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A Research Study on Sociodemographic Determinants of Different Menarche in the Female Students in Southern Vietnam

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ABSTRACT

Background: Menarche is a landmark in the life of a woman. There are very little data on possible factors influencing the age at menarche in Vietnamese populations. This study was designed to identify secular trends in the age at menarche and to investigate the possible factors that influence the age at menarche.

Methods: Data was collected from 1,200 female students using a targeted examination system with a direct interview technique. Our current research was conducted at Thu Duc General Hospital, Ho Chi Minh City, Vietnam from May 2018 to April 2019. Cross-sectional information was applied for a univariate survey, to complete the representation of factors and their characteristics on the list information; and for a bivariate examination, to discover the relationship between factors.

Results: Most of student (54.0%) had periods at an early age, 37.8% had periods at a typical age, and 8.2% had periods at the later age. The outcomes also exposed 10.3% of students had sporadic menstrual cycles, but a large proportion of respondents (70.3%) suffered from menstrual discomfort. The relationship between the age of menstruation and financial variables remained considered very important. Female students with a lower average age at menarche live in urban areas where family wages are high relative to those in the provincial territories and where family wage collection is central or low.

Conclusion: The majority of female students were getting early age at menarche, which associated with urban livings. This may cause several pressures on medical system due to risks of psychological problems and nutritional dysfunction.

Keywords: Female student, Menarche, Menstrual cycle, Puberty, Vietnam.

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INTRODUCTION

Menarche is a landmark in the life of a woman, because it represents the beginning of reproductive function. The importance of this once iconic lever has been identified as either a marker for chronic conditions risk and a guide for the health and physiological path.

The signs of girls' pubertal activities are the start of adolescence, peak height velocity and menarche. The beginning of puberty is characterized by breast tissue production, while peak height velocity is the fastest pace detected during the spurt of pubertal development. Menarche is a rather late in development and typically happens 6 months after peak height velocity has reached. The age of menarche is complex and relies on the role of genetic and environmental factors.[1]

Cultural-economic factors and psychosocial psychological issues have been correlated with menarche timing, even though the essence of these interactions is uncertain.[2, 3] Variables that were assumed to affect girls' physical development in the 19th century were environment (especially the mean annual temperature), race, social position, urban or rural life, physical exercise, schooling, sexual activity, accommodation, inheritance and medical conditions.[4] Research conducted in the 20th century recorded many menarche age-related factors such as birth season and month, biology, socioeconomic status, parents' profession and employment, and household size.[4] Whatever the influences affecting menarche development and age, they intertwine and therefore the initiation of menarches cannot be due to a single cause.[1]

The menstrual cycle in women is characterized by high variability in cycle length (26–35 days), 5-day menses, a fertile phase from 5 days before to the day of ovulation, and low fertility which is dependent on cycle length and age.[5] Menarcheal age is a key maturity indicator of female development, and it is known to reflect population health.[6] For females, the menstrual cycle is marked by high variability for cycle duration (26–35 days), 5-day cycles, a fertile process from 5 days prior to the day of menstruation and reduced fertility depending on cycle period and age.[7-12] The possible factors influencing age at menarche may differ among populations, and there may be significant variation depending on the race, geography, and the time period tested. However, there are very little data on possible factors influencing the age at menarche in Vietnamese populations. This study was designed to identify secular trends in the age at menarche and to investigate the possible factors that influence the age at menarche.

METHODS

Study design and study site

This is a cross-sectional study based on face-to-face interview. Our current research was conducted at Thu Duc General Hospital, Ho Chi Minh City, Vietnam from May 2018 to April 2019. The hospital has five housing corridors for female students and workers that could be enrolled.

Ethical consideration

The study was approved by the Science Research Committee. The research complied with ethical standards by obtaining informed consent, ensuring respondent autonomy, and guaranteeing anonymity and confidentiality. Explanations provided to the respondents included information regarding the voluntary nature and safety of participation in the study. The participants were informed of their right to refuse participation or withdraw from the survey at any time without consequences. No details that could point to the participants' identities were

reflected on the questionnaires, and only members of the research team were authorized to collect information on the participants.

