

## Pediatric Gynecological Symptoms Among a Group of Early Adolescent Girls in Assiut, Egypt & Riyadh, Kingdom of Saudi Arabia (KSA) and Their Reactions

Maha Al-Araby<sup>1</sup>, Nabila Taha<sup>2</sup>, Fathia Zaky<sup>3</sup>,

<sup>1</sup>Lecturer of Pediatrics Nursing, Tanta University, <sup>2</sup>Assistant Professor of Obstetrics and Gynecological Nursing, Assiut University, <sup>3</sup>Assistant professor of Pediatrics Nursing, Assiut University.

**Abstract:** Pediatric and adolescent gynecology as a subspecialty is currently gaining increasing recognition both nationally and internationally. Gynecological symptoms can occur in infants, children, and adolescents. Dysmenorrhea is the most common gynecological complaint among adolescents and young adult females. The aim of this study is to recognize the occurrence of gynecological symptoms among early adolescent girls in Assiut, Egypt & Riyadh, (KSA) and their reactions. A cross-sectional descriptive design was used in this study. The study was carried out in the University Preparatory School, Assiut city, Egypt, and Preparatory School 136, Riyadh city, (KSA). The study population consists of 400 girls, 200 of each setting. Exclusion criteria: Those who married or have not reach puberty. Data were collected through March 2014. An interview questionnaire was developed and used to collect the necessary data, comprising questions about personal data, menstrual history, gynecological symptoms and the reactions. The mean age in Assiut & Riyadh girls was  $13.49 \pm 0.87$  &  $14.77 \pm 1.06$  years respectively. Asthma was found in 7% of the Riyadh girls & in 2% of Assiut girls with a statistically significant difference between the two groups. More than three quarters (76.5%) of Assiut girls & 72.5% of Riyadh girls were complaining of dysmenorrhea. "Asking mothers or friends" was the first action taken by Assiut & Riyadh girls, (40% & 32.5% respectively), followed by "consulting a physician" among Assiut girls (25%) & "considered no problem" among Riyadh girls (27.5%) with statistically significant differences between the two groups. The study concluded that dysmenorrhea is the most common symptom the girls complain of. The first action taken in the presence of any symptom is asking mothers or friends followed by consulting a physician. Still, there is a group of girls who does not consider the presence of symptoms a problem. It is recommended that a specialized clinic should be dedicated to providing pediatric adolescent gynecological care.

**Keywords:** Pediatric & adolescent gynecology, dysmenorrhea, puberty.

### I. Introduction

Pediatric and adolescent gynecology as a subspecialty is currently gaining increasing recognition both nationally and internationally. [1] Puberty is the period of transition between childhood and adult womanhood and a time for growth and change. [2, 3]

In 1988, the Department of Gynecology of Tampere University Hospital, Finland, established a gynecological outpatient clinic for girls  $\leq 15$  with the sole purpose of assigning all supervision of gynecological problems of children and adolescent to a team of gynecologists [4]; this practice has been replicated in many centers in the developed world and has also been associated with the establishment of residency programs [5].

In the UK, children with growth and pubertal problems are seen by pediatric endocrinologists in special centers where gynecologists also participate in their care [6]

Gynecology is not just for adult women, sometimes girls and teens need specialized Ob.Gyn. care too. Girls and teens are not small women. Pediatric patients and adolescent patients have very different gynecological concerns; and those issues require special skills and knowledge. Assessing gynecological symptoms and signs in prepubertal children can be challenging for pediatricians. [4]

Gynecological problems can occur in infants, children, and adolescents and are often very different from the condition that affects adult women. Children and adolescent with gynecological problems have unique needs that benefit from specialized evaluation, treatment and follow up by a gynecologist with special expertise in caring for patients with these disorders. [7, 8]

Gynecological problems in children and adolescents can be hormonal, structural or functional, several of which can be managed with reassurance while others respond to medical therapy. [7] Dysmenorrhea is the most common gynecological complaint among adolescents and young adult females. Dysmenorrhea in adolescents and young adults is usually primary with no pelvic pathology and is associated with normal ovulatory cycles. [9]

### **Significance Of The Study**

Although female reproductive system is in the structure of every girl, still the discussion of any related issues is an area of prohibition. Girls should be aware of their body systems, associated problems, and proper action in case of related disorders. This is also crucial for their future life since they are expected to be mothers. Therefore, there is a need to recognize the occurrence of pediatric gynecological symptoms among girls and their reactions to this issue.

