

# Prevalence of Primary Dysmenorrhea and Factors Associated with Its Intensity Among Undergraduate Students: A Cross-Sectional Study

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## ■ ABSTRACT:

Primary dysmenorrhea is a womanhood problem around the world and negatively affects quality of life. This study was designed to investigate the prevalence of primary dysmenorrhea and to determine the factors associated with its intensity. A cross-sectional study was carried out among 311 undergraduate female students aged 18 to 27 years in Isfahan University of Medical Sciences, Iran. Socio-demographic characteristics and menstrual factors were obtained through interviews with the help of a pretested questionnaire. The prevalence of primary dysmenorrhea was 89.1%. Residing at home, younger age, lower number of years of formal education for the mother, positive family history of dysmenorrhea, higher severity of bleeding, and shorter menstrual period intervals were significantly associated with the higher intensity of primary dysmenorrhea. Primary dysmenorrhea is a common health concern among young women. Being aware of the factors that are associated with its intensity makes it possible for health professionals to organize better focused programs to reduce the adverse effects of dysmenorrhea.

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## BACKGROUND

One of the most common complaints for women that can affect quality of life is dysmenorrhea. Dysmenorrhea is a subgroup of pelvic pain that manifests as painful menstrual flow (Lefebvre et al., 2005; Nasir & Bope, 2004). It occurs in two forms: primary and secondary dysmenorrhea. Primary dysmenorrhea is painful menstruation occurring without any gynecological disease, often starting at 6 to 12 months after menarche and possibly continuing to menopause. Although the

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secondary form can occur at any time in a woman's life between menarche and menopause, it most often happens after 25 years of age subsequent to a gynecological pathology such as endometriosis and ovarian cysts (Proctor & Farquhar, 2007). Primary dysmenorrhea usually starts around the onset of menstruation and may continue for 8 hours to 3 days (Proctor & Farquhar, 2007). Although there is not enough information to attribute the etiology of primary dysmenorrhea to one factor yet, a combination of factors, including increase of synthesis and secretion of prostaglandin  $F_{2\alpha}$ , increased vasopressin and oxytocin that subsequently enhance the secretion of prostaglandin, and stimulation of the type C pain fibers, are postulated to be the contributing agents (Montoya, Cabezza, Rojas, Navarrete, & Keever, 2012; Sheila Rani, 2012). Dysmenorrhea has different detrimental effects on individuals and the community. For instance, school and work absenteeism, interference with daily living activities, limitation in socialization, and higher intake of sedative medications are positively associated with the higher prevalence and intensity of dysmenorrhea (Al-Kindi & Al-Bulushi, 2011; Locklear, 2009; Pitanguí et al., 2013). In 2007, the International Association for the Study of Pain estimated that at each menstrual period, approximately 10% to 15% of dysmenorrheic women were not able to work for 1 to 3 days (IASP, 2007). In the United States, dysmenorrhea causes annual loss of nearly 140 million working hours (Ostrzenski, 2002). In Japan, it was estimated that economic losses due to dysmenorrhea totaled \$4.2 billion dollars annually (Taketani, 2000). Sugumar et al. (2013) in their study on 654 respondents in India found that 42% self-medicated and that 35% took inappropriate medicine and mefenamic acid as a non-steroidal anti-inflammatory drug (NSAID) to reduce the discomfort of dysmenorrhea. According to the medication guidelines of the U.S. Food and Drug Administration (FDA), NSAIDs can increase the risk of heart attack or stroke, stomach ulcers, and bleeding, especially when used over a long time. Furthermore, kidney, liver, and heart failure; anemia; asthma attacks in people suffering from asthma; and allergic reactions are serious side effects of NSAIDs. In addition, stomach pain, diarrhea, constipation, heartburn, dizziness, nausea, and vomiting are reported as the mild to moderate side effects of the consumption of NSAIDs (FDA, 2007). There are only two studies about the prevalence of primary dysmenorrhea among undergraduate students in Iran (Akhavanakbari & Ahangar-Davoudi, 2010; Nazarpour, 2010). Additionally, there is limited literature on the association among socio-demographic characteristics and menstrual factors with the intensity of primary dysmenorrhea. This study aimed to determine the prevalence of primary dysmenorrhea and identify

factors associated with its intensity to provide better understanding of this issue in an effort to safely reduce its intensity and negative impacts.

## METHODS

### Design

This cross-sectional study was conducted in Isfahan University of Medical Sciences in Iran among 311 undergraduate female students. Prior to the study, it was approved by the University Research Ethics Committee of Universiti Putra Malaysia (JKEUPM).

Participants were given the information about the purpose and protocol of the study. Informed consent of participants was sought prior to data collection. Inclusion criteria included studying at Isfahan University of Medical Sciences; being single; not taking any medications (namely vitamin-mineral supplements, NSAIDs, oral contraceptive pills [OCPs], and any other special medications); not having a previous history of pelvic inflammatory disease; not currently suffering from ailment including pelvic inflammatory disease; and not having any symptoms including stinging, itching, and discharge from the vagina.

### Data Collection

All participants were interviewed with the help of a pre-tested questionnaire consisting of socio-demographic characteristics and menstrual factors, including the numeric pain rating scale and pictorial blood loss assessment chart. Socio-demographic characteristics included age, family size, place of origin (rural or urban), residential status (at home with their families, alone and away from home, or at the dormitory), participant's average monthly income, number of years of parents' formal education, parents' occupation (managers & professionals, support service, skilled workers, elementary occupations, armed force occupations, housewife, unemployed), and parents' average monthly income.

To assess the intensity of primary dysmenorrhea, the Numeric Pain Rating Scale (NPRS) questionnaire was used (McCaffery & Beebe, 1993). According to the guideline of the NPRS, participants were classified as dysmenorrheic if they circled 1 to 10. Mild, moderate, and severe intensity were assigned as 1 to 3, 4 to 6, and 7 to 10, respectively (McCaffery & Beebe, 1993).

Menstrual characteristics, including age of menarche, history of dysmenorrhea in the family (none, mother, sister, mother and sister), length of menstrual flow (days), and interval between menstrual periods (days), were obtained with a questionnaire by interview. To measure the intensity of bleeding, participants were asked to fill a Pictorial Blood Loss Assessment Chart (PBAC) questionnaire for one menstruation (Higham,

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