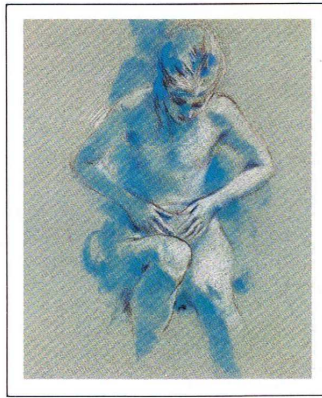


# D Y S M E N O R R H E A

## The Neglected Syndrome



A Comprehensive Review:  
Epidemiology/Etiology/Diagnosis/Treatment/Counseling



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# Introduction

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The last ten years have brought us closer to an understanding of the pathophysiology and treatment of dysmenorrhea, but a recent study confirmed earlier figures on the percent of affected women who seek medical treatment. Many women have dysmenorrhea; not many women seek care for it, even when symptoms are severe or incapacitating.

The usual lag between the understanding of professionals and the dissemination of their understanding to the population exists for dysmenorrhea, and this lag works to keep women from seeking medical care. The history of dysmenorrhea and attitudes toward it are additional, important influences, however. Remnants of old, faulty theories of a psychological cause weigh on a woman's decision to seek therapy. Added to erroneous scientific theories are superstitions and traditions passed down from ancient rituals dealing with the mystery of menstruation.

In summary, dysmenorrhea is as old as medical history and still affects a large percent of the population. We have a new therapeutic tool that can provide most women with some relief, but many women do not seek help because they *believe* that no help is available. Physicians can take advantage of opportunities to overcome — by careful, sensitive and sometimes persistent questioning — the tendency of many affected women to deny dysmenorrhea.

Recently, five physicians met to discuss different aspects of the dysmenorrhea problem. Four of them — Dr. Joyce M. Vargyas, Dr. Rogerio A. Lobo, Dr. Richard P. Marrs, and Dr. Subir Roy — are faculty members in the Department of Obstetrics and Gynecology at the University of Southern California. Dr. Mary Elizabeth Roth, who is a Fellow of the American Academy of Family Physicians and Associate Adjunct Professor of Family Medicine at the University of California, Irvine, provided another perspective, particularly in the discussion of patient counseling. This monograph combines a historical view of dysmenorrhea research with excerpts from the roundtable discussions. We at Syntex hope that you will find it a useful reference tool and a practical guide to management.

*Part One:*

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# Epidemiology and Etiology

## Introduction

*At first signs of menstruation, a Zulu girl runs to the river and hides among the reeds for the day so as not to be seen by men. She covers her head carefully with her blanket that the sun may not shine upon it and shrivel her up into a withered skeleton. After dark she returns to her home and is secluded in a hut for some time. (Frazer, p 226)*

*Amongst the Thlinkeet or Kolosh Indians of Alaska, when a girl shows signs of womanhood she is shut up in a little hut or cage, which is completely blocked up with the exception of a small air-hole. In this dark and filthy abode she had to remain a year, without fire, exercise, or associates. (Frazer, p 230)*

*The Creek and kindred Indians of North America compelled menstruating women to stay in separate huts at some distance from the village, in danger of being surprised by enemies. But should an enemy kill one of these menstruating women, he was considered "polluted," and had to cleanse himself with sacred herbs and roots. (Frazer, p 239)*

Depending upon one's perspective, great strides have been made in understanding the menstrual cycle and the physiological processes that occur monthly in the menstruating female. The remnants of taboos and folk beliefs are still with us, however, and they still affect the health care of millions of women of menstrual age. Contemporary society is beyond the practice of isolation or confinement of menstruating women, but the psychological roots of such primitive practices are still with us. Menstruation is viewed by many as a burden all women must bear; menstrual distress, no matter how excruciating or incapacitating, is too often considered part of that inescapable plight.

