



The Effectiveness of Education on Abdominal Stretching Exercise Therapy Using Podcast Media on Increasing Knowledge

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Abstract

Adolescence is a transitional phase from childhood to adulthood, in females marked by the onset of menstruation. During menstruation, some adolescents experience pain known as dysmenorrhea. The management of dysmenorrhea can include abdominal stretching exercise therapy. Abdominal stretching exercise therapy involves stretching exercises of the abdominal muscles that can reduce the intensity of dysmenorrhea pain. To increase adolescents' knowledge, health education can be provided. This study aims to determine the effectiveness of education on abdominal stretching exercise therapy using podcast media in increasing knowledge among female adolescents at SMA Negeri 10 Tasikmalaya. This research uses a quasi-experimental method with a pretest-posttest with control design. The population in this study consisted of 276 female students in grade XI. The sampling technique used proportional stratified random sampling, resulting in a total of 40 respondents, with 20 respondents in the intervention group and 20 respondents in the control group. Data collection was done using a questionnaire developed by the researcher. Statistical tests used included dependent t-test and independent t-test. The results showed an increase in knowledge among female adolescents after being given education on abdominal stretching exercise therapy using podcast media. Education on abdominal stretching exercise therapy using podcast media is effective in increasing knowledge among female adolescents at SMA Negeri 10 Tasikmalaya.

Keywords: Abdominal Stretching Exercise Therapy, Health Education, Podcast Media

INTRODUCTION

During adolescence, women experience body changes due to the estrogen and progesterone hormones that come into play. These changes include the onset of menstruation (Azma et al., 2018). Some adolescents experience pain during menstruation, known as dysmenorrhea (Hasnah & Harmina, 2017). Dysmenorrhea is a painful sensation felt by women before or during the menstrual phase. Dysmenorrhea is

caused by the imbalance of the hormone progesterone in the blood. Women during dysmenorrhea will produce higher amounts of prostaglandins, up to ten times more than women who do not experience dysmenorrhea. Dysmenorrhea is divided into 2 types, primary dysmenorrhea which is not caused by disease conditions and secondary dysmenorrhea which is caused by disease conditions (Firawati, 2020).

Prostaglandin levels that are too high can cause women to experience dysmenorrhea. When women experience dysmenorrhea, it can usually be accompanied by cramps, diarrhea, dizziness, and nausea and vomiting (Sulaeman & Yanti, 2019). World Health Organization (WHO) explained that the incidence of dysmenorrhea experienced by women in 2020 was 1,769,425 (90%). This shows that the prevalence of dysmenorrhea is high worldwide. (R. Herawati, 2017). The incidence of dysmenorrhea in each country is quite high, including Thailand 84.5%, Sweden 72%, Malaysia 69.4%, America 60%, and in Indonesia 64.25% of women experience dysmenorrhea (Asroyo et al., 2019).

Dysmenorrhea is one of the reproductive health issues in Indonesia that needs to be addressed and addressed immediately (Lail, 2017). Dysmenorrhea that is not treated immediately can have several effects such as delayed menstrual schedule, infertility, pregnancy with ectopic rupture, uterine perforation due to Intrauterine Device (IUD), and infection (Nugroho et al., 2019).

Therapeutic interventions in the management of dysmenorrhea can be done using pharmacological and non-pharmacological methods. Pharmacological methods include the use of medication. However, pharmacological therapy has side effects and causes dependence. While non-pharmacological methods include abdominal stretching exercise therapy. Abdominal

stretching exercise therapy is effective in reducing the intensity of dysmenorrhea. When the body does exercise, the body will produce endorphin hormones from the spinal cord and brain which have functions as natural pain relievers that provide a feeling of calmness (Windastiwi et al., 2017).

In handling dysmenorrhea, education about health education is needed for women to determine the effect of health education and the level of knowledge obtained after receiving education (Fitriyani et al., 2023). Education can be done using various types of methods and media, one of which is podcasts. Podcasts are audio or video recordings that are published periodically via the internet (Mahyani et al., 2022). Podcasts are an effective educational medium (Laila, 2020). Podcasts can be implemented flexibly through various media platforms available (Cin & Utami, 2020). Jejak Pendapat (Jakpat) has conducted a survey in 2020 with the result that the majority of podcast users in Indonesia are young people in the age range of 15 to 19 years old and between 20 to 24 years old (Bayu, 2021).

