

# CORRELATION BETWEEN MENARCHEAL AGE WITH MENSTRUAL HEALTH AWARENESS AMONG COLLEGE STUDENTS IN A PRIVATE UNIVERSITY

Dora Samaria<sup>1</sup>, Theresia<sup>2</sup>, Doralita<sup>3</sup>

<sup>1</sup>Lecturer of Faculty of Health Sciences, Universitas Pembangunan Nasional "Veteran" Jakarta

<sup>2</sup>Clinical Educator of Faculty of Nursing Universitas Pelita Harapan

<sup>3</sup>Nurse staff of Pantai Indah Kapuk Hospital

Email: [dora.samaria@upnvj.ac.id](mailto:dora.samaria@upnvj.ac.id), [theresia.fon@uph.edu](mailto:theresia.fon@uph.edu), [dora.panjaitan@gmail.com](mailto:dora.panjaitan@gmail.com)

## ABSTRACT

*Adolescent females who had their menarche experience cognitive and psychological development. In that period, it takes adolescents' awareness of menstrual health in order to behave appropriately and maintains the quality of health. This study aims to identify the correlation between menarcheal age and menstrual health awareness. This research used cross-sectional design done to 117 female students of Economic Education Study Program in Universitas Pelita Harapan from October to November 2017. This research used purposive sampling method. Data were analyzed using Spearman Correlation Test. The results showed that there was a significant correlation between menarcheal age and menstrual health awareness. It can be concluded that adolescents female who had their menarche at normal age (12-14 years) had increased menstrual health awareness. It is recommended for future research to use quasi-experimental or randomized controlled trial study on larger sample size.*

**Keywords:** *Menarcheal age, menstrual health awareness, adolescent.*

## INTRODUCTION

Adolescence is one of the fastest phases in human development that includes many changes such as physical, cognitive, psychological, and social development, which have implications for adolescents health and behavior (World Health Organization, 2018). About 1.2 billion adolescents today constitute 18% of the world's population, of which more than half live in Asia (United Nations Children's Emergency Fund, 2012). One of the crucial phases that experienced by adolescent female is menarche. Experience of menarche becomes a moment that characterizes a huge self-awareness for young women. It is comparable to other

unforgettable moments in a woman's life, such as marriage and childbirth (Amaral, Hardy, & Hebling, 2011).

Age and experience of menarche of adolescent women in different countries are depended on the demographics, culture, and lifestyle (Al et al., 2015; Amaral et al., 2011; Esimai & Esan, 2010). In Indonesia, adolescent women generally experienced menarche at the age of 12-14 years (Putri & Meiliani, 2014). In United States (US), less than 10% of US girls got menarche before 11 years old, and 90% of all US girls are menstruating by 13.75 years of age. However, non-Hispanic black girls in US was significantly earlier than white girls at

10%, 25%, and 50% of those who had got menarche (Chumlea et al., 2003).

Adolescent women who have attained menarche age will experience a period of menstruation that is often followed by symptoms or complaints of discomfort. Many women experience pain during menstruation. As many as 60.5 % of female students reported pain during menstruation and 12.5% reported impaired academic activities due to menstruation. The findings are consistent with reports of 16-58% of adult women and 35-78% of adolescents experiencing pain during menstruation, and about 3-20% report it as severe enough pain to interfere the daily activities (Esimai & Esan, 2010).

Biological determinants during adolescence are quite universal. Adolescents need to have awareness of their body changes in order to live easier and more productive (Sandhya & Bimala, 2017). Adolescent women also need to be aware of the importance of having adequate and proper knowledge, as well as the facilities and cultural environment, to manage menstruation in a hygienic and dignified manner. They also need to be aware of any disorders or abnormalities that may occur

during menstruation and appropriate behavior to overcome them.

Awareness of reproductive health is a healthy awareness of the conditions pertaining to the system, function, and the reproductive process in the preparation process to obtain a healthy reproductive (Arianti, 2012). Knowledge and awareness shapes attitudes through some concepts and constructs, knowledge and menstrual awareness, are expected to have a positive influence on attitudes and behavior (Langer, et al, 2015). Awareness of the need for healthy menstrual practice is important (Sharma, 2013; Gustinah & Djanah, 2015). The menstrual health awareness concerns on young women's awareness of system, function, and process of healthy menstrual and recognizing the signs of menstrual abnormalities and early efforts that can be done in overcoming the disorders.

The study of Dudeja, Sindhu, Shankar, Gadekar, et al. (2016) towards 250 adolescent in Western Maharashtra found that female teenagers' knowledge about menstruation was still less (5.4%). They found that the lack of menstrual health awareness is a barrier in adopting a good menstrual practice. It was an obstacle for

young women to overcome traditional beliefs, misconceptions and restrictions on menstruation. It also affected them in the transitional phase of being an adult woman.

