

## THE EFFECT OF KEGEL EXERCISE ON REDUCING PAIN INTENSITY OF DYSMENORRHEA IN ADOLESCENT WOMEN

**Eka Diana Lestari \*, Dian Priharja Putri**

Sekolah Tinggi Ilmu Kesehatan Abdi Nusantara

Jl. Swadaya No.7, RT.001/RW.014, Jatibening, Kec. Pd. Gede, Kota Bks, Jawa Barat 17412, Indonesia

Email: [ekadianlestari980@gmail.com](mailto:ekadianlestari980@gmail.com)

### Abstract

**Background:** Dysmenorrhea or menstrual pain is a gynecological complaint due to an imbalance of the hormone progesterone in the blood. The degree of pain varies, from mild to severe. Severe pain conditions can interfere with daily activities. One therapy to overcome the problem of menstrual pain is Kegel exercises or Kegel exercises, which are pelvic floor muscle exercises. **Objective:** To determine the effect of Kegel exercises on reducing the intensity of dysmenorrhoea pain in young women at MTs Al-Anwar Raman Agung, South Sumatra in 2023. **Method:** This research is quasi-experimental with one group pretest and posttest design. The sample in this study was 60 young women at MTs Al-Anwar Raman Agung South Sumatra in 2023 who were divided into two groups, namely the group who did Kegel exercises and the group who did not do Kegel exercises. Dysmenorrhea pain is measured using the Numeric Rating Scale (NRS). Data analysis used the Mann Whitney test. **Results:** The degree of dysmenorrhea pain experienced by the treatment group was 27 (90%) moderate pain levels and 29 respondents (96.7%) experienced moderate pain levels in the control group and 16 respondents (53.3%) after doing Kegel exercises experienced moderate pain %) and the control group experienced moderate pain as many as 27 respondents (90%). **Conclusions and suggestions:** There is a difference in the intensity of pain reduction in the group who did Kegel exercises compared to the group who did not do Kegel exercises in young women at MTs Al-Anwar Raman Agung, South Sumatra with p value = 0.005. **Keywords:** Adolescents, Dysmenorrhea, Kegel Exercises, Pain Intensity

### Introduction

Adolescence is an important period in human life which is characterized by rapid physical, psychosocial, cognitive and emotional growth as well as sexual and reproductive maturity (Lehtimäki et al., 2019). One of the signs of sexual and reproductive maturity in young women is menstruation (Michael et al., 2020).

Dysmenorrhea is a major gynecological problem, which women often complain about during menstruation (Lowdermilk et al., 2011). Dysmenorrhea is often considered a non-serious problem and is a condition that usually occurs during menstruation, so most cases of dysmenorrhea are slow to be diagnosed and treated. In fact, dysmenorrhoea can also cause the academic performance of adolescent girls and women to decline (Hailemeskel et al., 2016).

Treatment to overcome dysmenorrhoea is very important because it will have an impact on the quality of life and productivity of women and even socio-economic conditions. This happens because most women prefer to self-manage when they experience dysmenorrhoea by taking Non-Steroidal Anti-Inflammatory Analgesics (NSAIDs) rather than seeing a health professional (Fisher et al., 2016). Although the drug is mostly effective in reducing dysmenorrhea, there is still an 18 – 25% chance of failure (Oladosu et al., 2018). As a result, the symptoms they experience do not decrease and can

increase the risk of endometriosis. This problem has a significant impact on the quality of life so that it can have a socioeconomic impact (approximately 4.95 trillion Japanese yen (JPY) each year) (Health and Global Policy Institute, 2021).

The many losses that can be caused by dysmenorrhoea certainly require effective and efficient solutions other than taking analgesic drugs. Physical activity is one solution that can be used to treat dysmenorrhoea. By doing physical exercise, pain, stress and prostaglandin levels will decrease, thereby improving the quality of life. Physical exercise is also a treatment method that has a mild or even no risk of side effects (Geneen et al., 2017).

