https://stikes-nhm.e-journal.id/OBJ/index

P-ISSN : 1979-3340
e-ISSN : 2685-7987

Jurnal Ilmiah Obsgin

Jurnal Ilmiah Ilmu Kebidanan & Kandungan

Article

A SCOOPING REVIEW BETWEEN NUTRITIONAL STATUS AND EARLY MENARCE OF ADOLESCENT WOMEN IN INDONESIA

[1] Afiatun Rahmah [2] Mirawati, [3] Rahma Alifhia Ariana

[1,2,3]DIII Midwifery Study Program, Faculty of Nursing and Health Sciences, University of Muhammadiyah Banjarmasin

SUBMISSION TRACK

Recieved: July 07, 2023
Final Revision: July 27, 2023
Available Online: July 31, 2023

KEYWORDS

Nutritional status, menarche, teenager, early menarche, indonesia.

CORRESPONDENCE

E-mail: afiatunrahmah@umbjm.ac.id

A B S T R A C T

Background :. Menarche is menstruation or menstruation that comes for the first time and is the culmination of a series of changes that occur in a young woman who is reaching adulthood and as a sign that she is capable of becoming pregnant or her reproductive system is starting to function, the results of the 2018 Basic Health Research (Riskesdas) state that 70.1% of young women aged 10-19 years have experienced menstruation and as many as 29.9%.

Purpose: This study aims to determine the relationship between nutritional status and the incidence of early menarche in female adolescents in Indonesia

Research Methods: The study is a scoping review with PRISMA guidelines, the data bases used are Pubmed, Google Scholar and Science Direct, The Scoping Review method was carried out using the following steps; 1) identifying research questions; 2) identifying relevant studies, through the Pubmed, Google Scholar, and Wiley Science Direct. The article criteria used are articles published from 2019 to 2023 and discussing of nutritional status and Early menarche; 3) the selection of articles was described using the Prisma Flow Chart where in full text search results, 7 articles was used for the review as these have quality assessment and according to population, methods, and results; 4) carrying out data charting; and 5) carrying out the compilation of results reports.

Research Results: There are 7 articles related to nutritional status on the incidence of menarche. All articles use a cross sectional design. Of the 7 articles, there were 4 articles which showed a relationship between nutritional status and the incidence of early menarche in young women.

Conclusions and Suggestions: it can be concluded that there is a relationship between nutritional status and the incidence of early menarche in young women in Indonesia. It is hoped that young women can apply healthy consumption patterns so that their nutritional status is normal.

INTRODUCTION

Menarche is menstruation or menstruation that comes for the first time and is the culmination of a series of changes that occur in a young woman who is entering adulthood and is a sign that she is capable of becoming pregnant or that her reproductive system is starting to function. According to Pearce in Proverawati (2009), menarche is defined as the beginning of menstruation in a girl during puberty which indicates that the child has entered the stage of maturity of the sexual organs in her body (Velga, 2019).

In the last 100 years the age of menarche has shifted to a younger age. Sammel Weiss stated that 100 years ago the age of Viennese girls at the time of menarche varied widely, namely between 10-16 years but an average of 12.5 years (Winkjosastro, 2007). According to Proverawati (2009), the average age to reach menarche in England is 13.1 years. According to the World Health Organization (WHO), earlier menarche allows young women to come into contact with sexual life more quickly so that the possibility of teenagers to get pregnant and become a mother is greater. Adolescent health has intergenerational effects, slow menarche also has an impact on slow physical maturity, both hormones and organs. In addition, slow menarche in the long term will increase the risk of women developing osteoporosis due to slow estrogen production which will affect the determination of bone mass (Velga, 2019).

The World Health Organization (WHO) defines adolescents as residents with an age range of 10-19 years. According to the Minister of Health of the Republic of Indonesia Number 25 of 2014, adolescents are residents with an age range of 10-18 years while the Population and Family Planning Agency (BKKBN) defines adolescents with an age range of 10 -24 years old with unmarried status The 2014 WHO report estimates that there are around 1.2 billion or 18% of the world's youth group of the world's population. The Central Statistics Agency (BPS) reports the composition of the population in Indonesia in 2018, showing around 8.63 % or as much as 22.87 million of the population of early adolescents aged 10-14 years of the total population of Indonesia.

