

Menstrual Patterns and Disorders among Women in Jeddah, Saudi Arabia.

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Received: June 2018

Accepted: July 2018

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ABSTRACT

Background: The menstrual disorders are the most common gynecologic illnesses. These disorders can negatively affect the quality of the adult females' lives. This study aimed to determine the prevalence and the nature of menstrual disorders among women in Jeddah to find its relation to pain and to identify what is normal and acceptable. **Methods:** A cross-sectional survey was conducted from Jan 23 to 31, 2018 in Jeddah, KSA among 303 female. Frequencies and Chi-square test were used in data analysis by SPSS software. **Result:** This study enrolled 303 participants with a mean of 26.8 ± 6.8 years and a range of 16-52 years. The mean age at menarche was 12.9 years. The majority of the participants had a regular period (69.6%). (8.3%) had polymenorrhea and (2.6%) had oligomenorrhea. The menstrual flow length of the most women was ranged from 3 to 7 days (80.9%). The prevalence of menorrhagia was (19.1%) while hypomenorrhea was (19.5%). (74.3%) of the participants reported that they experienced moderate to severe dysmenorrhea and (49.2%) of them their daily activities were affected by the pain. (58.4%) of the responders that reported menstrual disorders used medication for symptom relief and 108 of them indulged in self-medication. (89.4%) admitted they have undergone psychological changes the few days before the menses. **Conclusion:** Dysmenorrhea was the commonest reported menstrual disorder (74.3%) followed by irregular menstruation (30.4%). The high prevalence of non-expert treatment in the respondents for relieving symptoms confirms the need for awareness creation, emphasizing the dangers of the possibilities of the presence of other harmful differential health disorders.

Keywords: Menstrual patterns, disorders, Jeddah, Saudi Arabia.

INTRODUCTION

The menstrual disorders are the most common gynecologic illnesses. 20 to 24-year-old age group is the highest prevalence then it reduces increasingly afterwards.^[1] The regular menstrual cycle depends on hormonal action and interaction that released from hypothalamus-pituitary and ovaries and their impact on the endometrium. According to a literature review, the usual menstrual pattern is starting from the 3rd year after menarche, 21-34 days is the interval between bleeding periods, with a flow lasting 3 to 7 days and a range of menstrual blood loss 5-80 ml (mean of 35 ml).^[2]

Differences in menstrual patterns and dysfunctions vary, such as menstrual cycle irregularities (of length or duration), hyper or hypomenorrhea, poly or

oligomenorrhea, amenorrhea, menorrhagia, dysmenorrhea and premenstrual syndrome (PMS). These disorders can negatively influence the quality of the adult females' lives and, therefore are often a significant source of concern for them and their families.^[3]

Moreover, there can be consequences such as difficulties in college attendance and academic performance which hinder practical achievements and employment prospects.^[4] They also affect the public economy regarding medical care costs represented in highly priced hormonal drugs and laboratory tests.^[1]

A local study among female students in Taif medical college reported that 30% of them had an irregular menstrual cycle, 68% was suffering from PMS, and 77% experienced dysmenorrhea.^[5] Another local study among Saudi nursing students found that 96.3% of the participants had dysmenorrhea while 36.4% had irregular menstruation.^[6]

There is insufficient information about the knowledge and attitude of adult girls regarding menstruation. Many girls can't differentiate between normal and abnormal menstruation.^[7] Most of what they know about menstruation is predominantly obtained from their mothers and their friends. Girls

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are interested in knowing more about the normal menstrual cycle and its disorders. Equipped with correct information, they could make right judgments on when to seek medical advice.^[8]

Although menstrual disorders represent a big public health problem among females, however, there are few studies have been conducted about this important problem.

The study aims to determine the prevalence and the nature of menstrual disorders among women in Jeddah to create a population-specific reference data which is helpful to establish its relation to pain and to identify what is normal and acceptable. Since knowing of their variability is needed for patient education purposes and to guide physicians' investigations, treatment and follow-up.

MATERIALS AND METHODS

A cross-sectional survey conducted from Jan 23 to 31, 2018 in Jeddah, Saudi Arabia after administrative approvals. The population was all women of reproductive age and living in Jeddah. A self-administered, structured, anonymous electronic questionnaire is covering 20 items designed for the study. The tools used in the previous studies were reviewed to prepare the questionnaire.

A total of 303 female completed the questionnaire. The questionnaire includes the following demographic and clinical data: age, age of menarche, weight, and height to calculate the body mass index (BMI), marital status, presence of pregnancy, breastfeeding or usage of contraceptive method (to rule out the cause of amenorrhea, if present), physical exercise and if she is a smoker or not.

