



## Questionnaire Based Study on Menstrual Pattern and Abnormalities in Women of Reproductive Age in Peshawar Khyber-Pakhtunkhwa Pakistan

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**Abstract:** This study analyses the menstrual patterns and abnormalities among female adolescent students in Peshawar, Pakistan. In the present study, the data was collected from 300 female students (16 to 23 years) studying in different institutes of Peshawar. A questionnaire containing 54 close ended questions were made for collection of information about the demographic data, mother education, knowledge on menstruation, effect of menstruation on the education, practices during menstruation, abnormalities of the menstrual cycle and treatment for menstrual abnormalities. The data was analyzed using SPSS version 16.0. The result showed that the majority of participants were in the age of 20-21 years and the mean age of menarche was 13-14 years. Majority of the respondents have normal BMI with medium hemorrhage and menstrual cycle repeating after less or 28 days. Majority of respondents (74.3%) have mean days of menstruation 4 to 7 days. Dysmenorrhea was found to be the major abnormality of menstrual cycle among the girls. During the menstrual cycle, intense abdominal pain was reported by 51.7% of respondents, intense pain in legs was reported by 39.3% of respondents and intense back pain was reported by 52.7% of respondents. It was found that 28.7% of respondents are taking treatment for their menstrual abnormality. The study concluded that menstrual patterns and problems need to be addressed properly in order to maintain healthy life among adolescent girls.

**Keywords:** Menstruation; Menarche; Dysmenorrhea; Menorrhagia; Premenstrual symptoms (PMS); Polymenorrhea; Polycystic ovarian syndrome (PCOS).

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### 1. Introduction

Menstruation is a monthly cycle in women of reproductive age in which there is shedding of endometrial lining of uterus along with bleeding that leads to vagina[1-2]. The factors controlling menstrual cycle include autocrine, endocrine, and paracrine factors which regulate development of ovarian follicles, luteal phase, and endometrial remodeling. Menarche is an essential process in pubertal development in the lives of all females[3]. A normal menstrual cycle can be assessed on the basis of four factors such as frequency, duration, regularity, and volume of blood in the menses[4]. The notable menstrual abnormalities include oligomenorrhea, amenorrhea, polymenorrhea, premenstrual syndrome, dysmenorrhea, menorrhagia and polycystic ovarian syndrome (PCOS) [5]. Dysmenorrhea is a condition of painful menstruation in which pain and cramps arising from the lower abdominal area radiates towards the thighs. The other common symptoms such as vomiting, nausea, diarrhea, constipation and frequent urination are at peak in the first 24 hours of the menses and usually diminish in two days [6]. Prostaglandin (PG) causes the uterine contractions during the menstrual cycle which results in the pain. [7]. Amenorrhea is the absence of menses for irregular times or sometimes may be a permanent condition due to the dysfunction of ovaries, uterus, pituitary and hypothalamus[8]. Menorrhagia, a

common gynecological problem, results in a huge amount (80mL) of blood loss per menstrual cycle[9]. Menorrhagia is affecting 36% to 38% of women worldwide; with at least one among the three women of reproductive age is affected[10]. Oligomenorrhea is one of the menstrual abnormality. The condition in which there is a longer interval (35 to 180 days) between the menses is called oligomenorrhea [11]. Polymenorrhea represents a condition of abnormal uterine bleeding in which there is much short interval (less than 21 days) between the periods [12]. Polycystic ovary syndrome (PCOS), a common endocrine disorder is characterized by polycystic ovaries along with oligo or amenorrhea, obesity, hirsutism and acne[13-14]. Gynecological problems can be anatomical, physiological or hormonal[15]. The menstrual abnormality has many causes such as obesity or underweight, reproductive factors, smoking, any disease (type 2 diabetes mellitus, thyroid disorder, endometriosis, etc) and use of medicines (antiandrogens and anti-depressants) [16]. It is found that the knowledge about the reproductive health among the Pakistani youth is not sufficient [17]. The major reason behind the gynecological visits appeared to be linked with menstrual disorders[7].

## **2. Methodology**

### **2.1. Sampling area**

The present research/study was conducted among the people of Peshawar.

### **2.2. Study design**

The study design was quantitative.

### **2.3. Period of the Study**

The study period lasted from Dec 2018 to August 2019.

### **2.4. Sample size**

Sample size was 300 based on the study conducted in Peshawar on Assessment of Menstrual abnormalities and treatment among women of reproductive age.