Sampling and data collection

The sample size was 1,000. Interned female students who was at the age of 21-30 was invited to participate in the study. The example was chosen by means of an intentional testing system and a face-to-face meeting technique using a standard survey. One- and bivariate surveys were used to break down the information.

Data analysis

Data was then entered into Microsoft Excel for Window 2010 for management. Data analysis was performed by the Factual Package for Social Sciences version 23.0 (SPSS Inc., Chicago, IL, USA). Categorized variables were presented as frequency and percentage. Continuous variables were presented as mean and standard deviation (SD). Chi-square test was used for the immensity level and $p < 0.05$ was considered a fact of interest. To examine the effects of socio-demographic factors on menstrual characteristics, living conditions and age of menarche were considered as dependent factors and the dependent were extent of menstrual flow, length of menstrual cycle, normality of menstrual cycle, premenstrual side effects, menstrual agony, menstrual fever, school absenteeism, housing, and monthly family income.

RESULTS

A total of 1,000 female interned students was included for data analysis. Table 1 presents the demographics of included at Thu Duc General Hospital. The outcomes exposed that over a half of students (54%) remained in early menarche, 39.7% were in normal menarche, and 8.2% were in late menarche. Currently, almost respondents (84.3%) have a shorter menstrual cycle (≤7 days) and some cases (15.7%) have a longer menstrual cycle (>7 days). In terms of length of the menstrual cycle, the majority (72.2%) had a regular cycle (≤34 days) and about 27.8% had a longer cycle (>34 days). Table 2 shows the comparisons between rural and urban residence among groups of menstrual characteristics. There was a significant difference among early, normal and late menarche age. We found no difference related to period of menstrual flow and menstrual cycle.

Table 3 demonstrates the comparisons regarding mean age of menarche between urban and rural residents divided by family income. There was no significant difference between groups of students.

Figure 1 illustrates the menarche age divided by place of residence and monthly family income. Obviously, the mean menarche age of rural residents (approximate 13 years old) was higher than urban livings (12 years old). The mean menarche age of members from low income family (approximate 13 years old) was higher than the remain groups (12 years old).

Table 1. Demographics and menstrual characteristics of included female students (N=1,000)

Characteristic	n
Age (Mean±SD)	24.6±1.3
Living area	
Urban	440
Rural	560
Family income	
Low	523
Middle	176
High	301
Age at menarche (years)	
<13 (Early)	540
13-15 (Normal)	378
>15 (Late)	82
Duration of menstrual flow (days)	
≤7	157
>7	843
Regularity of menstrual cycle (days)	
≤34 (Irregular)	278
>34 (Regular)	722
Premenstrual symptoms	
No	395
Yes	605

Note: Data was presented as frequency unless state otherwise.

Table 2. Relations among menstrual features through residence

Menstrual features	Rural	Urban	p-value
Age at menarche (years)			
< 13 (Early)	261 (26.1)	279 (27.9)	
13-15 (Normal)	247 (24.7)	131 (13.1)	0.001
>15 (Late)	52 (5.2)	30 (3.0)	
Period of menstrual flow (days)			
≤ 7	95 (9.5)	62 (6.2)	0.125
>7	465 (46.5)	378 (37.8)	
Menstrual cycle length (days)			
≤ 34	156 (15.6)	122 (12.2)	0.512
>34	404 (40.4)	318 (31.8)	

Table 3. Mean age at menarche through socioeconomic status thru place of residence

		High income	Middle income	Low income	p-value
Urban	Number of students	162	25	253	
	Mean±SD	11.91±1.74	12.88±1.13	11.81±1.78	0.065
Rural	Number of students	139	151	270	
	Mean±SD	12.52±1.60	12.79±1.65	12.12±1.66	0.087

