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Shift in Menarche Age Among Generations X, Y, Z, and Alpha in Jember District

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ABSTRACT

Menarche is defined as the first menstrual period in a female adolescent.This study aims to evaluate the shift in the age of menarche among four generations: Generation X, Y, Z, and Alpha in Jember Regency. The research design used a quantitative approach with survey methode. This study used nonprobability sampling, consecutive sampling which divided the responden on 274 female adolescent of different numbers in each generation studied. Data were collected through questionnaires and analyzed using One way Anova. The results showed that the age of menarche shifted among the generations studied. Generation Alpha had an earlier age of menarche than the previous generation. Additionally, there was a significant difference in the age of menarche between Generation X and Y, and Generation Y and Z, with Generation X experiencing a delay in the age of menarche compared to Generation Y, and Generation Z experiencing an acceleration in the age of menarche compared to Generation Y. Conclusion: This study concludes that a shift in the age of menarche occurs among Generation X, Y, Z, and Alpha in Jember Regency. This indicates a change in environmental and lifestyle factors that affect the age of menarche. Discussion: The results of this study are expected to be a reference for further research on factors influencing the shift in the age of menarche and health implications related to this shift.

Keyword: Menarche, shift, Generation X, Y, Z, and Alpha.

ABSTRAK

Menarche adalah periode menstruasi pertama pada remaja putri dengan tujuan untuk mengevaluasi pergeseran usia menarche di antara empat generasi: Generasi X, Y, Z, dan Alpha di Kabupaten Jember. Rancangan penelitian ini menggunakan pendekatan kuantitatif dengan metode survei. Penelitian ini menggunakan nonprobability sampling, consecutive sampling yang membagi responden pada 274 remaja putri dengan jumlah berbeda pada setiap angkatan yang diteliti. Data dikumpulkan melalui kuesioner dan dianalisis menggunakan One way Anova. Hasil penelitian menunjukkan bahwa usia menarche mengalami pergeseran antar generasi yang diteliti. Generasi Alpha memiliki usia menarche lebih awal dari generasi sebelumnya. Selain itu, terdapat perbedaan yang signifikan usia menarche antara Generasi X dan Y, serta Generasi Y dan Z, dengan Generasi X mengalami keterlambatan usia menarche dibandingkan dengan Generasi Y, dan Generasi Z mengalami percepatan usia menarche dibandingkan dengan Generasi Y, dan Generasi Z mengalami percepatan usia menarche. menarche dibandingkan dengan Generasi Y. Kesimpulan: Penelitian ini menyimpulkan bahwa terjadi pergeseran usia menarche pada Generasi X, Y, Z, dan Alpha di Kabupaten Jember. Hal ini mengindikasikan adanya perubahan faktor lingkungan dan gaya hidup yang mempengaruhi usia menarche. Hasil penelitian ini diharapkan dapat menjadi acuan penelitian selanjutnya mengenai faktor-faktor yang mempengaruhi pergeseran usia menarche dan implikasi kesehatan terkait pergeseran tersebut.

Kata Kunci: *Menarche, shift, Generasi X, Y, Z, dan Alpha.*

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Introduction:

Menarche is the first time a woman experiences menstruation(Wisnu Fadila & Darojad N.Agung Nugroho, 2018). The shift in menarche age can occur due to various factors such as lifestyle, nutrition, environment, and genetic factors (Partika Sari et al., 2019a). Changes in menarche age can provide an indication of changes in health and living conditions in a population (Sudikno & Sandjaja, 2019). In this research, the researchers will collect data from women of different generations, namely Generation X (born 1965-1980), Generation Y (born 1981-1996), Generation Z (born 1997-2012), and Generation Alpha (born 2013-2025) (Mardati & Hamidah, 2021). In this study, both approaches are used to obtain a complete picture of age shifts of menarche and the factors influencing them in each generation in Jember Regency.

The shift in menarche age that is getting faster in the Alpha generation (Carlson & Shaw, 2019).It can have an impact on women's reproductive health in the future, such as the risk of developing breast cancer and osteoporosis (Vihko & Apter, 1984).Therefore, it is necessary to carry out appropriate prevention and intervention efforts to promote reproductive health in women in Jember District.

Further research needs to be conducted to gain a better understanding of the factors that influence menarche age shifts in Jember District, especially in Tanggul District. Factors such as exposure to chemicals and lifestyle changes can affect the shift in menarche age, so it needs attention in prevention and intervention efforts (Andriyanty & Wahab, 2019).