## How Many Women Have Dysmenorrhea?

*“Although it may seem that we treat many patients with dysmenorrhea, the scope of the problem is not often recognized. One out of every two women of child-bearing age coming into your office may have symptoms of dysmenorrhea, ranging from moderate to severe, for which you can offer relief.”*

*Dr. Joyce Vargyas*

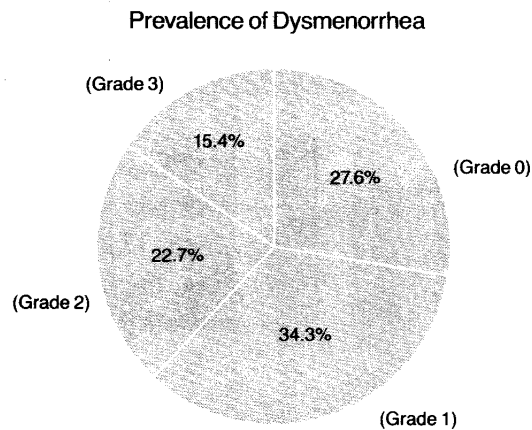
We cannot answer this simple question, even though medicine has evolved to the point of being able to treat the symptoms of most women with dysmenorrhea. To be counted through their physicians, women must become patients, and as Morrison and Nicolls (1981, p 96) point out in their epidemiological survey of the problem, “Consideration of menstrual pain as ‘normal’ by many health care providers, patients, and parents has led to hesitation on the part of affected individuals to seek medical consultation.”

The problem of underreporting is serious, as evinced in surveys by Sobczyk in 1978, Widholm in 1979, and Klein in 1980. Klein disclosed that few of the adolescents had seen a physician regarding their dysmenorrhea, even when their pain was severe, and in many cases parents were unaware of a problem. Because most patients are unable to recognize symptoms of secondary dysmenorrhea and are unaware of its implications, failure to report symptoms of painful menstruation may be masking a higher prevalence of dysmenorrhea resulting from pelvic disorders. This potential threat provides an urgent reason for health care providers to assess aggressively the presence and the nature of dysmenorrhea.

Reports and epidemiological surveys show large disparities in prevalence, probably reflecting the inconsistent “criteria employed to define the syndrome,” (Cox and Santirocco, 1981, p 75) “the lack of a multidimensional quantitation of pain,” (Ylikorkala and Dawood) and “the selective nature” of many investigations (Andersch and Milsom). All three problems need to be addressed before we can get reliable figures on the prevalence of the syndrome.

Dysmenorrhea is always characterized by pelvic pain, but some women describe sharp, cramping pains, whereas others report steady, dull, aching pains. Some women experience only abdominal pain, whereas others are affected by any of a wide range of symptoms of varying degrees of severity: cardiovascular, respiratory, gastrointestinal, genitourinary, nervous, and emotional. Some women experience symptoms before the appearance of menstrual bleeding; others can pinpoint their symptoms to the onset of flow. Some are incapacitated by their pain, whereas others function with varying degrees of competence.

Recently, Andersch and Milsom undertook a large, crossgroup survey, meaning that they did not survey one specific category of women — such as students, factory workers, or clinic patients — but a sample of 19-year-olds from the total population of a city in Sweden. In this study 72.4% of the study population reported dysmenorrhea. Pain was measured by a multidimensional scoring system that correlated well with assessment on a visual analog scale. Daily activity was impaired or inhibited in 38.1% of the women (Grades 2 and 3).



*Andersch and Milsom categorized dysmenorrhea according to this scale:*

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*Grade 0: No pain, no effect on activity.*

*Grade 1: Mild pain, activity seldom affected, analgesics seldom needed.*

*Grade 2: Moderate pain, activity affected, analgesics required, seldom absent from work or school.*

*Grade 3: Severe pain, activity inhibited, analgesics poorly effective, vegetative symptoms present.*

Prevalence reports from other investigations have provided somewhat lower figures, usually ranging from 20% to 50%. In 1979 Widholm, cited by Huffmann, reported surveys showing that adolescent females in 1971 showed that only 7% had dysmenorrhea in the first year after menses, but 26% of girls who had been menstruating for five years reported some dysmenorrhea. In a 1978 survey, Widholm, averaging two adolescent populations, found that 47% had dysmenorrhea. Figures were similar for adult women.

