Middle East Fertility Society Journal (2015) **20**, 198–203

Middle East Fertility Society

Middle East Fertility Society Journal

www.mefsjournal.org
www.sciencedirect.com

ORIGINAL ARTICLE

Menstrual disorders among Zagazig University Students, Zagazig, Egypt

Ahmed M. Nooh *

Obstetrics & Gynaecology Department, Zagazig University Students' Hospital, Zagazig, Egypt

Received 27 May 2014; revised 15 August 2014; accepted 21 August 2014
Available online 25 October 2014

KEYWORDS

Menarche;
Menstruation;
Adolescent;
Amenorrhoea;
Dysmenorrhoea

Abstract *Objective:* To determine the nature and prevalence of menstrual disorders among the young female students at Zagazig University, Zagazig, Egypt.

Study design: A questionnaire covering items on adolescents' demographic data and menstruation characteristics was used for information collection.

Results: A total of 283 questionnaires were analysed. The mean age at menarche was 12.1 ± 1.6 years with a range of 11–16 years. Oligomenorrhoea was reported by 17 girls (6.0%) while 6 others (2.1%) mentioned having polymenorrhoea. Hypomenorrhoea was noted in 20 students (7.1%), while hypermenorrhoea was reported by 15 (5.3%). Irregular periods were mentioned by 22 girls (7.8%). Dysmenorrhoea was reported in 185 students (65.4%). Out of these, 79 (27.9%) graded their pain as mild, 66 (23.3%) as moderate and 40 (14.1%) as severe. PMS was mentioned by 158 students (55.8%). Consulting somebody regarding their menstrual problems was reported by 32 students (11.3%).

Conclusion: The results of this study are comparable to those in other parts of the world. Adolescents should be encouraged to chart their menstrual periods from menarche onwards in order to focus their attention on when and how to seek medical advice. Health education on menstrual disorders targeting adolescents and including education on reproductive health in the school/university curriculum may assist in early detection of these disorders.

1. Introduction

Menstrual disorders are not uncommon among adolescents and young adult women (1–3). These disorders can adversely affect the quality of the adolescents' lives and, therefore, are often the source of anxiety for them and their families (4,5). In addition to the recognised health problems, there can also be consequences such as limitations on attendance at work and academic performance which hinder practical achievements and employment prospects. Early diagnosis and management of these disorders will not only improve a young woman's

* Address: 4 Maes Watford, Caerphilly CF83 1LP, South Wales, UK. Tel.: +44 (0) 2920 026568.
E-mail address: ahmednoohuk@yahoo.co.uk.

Peer review under responsibility of Middle East Fertility Society.

ELSEVIER Production and hosting by Elsevier

http://dx.doi.org/10.1016/j.mefs.2014.08.002

current health, sense of well-being and overall quality of life but may also lower her risks for future disease and ill-health (6,7).

Erroneously, menstrual disorders and the private nature of the 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 may face life-threatening conditions (8,9). It is suggested that menstrual disorders may 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 care for them (10).

There is a lack of information about the knowledge and attitude of adolescents regarding menstruation. Many girls have little or no information about normal and abnormal menstruation (11). Houston et al. reported that twice as many African–American adolescents felt unprepared and did not receive information about menarche when compared with Caucasian teens (7). Most of what girls know about menstruation is often information obtained from their mothers and their peers. Girls are interested in knowing more about normal and abnormal menstruation. Equipped with this sort of information, they could make correct decisions on when to seek medical advice.

Population-specific reference data are useful to establish what is normal and acceptable, and what is not. Few population studies have been conducted in Egypt on normal and dysfunctional menstruation. Knowledge of their variability is needed for patient education purposes and also to guide clinicians' management of these disorders (5).

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

2. Materials and methods

This was an observational study of a sample of newly-enrolled female students at Zagazig University, Zagazig, Egypt for the academic year 2013–2014.

2.1. Sample size

For the academic year 2013–2014, a total of 17,167 new students were enrolled at Zagazig University. Of these, 9986 were females. Using Epi-info, version 6 and based on a prevalence of menstrual disorders of 25% and with 95% confidence interval (95% CI) and 5% error, the minimum sample size was estimated as 280. However, allowing for non-respondents and exclusions for various reasons, the aim was to recruit 308.

2.2. Statistical analysis

Data were analysed using SPSS, version 20 (SPSS Inc, Chicago). Frequencies and percentages were presented as mean ± standard deviation (±SD). The chi-squared (χ^2) test, *F*-test (analysis of variance – ANOVA), odds ratio (OR) and 95% CI were used where appropriate. $P < 0.05$ was considered to show a statistical significance.

2.3. Data collection

A random sample of female students attending the university pre-enrolment medical examination at Zagazig University Students' Hospital, Zagazig, Egypt agreed to participate in the study. A purpose-designed questionnaire was filled anonymously. Ethical approval was obtained from the local institutional ethical committee, and students gave their verbal consent.

The objectives of the study were explained to the participants. 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 ensure confidentiality and prevent information contamination.

The questionnaire covered information about the following demographic and clinical data: age, age at menarche, body mass index (BMI), marital status, place of residence, presence of pregnancy and breastfeeding (to rule out the cause of amenorrhoea, if present) and physical exercise.

The participants were then asked about the characteristics of their menstruation: the 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/sanitary towels changed per day during menstruation (⩽1, 2–4 or ⩾5). Pain during menstruation (dysmenorrhoea) was assessed by the verbal multidimensional scoring system (12). This system grades pain as none, mild, moderate or severe. It also takes into account the effect on daily activity, symptoms perception and the need for analgesia. The respondents were then questioned about symptoms of pre-menstrual syndrome (PMS), and whether they consulted any physician, pharmacist, nurse, relative or friend regarding their menstrual problems.

For the purpose of this study, menstrual disorders are defined as follows: secondary amenorrhoea: no period for ⩾3 months, oligomenorrhoea: cycle repeated once every >35 days but <3 months, polymenorrhoea: cycle repeated once every <21 days, hypomenorrhoea: duration of menses <3 days with slight blood loss (using ⩽1 pad/day), hypermenorrhoea/menorrhagia: duration of period >7 days and/or blood loss ⩾80 ml (using ⩾5 pads/day). PMS is defined as one or more of the following symptoms starting 10 days before menstruation and disappearing at the start of period: rapid mood changes, depression, painful or tender breasts and bloating or swelling of the abdomen.

3. Results

The questionnaires were distributed and collected over the period from 1st September to 13th October 2013. Out of 308 questionnaires distributed, 297 (96.4%) were returned. However, 14 questionnaires were excluded as they were either incompletely or inappropriately filled. The remaining 283 questionnaires were thus analysed for the purpose of this study.

The participants generally belonged to middle class families. Tables 1a and 1b show the demographic and clinical characteristics for the sample as a whole. All the respondents were single.

In this study, 207 participants (73.1%) had regular menses since menarche, 54 (19.1%) reported having irregular periods only during the first 6–12 months after menarche while only 22 (7.8%) continued to have irregular periods beyond the first year after menarche.

Table 2 shows the relation between certain biological factors (age at menarche, duration of menses and menstrual cycle length) and severity of dysmenorrhoea, Table 3 shows the relation between BMI and both of dysmenorrhoea and PMS and