Menstrual Disorders among Adolescent Females in Tala District, Menoufia Governorate, Egypt

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Abstract

Background: Menstrual disorders are common among adolescents and young adult women. These disorders actually may adversely affect the quality of the female' life and, therefore, considered a source of anxiety for them and their families. **Objectives:** The current study aimed to verify menstrual pattern, estimate the prevalence of menstrual disorders among adolescent females and study the interference of these disorders with social and physical life of the studied population. **Methods** This cross-sectional study was conducted on 300 adolescent females aged (14-18 years old) attended secondary schools in Tala district, Menoufia governorate, Egypt. Only females who had already menstruated were requested to participate. Socioeconomic status, Menstrual pattern, disorders and their interference with physical and social life were assessed through a predesigned questionnaire. **Results**: The current study revealed that the age of menarche of the studied adolescent females was between 9 and 16 years and the prevalence of menstrual disorders was 87**%.** There was statistically significant relationship between the menstrual disorders in adolescent females, socioeconomic standard and family history of menstrual disorders (p value < 0.05). Moreover, adolescent females with menstrual disorders showed significant higher prevalence of school abstinence and significant worsening of pre-menstrual tension symptoms than girls without menstrual disorders.

Conclusion This study concluded that the prevalence of menstrual disorders among the studied adolescent females was (87%). Dysmenorrhea was the most prevalent menstrual disorders in adolescence females followed by menorrhagia and these disorders usually responsible for their school absenteeism, and worsening of pre-menstrual tension symptoms.

Keywords: Adolescent, Dysmenorrhea, Menarche, Menstrual disorder, School absenteeism, Menorrhagia.

Introduction:

Menstrual problems are major gynecological problems, especially among adolescent females. These disorders can often cause an anxiety for female adolescents and their families.[1] They include, dysmenorrhea, premenstrual syndrome, menorrhagia, amenorrhea, oligo menorrhea.[2] These disorders are common during the first two years after menarche and the variability in cycle length is greater during adolescence than adulthood.[3] These menstrual irregularities can be related to the incomplete maturation of Hypothalamic-pituitary-ovarian axis which may take more than two years

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after menarche until complete maturation.[4] Most common menstrual problem during adolescence is dysmenorrhea.[5] It is suggested that these disorders may be related to different variables as diet and eating disorders, exercise and body mass index (BMI), stress and chronic diseases.[6] Which can lead to a variety of psychological problems among the adolescents as anxiety and depression particularly with limited awareness related to this topic.[4]

Moreover, menstrual pain and symptoms cause school absence for teenagers, they also interfere with life activities.[7] As a result of the overlap between dysmenorrhea, PMS and some endometriosis symptoms there is difficulty to distinguish normal pain and PMS from pathological disease.[8] Menstrual history forms an important domain of adolescent health and because most of menstrual problems go unreported, it is necessary to provide adequate attention and care to protect against the long-term consequences on reproductive and sexual health.[8]

The current study aimed to verify menstrual pattern, estimate the prevalence of menstrual disorders among adolescent females and study the interference of these disorders with social and physical life of the studied population.

Methods:

This cross sectional study was conducted on 300 secondary school females aged between 14 and 18 years old from May 2017 to October 2019, in the only two secondary schools in Tala district (one urban and one rural), Menoufia Governorate, Egypt. Tala district was selected by multistage stratified random sampling from districts affiliated to Menoufia governorate (13 districts).

The sample size was calculated using online Rao soft program based on the prevalence of menstrual disorders among adolescent females 81% [9] at 95% confidence interval, the calculated sample size was calculated, it was 293 and increased to 300 to round the figure. The sample was proportionally allocated according to the total number of student females in each school.

From the two schools all grades were selected. Each grade of the secondary school contains two classes, one class from each grade was selected randomly, and the average number of each class was 50

adolescent females. Pilot study was done, to measure feasibility of study setting, content and validity of the used tools, on a convenient sample of twenty accepted subjects and were excluded from the study. Adolescent females who were non cooperative, had any chronic medical, neurological disorders and with regular medication were excluded from the study.