### **Aim Of The Study**

The aim of this study is to recognize the occurrence of pediatric gynecological symptoms among early adolescent girls in Assiut, Egypt and Riyadh, (KSA), and their reactions.

## **II. Subjects And Method**

**Research design:** A cross-sectional descriptive design was used in carrying out this study.

**Research Setting:** This study was conducted at the University Preparatory School, Assiut city, Egypt and Preparatory School 136, Riyadh city, (KSA).

**Subjects:** The study population targeted in this work consisted of 400 girls; 200 from each study setting. There were no inclusion criteria, apart from being an enrolled student in the school. The exclusion criteria were applied on those being married or before menarche. A systematic random sampling of 200 students was recruited from all classes of the three grades in each school.

**Tool of data collection:** An interview questionnaire was developed by the investigators in an Arabic language, after reviewing related literature, and was used to collect the necessary data. It comprised the following parts: part (1) personal data of female students and their parents (including: age, level of education, mother's and father's level of education & health condition); part (2) menstrual history (including: menarche, rhythm, period, and cycle), and part (3) pediatric gynecological symptoms (including: bleeding, premenstrual syndrome, menorrhagia, dysmenorrhea, oligomenorrhea, etc.), and students' reactions.

### **Procedures**

An official permission was obtained from the Ministry of Education as well as the directors of each school .

**Pilot study:** After the development of the tool, a pilot study was carried out on 20 students from grade two of each school. The aim was to ascertain the relevance of the tool, to detect any problems peculiar to the statements as sequence and clarity and to estimate the time needed to complete the questionnaire. According to the results of the pilot study, the needed modifications were done. Before actual study work, a jury acceptance of the final form was secured from both pediatric and gynecological fields to test its contents' validity; whilst the reliability was assessed by measuring its internal consistency using Cronbach's alpha coefficient method.

**Field work:** This study was carried out through March 2014. The study was announced to the director of each school. Classes were selected through systematic random sampling, and were approached by the investigators. The aim of the study was clearly explained.

**Ethical considerations:** The oral consent was obtained from all girls participating in the study; and they were secured that the data will be confidential and used only for the research purpose. Moreover, the forms were anonymous in order to give them more trust to answer all the questions without fear of disclosure.

### **Statistical Analysis**

Data are entered using Epi-Info 6.04 computer software package, and are statistically analyzed using SPSS 19.0 statistical software packages. Data are presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Whenever the expected values in one or more of the cells in 2x2 tables are less than 5, Fisher exact test is used instead. In larger than 2x2 cross-tables, when the expected value in 10% or more of the cells is less than 5, no test could be applied. Statistical significance is used at p-value <0.05.

## **III. Results**

Table (1): There is a statistically significant difference between the mean age of Assiut & Riyadh girls (13.49± 0.87 & 14.77± 1.06 years respectively). (P=0.000). Nearly half of the studied girls (49.5%) were in grade two in Assiut , while in Riyadh nearly two thirds of the subjects (63%) were in grade three with a

statistically significant difference ( $p = 0.000$ ). Nearly two thirds of the studied girls in Assiut (60.5%) and less than one third (30%) in Riyadh have university educated mothers. Also it was found that university educated fathers constitute 68.5 % & 45.5% in Assiut & Riyadh respectively, with a statistically significant difference ( $p = 0.000$ ), (table 1). As regards health condition, (figure 1) asthma can be found in 7% of Riyadh girls & in 2% of Assiut girls with a statistically significant difference between the two groups ( $p = 0.016$ ).

