Original Study

Nature and Prevalence of Menstrual Disorders among Teenage Female Students at Zagazig University, Zagazig, Egypt

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A B S T R A C T

Study Objective: To determine the nature and prevalence of menstrual disorders among teenage girls.
Design: An observational descriptive cross-sectional study.
Setting: Zagazig University Students' Hospital, Zagazig, Egypt.
Participants: A representative sample of female students who attended the university pre-enrollment medical examination.
Interventions: Self-administered questionnaire covering items on the adolescents' demographic data and menstruation characteristics.
Main Outcome Measures: Information about menarche, body mass index, physical exercise, cycle length and regularity, duration of menses, menstrual blood loss, dysmenorrhea, and premenstrual syndrome.
Results: A total of 285 questionnaires were analyzed. Mean age at menarche was 12.3 ± 1.5 years. Oligomenorrhea was reported by 18 participants (6.3%) and 5 others (1.8%) mentioned having polymenorrhea. Hypomenorrhea was noted in 25 students (8.8%), and hypermenorrhea was reported by 12 (4.2%). Irregular periods were mentioned by 24 students (8.4%). Dysmenorrhea was reported in 188 students (66.0%). Of these, 81 (28.4%) graded their pain as mild, 69 (24.2%) as moderate, and 38 (13.3%) as severe. Premenstrual syndrome was mentioned by 160 girls (56.1%). Consulting somebody regarding their menstrual problems was reported by 36 students (12.6%).
Conclusion: Our results are not greatly different from those in other parts of the world. Data on nature and prevalence of menstrual disorders and their effect on young women's health status, quality of life, and social integration suggest that management of these disorders should be given more attention within the available reproductive health care programs. Further research into prevalence of and risk factors for menstrual disorders and their morbidity is warranted and anxiously awaited.
Key Words: Teenage, Menarche, Menstruation, Amenorrhea, Dysmenorrhea, Premenstrual syndrome, Zagazig, Egypt

Introduction

During teenage years, a young woman will usually begin to menstruate. Although this is an exciting experience and a significant landmark in transition from girlhood to womanhood, the pathway can be confusing because of variation in associated symptoms. These range from organic or physical (painful cramps or excessive bleeding) to emotional (feeling “down,” irritable, or teary).[1]

Mistakenly, menstrual disorders and the private nature of data related to menstruation are generally perceived as only minor health concerns and thus irrelevant to the public health agenda, particularly for women in developing countries who might face life-threatening conditions.[2,3] O'Connell et al suggested that menstrual disorders might be as common in developing countries as they are in developed countries, and that when services are available, this will prompt women in developing countries to seek the relevant advice and care.[4]

Data about the knowledge and attitude of teenagers regarding menstruation are scarce.[5] Many girls have little or no information about normal and abnormal menstruation.[6–8] It was reported that twice as many African American teenagers believed they were unprepared and did not receive information about menarche compared with Caucasian adolescents. Most of young girls' knowledge about menstruation is often information passed from their mothers and peers. Teenagers are anxious to know more about normal and abnormal menstruation. Equipped with this sort of knowledge, they could make correct decisions on when and where to seek advice and care.[9]

Limited population studies have been conducted in Egypt on normal and dysfunctional menstruation.[10] Knowledge of their variability is of paramount importance for the objective of guiding clinicians' management of these disorders, and also for patient education purposes.[6]

The objective of this study was to determine the nature and prevalence of menstrual disorders among teenage female students at Zagazig University, Zagazig, Egypt.

Materials and Methods

This was an observational descriptive cross-sectional study of a sample of newly-enrolled teenage female

The authors indicate no conflicts of interest.

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1083-3188/$ - see front matter
http://dx.doi.org/10.1016/j.jpag.2015.08.008

students at Zagazig University, Zagazig, Egypt for the academic year 2014-2015.