Currently, the use of podcasts in Indonesia is still in the development phase. Although podcasts continue to grow in Indonesia, there is no research on the effectiveness of education regarding abdominal stretching exercise therapy using podcast media. One of the important health education to be educated to adolescents is

abdominal stretching exercise therapy. Abdominal stretching exercise therapy can reduce dysmenorrhea pain intensity in adolescent girls (Ummah & Utami, 2023).

Based on the background of the above problems and preliminary studies conducted, data obtained from the Regional Education Service Branch XII (CADISDIK VII) of West Java Province, found that SMAN 10 Tasikmalaya is a high school with the largest number of female students in Tasikmalaya City in 2023. The preliminary study was conducted by interview method, obtained the results of the report from the Head of School Health Unit (UKS) that adolescent girls at SMAN 10 Tasikmalaya often experience dysmenorrhea, the majority who experience dysmenorrhea are grade XI adolescent girls. In addition, researchers also conducted interviews with 10 adolescent girls in class XI with the results that they often experience dysmenorrhea and have never received education about abdominal stretching exercise therapy. Based on this, researchers are interested in conducting research on "The Effectiveness of Education on Abdominal Stretching Exercise Therapy Using Podcast Media on Increasing Knowledge in Adolescent Girls at SMAN 10 Tasikmalaya".

RESEARCH METHOD

This research design is pre test and post test nonequivalent control group. The population in this study were grade XI adolescent girls totaling 276 people. The

proportional stratified random sampling technique uses the Lemeshow formula, as follows:

$$n = \frac{N \cdot Z^2 \cdot p \cdot q}{d(N - 1) + (Z^2 \cdot p \cdot q)}$$

Then the number of sample members based on strata is as follows:

Table 1. Sample

No	Kelas	N	Penentuan Sampel	n
1.	XI.1	55	55 / 276 x 40	8
2.	XI.2	49	49 / 276 x 40	7
3.	XI.3	49	49 / 276 x 40	7
4.	XI.4	18	18 / 276 x 40	3
5.	XI.5	55	55 / 276 x 40	8
6.	XI.6	44	44 / 276 x 40	6
7.	XI.7	44	44 / 276 x 40	6
8.	XI.8	51	51 / 276 x 40	7
9.	XI.9	18	18 / 276 x 40	3
10.	XI.10	41	41 / 276 x 40	6
11.	XI.11	41	41 / 276 x 40	6
12.	XI.12	51	51 / 276 x 40	7
13.	XI.13	16	16 / 276 x 40	2
14.	XI.14	14	14 / 276 x 40	2
Jumlah		276		100

A total of 40 respondents were obtained, 20 respondents for the intervention group and 20 respondents for the control group. Sample determination is based on inclusion criteria and exclusion criteria. The inclusion criteria for this study were grade XI adolescent girls who experienced dysmenorrhea and had never received education about abdominal stretching exercise therapy. The exclusion criteria for this study were young women who did not experience dysmenorrhea and had received education about abdominal stretching exercise therapy.

Data collection was obtained from primary data and secondary data. Using a questionnaire instrument made by the researcher with validity test results of 0.361 which was declared valid and reliability test results of 0.951 which was declared reliable. Before data collection, respondents were given informed consent was willing to participate in the study.

The research instrument used in this study was a questionnaire of knowledge stretching exercise therapy. This instrument is made in online form using google form, then distributed via a link that can be scanned by respondents. The questionnaire consists of 30 statements using a Guttman scale with 2 answer options "true or false" (Sugiyono, 2019).

The types of data analysis used are univariate analysis and bivariate analysis. Univariate analysis is a data processing step that describes and summarizes data in the form of tables or graphs. While bivariate analysis is exploring the relationship or correlation between two variables that are thought to be related (Notoatmodjo, 2018). Data normality test using Shapiro Wilk. Data analysis used Dependent T Test and Independent T Test. This research was conducted on April 23-25, 2024 at SMAN 10 Tasikmalaya.