In a chapter on the clinical features of dysmenorrhea, Emmet Lamb (1981, p 111) lists eight surveys from different countries. Prevalence figures ranged from 31% among Scandinavian workers (Svennerud, 1959) to 92% among Finnish university students (Timonen and Procope, 1973). Two investigators reporting on women in

the United States found 45% among wives of graduate students (Moos) and 89% among clinic patients who responded by mail to a question designed to identify any history of dysmenorrhea (Sobczyk, 1978). Lamb concurs with the generally accepted opinion that about half of adolescent and young adult females experience painful menses. About 10% of these women are incapacitated from one hour to three days each month.

Widholm reported the percent of dysmenorrheic women who had consulted physicians because of dysmenorrhea. Among teenagers only 3.2% of 13- to 14-year-olds and 27% of 17- to 18-year-olds had sought medical help. About 25% of adult women had seen doctors because of menstrual cramps. Although 39% of the dysmenorrheic women in Sobczyk's 1978 survey claimed that they had severe pain, dysmenorrhea was rarely listed in their clinic records.

*“The silent sufferers: women with dysmenorrhea who for one reason or another avoid discussing the problem. They may not come to our offices at all, or if they do, they don't mention their menstrual pain unless we ask the right questions.”*

*Dr. Joyce Vargyas*

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## **What is Known About Other Epidemiologic Factors?**

As one would expect when it is difficult to determine how common a particular disorder is, more specific aspects of the epidemiological picture are also less than clearly defined. Many researchers have tried, however, to categorize women who experience dysmenorrhea, and it is useful to review their findings.

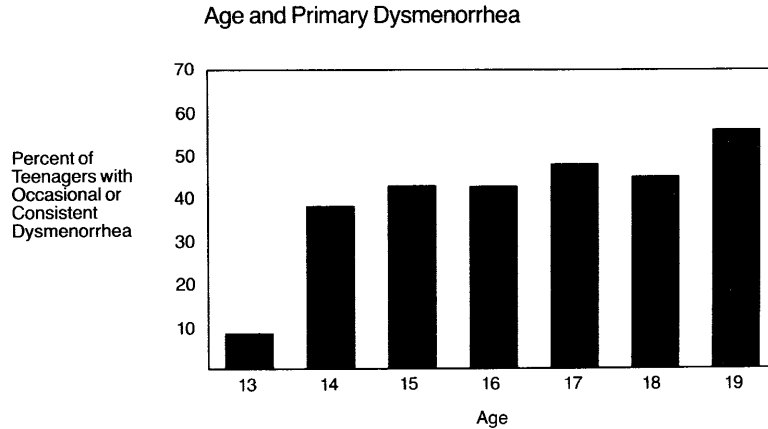
### **Onset and Menarche — Ovulation — Age — Parity**

Onset relative to menarche has been studied extensively, perhaps because it is interconnected with many other aspects of dysmenorrhea that need to be ascertained, among them important etiologic questions. Most investigators, including Widholm and Kantero (1971), report that dysmenorrhea is uncommon during the first year after menarche. Some surveys, however, report primary dysmenorrhea beginning with the first menses. In Widholm's study, 67.5% of girls with dysmenorrhea reported such an early onset. Morrison and Nicolls (1981, p 97) address this issue, pointing out that Frisk in 1965 reported dysmenorrhea occurring in many women at or near menarche.



The delay of six to 12 months between menarche and onset of painful menses has been considered to be the time needed to establish regular ovulation (Ylikorkala and Dawood), often thought to be necessary for dysmenorrhea to occur. Inhibition of ovulation has not always affected dysmenorrhea, however. For a discussion of dysmenorrhea and oral contraceptives, see page 38.

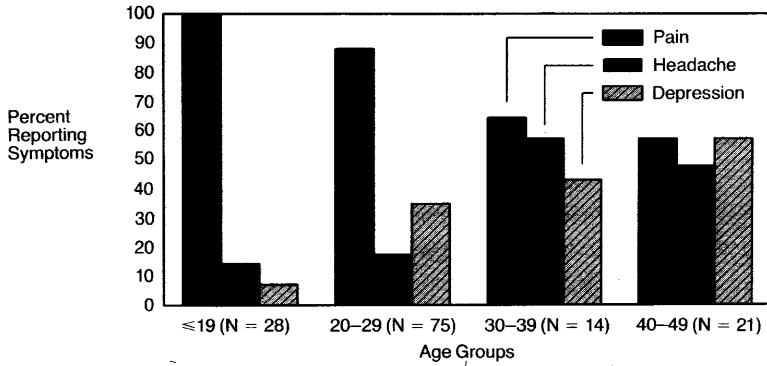
When teenagers at any stage of reproductive maturity are simply surveyed for the presence or absence of dysmenorrhea, its presence is related positively to age.



