Impact of Socio-economic Status on Age at Menarche among Secondary School Students at AL-Dora Region in Baghdad Governorate

اثر الحالة الاجتماعية-الاقتصادية على العمر عند بدء الطمث بين طالبات المدارس الثانوية في منطقة الدورة في محافظة بغداد

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المستخلص:

الهدف : لتقيم اثر الحالة الاجتماعية الاقتصادية على العمر عند بدء الطمث بين طالبات المدارس الثانوية في مدينة الدورة في بغداد-العراق.

المنهجية: اجريت دراسة مقطعية متعددة المراحل من الثالث من كانون الاول ٢٠١٣الى الثاني عشر من اذار٢٠١٤ وشملت عينة الدراسة ١٧٦٠ فتاة منهم ١٥١٠ من مناطق المدينة و٢٥٠ فتاة من المناطق الريفية في المرحلة الاولى تم اختيار المدارس عشوائيا ثم تم اختيار صف واحد من كل مرحلة البيانات جمعت خلال استبانة خاصة متضمنة عمر الحيض للطالبة بالسنوات وعدد افراد الاسرة والمستوى التعليمي للوالدين ووظيفة الوالدين ومعلومات اخرى .

النتائج: اظهرت النتائج ان متوسط سن البلوغ لطالبات المدارس الثانوية في الدورة بلغ12.49±0.99 وان متوسط سن البلوغ لطالبات المدينة كان 12.4±1.0 بينما متوسط سن البلوغ لطالبات الريف كان 12.9±1.1 مما يعطينا ارتباط معنوي لذلك فتيات المدينة ابكر حيض من فتيات الريف.وكان العمر عند الحيض ابكر للفتيات مع عدد اشقاء اقل من الفتيات مع اكثر اشقاء .وكذلك اكتشفت الدراسة ان الفتيات مع المستوى التعليمي العالي للوالدين ووظيفة الام لديهن حيض مبكر بينما لايوجد فرق معنوي بين العمر عند الحيض ووظيفة الاب .

التوصيات: وفقا لنتائج هذه الدراسة أوصينا بدراسات اخرى لتحديد العمر عند الحيض للفتيات العراقيات لان الحيض يختلف بحسب الموقع، فإنه قد لا يكون من الممكن تعميم هذه النتائج على المجتمعات الأخرى في المجتمع العراقي .لان الحالة الاجتماعية والاقتصادية تختلف بين السكان.

Abstract:

Objective: To assess the Impact of Socio-economic status on age at menarche among secondary school students at AL-Dora city in Baghdad, Iraq.

Methodology: This is a cross sectional study with multi-stage sampling was carried out during the period from the 3th of December2013 to 12th of March 2014. The Sample comprised of 1760 girls, 1510 girls from urban area and 250 from rural area was included in the study. In first stage, selection of schools was done, and one class was selected randomly from each level of Education, The data collection through a special questionnaire which Contain the age of girl by year, class level, birth order, number of household, number of rooms, residency (urban/rural), education level of parents, occupation of parents.

Results: The study showed that the mean age at menarche for adolescent secondary school girls in Al-Dora was12.49±0.99 years, and the mean age at menarche of girls living in the urban area were 12.4±1.0 while 12.9±1.1 year for girls living in the rural area, which give a significant association, so the girls from urban area had earlier menarche age than rural area, and earlier age at menarche of those girls who had fewer number of siblings than those who had more siblings, Also the study discovered an earlier age at menarche in those girls whose Parents' had a high educational level, occupation of mothers, While there was no association between occupation of father and age at menarche.

Recommendation: According to the findings of the present study we recommended to further elaborated study is required to estimate the age of menarche of Iraqi girls, because menarche age can vary by location, it may not be possible to generalize these results to other communities in the Iraq government.

Keywords: menarche age, Socio-economic status, urban area, rural area, educational level

Introduction:

Menarche being the onset of menstruation is one of the most significant milestones in a woman's life [1]. It is the most widely used indicator of sexual maturation in females as well as the most accurately recalled indicator of puberty among girls [2].Because unlike other pubertal changes that are gradual, menarche is a distinct event with a sudden onset[3]. The age of girls who start menstruating is known to be influenced by genetic, environmental and socio-economic factors. A large volume of studies conducted throughout the world has recorded that girls from families of high socio-economic status mature earlier than their peers from families of low status. Depending upon the place of residence i. e. a city or a village, the number of children in the family, parent's income, their level of education and occupation, significant differences' regarding age at menarche [4]. The report of some studies revealed that socio-economic status of the family as well as family size influenced the menarcheal age of girls from these families [5,6].The aim of current study to assess the effect of Socio-economic status on age at menarche among secondary school students in Al-Dora city of Baghdad Governorate.