Sample Size

A total of 29,162 new students were enrolled for the academic year 2014-2015 at Zagazig University. Of these, 15,056 were females. Using Epi-info, version 6 (Centers for Disease Control and Prevention [CDC]; Atlanta, Georgia, USA) and based on a prevalence of menstrual disorders of 25% and with 95% confidence interval and 5% error, the minimum sample size was estimated as 283.[1] However, allowing for nonrespondents and exclusions for various reasons, the aim was to recruit 340 participants.

Statistical Analyses

Statistical Package for Social Sciences version 20.0 (SPSS, Statistics for Windows, IBM Corp, Armonk, NY), was used for data analysis. Frequencies and percentages were presented as mean ± SD. The χ^2 test, *F* test (analysis of variance), odds ratio, and 95% confidence interval were used where appropriate. $P < .05$ was considered to show statistical significance.

Data Collection

Teenage female students who attended the university pre-enrollment medical examination at Zagazig University Students' Hospital, Zagazig, Egypt, were approached for the purpose of this study. Recruitment continued until the statistically predetermined sample size (340 participants) was reached. Those who agreed constituted the subjects of this study.

Inclusion Criteria

Teenage (up to the age of completed 20 years minus 1 day), newly enrolled, female, university students were eligible for inclusion.

Exclusion Criteria

Mature adults (older than 20 years), who did not fulfill any of the inclusion criteria were excluded.

Intervention

The participants were asked, anonymously, to fill a purpose-designed questionnaire. Informed consent was obtained after the procedure was fully explained and approval given to the study by Zagazig University Students' Hospital ethical committee. The procedures followed were in accordance with the ethical standards of the hospital committee on human experimentation and with the Declaration of Helsinki (1975), as revised in 1983. The purposes of the study were explained to the participating students. It was emphasized that all data collected would be strictly confidential. For every participant, the questionnaire was distributed and collected on the same day to prevent information contamination and also to preserve confidentiality.

Information about different demographic and clinical data was covered by the questionnaire. These included: age, menarcheal age, body mass index (BMI; calculated by dividing the participant's weight in kilograms by her height in square meters), marital status, contraceptive use—if any, physical exercise, residency, presence of pregnancy and breastfeeding (to rule out causes of amenorrhea, if present).

Participants were then asked about the characteristics of their menstruation: cycle length (<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 vulval pads or sanitary towels changed per day during menstruation (<1, 2-4, or >5). Dysmenorrhea was assessed using the verbal multidimensional scoring system, which was used to grade menstrual pain as none, mild, moderate, or severe.[11] It also accounted for the effect on daily activity, symptom perception, and need for analgesia. Participating students were then questioned about symptoms of premenstrual syndrome (PMS), and whether they consulted any relative, friend, physician, pharmacist, or nurse regarding their menstrual disorders.

For the purpose of this study, menstrual disorders were defined as follows: secondary amenorrhea: no period for >3 months, 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 (use of <1 vulval pad or sanitary towel per day), menorrhagia or hypermenorrhea: duration of period >7 days and/or blood loss >80 mL (use of ≥5 vulval pads or sanitary towels per day). One or more of the following symptoms starting 10 days before menstruation and disappearing at the start of period were used to define PMS: depression, rapid mood changes, painful or tender breasts, and swelling or bloating of the abdomen.

Results

From August 26 to October 16, 2014, questionnaires were distributed and collected. Of 340 distributed, 301 questionnaires (88.5%) were returned. However, 16 questionnaires were excluded because they were either incompletely or inappropriately filled. The remaining 285 questionnaires were thus analyzed for the purpose of this study.

Table 1 shows the demographic and clinical characteristics for the sample as a whole. All participants were single, and generally belonged to middle class families.

In this study, only 24 participants (8.4%) continued to have irregular periods beyond the first year after menarche, 50 others (17.5%) reported having irregular periods only during the first 6-12 months after menarche, and the remaining 211 (74.0%) reported regular menses since menarche.

Participants who suffered dysmenorrhea reported having lower abdominal pain during menses that extended to the thighs. Dysmenorrhea was reported in 188 cases (66.0 %). Of these, 81 (28.4%) described their pain as mild which