

Prevalence of dysmenorrhea among women in the reproductive age group in Peelamedu area in Coimbatore, Tamil Nadu

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Abstract

Background: Dysmenorrhea is a common menstrual disorder with a major impact on women's quality of life, work productivity, and health-care utilization. Prevalence of dysmenorrhea in women of the reproductive age group is 70 - 91%, and severe pain contributes to 2 - 29 %. **Aim:** The aim of the study was to determine the prevalence of dysmenorrhea among women in the reproductive age group in Peelamedu area in Coimbatore, and assess the association of dysmenorrhea in relation to age, parity, child birth and family history. **Material and methods:** A total of 390 women gave their written consent and participated in the study. All the participants answered a detailed questionnaire containing items about their reproductive and menstrual history. Statistical analysis was done using Chi-squared test. **Results:** Prevalence of dysmenorrhea among women in the reproductive age group was found to be 69.75%. The association between dysmenorrhea and childbirth, age, parity and family history was found to be statistically significant with a p value of < 0.001. **Conclusion:** Prevalence of dysmenorrhea among women in the reproductive age group in Peelamedu area in Coimbatore was found to be 69.75%. Prevalence of dysmenorrhea decreased with increased age and increased parity and increased with positive family history and before childbirth.

Keywords: childbirth, dysmenorrhea, nulliparous, menarche, prevalence

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Introduction

Dysmenorrhea is the most common gynecological disorder in women of reproductive age.¹⁻³ The term 'dysmenorrhea' is derived from the Greek words 'dys' meaning difficult or painful or abnormal, 'meno' meaning month, and 'rrhea' meaning flow.⁴ It can be classified into primary and secondary dysmenorrhea.^{2,3,5-7} Primary dysmenorrhea, is

defined as "painful menses in women with normal pelvic anatomy" and usually begins during adolescence.³ It is characterized by "crampy pelvic pain beginning shortly before or at the onset of menses and lasting one to three days."³

Dysmenorrhea may be accompanied by nausea, vomiting, diarrhea, headache, irritability or anorexia. The pain of primary dysmenorrhea

and the systemic symptoms that may be associated with it are due to high prostaglandin levels.²⁻⁴ The reported prevalence of primary dysmenorrhea, ranges from 43% to 90% among various populations of adolescent girls and women, and it gradually decreases with age.^{1,5,7,8} A prevalence of approximately 45%–97% has been reported from community-based studies in the World Health Organization review.⁷

Various studies in India revealed that prevalence of dysmenorrhea varies from 33% to 79.67%, however, the true prevalence of dysmenorrhea is not clearly established in India.⁹ According to World Health Organization community-based study, the prevalence of severe dysmenorrhea is about 12%–14%.⁷ This disabling dysmenorrhea can contribute to school absenteeism, lost work time, and reduced quality of life.^{1-4, 6-11}

Secondary dysmenorrhea can be caused due to pelvic organ pathology such as endometriosis, pelvic inflammatory disease, intra-uterine devices, irregular cycles (anovulatory cycle) or infertility problems, ovarian cysts, adenomyosis, uterine myomas or polyps, intra-uterine adhesions, or cervical stenosis.^{2,5} The etiology of uterine pain in primary dysmenorrhea is still not established, but many risk factors have been identified, such as young age, early menarche before 12 years, positive family history, nulliparous, stress/depression, smoking, high body mass index (BMI) but some studies also show that low BMI, long menstrual intervals or long menstrual periods, massive menstrual volume, smoking, genetic factor, contraceptive use and socioeconomic factors are involved.^{2,5,7,8,11-14}

In view of these findings, we were interested in determining the prevalence of dysmenorrhea in our setting and its associated factors. The aim of this study was therefore to determine the prevalence of dysmenorrhea among women in the reproductive age group in Peelamedu area in Coimbatore, and to determine the

association between selective reported reproductive/menstrual factors and dysmenorrhea. We chose mainly to concentrate on age, parity, childbirth and family history.

Materials and Methods

This cross sectional study was conducted among women in the reproductive age group in Peelamedu area in Coimbatore, Tamil Nadu, India, between July to August 2014 after obtaining approval from the institutional ethical committee.

Data was collected from 450 female volunteers from the general public in Peelamedu area in Coimbatore, using a self-administered structured questionnaire, after obtaining informed oral consent. The questionnaire included age of subject, age of menarche, detailed menstrual cycle history regarding regularity of menstrual cycles, menstrual pain and its associated features, duration of pain, amount of menstrual flow, parity, family history of menstrual pain and mode of delivery.

Out of 450 female volunteers, only 390 women were selected for the study, based on the following inclusion and exclusion criteria:

Inclusion criteria: Women in the reproductive age group of 15-45 years residing in Peelamedu area in Coimbatore, Tamil Nadu, India, who had regular menstrual cycles, and normal vaginal delivery.

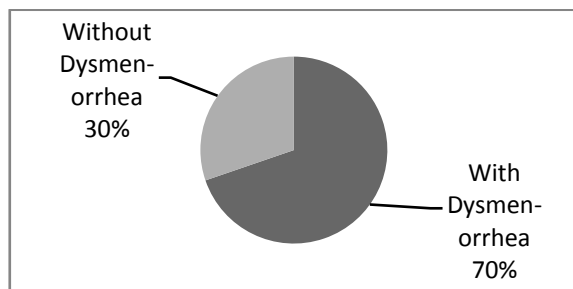
Exclusion criteria: Women with late menarche (> 16 years of age), irregular menstrual cycles and medical conditions like systemic hypertension, diabetes mellitus, thyroid problems and dysmenorrhea due to gynecological problem like endometriosis, pelvic inflammatory disease, intra-uterine devices and uterine myomas were excluded from the study.