RESEARCH RESULT AND DISCUSSION RESULT

a. Characteristics of Respondents by Age

Table 2. Distribution of Respondents' Characteristics Based on Age of Adolescent Girls

Age	Eksperiment / Intervension		Control	
	F	%	F	%
16	6	30	4	20
17	14	70	14	70
18			2	10
Amount	20	100	20	100

Based on Table 2. obtained the results of most respondents aged 17 years with a percentage of 70.0% (14 people) in the

intervention group and 70.0% (14 people) in the control group

b. Characteristics of Respondents Based on Last Education

Table 3. Distribution of Respondents' Characteristics Based on the Last Education of Adolescent Girls

Last Education	Intervension		Control	
	F	%	F	%
SMP	15	75	10	50
MTS	4	20	10	50
Pesantren	1	5		
Amount	20	100	20	100

Based on Table 3. it was found that most of the respondents had the last education of Junior High School (SMP) with a percentage of 75.0% (15 people) in the intervention group and in the control group the results were equivalent with a percentage of 50.0% (10 people) with the last education of Junior High School and 50.0% (10 people) with the last education of Madrasah Tsanawiyah (MTS). Mean Distribution of Knowledge Score Before and After Education in the Intervention Group at SMA Negeri 10 Tasikmalaya

Table 4. Mean Distribution of Knowledge Score Before and After Education in the Intervention Group

Variable	Mean	SD	Min-Max
Knowledge			
Pretest	21,25	2,881	14-25
Posttest	25,85	1,237	23-28

Based on Table 4. obtained the average value of knowledge scores before being given education in the intervention group was 21.25 and after being given education was 25.85.

c. Distribution of Mean Knowledge Score Before and After Education in the Control Group at SMA Negeri 10 Tasikmalaya

Table 5. Mean Distribution of Knowledge Score Before and After Education in the Control Group

Variable Knowledge	Mean	SD	Min-Max
Pretest	20,40	2,213	14-24
Posttest	23,75	1,711	19-26

Based on Table 5. obtained the average value of knowledge scores before being given education in the control group was 20.40 and after being given education was 23.75.

d. Difference in Mean Knowledge Score Before and After Education in the Intervention Group.

Table 6. Distribution of Mean Differences in Knowledge Scores Before and After Education in the Intervention Group

Variable	Mean	SD	Min-Max	N
Pretest	21,25	2,881	0,001	20
Posttest	25,85	1,237	0,001	20

Based on Table 6. obtained the results of 20 intervention group respondents, the average knowledge score before being given education was 21.25 and after being given education was 25.85. The statistical results obtained both with a p- value of 0.001 means that at 5% alpha shows a significant difference between the average knowledge score before and after education in the intervention group.

e. Difference in Mean Knowledge Score Before and After Education in the Control Group

Table 7. Distribution of Differences in Mean Knowledge Score Before and After Education in the Control Group

Variable	Mean	SD	P. Value	N
Pretest	20,40	2,213	0,001	20
Posttest	23,75	1,711	0,001	20

Based on Table 7. obtained the results of 20 intervention group respondents, the average knowledge score before being given education

was 20.40 and after being given education was 23.75. The statistical results obtained both with a p-value of 0.001 means that at 5% alpha shows a significant difference between the average knowledge score before and after education in the control group.

e. Difference in Mean Knowledge Score After Being Given Education Between the Intervention Group and the Control Group Regarding Knowledge Improvement

Table 8. Comparison of Changes in Mean Knowledge Score Before and After Being Given Education in the Intervention Group and the Control Group

Group	Mean Before	Mean After	Changes	Meaning
Intervensi on Group	21,25	25,85	4,60	Increase
Control Group	20,40	23,75	3,35	Increase

Based on Table 8. it is found that the average knowledge score in the intervention group before being given education is 21.25 then after being given education the average knowledge score is 25.85, meaning that there is a change in knowledge value of 4.60, it can be concluded that there is a significant difference in the average knowledge score before and after being given education in the intervention group. In the control group, the results showed that the average knowledge score before being given education was 20.40, then after being given education, the average knowledge score became 23.75, meaning that there was a change in knowledge value of 3.35, it can be concluded that there is a significant difference in the average knowledge score

before and after being given education in the control group.

DISCUSSION

a. Age Characteristics of Respondents in the Intervention Group and Control Group

In this study, the age of respondents in the intervention group and control group was mostly 17 years old, reflecting a homogeneous sample in cognitive and psychological development. Age affects a person's absorption and mindset, the older the age, the better the ability of adolescents to understand information that supports the improvement of knowledge and its implementation. However, from the results of the pre-test and post-test in the intervention group and control group, there was 1 intervention group respondent aged 16 years who answered the pre-test with a fairly high knowledge score of 25 out of a total of 30 correct answers. The researcher assumed that this could be due to external factors that are not directly related to age, such as parental education level, information, motivation and socio-cultural factors.

