



THE THERAPIST

JOURNAL OF THERAPIES & REHABILITATION SCIENCES

<https://thetherapist.com.pk/index.php/tt>

ISSN (P): 2790-7414, (E): 2790-7406

Volume 5, Issue 1 (Jan-Mar 2024)



Original Article

Attributes of Menstruation among Young Physical Therapy Female Students of Karachi

Shafaq Afreen Hasnain¹, Shaista Hayat², Muhammad Rehan Muddasir³, Kashmala Zia⁴, Obaida Aarzo⁵, Tayyaba Syed⁶, Ayesha Aftab⁷ and Syeda Rida Baqir^{8*}

¹Dadabhoj Institute of Higher Education, Karachi, Pakistan

²SBB Deewan University, Karachi, Pakistan

³Sindh Institute of Physical Medicine and Rehabilitation, Karachi, Pakistan

⁴Northwest Institute of Health Sciences, Peshawar, Pakistan

⁵Khyber Medical University, Peshawar, Pakistan

⁶Saylani Thalassemia Center, Karachi, Pakistan

⁷Jinnah Medical and Dental College, Karachi, Pakistan

⁸Bahria University of Health Sciences, Karachi, Pakistan

ARTICLE INFO

Key Words:

Menarche, Dysmenorrhea, Menstrual Cycle, Puberty, Premenstrual Symptoms

How to Cite:

Hasnain, S. A., Hayat, S., Muddasir, M. R., Zia, K., Aarzo, O., Syed, T., Aftab, A., & Baqir, S. R. (2024). Attributes of Menstruation among Young Physical Therapy Female Students of Karachi : Attributes of Menstruation . THE THERAPIST (Journal of Therapies & Rehabilitation Sciences), 5(01). <https://doi.org/10.54393/tt.v5i01.182>

*Corresponding Author:

Syeda Rida Baqir
Bahria University of Health Sciences, Karachi,
Pakistan
dr_rida91@yahoo.com

Received Date: 21st December, 2023

Acceptance Date: 2nd March, 2024

Published Date: 31st March, 2024

ABSTRACT

The average age of menarche is between 9 to 14 years of age. Menarche is considered a normal milestone of every female's life. This period is supposed like a special period of every girl's life because in this stage girl is converted to the woman's age. Menarche is the indicator sign of a female that is ready to take part in reproduction activity. **Objective:** To determine the attributes of menstruation among young physical therapy female students of Karachi. **Methods:** This cross-sectional study was done among 385 young physical therapy female students in Karachi-Pakistan to reveal the age, duration, symptoms, and length of the menstruation cycle. The duration of the study was between June to November 2023. A non-probability purposive sampling technique was used. The validated questionnaire was used from a previous study done in 2016. Data were analyzed through SPSS version 23.0 software. **Results:** A total number of 385 young females was included in this study. The mean age of menarche revealed 187 (48.57%) found between 11 to 13 years. The regularity of menses was found in 299 (77.66%) participants. The average days of menstruation flow were about 6 to 8 days in 218 (56.62%) of research participants. The average length of the menstrual cycle was 21 to 35 days in 221 (57.40%) while the most common symptom found in research participants was lower abdominal pain in 187 (48.57%). **Conclusions:** There were significant differences between the characteristics of every young female related to the pattern, duration, age, regularity, and cycle length of the menstrual cycle.

INTRODUCTION

In females, the beginning of menstrual bleeding first time in their life is known as Menarche. Menarche does not give any sign before starting and it is mainly painfree [1]. Girls face this menarche problem at different ages. The average age of menarche is between 9 to 14 years of age [2]. Menarche can be altered by various factors like hereditary, social status, physical activity, status of health, and dietary habits. It gives an initiation of puberty level in females and now they can be fertile and take part in reproduction, in

some cases, females can not be fertile then it indicates some pathology in their body or any hormonal disturbances that can cause infertility in females [3]. Many physiologic, behavioral, mental, emotional, and hormonal changes can be seen in the body of females at the level of menarche. Most of the females are depressed due to facing many problems related to their menstrual cycle like painful menses, and irregular menses. It can give stress to the females [4]. Females who are facing late menarche issues