All participants were subjected to face to face interview to answer a pre-designed questionnaire**.** Only females who had already menstruated were requested to participate. They were instructed not to write their names on the questionnaire and were told that their responses would be confidential. The questionnaire consisted of three sections: socio-demographic data according to Fahmy et al.[10]

Details of the menstrual history in the questionnaire included; age at menarche, menstrual cycle length and regularity, duration and amount of flow, type and severity of pain related to menstruation; and need for analgesia. They were asked to indicate the severity of pain on a scale from 0 to 10 (0-3 = no/mild pain, 4-7 = moderate pain, and 8-10 = severe pain).

Symptoms suggestive of PMS were included in the questionnaire so that the students could check those relevant to them. Menstrual cycle patterns were defined as follows; regular menstrual cycles: cycle length of 21-35days, irregular menstrual cycles: varying cycle length less than 21 or more than 35 days, secondary amenorrhea: having missed ≥3 consecutive cycles in the last 12 months, prolonged menstrual flow (menstrual flow of more than 7 days), and hypo menorrhea (menstrual flow less than 2 days)**,** Assessment of medical history and family history of menstrual disorders. Respondents were also asked about the impact of menstruation and its disorders on their school attendance and social life according to parker et al.[11]

The questionnaire was accepted to be used since it was translated into the Arabic language. The translated questionnaire was revised by a panel of three expertise to test its validity.

Ethical Consideration: The study was approved by the Ethical Committee of the Faculty of Medicine, Menoufia University. Administrative per missions were obtained from authority of faculty of Medicine. Verbal consent was

obtained from all participants with their assurance regarding the confidentiality of the obtained information.

Statistical Analysis: Data were analyzed using Statistical package of Social Science (SPSS) version 23 (using IBM personal computer). Quantitative data (age) were expressed as mean and standard deviations (X±SD) and analyzed by student t test. Qualitative data were expressed as number and percentage and analyzed by applying Chi-square test.

Results:

The prevalence of menstrual disorders among the studied adolescent females was 87**% (Figure 1)**. The age of menarche of the studied sample was between 9 and 16 years with a mean of 12.6± 1.4. The range of menstrual cycle length was 23-35 days with a mean of 29.31± 2.114 **(Table 1)**. There was statistically significant relationship between the menstrual disorders in adolescent females, socioeconomic standard and family history of menstrual disorders (p value < 0.05), as most of the participants with low socioeconomic standard (95%) and with family history of menstrual disorders (88%) had menstrual disorders. **(Table 2)**.

There was statistically significantly relation between the presence of menstrual disorders, school absence and Worsening Premenstrual tension symptoms as most of participants with menstrual disorders reported absence from school (80.5%) and about two third of them suffered from worsening pre-menstrual tension symptoms (65%), **(Table 3)**.

Discussion:

This cross sectional (analytical) study recruited adolescent females aged from 14 to18 years old with mean age of menarche 12.6±1. 4 years .This result is consistent with Tayebi et al.[12] who performed a cross-sectional study on girls aged between 9 and 18 years old in Shiraz city (Iran) and found that the age of menarche was was12.26±1.11 years. This is inconsistent with Zegeye et al., [4] in a study from northwest Ethiopia reported a delayed age at menarche was (15.8±1years). These variations in the age of menarche may be attributed to environmental and genetic factors or difference in body mass index of the studied group.

The current study showed that majority of the studied participants (87%) suffered from one or more menstrual disorders the commonest is dysmenorrhea (62.75%) followed by menorrhagia (45%). This result is in agreement with Abdelmoty et al.[13] who performed a cross-sectional survey on Egyptian adolescents and reported that the prevalence rate of menstrual disorders was 95%. This is in the same line with Karout et al. [14] who reported that nearly half of the girls reported menorrhagia. This is in agreement with Negi et al. [15] who also detected that dysmenorrhea was one of the commonest menstrual problem among adolescent Indian girls. Besides, El-Gilany et al.[16] reported higher prevalence of dysmenorrhea among Egyptian teenagers for the same age group (80%). The differences in results were related to the degree of pain severity may be related to cultural differences in pain perception, absence of a universally accepted method of defining dysmenorrhea and individual variability in pain threshold.[16]

This study denoted that the menstrual disorders were statistically correlated with low socioeconomic standard and family history of menstrual disorders. This is consistent with Valvaikar et al. [17] who revealed that; the presence of menstrual disorders was significantly correlated with low socioeconomic levels and family history of menstrual disorder.

