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The Effectiveness of Physical Exercise on Level of Symptom and Quality of Life in Primary Dysmenorrhea in Adolescent in Denpasar

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ABSTRACT

Background: young women often experience various problems including pain during menstruation. Menstrual pain which is called dysmenorrhea is pain in the stomach or uterus, pain that occurs together with the onset of menstruation which occurs several hours to days. The incidence of primary dysmenorrhea will influence and have a major impact on the quality of life of these adolescents. **Purpose:** This study aims to prove the effectiveness of physical exercises in the form of abdominal stretching and core strengthening in reducing the degree of complaints and the quality of life of young women with primary dysmenorrhea in Denpasar. **Method:** This research study design use one group pre and post-test.. The research was conducted at a private physiotherapist in Denpasar, Bali from September to August 2022. The sample consisted of 30 people who received physical exercises in the form of abdominal stretching and core strengthening. **Results:** The Wilcoxon Test showed different results before and after the intervention obtained a value ($p < 0.05$) which means that there was a significant difference before and after the intervention in the degree of complaints and quality of life. **Conclusion:** Physical exercise is effective on the degree of complaints and quality of life in adolescents with primary dysmenorrhea in Denpasar

INTRODUCTION

In women, puberty is marked by the onset of menstruation or menstruation. Menstruation is the process of releasing blood from the uterus through the vagina every month during the childbearing age. Menstruation experienced by teenage women can cause problems, such as dysmenorrhea or menstrual pain. Dysmenorrhea is abdominal pain that comes from uterine cramps that occur during menstruation (Udayar et al., 2022). Dysmenorrhea is divided into primary and secondary. Primary dysmenorrhea is menstrual pain that is not based on pathological conditions, while secondary dysmenorrhea is menstrual pain that is based on pathological conditions such as the discovery of endometriosis or ovarian cysts (Itani et al., 2022).

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Primary dysmenorrhea is experienced by 60-75% of adolescents, with three-quarters of these adolescents experiencing mild to severe pain and a quarter experiencing severe pain (Itani et al., 2022). The form of dysmenorrhea that is often experienced by adolescents is stiffness or cramps in the lower abdomen, sometimes reaching the medial thigh (Utami, 2021). One way of non-pharmacological therapy is by doing physical exercise (Kas et al., 2020). In this study, researchers will provide physical exercises, namely abdominal stretching and core strengthening.

METHODS AND MATERIALS

The research method that used by researchers in this research is one group pre and post-test. Inclusion criteria: a). Women aged between 18 – 25 years b). experiencing primary dysmenorrhea pain, c). Subjects are willing to become respondents by signing an informed consent. Exclusion criteria: a). Experiencing and suffering from psychogenic stress, using a pacemaker, injury to muscles and/or joints that may affect the training given b). Samples are following other therapy programs c). Samples received corticosteroid injection therapy. Drop out criteria: a). The sample withdrew. b). The patient does not participate in the exercise more than 3 times. The research was carried out at the Physiotherapy Practice in Denpasar in August - October 2022. The number of respondents of 30 people received physical training in the form of abdominal stretching and core strengthening. The technique used for sampling in this study was a purposive sampling technique. Prior to conducting the research, the respondents signed an informed consent form as the research sample. Measuring the degree of complaints using the WaLIDD score to assess the severity of dysmenorrhea complaints, including the ability to work, location of pain, pain intensity and length of days the pain is felt. The Walidd score is a scale for measuring the severity of dysmenorrhea complaints. It includes scoring points for the ability to work, location of pain, pain intensity, and the duration of pain experienced. Each point has a value of 0-3. The interpretation of the Walidd score is as follows: a score of 0 indicates no dysmenorrhea, a score of 1-4 indicates mild dysmenorrhea, a score of 5-7 indicates moderate dysmenorrhea, and a score of 8-12 indicates severe dysmenorrhea (Teherán et al., 2018).

