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Spiritual relaxation to reduce dysmenorrhea: a quasy experimental

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A B S T R A C T

Background: The dysmenorrhea prevalence is still reported high in the world. Several previous studies discovered that deep breathing relaxation effectively reduced dysmenorrhea. Other studies presented the combination of early mobilization and spiritual relaxation could reduce the level of client pain postoperative appendectomy, however the effectiveness of spiritual relaxation techniques to reduce dysmenorrhea is not yet tested.

Objective: to determine the effect of spiritual relaxation to reduce dysmenorrhea.

Method: The research design used was Quasi Experiment with the pretest-posttest Control Group Design approach. The populations were female students who experienced menstrual pain (dysmenorrhea) and met the inclusion and exclusion criteria. The variable in this study was dysmenorrhea. The sampling technique was simple ramdom sampling consisted of 44 respondents. The calculation instrument was NRS (Numeric Rating Scale) and data were analyzed through statistical test of Paired T-Test and Independent T-Test.

Results: After spiritual relaxation treatment, the intensity of menstrual pain reduced significantly from 6.05 - 1.77, it proved that there was an effect of spiritual relaxation on dysmenorrhea with a significant value (ρ) of 0.000 ($p \leq 0.05$). There were significant differences in the intensity of menstrual pain in the intervention and control groups (1.77 ± 1,109 vs 5.63 ± 0.445; $p > 0.05$).

Conclusion: Spiritual relaxation effectively reduces dysmenorrhea.

INTRODUCTION

Primary dysmenorrhea is a gynecological problem which generally occurs to young women and adolescents with no pelvic abnormalities but complaints of cramping pain in the lower abdomen, spreading to the lower back and accompanied by complaint of headache, nausea, fatigue, vomiting, irritability, diarrhea and uncomfortable feeling [1–3]. Pain usually goes with menstrual bleeding and last from 48 to 72 hours [4]. Severe dysmenorrhea may cause in absence from school or work and disrupt daily activities and learning and finally effect on school performance [5–7].

The dysmenorrhea prevalence in the world is reported high and varied. The incidence of dysmenorrhea in female students at the An-Najah Palestine National University was 846 (85.1%) of the 956 female students who experienced menstruation [8], at Castilla-La-Mancha University in Spain, the incidence of dysmenorrhea was 74.8% from 193 female students [9] and in India the incidence of dysmenorrhea in adolescents was 73.9% [10]. The incidence of dysmenorrhea in Indonesia was also high compared to other countries in the world, estimated at around 64.25% [11] with the percentage of primary dysmenorrhea of 90% and secondary dysmenorrhea of 15% [12].

Based on the findings of a preliminary study conducted on November 26, 2018 at XI Muzamzamah Chosyi'ah Darul 'Ulum Jombang, there were 125 out of 350 female students experienced dysmenorrhea. Complaints experienced were low back pain, abdominal pain, dizziness, nausea, walking abnormalities and absent to school, thus it interfered daily learning activities. Efforts conducted to overcome dysmenorrhea were staying in bed, taking menstrual pain relievers and drinking more water.

Normally, the causes of menstrual pain include hormonal changes during menstruation, and excessive anxiety. Stress responses include activation of the sympathetic

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nervous system and release of various hormones and peptides. More prostaglandin and vasopressin are produced which causes an increase in uterine muscle contractions and cramps that cause dysmenorrhea [13,14].

Dysmenorrhea can be treated pharmacologically and non-pharmacologically. Non-pharmacological action to overcome dysmenorrhea is relaxation. Previous relaxation techniques often used is deep breathing relaxation technique. Several previous studies have presented that the intensity of menstrual pain reduces after deep breathing relaxation administered [15–18]. Previous studies discover that the combination of early mobilization and spiritual relaxation can reduce the level of client post-operative appendectomy pain [19], while the effectiveness of spiritual relaxation techniques to reduce the intensity of menstrual pain is not yet tested. In spiritual relaxation, it means that expressing it through prayer, hope, and belief in God. Relaxation is done by following the steps and spiritual values in religion. It is what distinguishes between spiritual relaxation and deep breathing relaxation. Based on this phenomenon, researchers are interested in conducting research to determine the effect of spiritual relaxation to reduce dysmenorrhea.

METHOD

Study Design

This study implemented a quasi-experimental research method with a pretest-posttest control group design [20].