This statement is supported by research (Azhari & Muflikhatin, 2021) that parents' education, especially mothers, often correlates with children's knowledge as they tend to provide a more supportive environment for learning. Then access to information sources such as books, the internet, health seminars, and other media can affect the level of knowledge of respondents. In addition, the level of motivation and personal interest in the

topic studied is also very influential so that the socio-cultural factors prevailing in a particular society or community can affect the attitudes and knowledge of respondents regarding dysmenorrhea and abdominal stretching exercise.

However, at the time of the respondent's post test there was a decrease in knowledge score from 25 to 24, a decrease in score of 1. Of all the respondents, only this respondent had a decrease in knowledge score after the intervention. Researchers assume this can be caused by external factors that are not directly related to age, such as physical, mental and emotional health or environmental factors. This statement is supported by research (Sukmawati, 2022) that respondents who do not concentrate and focus on doing the post test, can cause a decrease in knowledge scores. **Characteristics of Respondents' Last Education in the Intervention Group and Control Group.**

The characteristics of the research respondents have an equivalent level of education as the first level of secondary education, because graduates can continue their education to a higher level. Based on this, it reflects that the last education of respondents is homogeneous. According to the researcher's assumption, education plays an important role in improving respondents' knowledge. Through the formal education process, respondents are introduced to the process of change from childhood to adulthood, one of which is characterized by the occurrence of

menstruation, pain during menstruation and various efforts to handle it. The curriculum available at each institution allows respondents to develop analytical, problem-solving and logical thinking skills, all of which contribute to increased knowledge. In addition, the researcher believes that the educational environment also encourages social interaction and discussion, which helps in the exchange of respondents' ideas and perspectives. Learning provided by educators and access to educational resources such as books and technology can increase respondents' knowledge. Therefore, education not only increases theoretical knowledge, but also prepares respondents for dysmenorrhea management. This statement is supported by research (Sinaga, 2023) that formal education has a crucial role to improve the knowledge and daily behavior of respondents in dysmenorrhea management, one of which is abdominal stretching exercise therapy.

a. Difference in Mean Knowledge Score Before and After Education in the Intervention Group

The results showed that there were differences in the average knowledge about abdominal stretching exercise therapy. There was an increase in the average knowledge score after being given education compared to before being given education in the intervention group. Before being given education, the average knowledge of female students was 21.25, while after being given

education it was 25.85, there was an increase in knowledge score of 4.60.

During the research process, respondents seemed very focused on paying attention to the podcast, the researcher assumed that respondents who paid attention to the podcast with focus could receive information better, resulting in an increase in knowledge scores. This statement is supported by research (Lestari & Fatonah, 2021) that education using podcast media can train respondents' motor skills, because when the listening process is carried out automatically respondents will select information and focus on something. Podcast media increases the level of comprehension and improve the audience's imagination. In addition, podcasts also make respondent s' concentration higher in watching. Respondents must focus when watching podcasts, because when they let their guard down a little, they will miss the information conveyed. Researchers conducted interviews with respondents regarding the extent to which they were familiar with podcast media. Based on the results of the interview, respondents have often used podcasts as a medium in learning or just looking for entertainment, because of their easy use.

Researchers assume that podcasts are an effective educational media in increasing respondents knowledge about abdominal stretching exercise therapy, because they are easy to access and have their own charm. This

statement is supported by research (Lavircana et al., 2020) that education using podcast media can be accessed very easily, only requiring a quota or wi- fi network (Atoilah et al., 2015). We can also download podcasts so that they can be watched or played anytime and anywhere. Podcasts have their own charm to impress their audience because of the content and delivery methods that appeal to them, both from their cool delivery, language that is easy to understand, certain humor is inserted, or from the character of each host or resource person who makes it unique.

Researchers also conducted interviews with respondents regarding the reasons they chose to use podcasts as a medium in finding information. Based on the results of the interview, the respondents chose podcast media because podcasts are new media and keep up with the times so that respondents can be more proficient in following technological developments (Perceka & Sutrisno, 2020).