Methods:

Research used in the study of the shift in menarche age between generations X, Y, Z, and Alpha in Jember Regency was carried out using a quantitative and qualitative survey approach. Data will be collected through interviews and questionnaires, which will include information on the age of first menstruation and factors that may affect the shift in menarche age.

The quantitative survey method was carried out using questionnaires which were distributed to respondents to obtain numerical data that could be analyzed statistically. List the population and determine a representative sample from each generation. Create a questionnaire consisting of questions about menarche age, factors that influence shifts in menarche age, and other demographic information. Collecting data through interviews and distributing questionnaires to selected respondents.

The qualitative survey method was conducted using in-depth interviews and observations to obtain in-depth qualitative data and to understand the subjective experience of the respondents regarding the shift in menarche age and the factors that influence it. List the population and determine a representative sample from each generation. Prepare interview and observation guidelines consisting of open-ended questions about the respondents' subjective experiences regarding the shift in menarche age and the factors that influence it. Conducting in-depth interviews and observations of the selected respondents. Analyze the data by coding the interview transcripts and identifying the main themes related to the shift in menarche age and the factors that influence it.

In this study, both approaches are used to obtain a complete picture of the shift in menarche age and the factors that influence it in each generation in Jember Regency.

This study used nonprobability sampling, consecutive sampling which divided the responden on 274 female adolescent of different numbers in each generation studied. Analyze the data using statistical techniques such as regression, different test, and correlation to identify the shift in menarche age between generations and the factors that influence it.

Results:

Based on research that has been conducted on young women in Jember Regency. This research was conducted from early January 2023 to early May 2023 and found that 274 female adolescents (100.00%) were given a questionnaire containing questions about the factors causing the shift in menarche age, after agreeing to informed consent and being willing to be a respondent. Based on the questionnaires that have been collected and

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analyzed, it can be concluded that the research results are in the following explanation.

Tabel 1 Frequency distribution and characteristics of respondents

Characteristics of Respondents		Generation			
		X	*Y*	Z	*Alfa*
		N	N	N	N
Menarch age	<12 th	-	-	-	8
	12-13 th	-	101	93	-
	>13 th	97	-	-	-
BMI	Under Weight	30	53	42	2
	Normal	65	48	50	6
	Over weight	2	-	1	-
	Obest	-	-	-	-
Economic Status	PNS	52	75	90	8
	Non PNS	45	26	3	-
Life Style	Health	59	80	90	6
	Unhealth	38	21	3	2
Exposure to chemicals	Exposur	7	4	69	8
	Unexposure	90	97	24	-

[a]*Chi square test*

Tabel 2 Normality Test Data standardizes residual value

Characteristics	*P-Value*
Menarch Age	0,681
BMI	0,721
Economic Status	0,141
Life Style	0,206
Exprosure to chemical	0,723

[a]*Kolmogrov Smirnov test*
[*]*Level of significance <0,005*

Tabel 2 Based on the number of samples used was > 50 samples, so the normality test used was the Kolmogorov Smirnov which showed that the data were normally distributed (p-value > 0.05), so the next research test was the One Way Anova test.

Tabel 3 One way anova test

Generation	Mean	SD	*P-Value*
Gen X			
Y	0,254	0,205	0,218
Z	0,946	0,228	0,000
Alfa	3,15	0,531	0,000
Gen Y			
X	0,254	0,205	0,281
Z	0,693	0,226	0,002
Alfa	1,89	0,530	0,000
Gen Z			
X	0,946	0,228	0,000
Y	0,693	0,226	0,002
Alfa	2,20	0,539	0,000
Gen Alfa			
X	3,15	0,531	0,000
Y	2,89	0,530	0,000
Z	2.26	0,539	0,000

The study also found that out of 93 respondents from generation Z, 25 have not experienced their first menstrual period, and out of 103 respondents from generation Alpha, only 8 have experienced their first menstrual period. Factors that influence the shift in menarche age may also such as obesity and nutrition intake affect the shift in menarche age among females born between 1978-1988 (Alam et al., 2021).Other factors that can affect the shift in menarche age are exposure to chemicals (Suharjo & Harianto, 2019).Such as bisphenol A (BPA), which is widely used in plastic products and food packaging (Leone & Brown, 2020)Whether these factors also apply in Indonesia requires further study.