also experience depression to the female and also their family members it is most important to identify the exact date of the menstruation period because it is necessary to know the fertilization period of the female [5]. The length or duration of the menstruation cycle may vary for every individual female. The mean age of the ovulation cycle is in between 21 to 35 days [6]. Eventually, the flow of menses is at least 2 to 7 days, but most females face this bleeding problem for at least 3 to 5 days. It is more common in females in the puberty stage they initially disturb their cycle pattern [7]. It can be normal in 1 to 2 years of the start of the menarche stage and it is regularly the same in the whole life of the female when they reach their menopausal stage or females decrease their normal functions of the ovaries [8]. The major problem of adult females is disorders of the menstrual cycle which include low bleeding issues (hypomenorrhea), painful or abdominal cramps (dysmenorrhea), irregular or infrequent bleeding (oligomenorrhea), and abnormal functions of the uterus. Around the world, the prevalence ratio of menstrual disorders may vary from 5 percent to 35.6 percent [9]. Menarche is considered a normal milestone of every female's life. This period is supposed like a special period of every girl's life because in this stage girl is converted to the woman's age. Menarche is the indicator sign of a female that is ready to take part in reproduction activity [10]. Many factors can contribute to the age of menarche which includes heredity issues, body posture, body mass, size of the family, and societal conditions [11]. Females face many signs and symptoms during their cycle including headache, lower abdominal pain, pain in lower limbs, mood swings, lower back pain, pimples on their faces, and sometimes they suffer from fever [12]. The rate of mortality rate is increased in those persons who are facing human immune viruses, diseases transferred through sexual interaction [13]. Around the world, the problem of menarche age faced by every female due to the high body mass index of females, insulin resistance, and profile level is also increasing cardiac issues, like high blood pressure, heart diseases, and diabetes [14]. However, females who reach menarche before the age of 12 years have a higher chance of developing cancer of the breast as compared to those who get their 1st menstruation at the age of 15 or more. On the other side later age of menarche can cause other health issues in females like bone weakness, anxiety, females with depression signs, and also face social issues [15]. In Pakistan, there is a lack of knowledge regarding the normal and impaired functions of menses [16]. Most female students of physiotherapists have a lack of knowledge regarding their menstrual issues [17]. Complaint of painful menstruation are common in university students because students are busy with their medical tasks, lectures, and

sports activities and they are not taking care of their health which can create issues like stress, eating problems can lead to pyrexia, vomiting, loose motions and person feels like fainting [18]. Nowadays it is important to provide awareness and knowledge regarding the regular cycle of menses to adult females because a lack of knowledge creates many problems in the life of females because they face many issues regarding their impaired functions of hormones, and decreased rate of fertility and all these problems can impact the individual life of female and give a bad impression to other family members before and after her marriage [19]. It is mainly important that every female get knowledge and ask about their problems with their mother or as well as a doctor as compared to feeling shy or embarrassed regarding their menstruation issues [20]. Most mothers can play a vital role in their daughters' lives it is the responsibility of every mother to tell their child about the menarche age, regarding their symptoms, issues, complaints, the flow of bleeding, and regular pattern of menstrual cycle so, they can manage their issues on time and resolve them [21].

The aim of our study was to determine the attributes of menstruation among young physical therapy female students of Karachi.

METHODS

This cross-sectional study was done to determine the age, duration, symptoms, and length of the menstruation cycle among the female physical therapy students of Karachi-Pakistan. The duration of the study was between June to November 2023. The collection of data was done after receiving ethical approval from the research committee of AORC (Advanced Orthopaedic and Reconstructive Clinic) with a reference no: BASAR/No.074845/physio, dated: 25 May 2023. The sample size of the study was 385 selected through a non-probability purposive sampling technique. Confidentiality of the data of the participants was maintained. The validated questionnaire was used from a previous study done in 2016. The questionnaire was divided into two parts in the first part questions related to demographic information were included while in the second part questions related to age, duration, length, and symptoms of menstruation were included. The inclusion criteria of the study were female physical therapy students who undergo menarche, aged between 16 to 28 years from Karachi. Females who had a history of pelvic inflammatory disease, endometriosis, and any gynecological pathology using special drugs, or painkillers, and females who were not willing to participate in the study due to domestic or ethical issues were excluded from the study. The data were analyzed through the Statistical Package of Social Sciences (SPSS) version-23.0 Through which we evaluate the frequencies and percentages of depending variables

including: Menarche age, Flow duration, Cycle duration, Symptoms as well as conditions in research participants of seven districts of Karachi.

