

## Frequency of Different Menstrual Disorders among Female Medical Students at Taif Medical College

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**Abstract:** Menstrual disorders frequently affect the quality of life of adolescents and young adult women, especially those who suffer from dysmenorrhea and heavy menstruation. Such disorders also have economic consequences in terms of health care costs due to the consumption of expensive hormonal drugs and laboratory tests. Such disorders have non- health problems as well, as limitations on attendance at work and school /college which hinder academic achievements and employment prospects. This study aimed to see the frequency of different menstrual disorders in medical students of female medical college at Taif University. Overall 200 participants were asked to complete an anonymous questionnaire assessing menstrual symptoms. The items of the questionnaire were derived from different symptoms of menstrual disorders reported in existing literature. Data were collected over a 30 -day period in March 2014, in cooperation with the university authorities and according to the students' academic schedule. The questionnaire covered information about the following demographic variables: age, residence and their socioeconomic status. The participants were then asked about the characteristics of their menstruation: age of menarche; regularity/irregularity of menstruation in interval and duration; Pain during menstruation and degree and location of pain; symptoms of PMS, the effect of PMS on activities of life. Results revealed significant percentage of medical students were suffering from different kinds of menstrual disorder; 30% were suffering from irregular menstrual cycle, 77% were experienced dysmenorrhea and 68% were suffering from PMS. Because of severe dysmenorrhea and change in mood, rectal pain or breast tenderness, 59 % of students were affected and were unable to attend the academic activities of the college. Similarly our study revealed that low attendance in the classes was due to dysmenorrhoea and PMS. In conclusion: prevalence of dysmenorrhea among all menstrual problems in young female of Taif medical college is high. Working ability is reported to be affected by menstrual pain.

**Key words:** Dysmenorrhea premenstrual syndrome menstrual disorder menorrhagia

### INTRODUCTION

Menstrual disorders frequently affect the quality of life of adolescents and young adult women, especially those who suffer from dysmenorrhea and heavy menstruation [1]. The normal menstrual cycle relies on action and interaction of hormones released from hypothalamus-pituitary and ovaries and their effect on the endometrium. The normal menstrual pattern is such that age of menarche is less than 16 years, length of menstrual cycle 24-32 days, length of flow 3-7 days and amount of flow =80mL. Women can experience a variety of menstrual disorders. The most prevalent menstrual

disorders among adolescents are excessive uterine bleeding, dysmenorrhea and premenstrual syndrome. Dysmenorrhea, usually of the primary type, is a common symptom and a common cause of school absenteeism among adolescents [2, 3]. The World Health Organization reported that 18 million women aged 30–55 years perceive their menstrual bleeding to be excessive [4]. Such disorders also have economic consequences in terms of health care costs due to the consumption of expensive hormonal drugs and laboratory tests [5, 6]. Such disorder has non- health problems as well, as limitations on attendance at work and school /college which hinder academic achievements and employment prospects [7].

Menstrual disorders include menstrual cycle irregularities (of duration or length), hyper- or hypomenorrhoea, poly- or oligomenorrhoea, dysmenorrhoea, amenorrhoea, menorrhagia and premenstrual syndrome (PMS) [8]. Previous studies have shown a high prevalence of dysmenorrhoea and menstrual irregularity among female students (73 and 65% respectively) and that these problems affect the women's social activities and school attendance [5, 6]. Another study showed that the prevalence of no, mild, moderate and severe menstrual pain among Iranian women was 10, 41, 28 and 22% respectively [9]. A high proportion of women in other studies reported suffering oligomenorrhoea or amenorrhoea and these have been associated with body mass index (BMI) and other complications such as polycystic ovary syndrome (PCOS), hirsutism or infertility [10-12]. Menstrual disorders have multiple etiologies [13] and studies of associated variables have found relationships with diet and eating disorders [14-16], exercise and BMI [13,17,18], stress [19,20] and chronic diseases [21-25]. Studies on the prevalence of menstrual pain have shown that many factors are related to this disorder. These factors include: age below 20, low body mass index (BMI), smoking, early menarche, prolonged or aberrant menstrual flow, pelvic infections, psychological and genetic factors; all of these factors can influence the prevalence and the severity of dysmenorrhoea [10-12]. Life style modifications, for example choosing a diet low in fat like the vegetarian diet, was found to decrease the duration and the intensity of the menstrual cramps [9]. However, to date, pharmacotherapy remains the most reliable and effective treatment for abdominal pain related to primary dysmenorrhoea [13, 14].

A working definition of premenstrual syndrome (PMS) is, 'A condition which manifests with distressing physical, behavioral and psychological symptoms not due to organic or underlying psychiatric disease, which regularly recurs during the luteal phase of each menstrual cycle and which disappears or significantly regresses by the end of menstruation' [26]. The main symptoms of PMS are: emotional symptoms, which include depression, mood swings, outbursts, anxiety/tension, confusion, social withdrawal, poor concentration, sleep disturbance, thirst and appetite/food cravings; and physical symptoms which include breast tenderness, bloating and weight gain and headache [27-29]. We planned to conduct a study in female medical students of Taif medical college to see the frequency of different menstrual disorders.