Researchers assume that the use of podcast media today as a modern and trending media, podcast media can improve skills and provide long-term benefits for respondents in various aspects of life. This statement is supported by research (Maulida, 2021) that education through podcast media makes respondents more creative from the experience of the education process and make them more skilled in using technology and information in keeping up with the times.

During the research process, respondents seemed excited to pay attention to education through podcast media. Researchers assume that education through podcast media has great potential to motivate respondents to increase their knowledge and understanding of abdominal stretching exercise therapy. This statement is supported by research (Adi Wijayanto et al., 2023) that education through podcast media can motivate respondents to learn more, increase their understanding or knowledge so that it has an impact on good results, provide a fun, interactive and varied learning experience, can learn anywhere and anytime with easy access. (Adi Wijayanto et al., 2023). Selain itu, podcast dapat diakses dengan aman dan nyaman meskipun dalam jangka waktu yang lama (Zellatifanny, 2020).

Based on the results of the interview, the respondents really understood the abdominal stretching exercise therapy movement on the video podcast media because it was accompanied by pictures and explanations. Researchers assume that education through video podcast media is able to clarify respondents' understanding of abdominal stretching exercise therapy. This statement is supported by research (Hayati, 2022) that education using video podcast media is able to clarify the discussion and movements in performing therapy, because in the process of delivery in addition to hearing the sound, respondents also see directly and clearly each step of the image of the therapeutic

movements. Podcasts in the form of videos have the advantage of explaining and showing skills related to abdominal stretching exercise therapy movements. That education using podcast media can train respondents' motor skills, because when the listening process is carried out automatically respondents will select information and focus on something. Podcast media increases the level of (Susiloningtyas, 2018). The more therapeutic knowledge obtained, the clearer the understanding will be so that young women can practice abdominal stretching exercise therapy correctly and independently (Prawoto, 2019).

b. Mean Difference in Knowledge Score Before and After Education in the Control Group

The results showed that there was a difference in the average knowledge about abdominal stretching exercise therapy. There was an increase in the average knowledge score after being given education compared to before being given education in the control group. Before being given education, the average knowledge of female students was 20.40, while after being given education it was 23.75, there was an increase in knowledge score of 3.35.

During the research process, respondents seemed to pay good attention to the education process. Researchers assume that power point media gives its own impression. This statement is supported by research (Tanwir et al., 2023)

that power point media creates a memorable display during education. It can create presentation slides with various elements, such as text, images and graphics. Users can arrange the order of slides, add transition effects, and create varied and informative presentations.

Based on the results of the interview, respondents have often used power point media in the learning process at school. Researchers assume that power point media is an educational media that is easy to use. This statement is supported by research (N. Herawati et al., 2022) that power point media makes it easier for respondents to learn so that it can improve their learning achievement.

c. Differences in Mean Knowledge Score Before and After Education in the Intervention Group and Control Group

Based on the results of the study, it shows that there is a significant difference in knowledge between the intervention group and the control group. The data shows that the increase in knowledge level after education in the intervention group is greater than in the control group, which is shown through the average knowledge score of the intervention group which is 25.85 while in the control group it is only 23.75. From these data it can be concluded that education about abdominal stretching exercise therapy using podcast media is effective in increasing knowledge in adolescent girls at SMAN 10 Tasikmalaya and podcast media is more effective than

power point media in increasing the knowledge of adolescent girls.

According to the researcher's analysis, education using power point media has several disadvantages such as information overload. Presentations are often filled with too much text, graphics or other elements that can make respondents feel bored and less interesting. Meanwhile, education using podcast media is more interesting because there is humor, uses language that is used daily, follows the times, is easily accessible so that it can be played repeatedly anywhere and anytime. These differences influence how some people receive information (Tanwir et al., 2023).

Education about abdominal stretching exercise therapy using podcast media contains information delivery in the form of a conversation between the host and the resource person (Perceka, 2018). Discussing dysmenorrhea and abdominal stretching exercise therapy, the podcast video can be played repeatedly and does not change the content of the material, so that young women can become more aware of the therapy and can practice it independently (Prawoto, 2019).

Overall, podcast media can be provides a better learning experience than power point media. However, this does not mean that power point media cannot influence a person's knowledge. Various media have their own advantages as long as they are used appropriately according to the context and conditions in the field (Faujiah et al., 2022).

CONCLUSION

It is hoped that this research can be used as a reference for further researchers and can improve health education regarding abdominal stretching exercise therapy using podcast media.

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