Table (2) demonstrates that the mean age of studied girls' menarche was  $12.02 \pm 0.91$  &  $12.82 \pm 1.25$  in Assiut & Riyadh girls respectively, with a statistically significant difference ( $p=0.000$ ). The rhythm was regular in nearly two thirds among Assiut & Riyadh girls (61% & 64% respectively). The period of less than 8 days menstrual flow constitutes 88% & 89% of Assiut & Riyadh girls respectively. The mean days of the cycle among Assiut & Riyadh girls are  $30.97 \pm 11.08$  &  $25.96 \pm 9.06$  days respectively.

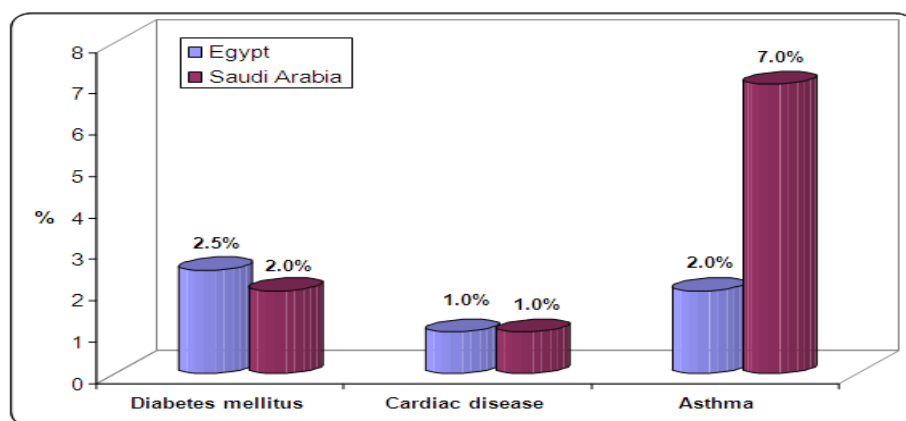
Concerning pediatric gynecological symptoms, table 3 shows that more than three quarters (76.5%) of Assiut girls & nearly three quarters (72.5%) of Riyadh girls complain of dysmenorrhea, while premenstrual syndrome constitutes nearly half (46.5%) & more than half (59.5%) of girls in Assiut & Riyadh respectively, with a statistically significant difference ( $p=0.009$ ). Vaginal discharge & vulvar itching are the complaints of nearly one quarter of girls (24%, 23%) & (23.5%, 22.25%) in Assiut & Riyadh respectively.

As regards girls' reactions towards these symptoms (figure 2), asking mothers or friends is the first action taken among Assiut & Riyadh girls, (40%, & 32.5% respectively), followed by consulting a physician among Assiut girls (25%), while these symptoms are not considered a problem among Riyadh girls (27.5%), with a statistically significant difference between the two groups ( $p= 0.002$ ).

The relation between the girls reactions' and their fathers' level of education was also examined. Table 4 indicate that one third (33%) of Saudi girls consulting a physician are of higher educated fathers with a statistically significant differences.

**Table 1-** Distribution of the study subjects by their socio-demographic characters.

Character	Egypt (n= 200)		Saudi Arabia (n= 200)		P-value
	No.	%	No.	%	
<b>Age:</b>					
< 15 years	179	89.5	77	38.5	0.000*
≥ 15 years	21	10.5	123	61.5	
Mean ± SD	13.49 ± 0.87		14.77 ± 1.06		0.000*
<b>Grade :</b>					
One	46	23.0	8	4.0	0.000*
Two	99	49.5	66	33.0	
Three	55	27.5	126	63.0	
<b>Mother's education:</b>					
Illiterate	0	0.0	17	8.5	0.000*
Reads & writes	23	11.5	40	20.0	
Basic education	20	10.0	38	19.0	
Secondary	36	18.0	45	22.5	
University	121	60.5	60	30.0	
<b>Father's education:</b>					
Illiterate	0	0.0	7	3.5	0.000*
Reads & writes	13	6.5	43	21.5	
Basic education	20	10.0	23	11.5	
Secondary	30	15.0	36	18.0	
University	137	68.5	91	45.5	