Discussion :

The results of a study on menarche age shift among generations X, Y, Z, and Alpha in Jember Regency in 2023 (specifically in Tanggul District) indicate a shift in menarche age among these generations. This research was conducted from early January 2023 to early May 2023 and found that the average age of menarche in females has been decreasing from generation X to Alpha. Menarche age for females in generation X (born between 1965-1979) the average age of menarche was 13.40 years, which decreased to 13.15 years in

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generation Y (born between 1980-1994) and further declined to 12.46 years in generation (born between 1995-2012). Moreover, in generation Alpha (born between 2013-2025), there was a significant drop, with the average age of menarche being around 10.25 years. The average age of menarche for young women is 12-13 years old with different characteristics of the respondents, namely age, nutritional status, socio-economic, exposure to mass media, and lifestyle (Partika Sari et al., 2019b).

The study also found that out of 93 respondents from generation Z, 25 have not experienced their first menstrual period, and out of 103 respondents from generation Alpha, only 8 have experienced their first menstrual period. Factors that influence the shift in menarche age such as obesity and nutrition intake affect the shift in menarche age among females born between 1978-1988 (Syafriani et al., 2021) .The incidence of menarche in young women occurs when the body fat percentage reaches at least 17% (Faridi, 2022).From the results of this study, the results showed that there was a relationship between nutritional status (BMI/U) and the age of menarche. This is reinforced by Huda's research (2020) which states that there is a relationship between nutritional status (BMI/A) with the incidence of menarche, and the age of menarche is influenced by good nutritional status (Dini Junita, 2020).Family socio-economic is a picture of parents' income respondents obtained from business or work . so that they can meet their needs,prosperity family welfare, with higher parents income will be increase purchasing power buying some food and daily lifestyle (Aminingsih et al., 2015).

Other factors that can affect the shift in menarche age are exposure to chemicals such as bisphenol A (BPA), which is widely used in plastic products and food packaging. Whether these factors also apply in Indonesia requires further study (Andriyanty & Wahab, 2019)fadila

Lifestyle is a daily habit that is carried out by young women related to sports, consumption of soft drinks, and fast food. Young women who are active in excessive sports physical activities before menarche will experience a delay in menarche than young women who rarely do sports or never do sports (Dewi et al., 2018).Consumption of soft drinks containing artificial sweeteners tends to be during the luteal phase (the time when ovulation occurs until menstruation occurs). So that during the luteal phase there is an increase in food or energy intake according to. Fast food contains lots of artificial sweeteners, fats and additives which can cause menarche earlier (Gultom et al., 2020).

These findings are consistent with studies conducted in several other countries that show a shift in the age of menarche among generations(Lase & Daeli, 2020) .The decrease in the age of menarche in generation Alpha may be due to factors such as exposure to chemicals and lifestyle changes. However, further research is needed to gain a better understanding of the factors that influence the shift in the age of menarche (Lubis et al., n.d.) .

In addition, the psychological factors of adolescents also cannot be forgotten .(Astuty et al., 2017). Indonesia is a developing country, where every year the number of anxiety experienced by adolescents is increasing (Satria et al., n.d.). According to the Central Bureau of Statistics (BPS) in Indonesia, 49.1% of adolescents experience anxiety about puberty, including menstrual problems. Factors that influence anxiety in facing menarche because of a young age can make young women experience anxiety because they are not ready for the changes that will occur (Ismi Antika putri et al., n.d.).Knowledge is a factor in the emergence of anxiety because when experiencing menarche young women the higher one's knowledge will affect the thinking process. Preparedness for menarche can be done by providing information and attention to young women at the time of facing menarche (Hamidah, n.d.).

In the context of reproductive health, the shift in the age of menarche needs attention because it can affect the risk of reproductive diseases in women, such as breast cancer and osteoporosis. Therefore, appropriate prevention and intervention efforts need to be taken to promote reproductive health among women in Jember Regency, especially in the face of the increasingly rapid shift in the age of menarche.

Conclusions:

Based on the results of research on the shift in menarche age between generations X, Y, Z, and Alpha in Jember Regency, it can be concluded that there is a decrease in the average age of menarche in women from generation X to Alpha. The shift in menarche age that is getting faster in the Alpha generation can have an impact on women's reproductive health in the future, such as the risk of developing breast cancer and osteoporosis. Therefore, it is necessary to carry out appropriate prevention and intervention efforts to promote reproductive health in women in Jember District.

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