The current study denoted that menstrual disorders were found to be greatly affecting social life of the studied group. Adolescent females with menstrual disorders showed significant higher prevalence of school abstinence and significant worsening of pre-menstrual tension symptoms than girls without menstrual disorders. This in agreement with Beevi et al.[18] who reported the affection of their daily life activities by the menstrual disorders. Could not attend the class and attended the class without taking medication but could not participate in any outdoor activities.

Hillen et al.[19] found that 53% of girls with dysmenorrhea reported interference and/or limitation of activities, 48% on sporting activities, 46% social activities, 45% said their school activities were limited and 18% reported interference longer than 48 hours.

Conclusions: This study concluded that the prevalence of menstrual disorders among the studied adolescent females was (87%). The commonest disorder was: Dysmenorrhea was the most prevalent menstrual disorders in adolescence females followed by Menorrhagia and these disorders usually responsible for their school absenteeism and pre-menstrual tension symptoms. So it is important for the clinicians to the skills to differentiate between normal and pathological menstrual patterns and timeline referral of cases that necessitate further investigations and evaluation.

Study limitation: The current study was a cross section and data collection depends on participant recall that may lead to recall bias. Moreover, menstrual and gynecological problems are embarrassing issue for adolescents' females.

Conflict of interest: There was no conflict of interest and there were no funding agencies.

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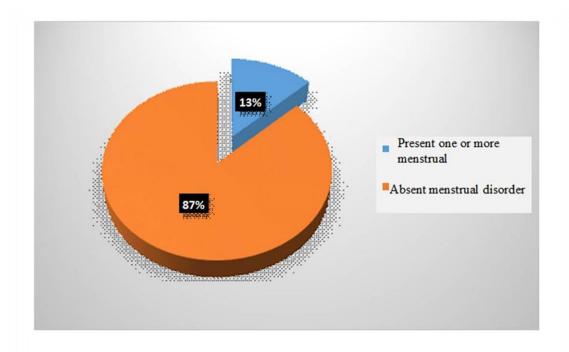
Figure (1): Frequency of menstrual disorders among the studied participants

Table (1): Menstrual pattern and disorders among the studied participants

Parameter	No. (300)	%
Menarche		
▪ Mean ± SD	12.6± 1.4	
▪ Range	(9-16) years	
Regularity of menstrual bleeding		
▪ Regular	112	37.3
▪ Irregular	188	62.6
Length of menstrual cycle		
▪ Irregular	188	62.7
▪ Regular	112	37.3
▪ Mean ± SD	29.31± 2.114	
▪ Range	(23-35)	
Dysmenorrhea		
▪ Yes	191	63.7
▪ No	109	36.3
Presence of blood clot		
▪ Yes	167	55.7
▪ No	133	44.3
Intermenstrual bleeding		
▪ Yes	96	32.0
▪ No	204	68.0
Menorrhagia*		
▪ Yes	135	45.0
▪ No	165	55.0*

* Menorrhagia is defined as regular cycle with excessive flow and duration.

Table (2): Relation between menstrual disorders, socio demographic characteristic and medical history of the studied group

Items	Menstrual disorder				X^2	P-value
	Absent		Present			
	No. 39	% 13	No. 261	% 87		
Age					1.297*	0.196
▪ Mean ± SD	16.77± 0.872		16.56± .933			
Menarche					-2.301*	0.849
▪ Mean ± SD	12.18± 1.393		12.72± 1.365			
BMI					2.587	0.46
▪ Under weight	3	17.6	14	82.4		
▪ Average	27	14.9	154	85.1		
▪ Overweight	7	8.3	77	91.7		
▪ Obese	2	11.1	16	88.9		
Residence					1.194	0.179
▪ Urban	14	10.6	118	89.4		
▪ Rural	25	14.9	143	85.1		
Socioeconomic status					7.271	0.026
	1	5	19	95		
▪ Low	11	8.3	121	91.7		
▪ Middle	27	18.2	121	81.8		
▪ High						
Family history of menstrual disorder					8.764	0.013
▪ Yes	19	11.2	150	88.8		
▪ No	14	24.6	43	75.4		
▪ Don't know	6	8.1	68	91.9		