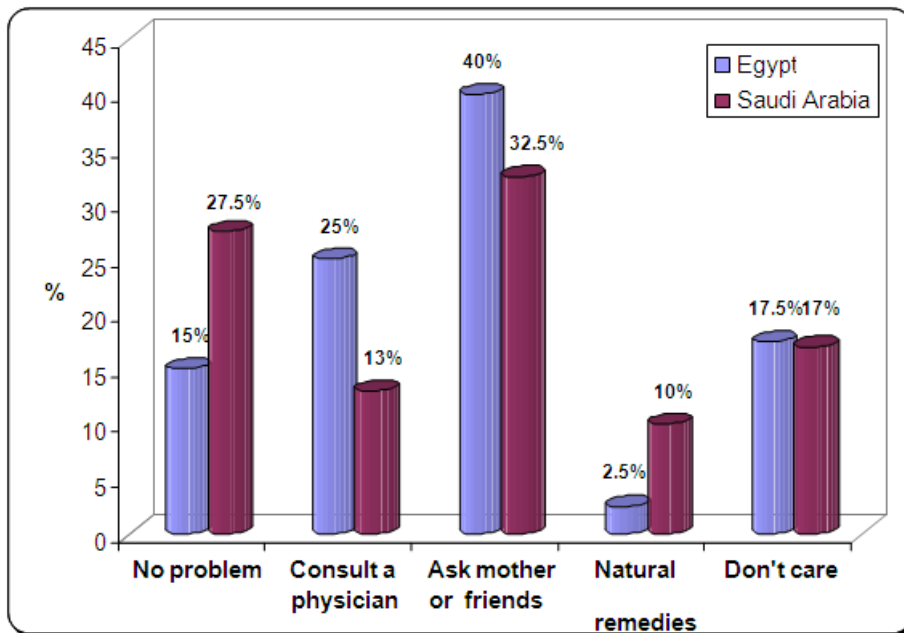
**Figure 1-** Distribution of the study subjects by their health condition.

**Table 2-** Distribution of the study subjects by their menstrual history.

Menstrual history	Egypt (n= 200)		Saudi Arabia (n= 200)		P-value
	No.	%	No.	%	
<b>Age at menarche:</b>					
< 13 years	139	69.5	75	37.5	0.000*
≥ 13 years	61	30.5	125	62.5	
Mean ± SD	12.02 ± 0.91		12.82 ± 1.25		0.000*
<b>Rhythm:</b>					
Regular	122	61.0	128	64.0	0.535
Irregular	78	39.0	72	36.0	
<b>Period:</b>					
< 8 days	176	88.0	178	89.0	0.754
≥ 8 days	24	12.0	22	11.0	
Mean ± SD	5.68 ± 1.52		5.80 ± 1.66		0.451
<b>Cycle:</b>					
< 21 days	18	9.0	46	23.0	0.000*
21 – 35 days	152	76.0	148	74.0	
> 35 days	30	15.0	6	3.0	
Mean ± SD	30.97 ± 11.08		25.96 ± 9.06		0.000*

**Table 3-** Distribution of the study subjects by their pediatric gynecological symptoms.

	Egypt (n= 200)		Arabia Saudi (n= 200)		P-value
	No.	%	No.	%	
<b>Congenital anomalies</b>	1	0.5	2	1.0	0.562
<b>Bleeding before puberty</b>	9	4.5	10	5.0	0.814
<b>Dysmenorrhea</b>	153	76.5	145	72.5	0.359
<b>Premenstrual syndrome</b>	93	46.5	119	59.5	0.009*
<b>Polymenorrhea</b>	78	39.0	52	26.0	0.006*
<b>Oligomenorrhea</b>	24	12.0	43	21.5	0.011*
<b>Metrorrhagia</b>	5	2.5	8	4.0	0.398
<b>Lower abdominal pain</b>	37	18.5	52	26.0	0.071
<b>Lower back pain</b>	23	11.5	60	30.0	0.000*
<b>Discharges</b>	48	24.0	46	23.0	0.814
<b>Itching</b>	47	23.5	45	22.5	0.812