### **2.5. Inclusion criteria and exclusion criteria**

The inclusion sampling criteria were participants between the age group of 16 to 23 years. The exclusion sampling criteria include age less than 16 years and more than 23 years.

### **2.6. Data collection procedure**

A questionnaire containing 54 close ended questions was made for collection of information about the demographic data, mother education, menstrual abnormalities and treatment. The designed questionnaire was rechecked and suggested changes were made for collecting data. In this study, the data was collected from 300 female students from different schools, colleges and universities. Only girls between 16 to 23 years were included in this study. Most of the data were collected from the Islamia College University Peshawar, Benazir Bhutto Women University Peshawar and University of Peshawar, Jinnah College, Islamia College and from random schools. In order to keep confidentiality, all the questionnaires were distributed and filled on the same day. From every participant informed written consent was taken. Protocol and purpose of the study were explained to the participants included in the study.

### **2.7. Data Analysis**

The data was analyzed using SPSS statistical analysis version 16.0.

## **3. Results**

### **3.1. Socio demographic characteristics of the respondents**

The present study was conducted to assess the abnormalities in the menstrual cycle among women of reproductive age in Peshawar. The majority of the respondents (38.3%) were in the age group 20-21 years while 13.3% in 16-17 years, 24.6% in 18-19 years and 23.6% in 22-23 years. It was found that 290 females were unmarried while 10 females were married only. In the study, 24 individuals were studying in school, 44 individuals were studying in college while 231 females were studying at the university. The monthly income of 10 individuals was from 15000-20000, 18 individuals from Rs. 20000 to Rs.30000, 100 individuals from Rs.30000 to Rs 50000 and 172 individuals were from families having monthly income of more than Rs 50000. It was found that mothers of 109 females were having no education, mother of 36 females were having education from 4 to 7<sup>th</sup> class, mother of 92 females were having secondary education, and mother of 63 females were degree holders.

### 3.2. Menstruation pattern according to BMI

According to the BMI in the underweight respondents, 14% have their cycle after less or 28 days, 4.3% have their cycle after 35 days and only 0.3% have their cycle after more than 35 days. According to BMI in the normal respondents, 56.7% have their cycle after less or 28 days, 10.7% have their cycle after 35 days and 7% have their cycle after more than 35 days. According to BMI in the overweight respondents, 5.3% have their cycle after less or 28 days, 1.0% have their cycle after 35 days and only 0.7% have their cycle after more than 35 days. Majority of the respondents (56.7%) have normal BMI and repeats their menstruation after less or 28 days.

**Table 1.**Menstruation pattern according to BMI

BMI	Menstrual cycle		
	Less or 28 Days	35 days	More than 35 days
Underweight (56)	42 (14.0%)	13(4.3%)	1 0(0.3%)
Normal (223)	170 (56.7%)	32 (10.7%)	21 (7%)
Overweight (21)	16 (5.3%)	3 (1.0%)	2 (0.7%)

### 3.3. Frequency distribution of BMI and hemorrhage of women (n=300)

The pattern of hemorrhage during the menstrual cycle in the underweight respondents were as follows; light (1.0%), medium (13.3%), heavy (4.0%) and spotting (.3%). The patterns of hemorrhage during the menstrual cycle in the normal respondents were as follows; light (5.3%), medium (52.7%), heavy (14.3%) and spotting (2.0%). The pattern of hemorrhage during the menstrual cycle in the overweight respondents were as follows; light (1.0%), medium (4.3%), heavy (1.3%) and spotting (.3%). In the study, the majority of respondents have normal BMI and majority of the respondents 158(52.7%) experiences medium hemorrhage.

**Table 2.**Frequency Distribution of BMI and Hemorrhage of Women (n=300)

Underweight (56)	3 (1.0%)	40 (13.3%)	12 (4.0%)	1 (0.3%)
Normal (223)	16 (5.3%)	158 (52.7%)	43 (14.3%)	6 (2.0%)
Over weight (21)	3 (1.0%)	13 (4.3%)	4 (1.3%)	1 (0.3%)

### 3.4. Psychological symptoms during periods (n-300)

It was found that mood swings, anger, and irritability were oftenly experienced symptoms by the majority of the respondents followed by the anxiety and difficulty in concentrating. Similarly among the physiological symptoms lower abdominal pain, pain in legs, headache and fatigue was oftenly experienced by the adolescent girls.