A study in Italy on teenage girls aged 11-15 years showed the fastest age of menarche at 12 years 3 months and the longest at 13 years 4 months Data from Basic Health Research (Riskesdas) in 2018 stated that 70.1% of girls aged 10- 19 years have experienced menstruation and as much as 29.9% have not had menstruation/menstruation. While the results of the 2010 Riskesdas found that around 37.5% of young women entered the age of Menarche at the age of 12-14 years and there were 19.8% of young women had their first menstruation when they were 15-16 years and 4.5% at age> 17 years

A cohort study conducted in America also shows that menarche in young women occurs at the age of 12.25 years and Body Mass Index (BMI) or body mass index (BMI) for young women in America has a greater impact on the age of menarche than race and ethnic factors.

BMI is one way to monitor individual nutritional status in groups of adolescents which can be determined by anthropometric measurements by comparing height and weight data. Based on the results of the 2013 Riskesdas, the nutritional prevalence of adolescents aged 13-15 years, namely 10.4%, has a BMI below the normal value standard or the thin and very thin categories, the obese category is 7.8% and the normal BMI is only 2.3%. American studies have found that BMI has a greater effect on age at menarche, providing more evidence to support efforts to tackle the epidemic of adolescent obesity in the United States. Prabasiwi's study reported that there was a relationship between nutritional status and the age of menarche in young girls.

Research by Kang et al. and Durda et al. in 2019 discussed the link between nutritional status, namely Body Mass Index and height with onset of menarche. Kang et al said that adolescents with early menarche had a lower average height with a higher BMI compared to those with a slower onset of menarche. Putra et al's research in 2016 stated that thinner adolescents tend to experience delayed menarche. In contrast to Lante's research in 2019, the results of this study stated that there was no significant relationship between the nutritional status of adolescents and the onset of menarche.

The results of Riskesdas show that based on the reports of respondents who have experienced menstruation, the average age of menarche is 13 years (20%) with an earlier occurrence at the age of less than 9 years. Nationally, the average age of menarche, 13-14 years, occurs in 37.5% of Indonesian children and there are also only 8 years old who have started their menstrual cycle, but this number is very small. (Devi Partika Sari et al., 2019)

The youngest menarche age in Indonesia is 9 years and the oldest menarche age is 18 years. The average age of menarche in Indonesia is 12.96 years with the proportion of 12 years old (31.33%), 13 years old (31.30%) and 14 years old (18.24%). The lowest average age of menarche was in Yogyakarta, 12.45 years and the highest in Kupang, 13.86 years. The average age of menarche in Banda Aceh is 12 to 13 years of 69.5%, at the age of less than 11 years it is 10.9% and 19.6% at the age of over 13 years. (Fitriany et al., 2018)

