

# The Effect of Health Education about Puberty on Knowledge of Physical Changes in the Early Youth in MTS Al-Ikhwan, Tidore Island

Triany L.Pelu, Na'mira Halil

<sup>1</sup>Penceramah, Poltekkes Kemenkes Ternate, Indonesia

## Abstract:

Physical changes are one of the physiological characteristics of early adolescents in entering puberty. Physical changes are often a problem for adolescents if the meaning of these changes leads to negative perceptions. These negative perceptions require the transfer of knowledge in order to provide an understanding of the physical changes that occur. One form of distribution of knowledge is through health education. The results of the 2012 Indonesian Youth Demographic and Health Survey (SDKI-R) in Aulia & Antika (2018) stated that as many as 13.3% of young women did not know anything about their physical changes during puberty. In fact, 47.9% of adolescent girls do not know the time of puberty. This lack of knowledge of adolescents results in a lack of knowledge of adolescents when experiencing a transition period. The transition period that occurs in adolescents is a vulnerable period for puberty adolescents, because adolescents experience rapid changes and involve physical changes including changes in body size, changes in body proportions and level of self-understanding, especially in terms of physical and sexual (Pasaribu, Ramayanti & Puri)., 2015). This study uses a quasi-experimental design based on a one group pre-post test design. The research sample is the entire population (total sampling), which is 45 students at MTs Al-Ikhwan Tidore Islands. Data analysis used the Wilcoxon test. The results showed that there was an effect of health education on puberty on knowledge of physical changes in early adolescents at MTs Al-Ikhwan Tidore Islands with p-value = 0.000. It was concluded that there was an effect of health education on puberty on knowledge of physical changes in early adolescence. This research still has many weaknesses, however, it is hoped that the results obtained can be used as material for other researchers to conduct further research on puberty with different designs and methods of health education.

**Keywords: Puberty, Health Education, Knowledge, Physical Change.**

## 1. Introduction

Physical changes are one of the physiological characteristics of early adolescents in entering puberty. Physical changes are often a problem for adolescents if the meaning of these changes leads to negative perceptions. These negative perceptions require the transfer of knowledge in order to provide an understanding of the physical changes that occur. [1] Based on the United States Statistics Agency, the world's population in January 2018 reached 7.53 billion people. Of this number, the most are children aged 0-4 years, reaching 662 million people or about 8.7% of the total population, followed by early teens with an age range of 10-14 years amounting to 618 million people (US Census Bureau, 2018). [2] According to the Ministry of National Development Planning (2019), Indonesia's population in 2018 reached 267 million. Of this number, adolescents aged 10-14 years are the largest, namely 22 million people with a male presentation of 50.9% and female 49.1%. [3]

According to the Central Statistics Agency of North Maluku (2018), the prevalence of early adolescents aged 10-14 years is as many as 128 thousand people, consisting of 65 thousand males and 62 thousand females. Meanwhile, in the city of Tidore Islands, the number of early adolescents was 10,264 consisting of 5,328 males and 4,936 females. [4]

The results of the 2012 Indonesian Adolescent Demographic and Health Survey (IDHS-R) in Aulia & Antika (2018) stated that as many as 13.3% of young women did not know anything about their physical changes during puberty. In fact, 47.9% of adolescent girls do not know the time of puberty. This lack of knowledge of adolescents results in a lack of knowledge of adolescents when experiencing a transition period. The transition period that occurs in adolescents is a vulnerable period for puberty adolescents, because adolescents experience rapid changes and involve physical changes including changes in body size, changes in body proportions and level of self-understanding, especially in terms of physical and sexual. [5]. Sexual maturation and changes in body shape affect the psychological life of adolescents, meanwhile teenagers pay great attention to their appearance so that they are often worried about their body shape that is not proportional. Psychological impacts if there is a minimal understanding of changes in puberty include poor self-concept, low achievement, lack of preparation for puberty, sexual deviations (Sarwono, 2015). According to Meliala (2016), physical and sexual changes are always accompanied by an imbalance in adolescents because these changes are experiences that have never been felt before. This causes the distribution of knowledge as a form of introduction to physical changes is needed by adolescents.[6] One form of distribution of knowledge is through health education. This is based on research conducted by Patonah, Setiawan & Setiyani (2014) on the effect of health education on adolescent girls' knowledge about signs of puberty in grade VII SMP Al-Maliki, Ledok Wetan Village, Bojonegoro District, Bojonegoro Regency which found that there was an effect of health education on on adolescent knowledge.[7] This is in line with research conducted by Rini (2017) on the effect of health education on puberty on early adolescent knowledge at SMP Negeri 1 Baturaden which also found that health education greatly influences adolescent knowledge.[8] Based on a preliminary study conducted at MTs Al-Ikhwan Tidore Islands by interviewing teachers, it was found that all students from class VII to class IX (72 people) had never received health education at school about puberty. The results of interviews with 20 students in grades VII and VIII found that only 6 students were able to explain the meaning of puberty and 5 students were able to explain the physical changes experienced during puberty. Information about puberty obtained by students is through the internet and parents. Based on this background, the researchers are interested in conducting research on the "Effect" Health Education About Puberty on Knowledge of Physical Changes in Early Adolescents at MTs Al-Ikhwan Tidore Islands".Bahan dan metode