RESULTS

There were 385 young physical therapy female students selected from the seven districts of Karachi. The age group range of research participants at menarche from 9 to 11 years was 27(7.01%), 11 to 13 was 187(48.57%), 13 to 14 was 83 (21.55%), 14 to 15 was 69(17.92%), and 15 to 16 was 19(4.93%). The mean menarcheal age was 12 ± 1.05 as shown in table 1.

Table 1: Mean Menarche Age

Menarche Age	Frequency [N (%)]
9-11	27(7.01)
11-13	187(48.57)
13-14	83(21.55)
14-15	69(17.92)
15-16	19(4.93)

Their length of menstrual cycle ranged from less than and equal to 20 days was 98 (25.45%), 21 to 35 days was 221 (57.40%), and greater than 35 days was 66 (17.14%). The duration of menstruation flow in research participants was more than 56.62% in 218 participants lasting for 6 to 8 days, while 105 (27.27%) lasted 3 to 5 days, and 62 (16.10%) had menses lasting more than 8. The flow duration, cycle duration and prevalence of symptoms related to the menstrual cycle is shown in table 2.

Table 2: Characteristics of Menstruation

Menarche Age	Frequency [N (%)]
Flow Duration	
3-5	105(27.27)
6-8	218(56.62)
Greater than 8	62(16.10)
Cycle Duration	
Less or equal than 20 days	98(25.45)
21-35 days	221(57.40)
Greater than 35 days	66(17.14)
Symptoms	
Low back pain	51(13.24)
Lower abdominal pain	187(48.57)
Tenderness of breast	19(4.93)
Fear	93(24.15)
Depression	21(5.45)
Nausea, vomiting, & pain in head	14(3.63)

The frequency of research participants is extracted from seven districts of Karachi of which 96 (24.93%) were from the central district, 21 (5.86%) from the east, 15 (3.89%)

from Kemari, 67 (17.40%) from Malir, 33 (8.57%) from Korangi, 22(5.71%) from the west, and 131(34.02%) from the south district as shown in figure 1.

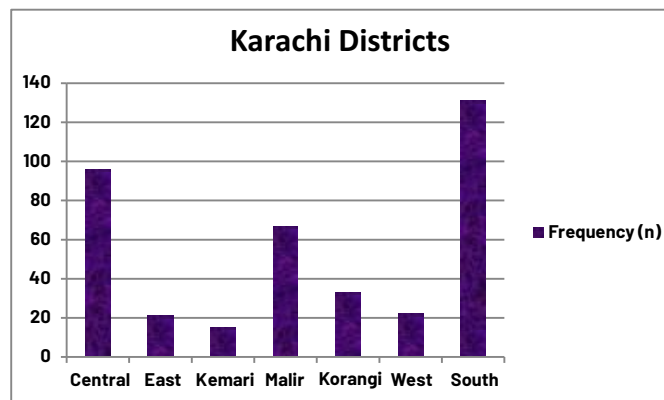


Figure 1: Frequency of Participants from Districts of Karachi

The conditions of the menstruation cycle are found in three categories out of 385 participants who said about the condition of dysmenorrhea 251 (65.19%) said yes, 134 (34.80%) participants said no, questions regarding the premenstrual symptoms 196 (50.90%) replied yes, 189 (49.09%) replied no, and while asking the questions regarding the regularity of menstrual cycle 299 (77.66%) answered yes, and 86 (22.33%) answered no as shown in figure 2.