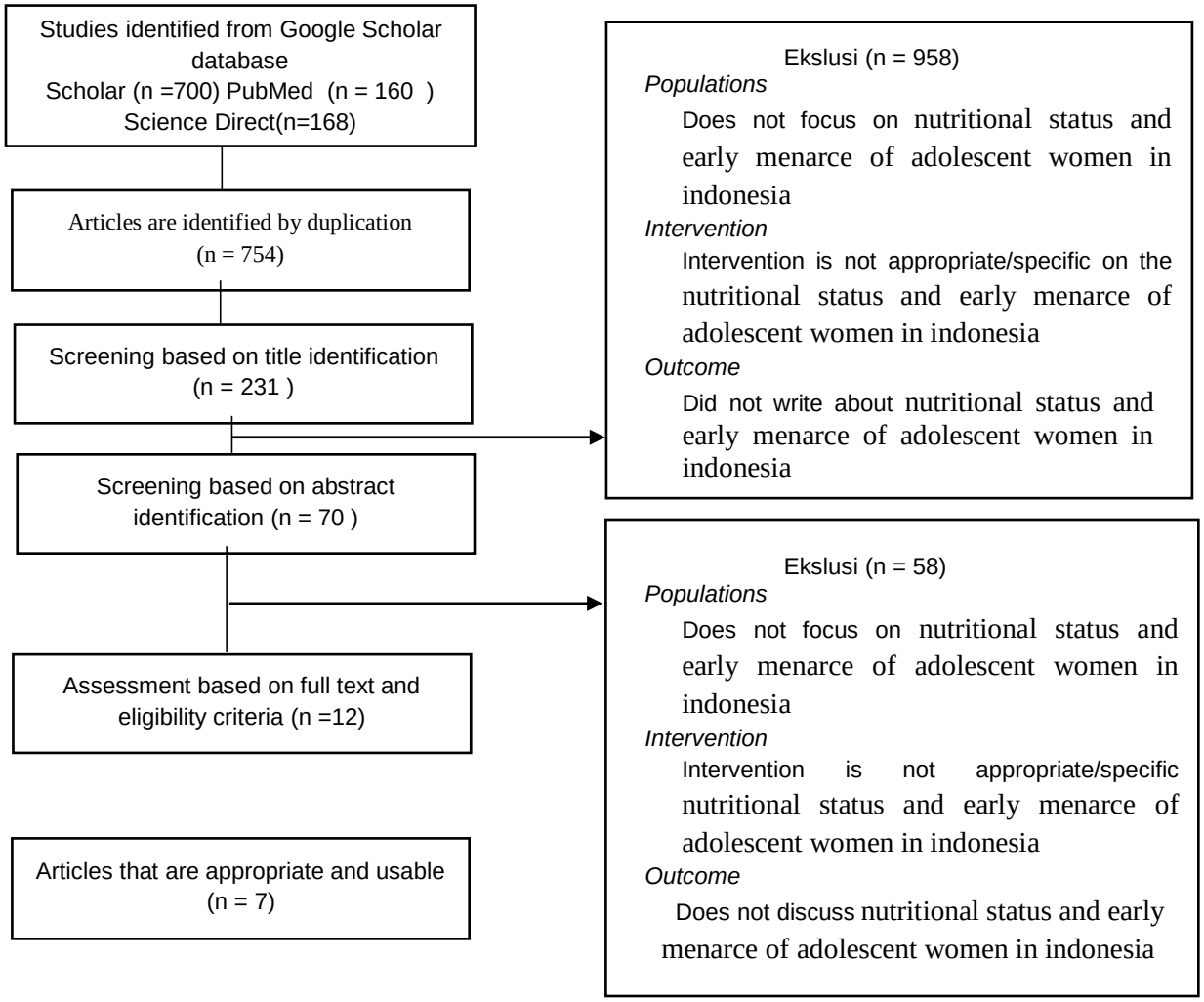
Based on the background above, the researcher is interested in conducting research on the relationship between nutritional status and early menarche in young women in Indonesia.

RESEARCH METHODS

This article was compiled using the meta-analysis method, namely a quantitative, formal, epidemiological research design used to assess systematically using previous research. In other words, The study is a scoping review with PRISMA guidelines, the data bases used are Pubmed, Google Scholar and Science Direct, The Scoping Review method was carried out using the following steps; 1) identifying research questions; 2) identifying relevant studies, through the Pubmed, Google Scholar, and Wiley Science Direct. The article criteria used are articles published from 2019 to 2023 and discussing of nutritional status and Early menarche; 3) the selection of articles was described using the Prisma Flow Chart where in full text search results, 7 articles was used for the review as these have quality assessment and according to population, methods, and results; 4) carrying out data charting; and 5) carrying out the compilation of results reports.