According to Astarto, et al (2011) the exact cause of dysmenorrhea is not yet known with certainty, in primary dysmenorrhoea the pain arises from high levels of prostaglandins. Meanwhile, secondary dysmenorrhea is thought to be the most common cause of endometriosis. The risk factors for primary dysmenorrhea are women who have not have given birth, are obese, smokers, and have a family history of dysmenorrhea. Meanwhile, factors that can worsen the situation are the uterus facing backwards, lack of exercise and psychological stress or social stress (Icemi & Wahyu, 2013). The onset of pain during menstruation is usually caused by someone experiencing stress which can disrupt the work of the endocrine system, which can cause irregular menstruation and cause pain during menstruation (Hawari, 2008).

There are many types of physical exercise that can reduce dysmenorrhoea. Some exercises that have been studied to reduce primary dysmenorrhoea pain are Kegel exercises. According to several previous studies, this exercise has the potential to reduce primary dysmenorrhoea pain (Sulistiyaningsih, 2015).

Based on 2020 World Health Organization (WHO) data, The incidence of dysmenorrhea was 1,769,425 (90%) women with 10-16% suffering from severe dysmenorrhoea. The incidence of dysmenorrhea in the world is very high with an average of more than 50% of the total number of women in the world (Herawati, 2021).

In Indonesia, the incidence of dysmenorrhoea is 64.25%, consisting of 54.89% primary dysmenorrhoea and 9.36% secondary dysmenorrhoea. Over the past 50 years, 75% of women have experienced menstrual cramps. Symptoms of primary dysmenorrhoea usually appear in women of childbearing age and women who have never been pregnant. Dysmenorrhea often occurs in women between the ages of 20 and 25, with up to 61% of unmarried women (Reeder, 2020).

The incidence of dysmenorrhoea in South Sumatra in 2020 was 64.3% (South Sumatra Provincial Health Office, 2020). The majority of female students at MTs Al-Anwar Raman Agung Prov. South Sumatra comes from a lower middle class economy, most of which experience a lack of nutritional intake which is one of the triggers for dysmenorrhea. A person's socio-economic status will influence a person's nutritional condition, where nutritional conditions can have a big influence on a person's pain resistance. According to Proverawati (2009). One of the factors that influences primary dysmenorrhea is nutritional status (Fitriana & Rahmayani, 2013). Nutritional status is the condition of the body which is the final result of the balance between nutrients entering the body and their use which can be divided into three groups, namely good nutrition, undernutrition and overnutrition (Cakrawati & Mustika, 2012). Adolescents with poor nutritional status will not only affect the growth and function of the body's organs, it will also cause disruption to reproductive function. This has an impact on menstrual disorders including dysmenorrhea, but will improve if nutritional intake is good (Sibagariang et al, 2010).

This research was to determine "The Effect of Kegel Exercises on the Intensity of Reducing Dysmenorrhea Pain in Young Women at MTs Al-Anwar Raman Agung South Sumatra in 2023".

## Method

This research is quasi-experimental with one group pretest and posttest design. The sample in this study was 60 young women at MTs Al-Anwar Raman Agung South Sumatra in 2023 who were divided into two groups, namely the group who did Kegel exercises and the group who did not do Kegel exercises. Dysmenorrhea pain is measured using the Numeric Rating Scale (NRS). Data analysis used the Mann Whitney test.

## Research Result

**Table 1 Distribution of Respondents Based on the Degree of Dysmenorrhea Pain in Both Groups After Carrying out Kegel Exercises on Young Women at MTs Al-Anwar Raman Agung, South Sumatra**

Derajat Nyeri Dismenorea	Kelompok			
	Intervensi		Kontrol	
	f	%	f	%
Tidak Nyeri	0	0	0	0
Nyeri Ringan	2	6,7	1	3,3
Nyeri Sedang	27	90	29	96,7
Nyeri berat	1	3,3	0	0
Jumlah	30	100	30	100

Table 1 shows that in the intervention group the degree of pain before being given Kegel exercise treatment to young women was moderate pain for 27 respondents (90%) and in the control group moderate pain was 29 respondents (96.7%).