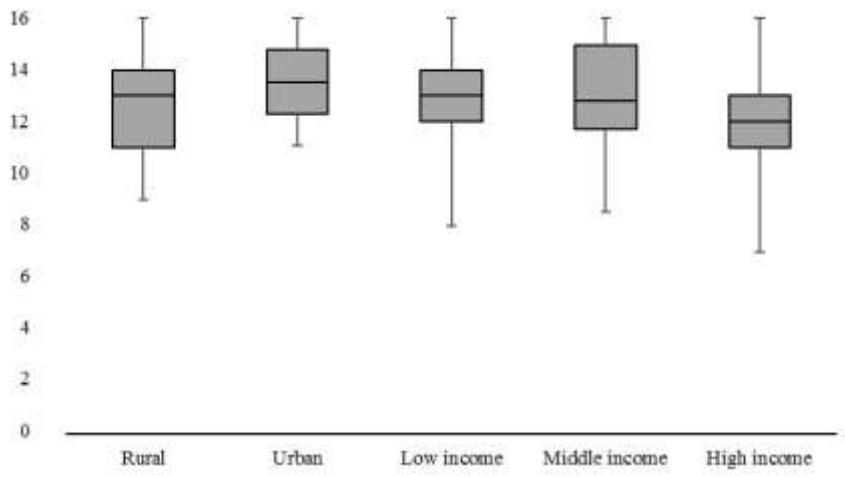

Figure 1. Stem-and-Leaf plot of age at menarche by place of residence and monthly family income

DISCUSSION

This interview-based study was to investigate the situation of age at menarche and explore characteristics that associated with age of menarche. We found that the majority of female students were get early age at menarche, but about 8% of them was late for the first menstrual cycle. There was significant difference between female who lived in urban area to the rural residents regarding age at menarche.

Age at menarche represents the beginning of reproductive existence for women and is defined by environmental and phenotypic traits.[13, 14] Many facets of adult wellbeing are linked with early menarche. Early menarched females have an elevated risk of heart disease,, breast cancer, metabolic syndrome, obesity and type-II diabetes.[15, 16] The average age of menarche has dropped from 16-17 years to under 13 years in the last century.[13, 17] It was proved that menarche age is downward in the USA and European countries, which can be explained in part by global obesity epidemics.[13, 17-20]

In terms of physical and genetic causes, older menarchic age was correlated with all-cause death, breast cancer risk, anxiety, hypertension and heart diseases, and metabolic syndrome like overweight or obesity, insulin resistance, and ovarian polycystic syndrome, as well as lower school performance and health risk behaviors.[16, 21, 22] Later menarche ages are associated with depression, fractures and reduced mineral content of the bone.[22, 23]

Regarding social factors, Material burdens, war and poverty experience were related to menarche age later on.[23] Early impressions in family raising - both stress factors and promotes - are asserted to affect maternal development.[24, 25] Early menarchy is synonymous with family conflict, shifts in family structure, traumatic home conditions, childhood parental exclusion and strained relationships of connection.[26-28]

Several nations observed negative trends in menarche age, ranging from values of 0.12 years per decade in Dutch and Brazilian women,[29, 30] to 0.7 years per decade in Chinese females over an 40-year period.[15] This study posed a similar finding compared to those studies, with the high proportion of early menarche females (54%).

Legislators should choose the appropriate age for children to become familiar with respondents of menstruation, gender education, contraception, toilet applies also once to select suitable age for first marriage. Adolescents and guardians should become familiar with possible effects of menstruation at an initial age. Legislators would structure and implement numerous welfare program identified with the conceptual medicine services for women at their appropriate age, bearing in mind that early menstruation is one of few danger aspects for welfare entanglement.

CONCLUSION

The survey recognized that about half of female first-year college students had initial menarche at initial age. The average age of female understudy students in urban areas and high-status families is lower than that of female understudy students in rural areas, centers and low status families. In contrast, rural under students are more likely to menstruate at a later age than urban under students. Thus, the result assumed that socio-demographic factors affect the age of woman under students in Vietnam.

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CONFLICT OF INTEREST

The authors have no conflicts of interests to declare.

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