Search using the Google Scholar, Science Direct and PubMed databases. The research articles used are full (fulltext) research articles published online in 2019-2023 at Databased

FLOW CHART PRISMA



Picture 1. Flow chart Prisma

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and MetaAnalyses: The PRISMA Statement. PloS Med 6(7): e1000097. Doi:10.1371/journal.pmed1000097

RESULTS AND DISCUSSION

Table 1. Article Relationship between Nutritional Status and Early Menarce

No	Researcher	Research Objective	Place of Study	Reserach Method	Number of Samples	Research Results
1	Wahyu Wijayati (2021)	The research objective is to know the incident menarche based on nutritional status of young women at MI Nururrisallah Sumberbendo Village, Pare District, Kediri Regency.	MI Nururrisallah Sumberbendo Village, Pare District, Kediri Regency.	Cross Sectional	70	There is no relationship between the incidence of menarche and the nutritional status of young women in MI Nururrisallah, Sumberbendo Village, Pare District, Kediri Regency.
2	Amika Rois, Ciani Satyawati, Yayan Ahlaludin, Fajar Fajridin, Akhmad Romadloni, Fahrini Limbong, Supriyanto (2022)	The purpose of this study was to find out what factors were associated with the incidence of precocious menarche in female students aged 10-13 years at Cikal Harapan Islamic School, Tangerang Regency.	Cikal Harapan Islamic School, Tangerang Regency.	Cross Sectional	125	There is no relationship between nutritional status and the incidence of precocious menarche (P-value 0,107)
3	Rusmaini, Cut Oktaviyana, Mulyatina (2022)	This study aims to determine the relationship between nutritional status and parental income with early menarche in MTsS Darul Ihsan students, Darussalam District, Aceh Besar District.	MTsS Darul Ihsan students, Darussalam District, Aceh Besar District.	Cross Sectional	63	The results showed that there was a relationship between nutritional status (p=0.003) and parental income (p=0.026) with the age of menarche
No	Researcher	Research Objective	Place of Study	Reserach Method	Number of Samples	Research Results

4	Widya Siestianing Rachma, Ikha Deviyanti puspita (2021)	The purpose of this study was to determine the relationship between food intake, nutritional status, and age of maternal menarche and early menarche in young women in the Bumi Pertiwi 2 Housing Area, Bogor Regency.	The Bumi Pertiwi 2 Housing Area, Bogor Regency.	Cross Sectional	40	The results of this study are that there is a relationship between protein intake and nutritional status with the age of menarche, while the intake of energy, fat, carbohydrates, calcium, and the age of the mother's menarche have no relationship with the age of menarche for young women in the Bumi Pertiwi 2 Housing area.
5	Imelda Diana, Siti Pangarsi dyah KW, cicih, (2019)	The study aims to determine the differences between nutritional patterns, lifestyle, nutritional status and exposure to pornographic media in the incidence of menarche status in children.	SDIT At-Taufiq	Cross Sectional	40	Based on the results of a study of 40 respondents, it was found that 79.2% of female students who had normal nutritional status had menarche, while 12.5% of female students who had abnormal nutritional status had menarche. The results of the Chi Square statistical test showed that there was a significant difference between nutritional status and the incidence of menarche (p value p <0.05, namely 0.000), where female students who had normal nutritional status were 26 times greater than female

						students who had abnormal nutritional status.
6	Enggar, ni putu suastuti, ni made rosiyana (2022)	This study was to determine the relationship between nutritional status and menarche age at SMP Negeri 6 Palu	SMP Negeri 6 Palu	Cross Sectional	40	the study found that there was no relationship between nutritional status and the age of menarche p-value 0.542.
7	Ayu dya Puspaning Tyas, Lintang Dian Saraswati, Mateus sakundarno adi, henry setyawan S (2022)	This study was to determine the relationship between nutritional status and the incidence of early menarche in elementary school students in Pati District.	Elementary school students in Pati District.	Cross Sectional	110	There is a relationship between nutritional status and the incidence of early menarche in elementary school students in Pati District, Pati Regency

.

This systematic study review addresses. The selected articles have gone through a screening process using PRISMA. there are 7 articles related to nutritional status to the incidence of menarche. All articles use a cross sectional design.

Table 1 shows the search results for articles related to nutritional status and menarche, there are 4 articles which show a relationship between nutritional status and the incidence of early menarche in young women, and there are 3 articles which do not show a relationship

Nutritional status affects sexual maturity in adolescents who experience early menarche), they tend to be heavier and taller at the time of their first menstruation compared to those who have not menstruated at the same age.