The research of Esimai & Esan (2010) found that adolescent awareness about menstrual abnormalities was poor (29%). Some of them (10.5 %) sought help to overcome menstrual disorders. Adolescent awareness of menstrual abnormalities was significantly influenced by their age at the time the study was performed. The results also stated that the group consisted of older age adolescents were more aware of the abnormalities in their menstrual cycle than the younger age group. Furthermore, the menarcheal age and the education level had no significant influence on students' awareness of menstrual abnormalities.

Adolescent females who had their menarche experience cognitive and psychological development. In that period, it takes adolescent's awareness of menstrual health in order to behave appropriately and maintains the quality of health. If adolescent females who already attained menarcheal age have no awareness of menstrual health, they will get an impact

on the quality of their reproductive health. Therefore, we are interested to identify the correlation of menarcheal age and menstrual health awareness. The result of this research can be a recommendation to design a program for adolescents based on their menarcheal age.

## **METHODS**

This study was a descriptive study with a quantitative correlation approach using cross sectional design. This research was conducted in October to November 2017. The population in this study were 143 students of Economic Education Study Program, Teacher College, Universitas Pelita Harapan.

The research sample was selected by purposive sampling method. The inclusion criterion was students who had their menarche and exclusion criterion was students who were absent at the time of study. The number of samples was calculated using the Slovin formula with a 5% error rate. So, the amounts of samples size was 117 female students.

We used a demographic and the menstrual health awareness questionnaire which had been developed through the process of

validity and reliability test. The menstrual health awareness questionnaire consists of 6 questions (see Table 1). The questions of number 2 and 5, the value of the score were reversed.

The validity and reliability of the questionnaire were tested to a similar population of 30 adolescent students of English Education Study Program, Teacher College, Universitas Pelita Harapan. The questionnaire was valid with *r* value of each question item is greater than 0.3 and reliable with alpha cronbach value greater than 0.6. When gathering data, the researchers explained the research objectives, benefits and procedures to the respondents. Then, the respondent gave their consent to participate in the study. Furthermore, the obtained data from the respondents were kept confidential by

using coding and without identity (Polit & Beck, 2014).

The data were processed using a computer program through the process of editing, coding, and entering. Then, the data were tested using univariate and bivariate analysis. Univariate analysis was used to determine the frequency distribution of demographic data. Bivariate analysis of Spearman Correlation Test was used to analyze the correlation of independent variable (menarcheal age) and dependent variable (menstrual health awareness).

## RESULTS

### Characteristics of Respondents

A total of 117 female students were participated in the study. Table 1 below shows the demographic characteristics of the respondents.

Table 1. Characteristics of The Respondents

Characteristics	n (%)	Mean	SD
<b>Age</b>		19.25	1.210
18	32 (27.35)		
19	41 (35.04)		
20	32 (27.35)		
21	7 (5.98)		
22	4 (3.41)		
23	1 (0.85)		
<b>Total</b>	<b>117 (100)</b>		
<b>Age at Menarche</b>		12.8	1.341
10	4 (3.41)		
11	9 (7.69)		
12	43 (36.75)		
13	29 (24.78)		
14	18 (15.38)		
15	12 (10.25)		
17	2 (1.71)		
<b>Total</b>	<b>117 (100)</b>		

Based on Table 1, the average age of respondents was 19.25 years old, with the majority of 19 years old (35.04%). The mean age of menarche respondents was 12.8 years old. The researchers divided the independent variable (menarche age) into two categories, normal menarcheal age (12-14 years old) and abnormal menarcheal age (<12 years old and > 14 years old) (Putri & Meiliani, 2014). The dependent variable, menstrual health

awareness, was divided into three categories, high menstrual health awareness (score  $\geq 24$ ), moderate health menstrual awareness (score 18-23), and low menstrual health awareness (score  $\leq 17$ ). Categorization of variables of menstrual health awareness followed the formula of three categories (Syarifudin, 2010). Table 2 shows the scores of respondents on both variables.

Table 2. Scores of Menarcheal Age and Menstrual Health Awareness

Variables	n	%	Mean	SD
Age at Menarche				
Normal (12-14 years)	90	76.92	2.01	0.482
Abnormal (<12 years and > 14 years)	27	23.08		
Menstrual Health Awareness				
Low (score $\leq 17$ )	3	2.57		
Moderate (score 18-23)	88	75.21	2.20	0.459
High (score $\geq 24$ )	26	22.22		

### Data of Normality Test Results

Both of research variables were tested to identify the normality of the data using Kolmogorof-Smirnov Test to determine the type of correlation test to be utilized in the study. The results showed that the p value of both variables were 0.000, thus  $H_0$  was rejected. So, the variables had an abnormal distribution data. Thus, Spearman Correlation Test was used to analyze the data. Table 3 below shows the results of Spearman's Correlation Test.