*In 1981 Svanberg and Ulmsten reported that 43% of girls aged ten to 19 (N=502) had occasional or consistent dysmenorrhea. Onset was less than one year after menarche in 72% of affected girls. Absence from school ranged from 8% to 18% among the age groups, but it was not correlated strongly with age.*

In nonteenagers, dysmenorrhea is often thought to become less severe or to disappear with increasing age. Studies have supplied data both supporting and refuting this theory. Widholm's 1979 report tended to confirm it, as did Svennerud's 1959 survey. Bergsjø and colleagues wrote in 1979, however, that dysmenorrhea, including general symptoms of feeling unwell, remained consistently high as a complaint in factory workers who were between 40 and 49 years of age. The following graph based upon their study shows changing relative importance of three dysmenorrhea symptoms as women age.

Relative Incidence of Three Symptoms Among Dysmenorrhic Women of Several Age Groups



*Subjects in the Bergsjö, Jenssen, and Villar study were Swedish industrial workers. They reported that headache and depression, as opposed to pain, are more troublesome to women over 30 years of age.*

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Information concerning the age of women with dysmenorrhea can easily be confounded with another factor, parity. Both advancing age and parity were once assumed to cure dysmenorrhea, but no longer. In the 1981 edition of Novak's text, Jones and Jones (p 817) state that relief from dysmenorrhea with either advancing age or childbirth is unpredictable and cannot be relied upon.

Ylikorkala and Dawood (1978) state, "while relief from dysmenorrhea occurs after the first childbirth, alleviation is only temporary in a great number of patients." The controversial view presented by Sjöberg in 1979 that pregnancy results in degeneration of uterine adrenergic nerves may be related to alleviation of dysmenorrhea immediately after childbirth. The regeneration of nerve terminals and the restoration of neurotransmitters reported by Sjöberg would support the finding that "improvement in dysmenorrhea symptoms after dilatation of the cervix or after vaginal delivery is often short-lived." (Dawood, 1981, p 43; Roberts)

### Weight

Because some surveys have reported higher frequency of dysmenorrhea among overweight subjects, obesity has been studied for a possible relationship to this syndrome. Widholm and co-workers have reported such relationships in two studies (Widholm et al, 1967; Widholm and Kantero, 1971). The 1982 crossgroup study by Andersch and Milsom found no relationship between weight and dysmenorrhea.

## Smoking

Reports again conflict. In 1969 Kauraniemi reported that dysmenorrhea is more common among smokers than among non-smokers and that the likelihood of having dysmenorrhea increases in proportion to the number of cigarettes smoked each day. Both results were higher significant statistically. Andersch and Milsom found the severity of dysmenorrhea to be reduced in smokers. Timonen and Procope (1971) found no relationship between smoking habits and dysmenorrhea, although they found smoking to influence premenstrual pain.

## Menstrual Pattern

Andersch and Milsom investigated several biological factors for possible relationship to dysmenorrhea and found some to be significantly related. Dysmenorrhea was more severe in women with early menarche, with longer duration of menstruation, and with increased menstrual flow. They found no relationship between length of cycle and severity of dysmenorrhea. Data collected by Moos in the late 1960s showed women with flow lasting eight days or more to be more likely to have dysmenorrhea. Jeffcoate stated in the 1975 edition of *Principles* that women with regular periods have a higher incidence of dysmenorrhea.

## Family History — Socioeconomic Status

The positive relationship sometimes reported between family history and dysmenorrhea (Widholm and Kantero, 1971) has been mentioned by other authors, who feel that it could indicate either hereditary factors or learned behavior (Lennane and Lennane; Morrison and Nicolls 1981, p99). Andersch and Milsom also reported that respondents who had dysmenorrhea were more likely than respondents who did not have dysmenorrhea to have mothers or sisters who also had dysmenorrhea.