Conversely, adolescents whose menstruation is late weigh less than those who have menstruated at the same age, even though their height is the same (Irianto, 2014). In addition, one study stated that estrogen receptor a (ERa gane) is a specific gene determining the age of menarche in girls that is able to change the biological activity of estrogen which is influenced by protein intake, where animal protein will stimulate the activity of ERA gane which makes a person's menarche faster.

Excess protein will be at risk 3.2 times higher in experiencing early menarche. Excess protein intake has a greater risk of experiencing obesity (Rachma & Puspita, 2021). Obesity occurs due to an imbalance between the intake and expenditure of calories in the body. This makes fat accumulate so that adipose tissue increases with leptin, some people who are

obese have leptin resistance (Diana et al., 2019).

Leptin levels can be secreted from body fat in someone who has excess nutritional status or is physically visible in someone who is overweight. If the concentration of leptin increases in the periphery, it can trigger an increase in serum Luteinizing Hormone (LH). An increase in LH will increase serum estradiol which in this case will cause early menarche in a teenager (Sukami & Wahyu, 2013).

Research by Dya Puspaning Tyas et al., (2019) states that if female adolescents have more nutritional status, the age of menarche will be earlier. The second most respondents in the study were respondents with more nutritional status. This nutritional status is influenced by the lifestyle and consumption patterns of the local community. Urban communities are equipped with all conveniences such as restaurants, cafes, supermarkets, and others.

The results of research by Rusmaini et al., (2022) stated that the nutritional status of obesity can cause the age of menarche to be faster or earlier. Respondents who experienced early menarche were due to their nutritional status, so that it could be stated that there was a relationship between nutritional status and the age of menarche. According to Dya Puspaning Tyas et al., (2019) nutritional status can affect a person's menarche age where better nutritional status will make or accelerate the arrival of menarche.

Larasati's research (2019) namely that there is a significant relationship between nutritional status and the incidence of early menarche in SMP Setia Negara Depok and Niu (2019) to students of Madrasah Tsanawiyah Nurul Huda, Keerom Regency – Papua. According to researchers the relationship between nutritional status and the incidence of menarche is closely related, the higher the nutritional status, the more menarche will experience and can affect the work of hormones that can trigger the development of the reproductive organs (Andriani 2022).

Research by Rachma & Puspita (2021) also states that there is a relationship between nutritional status and the age of menarche in young women. Nutritional status in adolescents can affect physical growth and menarche age. This is because nutritional status affects the level of sexual maturity. Someone whose level of sexual maturity occurs earlier will have a higher nutritional status.

In 3 studies whose results stated that there was no relationship between nutritional status and the age of menarche, it can be seen that, there are other factors that affect menarche including genetics, there is a positive relationship between the age of the mother at menarche and the age of her daughter at menarche and also related to age menarche in female siblings (Enggar et al., 2022; Wijayati, 2021). Physical activity and the environment also influence things such as pornography and pornography which are found in various media which can encourage a person's maturity (Rois et al., 2019).

CONCLUSIONS AND RECOMMENDATIONS

From the results of the article and discussion it can be concluded that there is a relationship between nutritional status and the incidence of early menarche in young women in Indonesia. It is hoped that young women in Indonesia can adopt healthy and balanced consumption patterns so that they have normal nutritional status.

REFERENCE

Alam, S., Syahrir, S., Adnan, Y., & Asis, A. (2021). Hubungan Status Gizi dengan Usia Menarche pada Remaja Putri. *Jurnal Ilmu Kesehatan Masyarakat*, *10*(03), 200-207.

Diana, I., Pangarsi Dyah, S. K., & Cicih. (2019). Perbedaan Antara Pola Nutrisi, Gaya Hidup, Status Gizi dan Keterpaparan Media Pornografi Pada Kejadian Status Menarche. Kesehatan Dan Kebidanan STIKes Mitra Ria Husada, 8(1).