Study proforma was maintained and data was analyzed using Chi-squared test

Results

In this study, the prevalence of dysmenorrhea among women in the reproductive age group was found to be 69.75%, as shown in Figure 1.

Figure 1: Prevalence of dysmenorrhea in women in the reproductive age group in Peelamedu



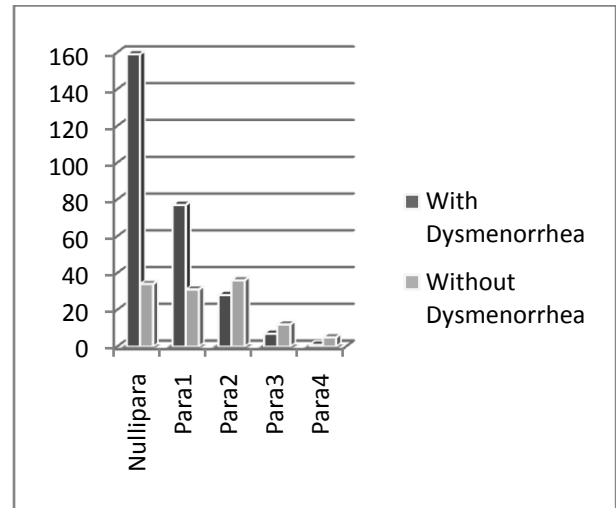
The prevalence of dysmenorrhea before and after childbirth was 82.39% and 57.36% respectively. The mean age of menarche was determined to be 12.36 ±1.15 years. It was also found that an increase in age was associated with a decrease in dysmenorrhea and there was a significant association between age and dysmenorrhea with a p value of <0.001, as shown in Table 1.

Table 1: Association between age and dysmenorrhea

Age in years	Number of women with dysmenorrhea	Number of women without dysmenorrhea
15-25	148	24
26-35	103	54
36-45	21	40
χ^2 value = 58.98		p value < 0.001

Our study also revealed that there was a decrease in dysmenorrhea as parity increased, which was statistically significant with a p value of <0.001 (Figure 2)

Figure 2: Association between parity and dysmenorrhea



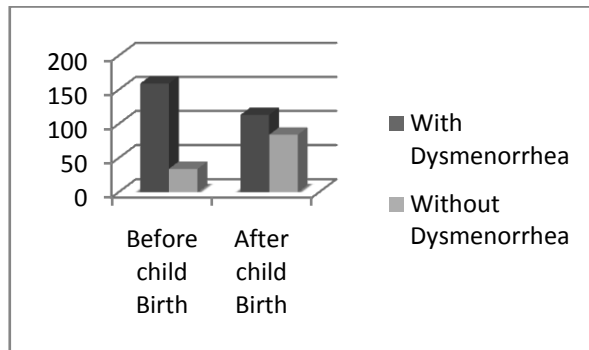
As shown in Table 2, the association between a positive family history of dysmenorrhea and reported dysmenorrhea was found to be statistically significant (p value of <0.001).

Table 2: Association between positive family history and dysmenorrhea

Family History	Number of women with dysmenorrhea	Number of women without dysmenorrhea
Present	190	32
Absent	82	86
χ^2 value = 58.44		p value < 0.001

Figure 3 shows that there was a decrease in reported dysmenorrhea after childbirth which was statistically significant with p value of <0.001, statistical analysis being done using Chi-squared test.

Figure 3: Association between childbirth and dysmenorrhea



The prevalence of dysmenorrhea decreased with increasing age and increased parity, and increased with positive family history and before childbirth.

Discussion

The findings of the present study showed a high prevalence of dysmenorrhea (69.75%) among women in the reproductive age group, in Peelamedu area in Coimbatore. The results are to be taken in the context of the results of a World Health Organization review in community-based studies showing that the prevalence of dysmenorrhea was 45%–97%.⁷ In comparison, the prevalence of dysmenorrhea in Vietnamese women was found to be 58.8%.⁵ while in India, Kumbhar *et al.* found that the prevalence of dysmenorrhea in adolescent girls in Kadapa district was about 65%.⁹ Increased prevalence of dysmenorrhea in these area was mainly due to less parity and also as more subjects were aged less than 25 years.

Some previous studies have confirmed that the intensity of primary dysmenorrhea decreased with age,^{3,12} which is what our study also revealed. Many other studies have shown that there is an increase in dysmenorrhea associated with positive family history,^{3,12} which is similar to the results of our study. The behavior model

of mother and sister, genetic factors and environmental factors play an important role in accounting for the association of dysmenorrhea with the positive family history.³

In our study, it was found that the prevalence of dysmenorrhea decreased after childbirth especially with increased parity. This has in the past been thought to occur due to pin hole cervical os becoming dilated after normal vaginal delivery to drain the menstrual fluid.^{12,15-17} The main cause of dysmenorrhea has been related to increased prostaglandin levels in the menstruating uterus, leading to reduced endometrial blood flow and subsequent pain.¹¹

Limitations of this study: Limitations of this study include the fact that dysmenorrhea has been diagnosed based solely on the woman’s perception of pain, which is difficult to quantify and could be related to non-menstrual events. Also, whether the dysmenorrhea was primary or secondary could not be differentiated without objective tests. Recall bias of the subject and sample size could also be limitations. Also, in our study, the socio-economic factor’s role in pain perception could not be considered

Conclusion

This study revealed that the prevalence of dysmenorrhea in women in the reproductive age group in Peelamedu area in Coimbatore was 69.75%. Prevalence of dysmenorrhea decreased with increased age and increased parity and increased with positive family history and before childbirth.

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Conflicts of interest: Nil

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