Then the respondents were asked about the characteristics of their menstrual cycle, the length of

the cycle (<21, 21– 35, >35 days or irregular), duration of menses (<3, 3–7 or >7 days), amount of blood loss as reflected by the number of pads changed per day during menstruation (<3, 3–5 or >5) and if there are psychological changes prior to the menses. Absence or presence of the pain during menstruation (dysmenorrhea) and its severity as mild, moderate or severe and its effect on daily activities, the need for analgesic medications and whether the medical treatment was required, gotten by self or received from parents or trained provider. For this study, menstrual disorders defined as follows: oligomenorrhea: cycle repeated once every >35 days but <3 months, polymenorrhea: cycle repeated once every <21 days, hypomenorrhea: duration of menses <3 days with slight blood loss (using <3 pad/day), hypermenorrhea/menorrhagia: period length >7 days and/or blood loss >80 ml (using >5 pads/day). Dysmenorrhea: painful menstruation (mild, moderate or severe).

The Data was analyzed using SPSS software (IBM SPSS Version 21, Chicago, Illinois, USA). Percentages and frequencies presented as the mean standard deviation (\pm SD). (Chi-square test) used to test the statistical significance of the variables with $p < 0.05$.

RESULTS

This study enrolled three hundred-three 303 participants with a mean of 26.8 ± 6.8 years and a range of 16-52 years. The mean menarcheal age was 12.9 years with standard deviation of 1.7. [Table 1, 2 and 3] show the demographic and clinical characteristics of the sample as a whole.

Table 1: Participant characteristics.

Characteristics	Minimum	Maximum	Mean	Std. Deviation
Age in years	16.0	52.0	26.8	6.8
menarche	9.0	23.0	12.9	1.7
Weight in kg	28.0	180.0	63.6	18.6
Height in m	1.00	1.75	1.57	.085
BMI Kg/m ²	13	75	25.4	7.3

[Table 2] represents that most of the responders were single and married (58.7%), (38.3%) respectively. Forty-seven (15.5%) of participants were using a contraceptive method, (11.9%) of them to prevent pregnancy, (2.3%) to regulate their period and 1.3% for both reasons. The majority had an active lifestyle (56.1%) followed by a sedentary lifestyle (33.7%). Only sixty of the responders (19.8%) were smokers.

[Table 3] shows that the vast majority of the participants had a regular period (69.6%). (8.3%) Had polymenorrhea (<20 days) and (2.6%) had oligomenorrhea (>35 days). The length of the menstrual flow of the most women ranged from 3 to 7 days (80.9%). The prevalence of menorrhagia (>5 vulvar pads changed per day) was (19.1%) while hypomenorrhea (<3 vulvar pads changed per day) was (19.5%). Most of the participants (74.3%) reported that they experienced moderate to severe

dysmenorrhea and (49.2%) of them their daily activities were affected by the pain. One-hundred-seventy seven (58.4%) of the responders that reported menstrual disorders used medication for symptom relief and one hundred- eight of them indulged in self-medication. (89.4%) Of the whole sample admitted they had undergone psychological changes the few days before the menses.

[Table 4] demonstrates that there are significant relations between dysmenorrhea and other menstrual cycle characteristics. Those who suffered from dysmenorrhea are more likely to use a higher number of vulvar pads per day ($p=0.033$), more prone to have psychological disturbances ($p=0.015$), more liable to have limitations in their daily activities ($p=0.001$) and more susceptible to consume medications ($p=0.001$).

Table 2: Participant characteristics

Marital status	Frequency	Percentage
Single	178	58.7
Married	116	38.3
Divorced	7	2.3
Widow	2	.7
Pregnant		
Yes	20	6.6
No	283	93.4
Breast feeding		
Yes	12	4.0
No	291	96.0
OCP		
Yes	47	15.5
No	256	84.5
Reasons		
Contraception	36	11.9
To regulate period	7	2.3
Both	4	1.3
No	256	84.5
Physical status		
Exercise	31	10.2
Active	170	56.1
Lazy	102	33.7
Smoking		
Yes	60	19.8
No	243	80.2

Table 3: Menstrual history

History of menstrual history	Frequency	Percentage
Period regular	211	69.6
irregular	92	30.4
Frequency		
<21	25	8.3
22-35	178	58.7
>35	8	2.6
28	92	30.4
Duration		
<3	8	2.6
3-7	245	80.9
>7	50	16.5
Number of pads		
<3	59	19.5
3-5	186	61.4
>5	58	19.1
Affect lifestyle		
Yes	149	49.2
No	154	50.8
psychological changes		
yes	271	89.4
no	32	10.6
Use medicine		
yes	177	58.4
no	126	41.6
Medication advised by		
Family	42	13.9
Physician	27	8.9
Patients herself	108	35.6
No medication	126	41.6
Pain		
No pain	78	25.7
Pain	225	74.3
Pain severity		
no	15	5.0
mild	63	20.8
moderate	150	49.5
sever	75	24.8

Table 4: Comparing the History of menstrual history in those who have pain with those have no pain.