**Figure 2-** Distribution of the study subjects by their reactions toward symptoms.

**Table 4-** Relation between father's education & reactions when facing any abnormal symptoms.

	Action	Father education										X <sup>2</sup>	P-value
		Illiterate		Read & write		Basic education		Secondary		University			
		No.	%	No.	%	No.	%	No.	%	No.	%		
Egypt	No problem	0	0.0	4	30.8	3	15.0	5	16.7	18	13.1	18.765	0.094
	Consult a physician	0	0.0	2	15.4	8	40.0	9	30.0	31	22.6		
	Ask mother or friends	0	0.0	3	23.1	8	40.0	11	36.7	58	42.3		
	Natural remedies	0	0.0	2	15.4	0	0.0	0	0.0	3	2.2		
	Don't care	0	0.0	2	15.4	1	5.0	5	16.7	27	19.7		
Saudi	No problem	1	14.3	16	37.2	3	13.0	10	27.8	25	27.5	212.34	0.000*
	Consult a physician	1	14.3	3	7.0	3	13.0	8	22.2	11	12.1		
	Ask mother or friends	2	28.6	15	34.9	9	39.1	9	25.0	30	33.0		
	Natural remedies	0	0.0	6	14.0	3	13.0	3	8.3	8	8.8		
	Don't care	3	42.9	3	7.0	5	21.7	6	16.7	17	18.7		

#### IV. Discussion

Pediatric gynecology is an emerging subspecialty involving the collaborative efforts of health professionals from gynecology and pediatric. The gynecological problems encountered in the pediatric population are unique to this age group [8]. The menstrual cycle has been recognized as a vital sign that gives information about the overall health of an adolescent. Significant deviation from monthly cycles can signal disease or dysfunction. This highlights the evidence based parameters for normal puberty, menarche cycle and amount of bleeding; though pediatric gynecology aimed at improving the reproductive health and development of girls throughout their life span [7]. Therefore, this study is conducted to recognize the occurrence of pediatric gynecological symptoms among early adolescent girls in Assiut, Egypt and Riyadh, (KSA).

The findings of the present study reveal that the mean age of girls is

13.49 $\pm\pm$  0.87 and 14.77 $\pm\pm$  1.06 years in Assiut and Riyadh girls respectively, with a statistically significant difference. This finding differs from that of a similar study conducted in Kuwait by Hasan, et al., 2010 [4], in a retrospective cohort review of 89 case records of patients under the age of 19 years who were admitted to the maternity Hospital, Kuwait, for a variety of reasons; the girls' mean age is 15-16 years. According to growth and development, the age 11 through 14 years are often referred to as early adolescence [10, 11]. The fact that Saudi girls are enrolled in schools after the age of six can explain the difference in the mean age between the two groups.

Regarding the level of parents' education, nearly two-thirds of girls in Assiut have university-educated mothers versus less than one third in Riyadh. Also, university-educated fathers constitute 68.5 % & 45.5% in Assiut and Riyadh respectively, with a statistically significant difference. This indicates a low educational level of parents in Riyadh, which could be due to many reasons, such as cultural and/or socioeconomical differences.

The findings of this study show that asthma, as a chronic disease, is present in both Riyadh and Assiut girls (7%, 2% respectively), with a statistically significant difference between the two groups. These results are approximately in agreement with that of a study conducted by Al Farayh, 2011, in Aljouf city, KSA, on 6000 of school pupils, 53% boys & 47% girls. The prevalence of asthma constitute 11% of the boys & 10% of the girls among the population study subjects [12], with no differences in different areas in KSA.

The results of the present study reveal that the mean age of menarche is 12.02 $\pm$  0.91 $\pm$  0.91 & 12.82 $\pm\pm$  1.25 in Assiut and Riyadh girls respectively, with a statistically significant difference. These findings are in agreement with a study conducted in Holly Makkah district on 200 of school girls with age ranging between 12 and 16 years, by Bahathiq & ElAwad, 2014, [13]. The study found that the mean menarche age is 12.6 $\pm$ 1.1 years. Another study by El-Awad et al., 2013, [14] in Kuwait governorate, on 1273 school female students, found that the mean age of menarche was 12.41 years.