Methodology:

Across- sectional study with a multi -stage random sample procedure was carried out during the period from the 3th of December 2013 to 12 th of March 2014 including 20 % of intermediate and secondary schools for girls from Al- Dora of Baghdad Governorate. In first stage, selection of schools was done. The schools were randomly selected from the list of schools provided by the directorate of education in Baghdad/Al- karkh 2. One class was selected randomly from each. Level of Education, the number of selected schools was 11 from urban area and 3 schools from rural area, the grades included was form the 7th educational to 12th educational grades. Sample of 1509 from urban area and 250 from rural area were included in the study. The data collection through self-administered questionnaire contain the age of girl by year, grdes, birth order, number of household, number of rooms, residency (urban/rural), Education level of parents, occupation of parents, crowding index and other information.

Results:

Table 1. The mean age at menarche of the study sample

Age at menarche	
Count	**1543**
Mean	**12.49±0.99**
Standard Error of Mean	**0.025**
Range	**8-17years**
Mode	**12**
Percentile 05th	**11**
25th	**12**
50th (Median)	**12**
75th	**13**
95th	**14**
99th	**15**

Out of this table results show the mean age at menarche of the study sample was12.49±0.99 years with standard error of mean 0.025 and age range between (8-19) years.

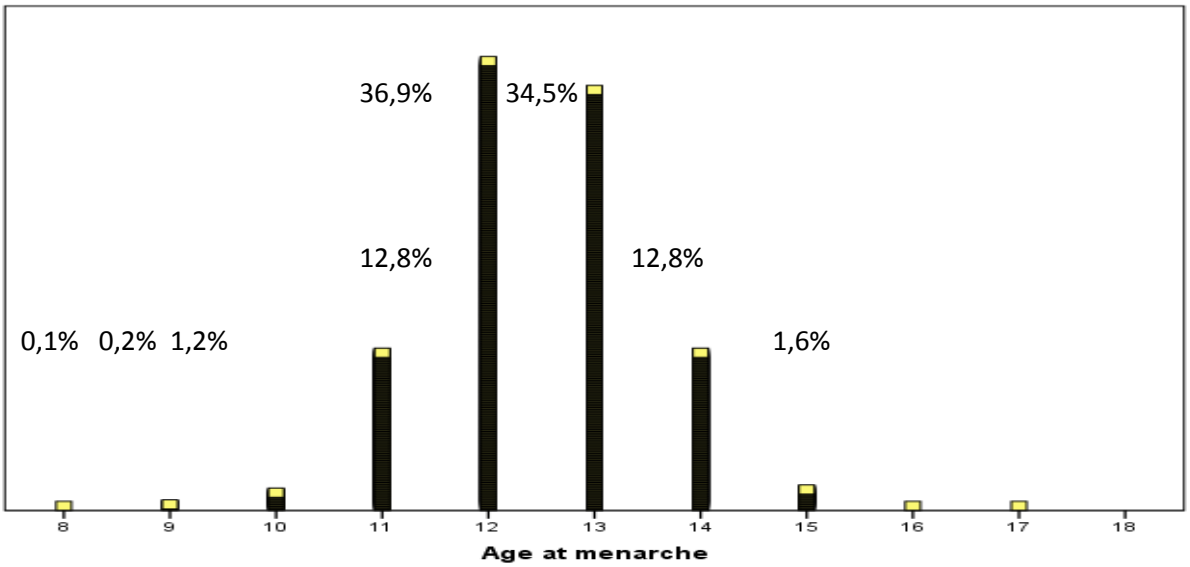

Figure 1. Presents distribution of age at menarche of study sample, the highest percentage was in ages 12(36.9) % and 13(34.5) % and one girls experienced menarche at age eight**.**

Table 2. The mean age at menarche of the study sample according to Age (years), Class, Residency and Crowding Index

		Age at menarche	
		Frequency	Mean±SD
Age (years)	12	44	11.7±0.6
	13	233	12.4±0.7
	14	234	12.4±1.1
	15	236	12.4±1.0
	16	346	12.6±0.9
	17	230	12.7±1.0
	18	217	12.6±1.1
	19	3	13.3±1.5
	P value		0.0001*
grade	1	266	12.2±1.0
	2	261	12.4±0.8
	3	194	12.5±1.0
	4	328	12.6±0.9
	5	304	12.7±1.0
	6	190	12.6±1.1
	P value		0.0001*
Residence	Urban	1324	12.4±1.0
	Rural	219	12.9±1.1
	P value		0.0001*
Crowding Index	<3	1180	12.5±1.0
	3--5	353	12.4±1.0
	>5	10	12.6±0.8
	P value		0.0001*
*Significant difference using Students-t-test for difference between two independent means or ANOVA test for difference among three independent means or more at 0.05 level			

P: probability level at ≤0.05, SD: Standard Deviations, * = significant at p-value ≤ 0.05, Crowding index: [The number of persons / the number of bed], >: more than, <: less than.