History of menstrual history	Normal (78)	Pain (225)		
Period				
✓ Regular (211)	55	156	0.058 (0.602-1.858)	0.483
✓ Irregular (92)	23	69		
Frequency				
✓ <21 (25)	8	17		
✓ 22-35 (179)	46	133		
✓ >35 (13)	3	10		
✓ 28 (86)	21	65		0.883
Duration				
✓ <3 (8)	4	4		
✓ 3-7 (245)	62	183		
✓ >7 (50)	12	38		0.277
Number of pads				
✓ <3 (59)	23	36		
✓ 3-5 (186)	41	145		
✓ >5 (58)	14	44		0.033
psychological changes				
✓ Yes (271)	64	207	0.398 (0.187 - 0.844)	0.015
✓ No (32)	14	18		
Affect lifestyle				
✓ Yes (149)	7	142	0.058 (0.025 - 0.131)	0.001
✓ No (154)	71	83		
Use medicine				
✓ Yes (177)	32	145	0.384 (0.227 - 0.650)	0.001
✓ No (126)	46	80		
Medication advised by				
✓ Family (42)	10	32		
✓ Physician (27)	4	23		
✓ Patients herself(108)	19	89		
✓ No medication (126)	45	8		0.007

DISCUSSION

The onset of menstruation (menarche) is individual specific, within a wide range of normality.^[9] There are known factors such as nutritional status, geographical location, environmental conditions and magnitude of socioeconomic inequalities in a society that affect the mean age at menarche and make it varies from population to population.^[9-11]

In the current study, the mean age at menarche was 12.9 years with standard deviation of 1.7, which is normal and similar to local research, was done among Saudi nursing students 6 and another regional research in Egypt (12.1 years) 12. However (16.2%) of the participants had the menarcheal age more than 14 years. Early menarche with unprotected sexual behavior in early adolescent years could lead to transmission of sexually transmitted diseases (STD), unwanted pregnancy and its illegal, dangerous termination as well as teenage motherhood; all of which adversely. The menstrual cycle length of the bulk of the participants (58.7%) ranged from 21 to 35 days which is similar to a study done by Gumanga and Kwame-Aryee.^[13]

The prevalence of polymenorrhea (<20 days) was about (8.3%) which is found to be high compared to another study done in Italy (2.5%).^[14] The prevalence of oligomenorrhea (>35 days) was (2.6%) which is comparable to the incidence of the same Italian study (3.7%)¹⁴ but lower than the prevalence of the Egyptian one (6%).^[12]

There is a significant correlation between the frequency of the menstrual cycle and the limitation of the lifestyle caused by the pain and number of pads changed per day ($p=0.031$), ($p=0.002$) respectively. The prevalence of irregular menses was (30.4%) similar to another local study done in Taif (30%)⁵ as in adolescence period it is common to have irregular cycle during the initiating of menstruation because of the non-ovulatory cycle associated with a variable amount of blood loss including menorrhagia.^[15] Other causes of menstrual irregularity include, tumors, endocrine disorders and acquired disorders like strenuous exercise, stress, and cigarette smoking are potential topics for further research. Moreover, irregular menstruation considered as a factor that increases the rate of psychological and emotional stresses.^[16] It has also been associated with increases in the risk of type II diabetes mellitus and coronary heart disease.^[17] The results showed the most usual length of the menstrual cycle was between 3 and 7 days (80.9%) compared to (87.6%) in Egypt.^[13] This study found longer menstrual flow is associated with more psychological and emotional disturbances ($p=0.043$). Our results showed 58 women (19.1%) reported that they used to change > 5 vulvar pads per day during their periods. Attempts to measure the amount of menstrual blood loss on the basis of the number of vulvar pads used per day is not accurate because of variations in personal fastidiousness and individual estimation of the volume of menstrual flow and quality of sanitation product used.^[18] Heavy menstrual bleeding has a significant impact on the quality of women's lives. It can lead to limitations at school and work and hinder educational and academic achievements. It also may put them at risk of anemia.^[19,20] Moreover, it can lead to poor menstrual hygiene, increased risk of infection since many women may not be able to afford costly vulvar pads, and they may resort to the use of cotton, toilet paper, and old clothes or rugs.^[13] In this survey, dysmenorrhea was the commonest reported menstrual disorder 225 (74.3%) compared to (60.9%) in a local study 21, (65.4%) in Egypt and (55.5%) in Turkey.^[12,22] These variations may be due to differences between the target populations, lifestyle, or due lack of a standardized universally accepted method for defining dysmenorrhea.^[23,24] This study showed a statistically significant association between dysmenorrhea and daily activities disturbance ($p=0.001$) and medication consumption ($p=0.001$). Pain negatively affects the academic and economic levels; it may discomfort a