As regards the rhythm, it is regular in nearly two thirds among both groups, the period of menstrual flow is less than 8 days for both groups and the mean days of the cycle are 30.97 $\pm\pm$  11.08 & 25.96 $\pm\pm$  9.06 days among Assiut and Riyadh girls respectively. This result disagrees with that of a study by Santana, et al., 2012 [15], who reports that 41.4% only of their study population have regular menstruation; whilst is in agreement with another study conducted by Mahmoud, et al., 2014 [16] who states that 60% of the subjects have regular periods.

The findings of the current study indicate that more than three quarters (76.5%) of Assiut girls and nearly three quarters (72.5%) of Riyadh girls complain of dysmenorrhea. This finding shows that dysmenorrhea is the most common pediatric gynecological symptom among studied girls. This is in agreement with a study on 389 school girls in Sidon city, Lebanon, 2012, which indicates that 74.3% of the study subjects are complaining of dysmenorrhea [15]. Another study conducted by Lipeng Wong, 2009, on 1092 girls from 15 different public secondary schools and 3 ethnic groups in the Federal Territory of Kuala Lumpur, Malaysia, found that 74.5% of the girls who had reached menarche have dysmenorrhea [16]. Also, Davis, 2003, states that dysmenorrhea is a common symptom in adolescent females [17].

Regarding premenstrual symptoms, it was found that nearly half (46.5% &) and more than half (59.5%) of the studied girls in Assiut and Riyadh respectively have premenstrual symptoms. This result is in agreement with Vichnin, 2008, [18] who conducted a study on 94 school girls, age ranges between 13 and 18 years, and found that 54% of the studied girls complain of premenstrual syndrome.

Vaginal discharges and vulvar itching are the complaints of nearly one quarter of girls in Assiut and Riyadh (24%, 23%) and (23.5%, 22.25%) respectively. This reflects lack of hygienic awareness on both groups' behalf.

The present study depicts that studied girls' reactions towards the above pediatric gynecological symptoms are firstly asking mothers or friends (40% , 32.5%) among Assiut and Riyadh girls respectively; whereas consulting a physician constitutes 25% & 13% among Assiut & Riyadh girls respectively . These percentages are higher than the results of a study conducted in Sida, Lebanon, 2012, [15] on 389 school girls, with age range between 13 and 19 years to explore their menstrual experiences. The study reveals that only 7.3% of the study subjects are consulting a physician in the presence of any irregularity of their cycles or any abnormal symptoms. These outcomes highlight the Arabs' negative attitude towards any discussions concerning the reproductive system.

Girls who do not consider the presence of gynecological symptoms a problem constitute 27.5% & 15% among Riyadh & Assiut girls respectively, with a statistically significant difference between the two groups ( $p= 0.002$  ).

Furthermore, it was observed through the findings of this study that the higher the level of the parents' education, the higher the percentage of studied girls consulting a physician which is the appropriate reaction. This is because adolescents need their care provider to be nonjudgmental and willing to maintain confidentiality, the need that is only fulfilled by a parent with a high level of education.

## V. Conclusion

The study concludes that dysmenorrhea is the most common gynecological symptom the girls complain of. The first action taken in the presence of any symptom is asking mothers or friends followed by consulting a physician. Still, there is a group of girls who does not consider the presence of symptoms a problem.

## VI. Recommendations

- A specialized clinic should be dedicated to providing pediatric & adolescent gynecological care.
- Future policy decisions must be taken for medical education in response to these realities in pediatric practices.
- There is a need for specific education regarding menstruation related conditions in schools' curricula.
- Girls should be empowered with adequate knowledge and proper reactions concerning their future life and future role as mothers.
- Enhancement the role of school nurse to provides pediatrics & adolescents with proper health education.