The object of this study was to determine the pattern of different menstrual symptoms among medical students in Taif medical college.

## MATERIALS AND METHODS

We carried out a cross-sectional study of Saudi female students who attended the medical college of Taif university in Taif, KSA during the academic year 2013-2014. Majority of the students of this college came from Taif of different socioeconomic strata of Taif. Some of the students were from Jeddah and Makah. Based on a prevalence of 25% of women having menstrual disorders (the lowest recorded prevalence) [6] and with 5% error and 95% confidence interval the minimum sample size was estimated 200 using Epi-info, version 6.

**Data Collection:** A self-administered, structured, anonymous questionnaire covering 21 items was designed for the study. The researchers reviewed the tools used in previous studies to prepare the questionnaire and then a pilot study was conducted with female students randomly selected from all academic years of the medical college. The pilot questionnaires were distributed to the students then the data were analyzed.

Data were collected over a 30 -day period in March 2014 in cooperation with the university authorities and according to the students' academic schedule. The questionnaire was distributed to the medical students in their class. The questionnaire was delivered in English and took about 15-20 minutes to complete. The purpose and the objective of the study were explained by the female researchers and students were informed that participation was optional. It was emphasized that all data collected were strictly confidential and students were requested to sign the consent form attached to the questionnaire. The questionnaire covered information about the following demographic variables: age, residence and their socioeconomic status. The participants were then asked about the characteristics of their menstruation: age of menarche (open question); regularity/irregularity of menstruation in interval and duration; presence of amenorrhoea (secondary); amount of blood loss (number of pads used); pain during menstruation and degree and location of pain; activity during menstruation; symptoms of PMS, whether the symptoms disappear after menstruation and the effect of PMS on activities of life (close-ended questions). Menstrual disorders were defined as follows [6, 24-26]:

Secondary amenorrhea: no period during the last 3 months.

**Regular Menstruation:** cycle repeated about once every 28-32 days with duration 5-7 days.

**Oligomenorrhoea:** cycle monthly repeated about once every > 32 days.

**Polymenorrhoea:** cycle repeated about once every = 21 days.

**Dysmenorrhoea:** painful menstruation (mild, moderate or severe).

**Premenstrual Syndrome (PMS):** at least 3 of the most common symptoms occurring 10 days before menstruation and disappearing at the start of menstruation:( painful or tender breasts, bloating or swelling of the abdomen, rapid mood changes, depressed mood or craving for sweet /salty foods, other) (open question).

**Data Analysis:** Data were analyzed using SPSS, version 18. Frequencies and percentages were presented or mean and standard deviation (SD) as appropriate. Bivariate analysis of data was done and the chi-squared test of significance was done where appropriate.  $P < 0.05$  was considered statistically significant.

## RESULTS

Of the 210 medical students recruited for the study, 200 (95.5%) completed the questionnaire. Fig. 1 The mean age of the participants was 21.7 years (SD 1.32) with range 17-24 years. The reported age of onset of menstruation was 14 years for 80% of participants. The mean menarche age was 13.2 (SD =0.368) years. Overall 185 (92.5%) of the students reported suffering from one or more types of menstrual dysfunction. The most common problem was pain during menses; 77.0% of students were suffering of dysmenorrhoea. Oligomenorrhoea with irregular cycles was

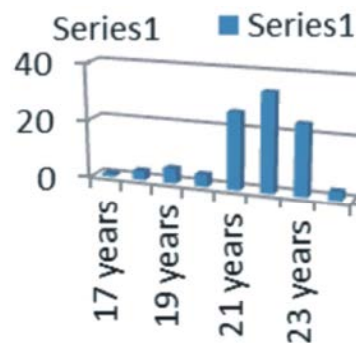


Fig. 1: Mean age of respondent

Table 1: Percentages of occurrence of symptoms of premenstrual syndrome

S. no	Problem	Percentage
1	Rectal pain	55
2	Breast pain	54
3	Change of mood	54
4	Craving for salty/sweet food	52
5	Headache /migraine	32

reported usually 29.0 % of students and polymenorrhoea with irregular cycles was experienced usually or sometimes by 25 % of students respectively and 8% of them were suffering from anemia. A small proportion of students (7%) were suffering from polycystic ovarian disease. According to the number of pads used during a cycle 2.0% of student reported very light menstruation (< 1 pad daily) and 29.9 % had heavy bleeding (= 5 pads daily). Rectal pain 55%, breast tenderness 54%, change of mood 54%, craving for sweet /salty food 52%, headache /migraine 32% were assessed as criteria to diagnose premenstrual syndrome.