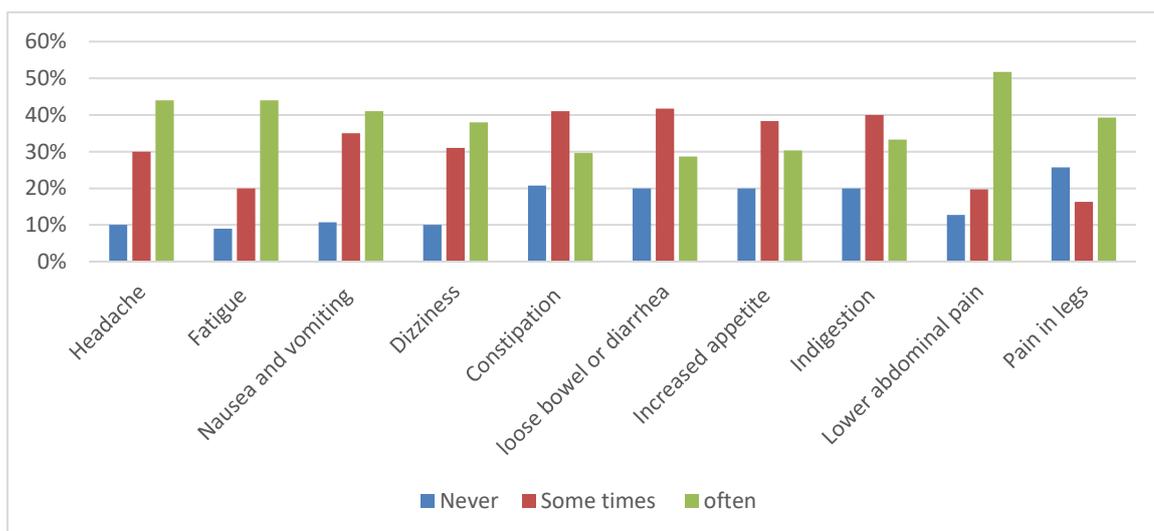


Figure 1. physiological symptoms during menstrual cycle

### 3.5. Abnormalities in menstrual cycle

Among the menstrual abnormalities, dysmenorrhea appeared to be the most common menstrual problem among the adolescent girls. While amenorrhea is the least reported problem among the respondents as shown in the table.

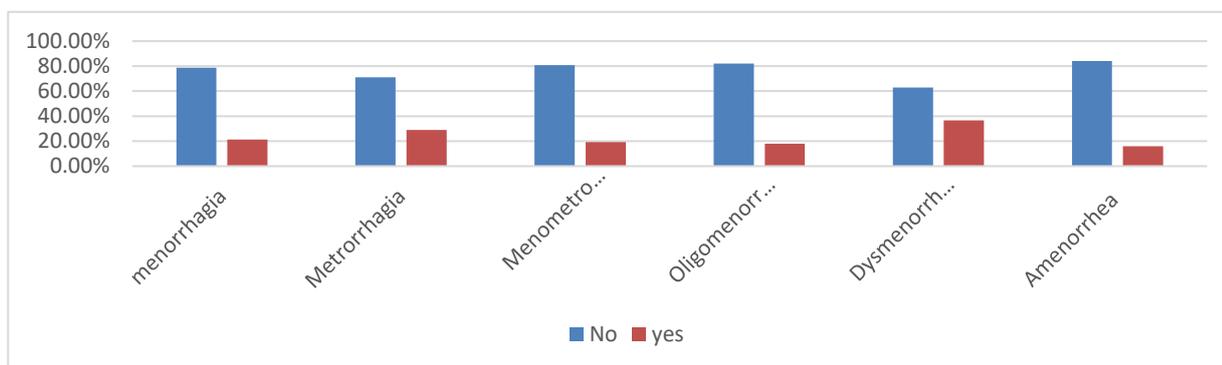


Figure 2. Days of pain during the menstrual cycle (n=300)

It was found that majority (43%) of the respondents experience severe pain on the first day of the menstrual bleeding, while only (14%) of the respondents experienced the pain in all the bleeding days. It was found that 46% of the respondents used painkillers for relieving the pain.

Table 3. Days of pain during the menstrual cycle

Variables	Respondents
Days of severe pain during periods	
1 <sup>st</sup> day	43%
2 <sup>nd</sup> day	21.7%
All 3 days	30.7%
All days	14.0%
Do you take painkiller during periods	
No	52.7%
Yes	46.0%

### 3.6. Treatment of menstrual abnormalities (n=300)

Majority of the respondents 64.7% didn't ever consult the gynecologist for menstrual abnormality and 35.3% of respondents consulted the gynecologist for menstrual abnormality. It was found that 71.3% of respondents had taken any treatment and 28.7% had taken treatment for their menstrual problem. Majority of the respondents 27.3% used drugs as treatment, 7.3% of respondents used hormones and 5.7% used other treatment. Majority of the respondents 90% did not use tablets to postpone periods and 10% of respondents took tablets to postpone periods.