Table 3. Spearman Correlation Test Results

Menstrual Health Awareness			
Menarche Age	r	p	n
	0.262	0.004	117

The result of Spearman Correlation test showed that p value was  $< 0.005$ , then  $H_0$  was rejected. Thus, it was concluded that there was a significant correlation between the age of menarche and the awareness of menstrual health. For the coefficient of the Spearman Correlation, *r* value was 0.262 which indicated that the correlation between menarcheal age and menstrual health awareness was weak.

## DISCUSSION

The majority of respondents had their menarche at the age of 12-14 years. This result supported the social, physical, psychological and cognitive of adolescents in facing a new phase of growth and development (Sanders, 2013). The developed cognitive phase supported adolescent awareness of menstrual health. It is consistent with the results of the menstrual awareness score, in which only three people (2.57%) had low menstrual health awareness. Most of the respondents had a sufficient and high awareness of menstrual health. It is advantageous because having good menstrual health awareness could be a provision for young woman to maintain her reproductive health.

The results were consistent with the study of Dudeja, Sindhu, Shankar, Gaddekar, et al. (2016) which revealed that awareness of health menstruation was important to adolescent. They further stated that ignorance and lack of preparation during puberty and menstruation could lead to the false beliefs and taboos that made young women vulnerable to feelings of shame and low self-confidence. Their study confirmed the finding that adolescent women who lack of menstrual awareness were not ready

for menstruation. Lack of awareness also created an obstacle in adopting safe and hygienic menstrual practices.

The researchers did not find any previous studies that explored on the awareness of menstrual health in adolescent. However, a similar research was obtained from the study of Sandhya & Bimala (2017) which study the adolescent's awareness of pubertal changes. Their findings showed that 16% of adolescents had an excellent level of awareness, 47% had a good level of awareness, 28% had an average awareness rate and only 9% had a low level of awareness. They concluded that there was a significant difference between the level of adolescent's awareness of pubertal changes and their age ( $X^2 = 18.04$ ,  $p = 0.00$ ).

Furthermore, both of study variables (menstrual age and menstrual health awareness) were analyzed to test whether there was a significant correlation between them. The result of Spearman Correlation Test showed that both variables have a significant correlation and a positive correlation coefficient resulting in a positive relationship direction. This could signify that adolescent who had menarche at normal age (12-14 years) had an

increased awareness of menstrual health. The results of this research were consistent with the results of similar study conducted by Sandhya & Bimala (2017) which concluded that as the age increased, the adolescent became more aware of the changes in puberty. This was in line with the direction of a positive correlation between age and adolescent awareness in this study.

However, the study of Esima & Esan (2010) contradicted with the results of this study. They found that menarcheal age did not affect the awareness of adolescent girls about abnormal menstruation ( $p=0.24$ ). It might happen because the focus of their study was slightly different from our research. They assessed the relationship between menarche age and the awareness of abnormality menstruation in adolescent women, whereas our study examined the correlation between menarcheal age and awareness of menstrual health. In addition, in the characteristics of the population in their study were not similar to our study.

They examined rural female adolescents who considered menstruation as a personal business and a taboo to talk about. Their respondents were also less exposed to menstruation information and various types

of abnormalities which makes their awareness of menstrual abnormalities was still low. These were different from the characteristics of the respondents in this study in which the population female adolescent students living in urban areas and were opened to variety of accessed information.

Both of our study variables had a significant correlation, but the strength of this correlation was weak ( $r = 0.262$ ). This might happen because the samples size in this study was not large enough. A larger sample size could provide a more accurate result of statistical test which close to clinical setting (Sastroasmoro & Ismael, 2011). Another weakness in this study was the categories of menarcheal age were too broad. The authors included the adolescent who had menarche at  $<12$  years old and  $>14$  years old into abnormal menarcheal age. It would more appropriate to divide them into new categories, such as early menarcheal age and late menarcheal age in order to yield a new finding.

## **CONCLUSION**

The results showed that there was a significant correlation between menarcheal age and menstrual health awareness ( $p = 0.004$ ;  $r = 0.262$ ) which indicated that the

adolescent females who had their menarche at normal age (12-14 years) tend to have high awareness of menstrual health. However, the strength of the correlation in our study was weak because of narrowed sample size. Therefore, for the future study, the researchers recommend to use larger sample size with quasi-experimental or randomized controlled trial design.

## ACKNOWLEDGMENTS

This article was extracted from primary research funded by the Pelita Harapan University (Grant Number: 244 / LPPM UPH / VII / 2017). We would like to thank the Institute of Research and Community Service of Universitas Pelita Harapan for financial support and The Research Center and Training Committee of Faculty of Nursing Universitas Pelita Harapan or editorial assistance.