## Research design

This study is intended to reveal a causal relationship by involving a group of subjects who will be observed before the intervention is carried out, then observed again after the intervention. So the design used in this study is a quasi-experimental design with a one group pre-post test design. [9]

Quasi experimental design with one group pre-post test design is research by conducting health education activities that aim to determine the symptoms or effects that arise, as a result of certain treatments. [10]

## Results and Discussion

### 1. Results

**Table 1 : Frequency Distribution by Gender of Students at MTs Al-Ikhwan Tidore Islands 2020**

Sex	N	%
Male	22	48,9
Female	23	51,1
Total	45	100

*Source: Primary Data, March 2020\*

Table 1 shows that the gender of the most students is female, namely 23 students (51.1%) and 22 students (48.9%) are male.

**Table 2 : Frequency Distribution by Age of Students at MTs Al-Ikhwan Tidore Islands 2020**

Age	N	%
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12	5	11,1
13	20	44,4
14	20	44,4
Total	45	100

*Source: Primary Data, March 2020\*

Table 2 shows that most of the respondents are 13 and 14 years old with 20 students each (44.4%). Meanwhile, respondents aged 12 years only amounted to 5 students (11.1%).

**Table 3 : Frequency Distribution by Class at MTs Al-Ikhwan Tidore Islands 2020**

Class	N	%
VII	20	44,4
VIII	25	55,6
Total	45	100

*Source: Primary Data, March 2020\*

Table 3 shows that as many as 25 students (55.6%) are students of class VIII, while 20 respondents (44.4%) are students of class VII.

**Table 4 : Frequency Distribution Based on Ever Getting Information about Puberty at MTs Al-Ikhwan Tidore Islands 2020**

Getting Information about Puberty	N	%
Yes	12	26,7
No	33	73,3
Total	45	100

*Source: Primary Data, March 2020*

Table 4 shows that as many as 33 respondents (73.3%) never received information about puberty and only 12 respondents (26.7%) had information about puberty.

**Table 5 : Distribution of Respondents Based on Knowledge Level Before Health Education was Given at MTs Al-Ikhwan Tidore Islands 2020**

Knowledge level	N	%
Good	1	2,2
Enough	12	26,7
Less	32	71,1
Total	45	100

*Source: Primary Data, March 2020*

Table 5 shows that the level of knowledge of respondents before being given health education was mostly in the poor category with a total of 32 respondents (71.1%) and for the sufficient category there were 12 respondents (26.7%) while for the good category there were only 1 respondent (2,2%)

**Table 6 : Distribution of Respondents Based on Knowledge Levels After Being Given Health Education at MTs Al-Ikhwan Tidore Islands 2020**

Knowledge level	N	%
Good	36	80
Enough	9	20
Total	45	100

*Source: Primary Data, March 2020*

Table 6 shows that the respondent's ability level after being given Health Education has increased with a good category of 36 students (80%) while the number of respondents who are in the sufficient category is 9 students (20%).

**Table 7 : Normality Distribution of Physical Change Knowledge Data**

	Kolmogorov-Smirnov		
	Z	df	Sig.
Pretest	2,941	45	0,000
Posttest	3,284	45	0,000

*Source: Primary Data, March 2020*

Table 7 shows that the results of the normality test obtained a z value of 2,941 with an Asymp Sig of 0.000 (pre-test) and a z value of 3.284 with an Asymp Sig of 0.000 (post-test). To determine whether the data is normal or not, the Asymp Sig value is compared with 0.05, if the Asymp Sig value is greater than 0.05, it can be concluded that the data is normal. From the normality test, the Asymp Sig value is less than 0.05, so it can be concluded that the data is not normally distributed. So that the alternative test used is the non-parametric Wilcoxon sign rank test.