**Table 2 Distribution of Respondents Based on the Degree of Dysmenorrhoea Pain in Both Groups After Doing Kegel Exercise on Young Women in MTs Al-Anwar Raman Agung South Sumatra**

Derajat Nyeri Dismenorea	Kelompok							
	Intervensi				Kontrol			
	Pretest		Posttest		Pretest		Pistest	
	F	%	F	%	f	%	f	%
	0							
Tidak Nyeri	0	0	0	46,	0	0	0	0
Nyeri Ringan	2	6,7	14	7	1	3,3	3	10
Nyeri Sedang	27	90	16	53,	29	96,7	27	90
Nyeri berat	1	3,3	0	3	0	0	0	0
	0							
Jumlah	30	100	30	100	30	100	30	100

Table 2 shows that in the intervention group the degree of pain after being given Kegel exercise treatment to young women was moderate pain for 16 respondents (53.3%) and in the control group moderate pain was 27 respondents (90%).

**Table 3: Distribution of Analysis of the Effect of Kegel Exercises on the Intensity of Reducing Dysmenorrhea Pain in Adolescent Girls at MTs Al-Anwar Raman Agung, South Sumatra**

Kelompok	Mean Rank	P value	Z
Melakukan kegel exercise	24,35	0,005	-2,819
Tidak melakukan kegel exercise	36,65		

Table 3 shows that there is a difference in the level of pain in the group that did Kegel exercises and the group that did not do Kegel exercises in young women with p value = 0.005 ( $p < 0.05$ ).

## Discussion

Description of the Degree of Dysmenorrhea Pain in Both Groups Before Doing Kegel Exercises at MTs Al-Anwar Raman Agung, South Sumatra Based on the research results, it shows that before being given Kegel exercise treatment, more than half (86.7%) of the young women in the group who did Kegel exercise experienced moderate pain intensity during dysmenorrhea. Meanwhile, for those who did not do Kegel exercises, almost all respondents, namely 29 people (96.7%) of young women, experienced moderate pain intensity during dysmenorrhea. This shows that the group doing Kegel exercises and the group not doing Kegel exercises both experienced moderate pain during dysmenorrhoea.

Moderate pain: continuous and intermittent pain that disappears only when the patient sleeps (Potter and Perry, 2018). Moderate pain is also characterized by feeling cramps in the lower abdomen, grinning face, hissing, pain spreading to the waist area, lack of appetite, some activities are disturbed, concentration is disturbed, the client tends to hold the painful area, but can describe the pain.

These results are in accordance with research by Lufi (2022) which stated that before being given treatment, young women in both the intervention and control groups experienced moderate pain. The same results also occurred in Setya's (2023) research that before being given treatment, young women experienced moderate pain during dysmenorrhoea.

According to the researcher's assumption, the degree of pain was moderate in female feces when experiencing dysmenorrhoea in both the intervention and control groups because menstrual pain was usually crampy and centered in the lower abdomen. Complaints of menstrual pain can vary from mild pain to severe pain. The severity of dysmenorrhoea can be directly related to the length and amount of menstrual blood. As is known, menstruation is almost always accompanied by heartburn and pain. The cramps that occur come from very intense uterine muscle contractions when menstrual blood is released from the uterus. This very intense muscle contraction then causes the muscles to tighten and cause cramps or pain. This muscle tension does not only occur in the abdomen, but also in the supporting muscles in the lower back, waist, hips, thighs and calves.

These results are in accordance with research by Oktarini (2020) which stated that there was a decrease or change in the degree of pain before and after being given Kegel exercises. These results are supported by research by Lufi (2022) which stated that there was a change in the degree of pain in young women during dysmenorrhoea after being given dysmenorrhoea exercises. There was a change in the degree of dysmenorrhoea due to Kegel exercises. Marlinda (2013) on adolescent girls in Sidoharjo Village, Pati District, showed that the intensity of pain in adolescent girls before exercise was mostly moderate pain (65%) and after exercise most of it decreased to mild pain (70.0%).