Setting and Respondents

The study was conducted at Dormitory XI Muzamzamah Chosyi'ah Darul 'Ulum Jombang in May 2019. The populations in this study were all female students of Dormitory XI Muzamzamah Chosyi'ah Darul 'Ulum Jombang who experienced dismenorrhea consisted of 125 respondents with 44 respondents as the sample who met the inclusion and exclusion criteria. Inclusion criteria in this study were: 1) Respondents who experienced regular menstruation once a month; 2) Respondents who experienced moderate-severe dysmenorrhea; 3) The first day experiencing dysmenorrhea. While the exclusion criteria in this study were respondents who could not follow the suggestion by the therapist.

The sampling technique was simple random sampling [20] and the main sample formula based on an unpaired numerical analytical research formula [21]. Based on the formula, 21 sample respondents were obtained, and to avoid a drop out sample, 10% was added so that the sample size in each group was 22 respondents.

Experimental Procedure

Spiritual relaxation in this study was carried out for 30 minutes and in four stages. First was the initiation stage, it was done by positioning the body as comfortable as possible in a sitting or lying position. Second stage was induction by deep and slow breathing through the nose and exhaling from the mouth. When exhaling, it was followed by imagining removal of all the burdens or problems (3 times).

The client was concentrated on positive words (gratitude) to get those feelings, while giving thanks to God Almighty and listening and following recital of dzikr (subhanallah) in the heart. This stage lasted for 2-3 minutes. The third stage was belief, self-belief by believing that you would be healthy and happy, this stage lasted for 10-15 minutes. The fourth stage was termination, when a condition reached to comfortable and relaxed. When the therapist would end the relaxation process, let the eyes open lightly, took a deep breath then the patient moved the fingers and toes. Asking the client's feelings after therapy and the last was to greet after everything was finished. This phase lasted between 5-7 minutes [22,23].

The Instruments and Measurement

The research instrument is a tool used to measure observed natural and social phenomena [24]. Instruments to measure pain was Numeric Rating Scale (NRS) with a scale of 0-10 [25]. Measurement of menstrual pain was conducted before and immediately after spiritual relaxation to the intervention group. Whereas in the control group, menstrual pain measurements were performed before and after menstruation pain management education was given.

Data Analysis

Data were analyzed through Paired T-Test and Independent T-Test with $\alpha \leq 0.05$ [20]. Normality test was obtained from Shapiro-Wilk.

Ethical Consideration

This research has obtained ethical clearance at the Faculty of Health Sciences Unipdu Jombang with certificate number of 006-KEP-Unipdu/2019.The researcher submitted a permit application to the Caregiver of XI Boarding House Muzamzamah Chosyi'ah Darul 'Ulum Jombang to obtain research approval.

RESULTS

Most respondents aged between 15-17 years old (54.5%) with the first age of menarche 11-13 years (97.7%). Most respondents' menstrual cycles were also regular with periods of 1-7 days with moderate intensity (Table 1). The intensity of dysmenorrhea in the intervention group before spiritual relaxation was mostly in moderate intensity or 68.2% and 31.8% respondents with high intensity.

Table 1. Respondent characteristics (n=44)

Characteristics	Frequency	Percentage
Age		
Early teens (12-14 years old)	20	45.5%
Middle teens (15-17 years old)	24	54.5%
Menarche age		
Normal Menarche (11-13 years)	43	97.7%
Slow Menarche (>13 years)	1	2.3%
Menstrual cycle		
Regular	28	63.6%
Unregularly	16	33.4%
Menstrual length		
normal (1-7 days)	28	63.6%
Long (8-15 days)	16	33.4%
Menstrual bleeding		
Few	3	6.8%
Moderate	30	61.2%
Heavy	11	25%

After the administration of spiritual relaxation, almost all respondents' intensity of dysmenorrhea (95.5%) was mild intensity and moderate intensity was small or 4.5% of the respondents. The intensity of dysmenorrhea in the control group before menstruation pain education was almost entirely (81.8%) in moderate pain and few experienced severe pain (18.2%). The intensity of dysmenorrhea after menstrual pain management education was mostly at moderate pain (68.2%) and few experienced severe pain (18.2%) and mild pain (13.6%).

The paired t-test results discovered that there was an effect of spiritual relaxation on the reduction of dysmenorrhea ($p<0.05$). The average intensity of menstrual pain before spiritual relaxation was 6.05 and after spiritual relaxation was 1.77. It proved that spiritual relaxation was effective in reducing the intensity of menstrual pain (Table 2).

The results of the Independent T-Test showed that there were differences in the intensity of menstrual pain in the intervention group and the control group ($p<0.05$). It was because the intervention group was given spiritual relaxation, while the control group only obtained education on menstrual pain management without practicing how to cope with menstrual pain, therefore the average intensity of menstrual pain in the intervention group was lower than control group (Table 3).