#### 4. Discussion

Three hundred respondents participated in the study, making a response rate of 100%. The mean age of menarche was 13-14 years that is somewhat similar to the study of [18] and [19] in which the mean age of menarche was 13-15 years and  $13.43 \pm 1.01$  years respectively. Comparable to our study by [20] and [21] it was found that the age of menarche to be  $(13.9 \pm 1.8)$  years in Gujarat &  $(13.51 \pm 1.04)$  years in Central India respectively. Also [22] reported the menarche age ranging from 12 to 14 years in girls of Karachi, Pakistan which coincides with our result. Likewise, the age of menarche reported by [23] was reported to be 12.4 years.

The study revealed that more than half of the respondents 76% said that normal menstrual cycle repeats after less or 28 days, 70.3% had medium hemorrhage or we can say moderate blood flow and 74.3% had bleeding for 4 to 7 days which coincides with the results of [24-25,26], Rabiepour. *et al.* (2017) in Malaysia, Pakistan and Iran respectively. While in another study conducted by Fehintola *et al.* (2017) more than half of the respondents reported the normal menstrual cycle length to be greater than 35 days. While the study conducted by [27] found that 84% of girls having blood flow between 3-5 days.

It was found that mood swings, anger, and irritability were the oftenly experienced symptoms by the majority of the respondents followed by the anxiety and difficulty in concentrating. Similarly among the physiological symptoms lower abdominal pain, pain in legs, headache and fatigue was oftenly experienced by the adolescent girls. In our study during the menstrual cycle, intense abdominal pain is reported by 51.7% of respondents, intense pain in legs is reported by 39.3% of respondents and intense back pain is reported by 52.7% of respondents. In our study, 46% of respondents take pain killers for menstrual pain similar to the study conducted by [28] reported that simple analgesic tablets were used for relief of pain by 98 (49.7%) subjects.

Dysmenorrhea appeared to be the common menstrual problem among the girls. While amenorrhea is the least reported problem among the respondents. [29] reported that oligomenorrhea to be the most prevalent problem while polymenorrhea was the less prevalent problem in girls of Singapore. In our study almost every individual had one of the menstrual abnormality i.e. menorrhagia (21.3%), Metrorrhagia (29%), menometrorrhagia 19.3%, oligomenorrhea (18%), dysmenorrhea (36.7%) and amenorrhea (16%). The common abnormality in our study reported is dysmenorrhea similar to the results by [30]. They reported dysmenorrhea (67.2%) and premenstrual syndrome (51.5%) among girls followed by irregular menstruation (24.3%), Oligomenorrhea (16.4%) and menorrhagia (18.7%). Somewhat similar to the other studies by [21] reported 60.77% had dysmenorrhea in Central India. [31] studied impact of Menorrhagia's on quality of life among 230 women in Lahore, Pakistan. Their result showed that without menorrhagia quality of life was better than the female having menorrhagia ( $p$ -value  $< 0.001$ ). The study was conducted in Hyderabad, Pakistan by [28] which reported dysmenorrhea in 76% of medical students along with the common symptoms such as headache, irritability, vomiting and abdominal cramps. Comparable to the study conducted by [20] reported 50.6% had dysmenorrhea, with headache (50%), abdominal cramps (35.5%), tension (36.9) depression (47.8%) being the common symptoms in our study. The results by [21] reported that (56.15%) girls had experienced headache (26.7%). It was found that 28.7% of the respondents did not take any treatment of their menstrual problem. Moreover, 35.3% consulted the gynecologist comparable to the results conducted by [31] that 31.2% girls having menstrual problems had some consultation and among them, some (45.5 %) consulted doctors while (35.5%) had consultation with their mothers in the Urban Slum India.

#### 5. Conclusion

Menstruation is a pivotal aspect of every woman's life thus ensuring menstrual health among young girls at early age should be a prior concern for everyone. In this study, the mean age of the menarche was 13 to 14 years. In the study, we have found that majority of the girls were victim of PMS i.e. anxiety, mood swing,

anger, irritability and acne and Dysmenorrhea. Menstrual abnormalities need to be sorted out as early as possible in order to minimize the complications.

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