woman during vacations, social activities or when high performance is required (e.g. job interviews, exams, and sports competitions).

Chronic recurrent menstrual pain causes absences from work or school and a significant budget for the health care system in medical consultations, investigations, and medications prescribed.^[25] Although the fact that dysmenorrhea in young females is typically primary, there is evidence that in approximately 10% of women with severe dysmenorrhea, uterine or pelvic anomalies may be found.^[26] The limitation of this study is the design was cross-sectional, and the self-reported information about the participants' menstruation couldn't be validated.

CONCLUSION

The prevalence of menstrual disorders especially dysmenorrhea among women who live in Jeddah is high. The high prevalence of non-expert management in the respondents for relieving symptoms confirms the need to create awareness, emphasize the hazards of the possibilities of the presence of other harmful differential health disorders. Women should be encouraged to consult physicians when significant menstrual disorder occurs. We also highly recommend increasing the awareness about puberty phase and its physiological and psychological changes and menstrual problems directing community especially young females and their parents by giving courses on reproductive health in the school curriculum, this may assist in early detection of these disorders.

REFERENCES

1. Shiferaw MT, Wubshet M, Tegabu D. Menstrual problems and associated factors among students of Bahir Dar University, Amhara National Regional State, Ethiopia: a cross-sectional survey. *Pan African Medical Journal*. 2014;17
2. Rigon, Franco, Vincenzo De Sanctis, Sergio Bernasconi, Luigi Bianchin, Gianni Bona, Mauro Bozzola, Fabio Buzi, Giorgio Radetti, Luciano Tatò, Giorgio Tonini, Carlo De Sanctis, and Egle Perissinotto. "Menstrual pattern and menstrual disorders among adolescents: an update of the Italian data." *Italian Journal of Pediatrics* 38, no. 1 (2012): 38. doi:10.1186/1824-7288-38-38
3. Olowokere, Adekemi Eunice, Monisola O. Oginni, Aanuoluwapo O. Olajubu, Augusta E. William, and Omolola O. Irinoye. "Menstrual disorders: The implications on health and academic activities of female undergraduates in a federal university in Nigeria." *Journal of Nursing Education and Practice* 4, no. 5 (2014). doi:10.5430/jnep.v4n5p12
4. Kadir, R. A., M. Edlund, and S. Von Mackensen. "The impact of menstrual disorders on quality of life in women with inherited bleeding disorders." *Haemophilia* 16, no. 5 (2010): 832-39. doi:10.1111/j.1365-2516.2010.02269.x
5. N. Aref, F. Rizwan, and M. M. Abbas, "Frequency of Different Menstrual Disorders among Female Medical Students at Taif Medical College," *World J. Med. Sci.*, vol. 12, no. 2, pp. 109-114, 2015.