DISCUSSION

The results illustrated that the intensity of menstrual pain (dysmenorrhea) in female students at Dormitory XI Muzamzamah Chosyi'ah Darul 'Ulum Jombang before the intervention of spiritual relaxation group was mostly moderate pain and the control group was almost entirely in moderate pain. It was due to age factor, where almost half of them were 12-14 years old. It is an early adolescent age when they have limited knowledge about menstrual pain (dysmenorrhea) and how to anticipate it if menstrual pain (dismenorrhea) occurs. In addition, the duration of menstruation also affected the intensity of menstrual pain.

Respondents who experienced moderate pain, they had normal length of menstruation, meanwhile those who experience severe pain, their duration of menstruation was long. The amount of menstruation also affected the intensity of menstrual pain. Respondents with moderate amounts of menstruation, most experienced moderate pain and respondents with large amounts of menstruation, the pain intensity experienced was severe.

The results of previous studies indicated that several factors affecting the intensity of menstrual pain were young menarche age, longer menstrual duration and excess menstrual volume [9,26–28]. The intensity of menstrual pain could be mild, moderate and severe [29]. Mild pain did not require anti-pain medication and did not affect daily activities, moderate pain slightly affected daily activities, and severe pain could hamper daily activities. Some of the results of previous studies illustrated that the intensity of menstrual pain experienced by respondents was in the moderate category [30–32].

Table 2. Effects of spiritual relaxation on dysmenorrhea

Group	Pre	Post	Mean difference (95% CI)	p-value
	Mean±SD	Mean±SD		
Spiritual relaxation	6.05±1.09	1.77±1.11	4.27 (3.82-4,73)	0.001
Control	5.91±1.02	5.63±0.45	0.27 (-0.06-0.60)	0.102

Paired T-Test

Table 3. Differences in menstrual dysmenorrhea after intervention

Groups	Mean±SD	Mean difference (95% CI)	p-value
Spiritual relaxation	1.77±1.11	4.27 (3.82 – 4.73)	0.001
Control	5.63±0.45	0.27 (-0.06 – 0.60)	

Independent T-Test

In the intervention group, almost all experienced mild pain after spiritual relaxation was conducted and in the control group, most experienced moderate pain and the results of the dependent t-test showed that there was an effect of spiritual relaxation on the intensity of menstrual pain. The intensity reduction of menstrual pain in the spiritual relaxation group occurred because respondents followed all the stages, eventually the respondents felt more comfortable and relaxed. This spiritual relaxation will give benefits if a person feel relax so that a state of relaxation is achieved and reduce sympathetic nerve activity through the spiritual belief of the respondent in order to control his physical condition so that the intensity of menstrual pain decreases. On the contrary, if someone feels tense and rejects the action given then the condition relaxation will not be achieved. The decrease in the pain intensity of the respondents can also be evaluated from the decrease or loss of complaints experienced by the respondent before spiritual relaxation such as a complaint of low back pain, stomachache, muscle or joints pains and cramps in the thigh.

The relaxation response gives individuals the ability to control physiological activity, self-control, and peace. Spiritual relaxation can stimulate endorphin hormone which is like a morphine in the body that gives a sense of calm and fit. So far, endorphins is known as substances which provide many benefits. Some of them are regulating the production of growth and sex hormones, controlling pain and persistent pain, controlling feelings of stress, and enhancing the immune system [33].

The results of the independent t-test discovered that there were differences in the intensity of menstrual pain in the intervention group and the control group. It occurred since of the spiritual relaxation was stimulated to intervention group, where students were very open and trusted the treatment given by the researchers and students could also follow all stages of relaxation well from the initiation, induction, suggestion and termination stages so relaxation conditions was achieved. Whereas, the control group was only treated with health education in the form of management of menstrual pain, thus, most of menstrual pain intensity remained moderate and only few experienced a decrease into mild pain or 3 respondents. This decrease occurred because respondents understood about the management of menstrual pain so they felt calmer and would try to follow the order described by the researchers.

Spiritual relaxation caused the respondent to be relax so that it could increase endorphins, decreased the response of the sympathetic nervous system and affected on intensity of menstrual pain reduction (dysmenorrhea). Thus, spiritual relaxation can be carried out independently and continuously by respondents so that menstrual pain (dysmenorrhea) decreases. Previous studies, explained that Emotional Freedom Technique (SEFT) Spiritual Therapy could reduce the intensity of dysmenorrhea pain in adolescents aged 12-15 years at SMP ZAHA 1 Genggong-Pajarakan-Probolinggo [34].

CONCLUSIONS AND RECOMMENDATION

Spiritual relaxation effectively reduces dysmenorrhea, so it can be used as an alternative to non-pharmacological efforts to overcome dysmenorrhea complaints.

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