at SMAN 1 Gedangan, Sidoarjo.

### **Results, Discussion, and Conclusion**

No	Classical music	Menstrual pain				Total	
		No pain		Menstrual pain		n	%
		N	%	N	%		
1	Mozart	40	93,0	3	7,0	43	100,0
2	Other classical music	24	82,8	5	17,2	29	100,0
Total		64	88,9	8	11,1	72	100,0

a. Types of classical music

Table 5.5. The frequency distribution of respondents by type of classical music used in the tenth-grade students at SMAN 1 Gedangan, Sidoarjo

No	Classical Music	Total	Percentage
1	Mozart	43	59,7
2	Other classical music	29	40,3
Total		72	100

Source: Primary data 2013

According to table 5.5 above shows that among 72 respondents, most of them (59.7%) use Mozart's classical music to relieve menstrual pain.

b. Menstrual pain

Table 5.6. The frequency distribution of respondents according to the frequency of menstrual pain felt after listening to classical music in the tenth-grade students at SMAN 1 Gedangan, Sidoarjo

No	Menstrual pain	Total	Percentage
1	No pain	64	88,9
2	Menstrual pain	8	11,1
Total		72	100

Source: Primary data 2013

According to Table 5.6 above shows that among 72 respondents, nearly all (88.9%) have no menstrual pain after listening to classical music.

c. Correlation between classical music therapy and menstrual pain

Table 5.7. Cross tabulation of classical music therapy with menstrual pain in the tenth-grade students at SMAN 1 Gedangan, Sidoarjo

Source: Primary data 2013

According to Table 5.7. it can be seen that among 72 respondents, nearly all (93,0%), totaling 43 respondents listening to classical music of Mozart did not feel menstrual pain. Among 29 respondents listening to other classical music, nearly all (82.8 %) did not feel any menstrual pain.

The results of statistical test using Fisher's Exact Test done to determine the correlation of classical music therapy and menstrual pain in the tenth-grade students at SMAN 1 Gedangan, Sidoarjo with the significance level ( $\alpha = 0.05$ ) and manual calculation, the results obtained that  $\rho = 0.164$  so that  $\rho > \alpha$ . Therefore,  $H_0$  was accepted showing that there was no correlation between the type of classical music and menstrual pain in the tenth-grade students at SMAN 1 Gedangan, Sidoarjo. It also meant that any of classical music has a soft rhythm, relaxing, and can reduce menstrual pain when being heard. So, not only classical music of Mozart, but also Beethoven and Vivaldi can eliminate menstrual pain on the tenth graders studying at SMA Negeri 1 Gedangan, Sidoarjo.

## Discussion

### 1. Correlation between classical music therapy and menstrual pain

The correlation between classical music therapy and menstrual pain can be seen from the result of statistical test using Fisher's Exact Test with significance level ( $\alpha = 0.05$ ) and manual calculation that  $\rho = 0.164$  so that  $\rho > \alpha$ , Therefore,  $H_0$  was accepted showing that there was no correlation between the type of classical music and menstrual pain in the tenth-grade students at SMAN 1 Gedangan, Sidoarjo.

According to table 5.7, it can be seen from both respondents listening to classical music of Mozart or other classical music, almost all experienced painless menstruation. This proved that there was no correlation

between the type of classical music and menstrual pain because classical music of Mozart or other classical music (Beethoven and Vivaldi) can eliminate menstrual pain. Any of the classical music are known with its soft sound and easy listening music. Typical melody in classical music makes this music feels comfortable and provides relaxing effects for anyone listening to it, unlike dangdut or rock music, which has the opposite rhythm with the heartbeat. Music which has a rhythm opposing to the heartbeat may make the heart beats faster than usual. It may result in blood vessels throughout the body become narrowed or vasoconstriction so that blood flow to the uterus becomes obstructed, and aggravate menstrual pain.

Music therapy is a therapy that can be accepted by everyone because the brain does not require hard work to interpret the music. Music therapy is very easy to be accepted by the organ of hearing and then funneled through the auditory nerve in the brain to the pituitary to release endorphin hormones. The endorphin hormones, which will block pain impulses to the brain, so menstrual pain sensory decreases. Yet, not all music can be used for therapy. Music that has a soft and relaxing melodies and rhythms flowing the same with the rhythm of the heart and breathing can lower heart rate and catecholamine levels in the blood, so the blood vessels dilate (vasodilatation) and blood supply to the uterus becomes smooth. As a result, menstrual pain can be reduced and even disappear.

Classical music has a sort of rhythm that is light, soft, easier and less confusing, and has a texture that is far clearer (Smith, 2011). Mornhinweg (1992) in Aemelia (2006) examined 58 healthy subjects to assess the type of music which reduce stress. Classical music appears to provide a relaxing effect that can be proved statistically compared with the "new age" music. Soothing music is also used in the treatment of patients with myocardial infarction (heart attack) before surgery, even to reduce patient's stress while waiting in the waiting room

Another study done by Satiadarma (1990), done by measuring the temperature of the skin using Galvanic Skin Response (GSR). When the subjects listen to loud music, the skin temperature is lower than the basal temperature (the temperature of normal individuals without music). On the other hand, when the soft music heard, skin temperature rises than usual. This proves the existence of a stress hormone released by the brain, namely adrenaline, which can affect the blood vessels in the skin to have vasoconstriction (narrowed). In condition of stress, adrenaline is discharged much causing blood vessels in skin narrowed, until the skin temperature to drop. It concludes that the type of loud music can cause stress, while soft music has a calming effect (Aemilia, 2006).

Classical music has the same rhythm with the rhythm of the heart and respiration, and soft and soothing melodies. O'Sullivan (1991) suggests that classical music influences imagination, intelligence and memory. Besides it also affects the Pituitary gland in the brain to release endorphins. We know that endorphin can reduce pain, as to reduce the use of analgesics (Aemilia, 2006).

Proverawati and Misaroh (2009) suggests that Mozart's music can also stimulate the increase of endorphin hormone which will block P substance from sensory neurons, so the transmission of pain impulses in the spinal medulla becomes obstructed, finally menstrual pain sensation reduced.

## **Conclusion**

Based on the results of research conducted at SMAN 1 Gedangan, Sidoarjo about the correlation between classical music therapy and menstrual pain in the tenth-grade students obtained the following conclusions:

1. The tenth-grade students of SMAN 1 Gedangan, Sidoarjo mostly used Mozart's classical music as a therapy to reduce menstrual pain.

2. Nearly all of the female students of tenth-grade students of experienced no menstrual

pain after listening to classical music (Mozart, Beethoven, and Vivaldi).

3. There was no correlation between classical music therapy and menstrual pain in the tenth-grade students of SMA Negeri 1 Gedangan, Sidoarjo.

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Firma Hidayanti<sup>1</sup> :  
Student - Nursing Programme, Faculty of Health  
Science UNUSA  
R. Khairiyatul Afyah, M. Kep, Sp. Kep.Mat<sup>2</sup>:  
Nursing Programme, Faculty of Health Science  
UNUSA

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