Of the students experiencing dysmenorrhoea, 18.8 % suffered a mild degree of pain, 19.5% moderate and 61.6% severe (Table 2). Most of them reported abdominal pain that extended to the thighs. A great majority reported that the pain affected their daily activities usually or sometimes (59.4 and 33.3% respectively) and many had been absent from the classes because of pain usually or sometimes (8.5 and 39.6% respectively). Of those who suffered from PMS, 97.8% reported that the signs usually disappeared with the beginning of menstruation and 60.0% and 31.5% reported that the symptoms usually and sometimes reduced their daily activity respectively.

Table 2: Degree of severity of dysmenorrhoea

Total no. of students suffering from dysmenorrhoea	Mild dysmenorrhoea	Moderate dysmenorrhoea	Severe dysmenorrhoea
154 = 77%	29= 18.8%	30 = 19.5%	95= 61.6%

## **DISCUSSION**

Menstrual dysfunction is a common cause of referral to the gynecology clinic and the problem has a considerable impact on the health status and the quality of life of women [30]. Menstrual disorders and the private nature of the data related to menstruation, however, do not attract the attention of the public health community [31, 32]. In our study significant percentage of medical students were suffering from different kinds of menstrual disorder; 30% were suffering from irregular menstrual cycle, 77% experienced dysmenorrhea and 68% was suffering from PMS. Because of severe dysmenorrhea and change in mood, rectal pain or breast tenderness, 59% of students were affected because they were unable to attend the academic activities of the college. Similarly our study revealed that low attendance in the classes was due to dysmenorrhea and PMS. Almost same result was shown in one study. In this study the results showed that a high percentage of student nurses suffered from different kind of menstrual disorders; painful menstruation and premenstrual symptoms were serious enough to affect their daily activities and academic attendance in many cases [33]. In a study in Morocco, menstrual pain was often cited as the main single cause of school absenteeism among adolescent girls [34]. Another study reported that 75% of girls experienced some problems associated with menstruation [35] and in a study among female prisoners 33% reported menstrual irregularity [36]. Regarding severity of dysmenorrhea, in our study 18.8% suffered from mild dysmenorrhea, 19.5 % from moderate and 61.6 % s from severe dysmenorrhea. This is in contrast to a study carried in Egypt which showed that 75% of female school students experienced dysmenorrhea while 14.8% described it as severe[37]. These differences in the degree of pain severity may be related to cultural differences in pain perception and variability in pain threshold. In our study 55 % of medical students were suffering from rectal pain during menstruation and it was also evident in our study that about 20%were having family member suffering from endometriosis. In these girls it could be an early sign of endometriosis, as association of dysmenorrhea with endometriosis has been established in literature [38].

A cross-sectional study was conducted in Art and Science Colleges of Dammam University, results revealed that about 35% of the university students had severe dysmenorrhea and almost 21% had moderate to severe

premenstrual syndrome (PMS). About 57% of students used analgesics to relieve symptoms of dysmenorrhea. As in our study, about 60% sufferer of dysmenorrhea was having self-medication in form of analgesic tablets [39]. There was another study carried out in south India and showed following results mean age of the subjects at menarche was  $13.36 \pm 1.25$  years with a range being 10 to 17 years [40]. Unlike to this study, in our study the mean age of menarche was 14 years. The most prevalent menstrual symptoms were tiredness (47.9%), backache (38.3%) and anger (34.5%). This is also seen in our study that 52% of girls have reported change in mood which could be anger or depression but they did not complained about tiredness or backache, this may be because of their good nutritional status or due to cultural differences. Prevalence of menstrual irregularity and dysmenorrhea was 11.9 and 78.2%. 6.7% of the participants had severe dysmenorrhea. 76.6% of these girls reported that their working ability was affected. In another study conducted amongst Nigerian university students, dysmenorrhea was the highest menstrual disorder, who reported 72% prevalence of dysmenorrhea. In the absence of appropriate pain relief, women with severe dysmenorrhea may not be able to carry out their normal activities [41]. One of the largest studies on menstrual patterns and menstrual disorders among Italian adolescent girls was conducted which showed following results; their mean age at menarche was  $12.4 (\pm 1.3)$  years, (95%CI 12.3–12.5). In this sample population, menstruation-related abdominal pain was reported by about 56% of their sample. About 6.2% of the girls were suffering from dysmenorrheal [42] which is in contrast to our study where it showed that 61.6 %was suffering from severe dysmenorrhea.

## **CONCLUSIONS**

In conclusion, it can be mentioned that prevalence of dysmenorrhea among all menstrual problems in female of Taif medical college is high. Working ability is reported to be affected by menstrual pain. It could be possible to improve menstrual discomforts management by including awareness programs. Secondly as we noted in our study 20% of our medical students were having family member suffering from endometriosis. In these girls dysmenorrhea could be an early sign of endometriosis so annual gynecological workup in health clinic is recommended by consultant gynecologist in medical college premises.

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