**Table. 8 : Knowledge Analysis Before and After Giving Health Education About Puberty**

Variable	N	Mean	SD	Z	p-value
Before Giving Health Education	45	2,69	0,514		
After Given Given Health Education	45	1,20	0,405	-5,960	0,000

Table 8 shows that the Wilcoxon test results obtained a p-value of 0.000, then H1 is accepted and H0 is rejected because the p-value is less than 0.05 meaning that there is an effect of health education on puberty on knowledge of physical changes in early adolescents at MTs Al-Ikhwan Tidore Islands

## 2. Discussion

### 1. Analisa Univariat

#### a. Gender

In carrying out the research, the respondents obtained were in accordance with the number of samples that the researcher needed, namely 45 students (100%). Respondents are dominated by female students according to table 5.1 which shows the gender of female students, namely 23 students (51.1%) and 22 students (48.9%) are male.

#### b. Age

Table 5.2 shows that most of the respondents are 13 and 14 years old with 20 students each (44.4%). Meanwhile, respondents aged 12 years only amounted to 5 students (11.1%).

In this study, the age of the respondents was categorized as early adolescence because the age range of early adolescence was between 10-14 years. According to Notoatmodjo (2014) age greatly affects knowledge, increasing a person's age will affect the perception, mindset and how to get the information. If a person is of sufficient age, he will have a mature mindset and experience as well. so that the knowledge gained will be better. [11]

This is supported by Nydia Rena's research (2012) which shows that the age of 10-14 years is a golden period for forming a strong foundation about puberty. These early teens have a high curiosity about new things that will be experienced by the teenager.[12]

#### c. Class

In this study, it is known that respondents for early adolescence are divided into two classes, namely 20 respondents (44.4%) are students of class VII while 25 students (55.6%) are students of class VIII.

#### d. Ever Get Information About Puberty

Table 5.3 shows that 33 respondents (73.3%) never received information about puberty and only 12 respondents (26.7%) had information about puberty.

Early adolescents in this study needed awareness in seeking and receiving information about puberty properly and correctly. Because according to Notoatmodjo (2014) the more information you get, the better the knowledge you have. Researchers found that there were still many respondents who never received information about puberty, which could affect their knowledge of physical changes, while respondents who had more sources of information would have better knowledge. Getting information at this time can be through parents, health workers, friends, mass media, print media and the internet, while the provision of this information can be given through health education using video media in order to attract the attention of early teens to properly digest the information conveyed. [11]

#### e. Knowledge Level of Students Before Health Education

The frequency distribution of the knowledge level of respondents before being given health education was mostly less knowledgeable with a total of 32 respondents (71.1%). Students who have a low level of knowledge are caused by a lack of information about puberty. Most students only receive information from peers and the internet which causes self-perceptions that lead to misunderstandings of the information provided. This is in accordance with research conducted by Asih and Anggraeni (2018) that 70% of adolescents have less knowledge about puberty due to lack of information.[13]

In the frequency distribution, students who have good knowledge only consist of 1 respondent (2.2%) and sufficient knowledge is 12 respondents (26.7%). The knowledge that students have is obtained from the experience factor, namely the experience of physical changes so that it allows students to know about puberty information.

The experiences you have include yourself or others. Like the experience that occurs at this age that there are respondents who have experienced physical changes both primary and secondary so that it affects their knowledge. And at this early age, they have been exposed to mass media, print and electronic but not all respondents are able to receive information properly.

According to research by Imam Arif (2015), increasing knowledge can be done by listening to health education or information from parents, teachers, mass media and print. A person's knowledge is obtained from the interaction of the surrounding environment such as a school environment that provides learning

about puberty and provides facilities that can support the implementation of health education. [14]

#### f. Students' Knowledge Level After Being Given Health Education

After the health education was carried out, it was found that the knowledge of the respondents had increased, namely in the good category, 36 respondents (80%), only 9 respondents (20%) and no knowledge in the less category.

What affects a person's level of knowledge is the information received by a person with sources of information obtained from several sources, one of which is health education.

Health education is a source of information that can increase knowledge because it is given using the lecture method. The use of this lecture method has the advantage that it is easy to convey and able to be understood well and the existence of two-way communication makes the respondents understand more than what was conveyed by the researcher.

In carrying out research, in addition to using the lecture method, he also uses presentation media in the form of video.

According to Daryanto's research (2013) that the selection of presentation media is presented in the form of text, images and combined animation. So that the use of this presentation media is able to attract the attention of respondents in carrying out health education so that it can increase respondents' knowledge. [15]

## 2. Bivariate Analysis

This research was conducted for two days, the first day began with a pretest to each respondent in the form of filling out a questionnaire to obtain data about knowledge of physical changes. After that on the second day of the study, respondents were given an intervention in the form of providing health education about puberty using the lecture method and video presentation media. The intervention in this study is an attempt to increase knowledge of physical changes. After the intervention, the respondent was again given a post-test.