6. Karout, Najwa. "Prevalence and pattern of menstrual problems and relationship with some factors among Saudi nursing students." *Journal of Nursing Education and Practice* 5, no. 12 (2015). doi:10.5430/jnep.v5n12p1.
7. M. Sharma and S. Gupta, "Menstrual pattern and abnormalities in the high school girls of Dharan: a cross sectional study in two boarding schools.," *Nepal Med. Coll. J.*, vol. 5, no. 1, pp. 34–6, 2003.
8. "Menstruation in Girls and Adolescents: Using the Menstrual Cycle as a Vital Sign." *Pediatrics* 137, no. 3 (2016). doi:10.1542/peds.2015-4480.
9. Thomas, F., Renaud, F., Benefice, E., Meeus, T. and Guegan, J. (2001). International Variability of Ages at Menarche and Menopause: Patterns and Main Determinants. *Human Biology*, 73(2), pp.271-290.
10. Kaplowitz, P. (2006). Pubertal development in girls: secular trends. *Current Opinion in Obstetrics and Gynecology*, 18(5), pp.487-491.
11. Chumlea, W., Schubert, C., Roche, A., Kulin, H., Lee, P., Himes, J. and Sun, S. (2003). Age at Menarche and Racial Comparisons in US Girls. *PEDIATRICS*, 111(1), pp.110-113.
12. Nooh, A. (2015). Menstrual disorders among Zagazig University Students, Zagazig, Egypt. *Middle East Fertility Society Journal*, 20(3), pp.198-203.
13. S. K. Gumanga and R. A. Kwame-Aryee, "Menstrual Characteristics in Some Adolescent Girls in Accra, Ghana," *Ghana Medical Journal*, vol. 46, no. 1. pp. 3–7, 2012.
14. Perissinotto, E., Sanctis, V., Bernasconi, S., Bianchin, L., Bona, G., Bozzola, M., Buzi, F., Sanctis, C., Rigon, F., Tatò, L. and Tonini, G. (2014). Onset of menstrual cycle and menses features among secondary school girls in Italy: A questionnaire study on 3,783 students. *Indian Journal of Endocrinology and Metabolism*, 18(7), p.84.
15. L. K. Lee, P. C. Y. Chen, K. K. Lee, and J. Kaur, "Menstruation among adolescent girls in Malaysia: A cross-sectional school survey," *Singapore Medical Journal*, vol. 47, no. 10. pp. 869–874, 2006.
16. Barron, M., Flick, L., Cook, C., Homan, S. and Campbell, C. (2008). Associations Between Psychiatric Disorders and Menstrual Cycle Characteristics. *Archives of Psychiatric Nursing*, 22(5), pp.254-265.
17. Gast, G., Grobbee, D., Smit, H., Bueno-de-Mesquita, H., Samsioe, G. and van der Schouw, Y. (2010). Menstrual cycle characteristics and risk of coronary heart disease and type 2 diabetes. *Fertility and Sterility*, 94(6), pp.2379-2381.
18. Zegeye, D., Megabiaw, B. and Mulu, A. (2009). Age at menarche and the menstrual pattern of secondary school adolescents in northwest Ethiopia. *BMC Women's Health*, 9(1).
19. KADIR, R., EDLUND, M. and VON MACKENSEN, S. (2010). The impact of menstrual disorders on quality of life in women with inherited bleeding disorders. *Haemophilia*, 16(5), pp.832-839.
20. Palep-Singh, M. and Prentice, A. (2007). Epidemiology of abnormal uterine bleeding. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 21(6), pp.887-890.
21. Ibrahim, N., AlGhamdi, M., Al-Shaibani, A., Al-Amri, F., Alharbi, H., Al-Jadani, A. and Alfaidi, R. (2015). Dysmenorrhea among female medical students in King Abdulaziz University: Prevalence, predictors and outcome. *Pakistan Journal of Medical Sciences*, 31(6).
22. Ozerdogan, N., Sayiner, D., Ayranci, U., Unsal, A. and Giray, S. (2009). Prevalence and predictors of dysmenorrhea among students at a university in Turkey. *International Journal of Gynecology & Obstetrics*, 107(1), pp.39-43.
23. Hillen, T., Grbavac, S., Johnston, P., Straton, J. and Keogh, J. (1999). Primary dysmenorrhea in young Western Australian women: prevalence, impact, and knowledge of treatment. *Journal of Adolescent Health*, 25(1), pp.40-45.
24. Chia, C., Lai, J., Cheung, P., Kwong, L., Lau, F., Leung, K., Leung, M., Wong, F. and Ngu, S. (2013). Dysmenorrhoea among Hong Kong university students: prevalence, impact, and management. *Hong Kong Medical Journal*.
25. S. Reddish, "Dysmenorrhoea," *Aust. Fam. Physician*, vol. 35, no. 11, pp. 842–849, 2006.
26. Chiappedi, M., Maffioletti, E., Piazza, F., D'Adda, N., Tamburini, M. and Balottin, U. (2012). Abilities of preschoolers: comparing different tools. *Italian Journal of Pediatrics*, 38(1), p.3.

How to cite this article: Abduljabbar HSO, Shuaib BH. Menstrual Patterns and Disorders among Women in Jeddah, Saudi Arabia. *Ann. Int. Med. Den. Res.* 2018; 4(5):OG01-OG05.

Source of Support: Nil, **Conflict of Interest:** None declared