BMI: Body Mass Index   SD: stander deviation X^2: chi-square   *student t test

Table (3): Interference of menstrual disorders on social and physical life of studied participants

Parameter	Menstrual disorders				X²	P-value
	Absent		Present			
	No 40	%	No 260	%		
School abstinence						
▪ Yes	25	62.5	209	80.4	12.4	0.001
▪ No	15	37.5	51	19.5		
Fatigue /tiredness						
▪ Yes	29	72.5	151	58.1	3.005	0.057
▪ No	11	27.5	109	41.9		
Loss of appetite						
▪ Yes	26	65.0	137	52.7	2.116	0.174
▪ No	14	35.0	123	47.3		
Analgesic abuse						
▪ Yes	20	50.0	171	65.8		
▪ No	3	7.5	10	3.8	4.012	0.135
▪ Don't use	17	42.5	79	30.4		
Mood swings						
▪ Yes	25	62.5	159	61.2	0.026	0.509
▪ No	15	37.5	101	38.8		
Worsening of PMTS						
▪ Yes	18	45.0	169	65.0	5.906	0.013
▪ No	22	55.0	91	35.0		

X^2: chi-square   PMTS: Premenstrual Tension Symptoms

الملخص العربي

اضطرابات الحيض بين المراهقات في مركز تلا- محافظة المنوفية-مصر

فاطمة الاسريجي- اسامة علي الكيلاني - مروة الشيخ

الخلفية: اضطرابات الدورة الشهرية شائعة بين المراهقات الاناث البالغات. هذه الاضطرابات في الواقع قد تؤثر سلبا على حياة الإناث ، وبالتالي ، تعتبر مصدر قلق بالنسبة لهم ولأسرهم.**الهدف من البحث:** هدفت الدراسة الحالية إلى تقييم مدى انتشار اضطرابات الدورة الشهرية والعوامل المساعدة على انتشارها بين المراهقات المصريات. **المنهجية و طرق البحث:** أجريت دراسة تحليلية مقطعية على 300 من الاناث المراهقات المقيدات بالمدارس الثانوية بمركز تلا التابع لمحافظه المنوفيه . حيث تم مقابلة جميع المشاركين وتقييم المستوي الاجتماعي وتاريخ الدوره الشهريه واضطراباتها وتاثيرها علي الحياه الصحيه والاجتماعيه من خلال استبيان مصمم مسبقًا.

النتائج : اظهرت نتائج الدراسة ان متوسط العمر عند الحيض 12.65 ± 1.379 سنة فى المجموعة العمرية من 14-18 سنة. كما لوحظ ان معدل انتشار اضطرابات الدورة الشهرية 87٪. ايضا لوحظ وجود علاقة ارتباط ذات دلالة احصائية بين اضطرابات الدورة الشهرية وكل من المعايير الاجتماعية والاقتصادية والتاريخ العائلي لاضطرابات الدورة الشهرية. كمارتبطت تلك الاضطرابات بشكل كبير مع درجة التغيب عن المدرسة ودرجة المعرفة بأعراض متلازمة ما قبل الحيض.**الاستنتاجات:** اضطرابات الحيض هي مشكلة شائعة بين الاناث المراهقات المصريات. ايضا يعتبر كل من عسر الطمث والدورة الشهرية الغير منتظمة من اكثر اضطرابات الدورة الشهرية انتشارًا. عادة ما تؤثر اضطرابات الدورة الشهرية على حياة الاناث المراهقات حيث إن عسر ونزيف الطمث من اهم اسباب التغيب عن المدرسة والتعب وتغيير المزاج فى الاناث المراهقات فى مصر.