According to Vaus in Arimurti (2012), the distance between the pretest and the intervention should not be too long. This is done to minimize the influence from outside before the intervention. Meanwhile, the time gap between intervention and posttest really depends on theory, previous research and the type of memory you want to see (short term or long term memory). The posttest that was conducted to see short term memory in this study used a short time interval after the intervention was given.[16]

Knowledge of this physical change can be increased because according to Notoatmodjo (2014) the cognitive component of knowledge is mostly received from the results of eye and ear sensing. In this case, the influence is very large through seeing and hearing. Health education provided using the lecture method and media presentation in the form of video in this study can be included in the criteria for seeing and hearing. [11]

Basically, according to Nugraheni, Indarjo & Suhat (2018) health education is a process of changing healthy living behavior based on self-awareness both within individuals, groups, groups or communities to maintain and improve public health.[17]

According to Iqbal & Chayatin (2009) in Sai, Kundre & Hutauruk (2018) this behavior change process aims to improve the community's ability to maintain and improve their health, both physically, mentally and socially. [18]

Transfer of knowledge with health education can be done by various methods. According to Afandi, Chamala & Wardani (2013) the method is a method used to achieve the goals that have been set.[1]

This is supported by Anita (2017) that in increasing one's health knowledge, health education needs to be carried out, namely efforts to influence a person or group as expected by health education providers. Where the provision of health education using the lecture method and presentation media has a better average score so it can be concluded that health education using the lecture method and presentation media is very effective in increasing respondents' knowledge. [5]

At the time of the research, the respondents were relatively new to health education using video presentation media, so most of the respondents had great curiosity and were very enthusiastic. The use of media is defined as an intermediary that is often found in various activities such as the teaching and learning process,

seminars, meetings and other lecture activities. And the media as a source of messages with recipients of messages or information so that the media can be interpreted as an intermediary or liaison between two parties.

Learning media is able to affect the effectiveness of learning so that it can improve students in learning and can help increase the absorption of material and focus information on knowledge (Arsyad, 2011).[19]

The results of research conducted at MTs Al-Ikhwan Tidore Islands about the effect of health education about puberty on knowledge of physical changes in early adolescents, it was found that there was a significant increase in respondents' knowledge after being given health education with lecture methods and video media, namely 80% were in the good category. compared to before being given health education, where there were only 2.2% of respondents in the good category. So that it can be seen the influence of health education on adolescent knowledge which is also supported by the results of the Wilcoxon analysis test.

The results of the Wilcoxon test of knowledge were obtained with a p-value of 0.000, then H1 was accepted and H0 was rejected because the p-value was less than 0.05, meaning that there was an effect of health education on puberty on knowledge of physical changes in early adolescents at MTs Al-Ikhwan Tidore Islands. So in accordance with the theory put forward by Wahit (2007) that the factors that influence knowledge, one of which is education which means providing guidance from one person to another on something so that they can understand.

The results of this study are in line with research conducted by Rini (2017) who found that there was an effect of health education on puberty on early adolescent knowledge at SMP Negeri 1 Batu Raden. [8]

Likewise, research conducted by Ristraningsih (2017) found that there was an increase in adolescent reproductive health knowledge after being given health education.

Research conducted by Patonah, Setiawan & Setiyani (2014) on the effect of health education on adolescent girls' knowledge of signs of puberty in grade VII SMP Al-Maliki, Ledok Wetan Village, Bojonegoro District, Bojonegoro Regency, found that there was an effect of health education on adolescent knowledge. [7]

Referring to the theory and research that has been mentioned, in order to increase knowledge, it is necessary to provide health education with lecture methods and video media. Because basically, knowledge of physical changes is a process of knowing about the process of sexual maturity and reproductive organs becoming functional with the occurrence of physical changes both primary and secondary experienced in early adolescence.

The results of research conducted by Yusuf Bachtiar (2015) with the title of knowledge differences in health education, lecture methods and leaflet media with the lecture method and video media about the dangers of smoking at SMK Kasatrian Solo found that the lecture method with video media had more effect on increasing knowledge about the dangers of smoking. .[20]

Thus it can be concluded that there is an effect of health education on puberty on knowledge of physical changes in early adolescents at MTs Al-Ikhwan Tidore Islands.

### 3. Conclusion

Based on the results of the research and discussion described in the previous chapter, it can be concluded several things as follows: Before being given health education about puberty, the level of knowledge of physical changes in early adolescents at MTs Al-Ikhwan Tidore Islands was mostly in the poor category. Knowledge of adolescent physical changes There was an effect of health education about puberty on knowledge of physical changes in early adolescents at MTs Al-Ikhwan Tidore Islands with a p-value of 0.000 ( $p < 0.05$ ).

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