Dya Puspaning Tyas, A., Dian Saraswati, L., Sakundarno Adi, M., Setyawan Bagian Epidemiologi dan Penyakit Tropik, H. S., & Kesehatan Masyarakat, F. (2019). Hubungan Status Gizi Dengan Kejadian Menarche Dini Pada siswi Sekolah Dasar di Kecamatan Pati, Kabupaten Pati. Jurnal Kesehatan Masyarakat (e-Journal), 7(4), 2356–3346. http://ejournal3.undip.ac.id/index.php/jkm

Enggar, E., Suastuti, N. P., & Rosiyana, N. M. (2022). Hubungan Status Gizi dengan Usia Menarche. Jurnal Bidan Cerdas, 4(1), 32–38. https://doi.org/10.33860/jbc.v4i1.596

Fitriani, R. J. (2020). Hubungan Status Gizi Dan Menarche Dengan Dismenore Remaja Di Kota Magelang. *Pontianak Nutrition Journal (PNJ)*, *3*(1), 13-16.

Huda, A. I., & Ningtyias, F. W. (2020). Hubungan Antara Status Gizi, Usia Menarche dengan Kejadian Dysmenorrhea Primer pada Remaja Putri di SMPN 3 Jember. *Pustaka Kesehatan*, *8*(2), 123-130.

Lail, N. H. (2019). Hubungan status gizi, usia menarche dengan dismenorea pada remaja putri di smk k tahun 2017. *Jurnal Ilmiah Kebidanan Indonesia*, *9*(02), 88-95.

Nurhikmah, A. (2021). Review Jurnal Kesehatan Masyarakat, Hubungan Status Gizi Dengan Menarche Pada Remaja Putri.

Rachma, W. S., & Puspita, I. D. (2021). The Relationship Of Dietary Intake, Nutritional Status, And Maternal Age Of Menarche With Early Menarche In Adolescents In The Perumahan Bumi Pertiwi 2, Bogor. Jurnal Ilmu Gizi, 1(2).

Rois, A., Satyawati, C., Ahlaludin, Y., Fajridin, F., Romadloni, A., Limbong, F., & Supriyanto, S. (2019). Factors Realted to Incidence of Menarche Praecox [Faktor Yang Berhubungan Dengan Kejadian Menarche Prekoks]. Proceeding of Community Development, 2, 200. https://doi.org/10.30874/comdev.2018.235

Rusmaini, Oktaviyana, C., & Mulyatina. (2022). Hubungan Status Gizi dan Pendapatan Orang Tua dengan

Early Menarche The Correlation of Nutritional Status and Parents' Income with Early Menarche Students in MTsS Darul Ihsan, Darussalam District, Aceh Besar. Journal of Healtcare Technology and Medicine, 8(2), 2615–109.

Savitri, N. P. W., Citrawathi, D. M., & Dewi, N. P. S. R. (2019). Hubungan status gizi dan usia menarche dengan kejadian dismenore siswi SMP Negeri 2 Sawan. *Jurnal Pendidikan Biologi Undiksha*, *6*(2), 93-102.

Sukami, I., & Wahyu, P. (2013). Buku Ajar Keperawatan Maternitas. Nuha Medika.

SYAFRIANI, S., APRILLA, N., & ZURRAHMI, Z. (2021). Hubungan Status Gizi Dan Umur Menarche Dengan Kejadian Dismenore Pada Remaja Putri Di Sman 2 Bangkinang Kota 2020. *Jurnal Ners*, *5*(1), 32-37.

Wijayati, W. (2021). Kejadian Menarche Berdasarkan Status Gizi pada Remaja Putri di MI Nururrisallah Desa Sumberbendo Kecamatan Pare Kabupaten Kediri. Journal Of Health, Nursing, And Midwifery Sciences Adpertisi, 2(1). http://jurnal.adpertisi.or.id/index.php/JHNMSA/submissions

Yazia, V. (2019). Hubungan Keterpaparan Media Massa Internet Dan Status Gizi Terhadap Usia Menarche Pada Siswi Kelas Vii Smpn 22 Padang. *Menara Ilmu*, *13*(6).