## REFERENCES

- Al, O., Rn, O., Abdel, N. M., Rn, R., Professional, N., & Rn, M. M. F. (2015). Original Study Experience of Menarche Among Jordanian Adolescent Girls : An Interpretive Phenomenological Analysis. *Journal of Pediatric and Adolescent Gynecology*. <http://doi.org/10.1016/j.jpag.2015.09.005>
- Amaral, M., Hardy, E., & Hebling, E. M. (2011). Menarche among Brazilian women : memories of experiences Maria Clara Estanislau do Amaral , MS ( Obstetric nurse , Collaborating teacher in the nursing graduate. *Midwifery*, 27(2), 203–208. <http://doi.org/10.1016/j.midw.2009.05.008>
- Arianti, Siang Ing. (2012, Mei). Pembelajaran Kesadaran Kesehatan Reproduksi pada Siswa SMALB/C (Tunahragita). *Jurnal Ilmiah Guru “COPE”*, Nomor 01/Tahun XVI/Mei 2012. [online]. Diakses dari <http://repository.unej.ac.id/bitstream/handle/123456789/68635/'Adillah%20-%20112110101118.pdf?sequence=1>.
- Chumlea, W. C., Schubert, C. M., Roche, a. F., Kulin, H. E., Lee, P. a., Himes, J. H., & Sun, S. S. (2003). Age at Menarche and Racial Comparisons in US Girls. *Pediatrics*, 111(1), 110–113. <http://doi.org/10.1542/peds.111.1.110>
- Dudeja, P., Sindhu, A., Shankar, P., & Gadekar, T. (2016). A cross-sectional study to assess awareness about menstruation in adolescent girls of an urban slum in western Maharashtra, (5), 8–12. <http://doi.org/10.1515/ijamh-2016-0079>
- Esimai, O. A., & Esan, G. O. O. (2010). Awareness of Menstrual Abnormality Amongst College Students in Urban Area of Ile-Ife , Osun State , Nigeria, 35(1). <http://doi.org/10.4103/0970-0218.62559>



- Gustinah & Djanah, 2015. Sumber Informasi dan Pengetahuan Tentang Menstrual Hygiene pada Remaja Putri. *Jurnal Kesehatan Masyarakat* 10 (2) (2015) 147-152. Diakses dari <http://journal.unnes.ac.id/nju/index.php/kemas>
- Langer, B., Mahajan, R., Gupta, Rajiv K, et al. (2015, December). *Impact of menstrual awareness and knowledge among adolescents in a rural area*. *Indian Journal of Community Health*/Vol. 27/Issue No.04/Oct-Dec 2015. [online]. Diakses dari <http://www.iapsmupuk.org/journal/index.php/IJCH/article/download/1108/893>
- Polit, D. F., & Beck, C. T. (2014). *Essentials of Nursing Research: Appraising Evidence for Nursing Practice*. Wolters Kluwer Health /Lippincott Williams & Wilkins. Retrieved from <https://books.google.co.id/books?id=2WJ6MAEACAAJ>
- Putri, R. L. D., & Melaniani, S. (2014). Analisis Faktor Hubungan Usia Menarche Dini. *Jurnal Biometrika Dan Kependudukan*, 2, 42–50.
- Sanders, R. a. (2013). Adolescent Psychosocial, Social, and Cognitive Development. *Pediatrics in Review*, 34(8), 354–359. <http://doi.org/10.1542/pir.34-8-354>
- Sandhya, P., & Bimala, P. (2017). Awareness and Attitude on Pubertal Changes among Community Adolescents, *10*(3), 1255–1265.
- Sastroasmoro, S. & Ismael, S. (2011). *Dasar-dasar Metodologi Penelitian Klinis*. Edisi Ke-4. Jakarta: Sagung Seto.
- Sharma, N., et al. 2013. A Cross sectional Study of Knowledge, Attitude And Practices of Menstrual Hygiene Among Medical Students In North India., *The Journal*
- Syarifudin, B. (2010). *Panduan TA Keperawatan dan Kebidanan dengan SPSS*. Yogyakarta: Grafindo Litera Media.
- United Nations Children’s Emergency Fund (2012). *Children in an urban world*. Diakses pada 7 Juni 2018 dari [https://www.unicef.org/sowc/files/SOWC\\_2012-Main\\_Report\\_EN\\_21Dec2011.pdf](https://www.unicef.org/sowc/files/SOWC_2012-Main_Report_EN_21Dec2011.pdf).
- World Health Organization (2018). *Maternal newborn, child, and adolescent health*. Diakses pada 7 Juni 2018 dari [http://www.who.int/maternal\\_child\\_adolescent/topics/adolescence/development/en/](http://www.who.int/maternal_child_adolescent/topics/adolescence/development/en/)