Dysmenorrhea often attacks most women. Dysmenorrhea is a symptom, not a disease. The symptom is pain in the lower abdomen. In certain cases, pain can be felt around the pelvis and inner side

of the thigh. Pain is felt especially on the first and second days of menstruation. The causes vary from increased prostaglandins to hormonal changes. Based on the cause, menstrual pain is divided into two, namely primary and secondary menstrual pain (Oktasari, 2015). Pain is an unpleasant sensory and emotional experience resulting from actual or potential tissue damage. Dysmenorrhea usually occurs during the premenstrual phase (secretion). In this phase there is an increase in the hormone prolactin and the hormone estrogen. According to its nature, prolactin can increase uterine contractions. Hormones that are also involved in dysmenorrhea are prostaglandin hormones (Manuaba, 2015).

Dysmenorrhea usually occurs due to excessive release of certain prostaglandins, namely Prostaglandin-F2 alpha, from uterine endometrial cells. Prostaglandin-F2 alpha is a powerful stimulant of myometrial smooth muscle contraction and uterine blood vessel constriction. This worsens uterine hypoxia which normally occurs during menstruation, resulting in severe pain (Manuaba, 2015). There are two ways to reduce dysmenorrhea, namely pharmacological and non-pharmacological. Warm compresses or warm baths, physical exercise, massage, hypnotherapy, adequate sleep, distractions such as listening to music and relaxation such as yoga and deep breathing are non-pharmacological efforts (Muttaqin, 2015).

The Effect of Kegel Exercises on the Intensity of Dysmenorrhea Pain Reduction in Young Women at MTs Al-Anwar Raman Agung, South Sumatra

The results of the research showed that the group doing Kegel exercises obtained a p value = 0.005. This means that  $H_a$  was accepted and  $H_o$  was rejected so that there was a difference in Kegel exercise on the intensity of reduction in dysmenorrhea pain experienced by the treatment group and the group who did not do Kegel exercise in young women at MTs Al-Anwar Raman Agung, South Sumatra. These results are in accordance with research by Lufi (2022) showing the influence of dysmenorrhoea exercises combined with aromatherapy on dysmenorrhea pain with a p value = 0.000.

These results are also supported by research by Oktarini (2020) which stated that dysmenorrhea exercise had an effect on reducing the intensity of dysmenorrhea pain in young women at YPIB Majalengka Vocational School, Majalengka Regency in 2019. The magnitude of the reduction in pain intensity before and after dysmenorrhea exercise was 1.8. This effect is because Kegel exercises can reduce the anxiety that arises during menstruation. Light exercise is highly recommended to reduce dysmenorrhoea. This is because when doing sports/exercise, the brain and spinal cord will produce endorphins, hormones that function as a natural sedative and create a feeling of comfort.

Likewise, research (Nuritsari, 2021) regarding students of the D III Midwifery Study Program in Karawang shows that there is a significant difference between the degree of dysmenorrhea before exercise and after exercise. Also the results of research (Widyastuti, 2020) on young women at SMK 1 Tapango, Polewali Mandar Regency show that there is an influence of whether or not dysmenorrhea exercise is given on reducing pain. Likewise, (Ditasari, 2020) regarding reducing pain with dysmenorrhea exercises shows that there are differences in the pain scale before and after the dysmenorrhea exercise intervention.

The results of this research are in line with the theory that dysmenorrhea exercise is a form of relaxation that is highly recommended. The aim of doing dysmenorrhea exercises is to reduce the dysmenorrhea experienced by several women every month (Suparto, 2015). This is because when doing sports or gymnastics, the body will produce endorphin hormones. Endorphins are produced by the brain and spinal cord. This hormone acts as a natural sedative produced by the brain, causing a feeling of comfort (Fitriana, 2020). Dysmenorrhea exercise is a relaxation technique that can produce the hormone -endorphin, this hormone is produced by the brain and spinal cord (Perry and Potter, 2019)

## Conclusion

There was a difference in the intensity of pain reduction in the group who did Kegel exercises compared to the group who did not do Kegel exercises in young women at MTs Al-Anwar Raman Agung, South Sumatra with p value = 0.005

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