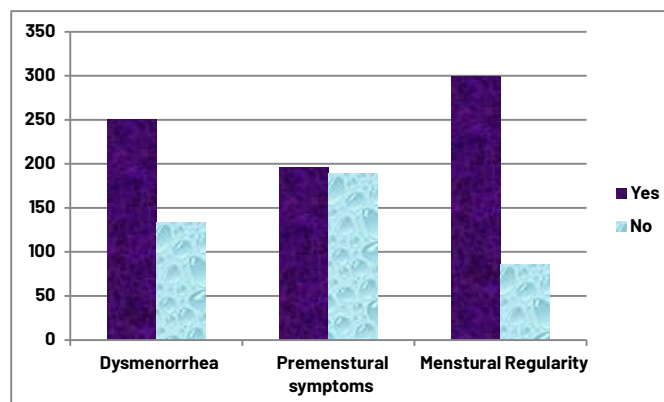


Figure 2: Conditions of Menstruation Cycle

DISCUSSION

The production of hormones and the changes in the structure of the ovary and uterus of the reproductive system of a female with the initiation of the puberty stage is known as the menstrual cycle [22]. In this duration the time starting from day one of the female periods to the day before the female's next period is included. In females menstrual cycle is the crucial factor of life which shows the different aspects of society like: dietary, geographic, and socio-economic [23]. A study reported in the early 2 years after the beginning of the cycle shows common factors

among all females because of the anovulation state [24]. As compared to this our study, 385 females whose ages range from 16 to 28 years were selected from the female physical therapy students general population of Karachi, the average age of the menstruation cycle was observed to be 12 ± 1.05 among the research participants. In comparison to this various researches showed different means of menarcheal ages. The research was done in Ethiopia, reported the average age of the menstrual cycle was reported between the ages of 13.6 ± 1.5 years [25]. Another study done in Addis Ababa reported the mean age of menstruation as: 13.72 ± 1.31 years [26]. Further studies done in Nigeria compared the rural versus urban population and the results showed 13.19 ± 1.32 years from urban and 14.22 years from rural population [27]. The study done in Sudan reported 13.85 years while a study done in Mozambique reported: 13.9 ± 1.29 years [28, 29]. In our study, it is observed that females have very little knowledge regarding the different aspects of menstruation, Some consider it as sparse while others who had heavy bleeding thought that it causes anemia after the end of a cycle. The duration of menstrual flow was found 6 to 8 days in 218 (56.62%) participants. The length of the menstruation cycle in our research was found to be 21 to 35 days in 221 (57.40%) research participants, Menstrual Irregularity was found in 86 (22.33%) participants. Premenstrual symptoms were found in 196 (50.90%) participants. As compared to the study conducted on university students in Karachi showed the prevalence of dysmenorrhea in 50 to 95 percent and the premenstrual symptoms were found in 75 to 85 percent of the population. The lack of attendance is found to be 51 percent in students during the menstrual period [30]. However in our study, the prevalence of dysmenorrhea was found in 251 (65.19%) of the research participants which is similar to the study done in Gondar town Ethiopia 64.7 percent. The youth females are required to be educated regarding the menstrual cycle, the perception of girls towards menses should change and provide them awareness related to the menstrual symptoms and its aspects [31]. In a present study about 77.66% of research, participants had regular menstrual cycles while some reported irregular cycles after 6 months of menarche. The reason behind the irregularity of the cycle was the poor growth in the follicular phase of the cycle and may be due to the defective generation of follicles which is due to ovulation deficiency. Another research reported that 36.6 percent of females complained of back pain, or abdominal pain while 8.9 percent had nausea, 25.5 percent had anxiety and symptoms of depression, 12.2 percent tenderness of the breast, 12.4 percent had a headache, and 2.8 percent had complaints of vomiting during the cycle [32]. The education of mensuration can

change the perception of youth regarding menses. In this mothers play a vital role in enhancing the knowledge of a girl after first menarche and this needs the girls to be confident during their cycle without the feeling of embarrassment. It also reduces the morbidity rate caused by hygiene issues, and also symptoms that occur during the menstrual period.

CONCLUSIONS

Our study concluded the majority of young females have a regular menstruation cycle and lower abdominal pain is most common in the research participants. It is the need of the community to increase awareness regarding the attributes of the menstruation cycle among young females to prevent morbidity-related menstruation like premenstrual symptoms, heavy bleeding, and irregular periods.

Authors Contribution

Conceptualization: SAH, SH

Methodology: MRM, KZ, OA

Formal analysis: TS

Writing-review and editing: SAH, SH, MRM, KZ, AA, SRB

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest

Source of Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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