Functional measurements were evaluated by filling out daily activity questionnaires as measured by the Short Form of the quality of life enjoyment and satisfaction questionnaire (Q-LES-Q-SF). Assessment scores are on a five-point scale (from "very poor" to "very good"), where

higher scores indicate greater enjoyment and satisfaction with life (possible raw total score range: 14-70). Scores are summed and presented as a percentage of the maximum possible total score. The percentage of the total score out of 70 represents the quality of life in the community sample. Additional item (item 16) measures satisfaction over the past week on a five-point scale (Stevanovic, 2011).

Normality Test (*Shapiro Wilk Test)*		
	walidd score	**(Q-LES-Q-SF)**
	p	**p**
Before	**0,001**	**0,003**
After	**0,001**	**0,001**

RESULTS AND DISCUSSION

The study "Effectiveness of Physical Exercise on the Degree of Complaints and Quality of Life of Adolescents in Primary Dysmenorrhea in Denpasar" was carried out in the second week of August 2022. The study subjects totaled 30 people who are described in the following presentation: 18 year old sample of 9 people (30%), 19 years old were 18 people (60%), and 20 years old were 3 people (10%).

Table 1. Normality Test Results and Homogeneity Test

	WaLIDD score	Q-LES-Q-SF
	P	P
Before	0,001	0,003
After	0,001	0,001

Table 2. Results of the Mean for Difference Before and After Intervention

	WaLIDD Score	Q-LESS-Q-SF
	P	P
Before and After	0,000	0,000

According to Jaleel et al confirmed that pain reduction occurs due to the facilitation of prostaglandin release after exercise. On the other hand, physical exercise also has an effect on increasing blood flow and metabolism in the womb. Another impact is reduced dysmenorrhea and the release of antidiuretic hormone during exercise, as well as vasoconstriction in the pelvic area which causes damage to prostaglandins. Various studies have found that exercise therapy and physical activity are associated with a reduction in dysmenorrhea. Exercise therapy has an impact on increasing premenstrual pelvic blood flow. The accumulation of prostaglandins in this area delays the onset of pain. Exercise therapy during pain causes the transfer of wastes and prostaglandins to occur more rapidly (which are the main cause of menstrual pain) than the uterus. Regular exercise also plays an important role in controlling stress and helps improve blood circulation, as well as increasing endorphins and nerve transducers. The mechanism of stress inhibition is one of the reasons for the relationship between exercise and

menstruation. Physical activity or exercise has been shown to reduce the intensity of dysmenorrhea by various mechanisms (Jaleel et al., 2022). Many pain conditions are associated with reduced quality of life (Mills et al., 2019). Primary dysmenorrhea is also a condition of recurrent pain associated with menstruation (Shellasih & Ariyanti, n.d.). Several studies related to the relationship between menstrual pain intensity and quality of life have been widely reported, Ozder et al. investigated the prevalence of dysmenorrhea and determined its effect on quality of life among female college students. Health related quality of life (HRQoL) was assessed using the generic 36-Item Short Form Health Survey (SF-36) and depressive symptoms were assessed with the BDI included in the survey (Ozder & Salduz, 2020). Their data suggest dysmenorrhea is a major public health problem among female university students and causes a social burden on students in addition to affecting school attendance, demonstrating that the condition is a significant public health problem requiring attention. Training primary care physicians on the management of primary dysmenorrhea should be considered.

Odongo et al., 2023 stated that severe menstrual pain with menstrual bleeding affects all aspects of a woman's quality of life more than just heavy menstrual bleeding. Udayar et al., 2022 demonstrated that severe menstrual pain associated with primary dysmenorrhea has an impact on quality of life.

CONCLUSION AND SUGGESTIONS

Based on the analysis of the results of the research and discussion that has been carried out, it can be concluded that physical exercise is effective on the degree of complaints and the quality of life of adolescents with primary dysmenorrhea in Denpasar.

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