This table show the mean age at menarche of girls at age 12 was 11.7±0.6, while at age 16 was12.6±0.9, which gives significant difference, and the mean age at menarche of girls at grade level 1 was12.2±1.0 year, while at class level 4 is 12.6±0.9 year, which give Significant difference, so an earlier age at menarche in those girls at age 12 year and in class level 1 while late menarche at age 16 year and in class level 4. Also the mean age at menarche in girls living in the urban area was12.4±1.0, while 12.9±1.1 year for girls living in the rural area, although there is a slight difference in age at menarche is statistically significant, so the girls from urban area with earlier menarche while the girls from rural area with late menarche. The present work shows that an earlier age at menarche in those girls who have fewer numbers of siblings than those who have more siblings**.**

Table 3. The mean age at menarche of the study sample according to the parents' education level, parents' Occupation

		Age at menarche	
		frequency	Mean±SD
Education level of mother	Illiterate	14	12.4±1.0
	Read&Write	48	12.7±1.2
	Primary	179	12.4±1.1
	Intermediate	464	12.5±0.9
	Secondary	382	12.4±1.0
	Institute&College	446	12.5±1.0
	P value		0.0001*
Occupation of mother	Dead	10	12.5±0.5
	High professional and managerial	98	12.5±0.9
	Lower professional, skilled and semiskilled workers	240	12.5±1.1
	Unskilled workers, unemployed and retired.	1195	12.5±1.0
	P value		0.0001*
Education level of father	Illiterate	15	12.5±1.3
	Read&Write	15	13.1±1.2
	Primary	101	12.5±1.1
	Intermediate	203	12.3±1.0
	Secondary	239	12.5±1.0
	Institute&College	856	12.5±1.0
	P value		0.010*
Occupation of father	Dead	114	12.6±0.9
	High professional and managerial	279	12.5±1.0
	Lower professional, skilled and semiskilled workers	490	12.5±1.0
	Unskilled workers, unemployed and retired.	660	12.5±1.0
	P value		0.770

P: probability level at ≤0.05, SD: Standard Deviations, * = significant at p-value ≤ 0.05

Throughout table (3) ,the study discovered an earlier age at menarche in those girls whose Parents' had a high educational level and menarche age affected by occupation of mothers but not affected by occupation of father.

Discussion:

In the current study, results showed the mean age at menarche of the study sample was12.49±0.99 years, ranging between (8-17) years, the lowest age of menarche were 8 years and highest were 15 years, an earlier age at menarche in those girls who at age 12 years and at class level 1, while the girls with late age at menarche at age 16 years and at class level 4, this difference statistically significant, this result supported evidence is available in the study that showed a significant correlation was observed between age at menarche with current age and current class level in school.

Suggesting that the younger girls were attaining menarche at an earlier age than older girls [7].

Results showed the mean age at menarche of the study sample were12.49±0.99 years, the study supported evidence is available in the study that found the mean age at menarche was 12.61 + 1.74 years [8]. The study's mean age at menarche were slightly higher than the age reported in the US In 1999-2002, the national age at menarche in the US was estimated to be 12.34 years (95% CI = 12.24 to12.45 years) [9].

The findings of the present study have supportive evidence which is available in the studies stated that the mean age at menarche was 12.43 ± 1.49, 12.42 (±1.04) years, 12.41 years respectively[10][11].

The age at menarche varies from population to population and changes with time. It was more susceptible to modification by certain socio-economic influences such as nutrition & urban area vs. rural area living. In current study the mean age at menarche of girls living in the urban area were 12.4±1.0 while 12.9±1.1 year for girls living in the rural area, although there was a slight difference in mean age at menarche was statistically significant (p = 0.000) . The study supported evidence is available in the studies that showed a significant association between age at menarche and Place of residence [12] [13]. There is no supportive evidence is available in the study stated that the mean age at menarche not affected by Place of residence [14]. The present work showed that the earlier age at menarche of those girls who had fewer numbers of siblings than those who had more siblings; Supportive evidence is available in the studies that showed there was a relationship between age of menarche and family size [8] [15]. It also the study discovered an earlier age at menarche in those girls whose Parents' had a high educational level, occupation of mothers, this result has supportive evidence which is available in the studies that showed a significant correlation was observed between age at menarche and parents' education level[8][15][16]. The study not supported evidence is available in the study stated that the age at menarche not affected by_Parents' education level [17], also the study discovered no significant association between occupation of father and age at menarche, this result supported evidence is available in the study that found the age at menarche not affected by occupation of father [17].

Recommendations:

According to the findings of the present study we recommended to further elaborated study is required to estimate the age of menarche of Iraqi girls, because menarche age can vary by location, it may not be possible to generalize these results to other communities in the Iraq society.

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