## References

- [1]. Angali A, Nicolette C, Alexandera N, Sari K and Rachel F(2014). Division of Pediatric and Adolescent Gynecology. Faculty of Medicine, University of Toronto.
- [2]. Ana R, Tangui PhD, Maya A, Gones PT (2013).Menstruation Disturbance: Prevalence, Characteristics and Effect on the Activities of Daily Living Among Adolescent Girls from Brazil. North American Society for Pediatric and Adolescent Gynecology,(26),148
- [3]. Luisa M, Veronica A, Herrera, MD(2014). Age at Menarche, Reaction to Menarche and Attitude Towards Menstruation Among Mexican Adolescent Girls. North American Society for Pediatric and Adolescent Gynecology,(27),61 -66
- [4]. Hasan L., Diegomaoh Mf., Al- Harmi and Mohd A.T..(2010)The scope of Pediatric and Adolescent Gynecological pollens in Kuwait ; Medical Principles and Practice International of the Kuwait University Health Sciences Centre ; Vol.19 (5)
- [5]. Muran D, Simmons KJ (2008). Pattern Recognition in Pediatric and Adolescent Gynecology. Pediatric Adolescent Gynecology, 21:103-108
- [6]. Edmonds DK (2002). Pediatric and Adolescent Gynecology- the UK Experience. J Pediatric. Adolescent. Gynecology, 15:265-270
- [7]. Paula j. and Adams Hilliard MD. (2014) journal of pediatric and adolescent Gynecology; volume 27,issue 6 p309-319 .
- [8]. Jane H, Kass W, Ellen E, Wilson MD( 2003). Pediatric gynecology: assessment strategies and common problems. Semin. Reported Med.21(4), 1, 363-371.
- [9]. Harel Z..(2006). Dysmenorrhea in adolescent and young adult: etiology and management. Journal of Pediatric and Adolescent Gynecology. 19(6), 363-371.

- [10]. Stang J, and Story M; (2005): Guidelines for Adolescent Nutrition Services .http: /www.epi.umm.edu /let /pubs /adol book.shtm.
- [11]. Sala, p. (2004): Survey of Gynecological Problems During Childhood and Early Adolescent in an Academic Center; Academic Dissertation, Faculty of Medicine, University of Tampere.
- [12]. Al Farayh S Abdulrahman, 2011, Epidemiology of Bronchial Asthma among school children in Aljouf City, KSA. ATS Journals Chapter DOI:10. 1164/ajrccm. Conference. 2011. 183.1
- [13]. Bahathiq Ao.,& ElAwad BE., 2014. Menarcheal age of school girls at Holy Makkah district. IMPACT:International Journal of Research in Applied, Natural & Social Science, vol.2, Issue5, May 2014, 211-216
- [14]. Al-Awad N., Al-Hasan T., AlMurjan D., Ali S., and Al-Taiar A., 2013. Age at menarche & its relation to body mass index among adolescent girls in Kuwait. BMC Public Health, 2013, 13:29.
- [15]. Santana T., Wehben N., Ziade F., 2012. Exploring dysmenorrhea & menstrual experience among Lebanese female adolescents. Eastern Mediterranean Health Journal, vol. 18, issue 8.
- [16]. Mahmoud AZ., Makhdoom AN., Mufti AL., Alreheli RS., Farghal RG., Aljaouni SE.,2014. Association between menstrual disturbances & habitual use of caffeine. Journal of Taibah University Medical sciences, vol.9, Issue 4, pp 341-144.
- [17]. Liping Wong and E Ming Khoo, 2010: International Federation of Gynecology and obstetric; vol.108, issue 2 P.139 -142
- [18]. Davis V J; (2003): Pediatric child health; what the pediatrician should know about pediatric and adolescent Gynecology: the perspective of a Gynecologist; 8(8) p . 491 - 495 .
- [19]. Vichnin M., Freeman EW., Lin H., Hilman J., Buis s., 2008. Premenstrual Syndrome (PMS) in Adolescent: Severity & Impairment. Journal of Pediatric Adolescent. 2008, Dec; 19 (8): 397-402.