Several authors have noted a higher prevalence of dysmenorrhea among higher socioeconomic groups (Widholm and Kantero, 1971; Kauraniemi), but Morrison and Nicolls (1981, p 98) point out that societal customs in a particular group may have a differential effect on the reporting of dysmenorrhea. Certainly many sources of error in research exist, and different forms of bias may underlie collections of information about dysmenorrhea. Cox and Santirocco (1981, pp 75 – 93) discuss the “possible operation of such confounds” in detail.

## Psychological Aspects

*“In addition to economic and scholastic losses, dysmenorrhea can cause a great amount of social disability. Many women who experience pain accompanied by stress during their periods anticipate the pain of the next period, creating more stress and anxiety.”*

*Dr. Joyce Vargyas*

Although, as Dr. Vargyas has pointed out, stress and anxiety may be part of the dysmenorrhea syndrome, the most biased aspect of our understanding of pathogenesis has been in the psychological arena. Cox and Santirocco neatly describe the many fallacies inherent in reports based on the psychopathology hypothesis. The pain of dysmenorrhea, like all other pain, “is a function of complex interactions between various systems from the level of neurotransmitters to the level of cultural values regarding pain experiences and the expression of pain.” What is now being recognized, since the psychogenic era has finally ended, is the importance of cultural values in determining the extent of suffering caused by dysmenorrhea.

Just as the ancients observed taboos of menstruation, women today are still influenced by outdated beliefs about dysmenorrhea. Andersch and Milsom found that only 21% of the dysmenorrheic women in their study sought medical help. Women who had not sought help ascribed this failure to the belief that menstrual pain is normal and that no help is available. Rowena Sobczyk cites similar explanations from several physician-writers in her 1980 article.

The failure to seek and to receive medical help is the main factor to be considered when assessing the vast effect of dysmenorrhea on social and economic aspects of life. Certainly a chronic, debilitating disorder affects the sufferer’s personal life and daily activities; most assuredly, when the number affected is multiplied by the hours of compromised work or social activity, there is significant loss. As Viveca Lundström proposed in a 1978 report, however, there is no longer an excuse, in light of treatment alternatives available today, for the “handicap that this disorder imposes upon young women, students, and professionals.”

This situation requires the involvement of physicians and other health-care providers to actively assess the problem and to use “advice, persuasion, suggestion, education, medication, and sometimes environmental manipulation to help the patient and to meet her needs.” (Astrachan, 1981, p 200) Change in thinking about dys-

menorrhoea will occur when physicians begin to teach patients what is known about the etiology and the pharmacological management of the syndrome.

## Etiological Considerations

Primary dysmenorrhoea has commonly been defined as menstrual pain with no evidence of pelvic pathology, yet that simple description is in need of revision, as are many other “of the old concepts surrounding primary dysmenorrhoea which still pervade gynecological textbooks.” (Dawood, 1981, p 261) A more accurate definition of the syndrome would include Dawood’s phrasing, “no macroscopically detectable pathology,” because the last 15 years of research have provided much evidence of abnormal processes within the pelvic organs of women with primary dysmenorrhoea.

## Early Prostaglandin Research

At a 1979 international symposium on dysmenorrhoea and prostaglandins, Vernon Pickles gave a historical summary of his earlier research on the role of prostaglandins in dysmenorrhoea. He described his research teams’ efforts to seek an explanation for uterine contractions, the observed physiological mechanism of menstruation. Their research in the 1960s explored the menstrual fluid “substance” thought to provoke uterine contractions, and they identified the “substance” first as prostaglandins (PG), then as  $\text{PGF}_{2\alpha}$  and  $\text{PGE}_2$ . This work laid the foundation for investigations during the 1970s into the etiology of primary dysmenorrhoea.

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*“Although prostaglandins are formed in all types of human tissue, those involved with the etiology of primary dysmenorrhoea are found in the endometrium and in the menstrual fluid. Increased concentrations of prostaglandins have been correlated with the clinical symptoms of primary dysmenorrhoea.”*

*Dr. Rogerio Lobo*

Reports of research before Pickles’s work are sporadic; Ylikorkala and Dawood cite a 1952 investigation by Asplund, who concentrated on cervical obstruction as a cause of primary dysmenorrhoea. Lundström (1981, pp 54–55) and other writers have noted the work of Moir, who in the 1930s attempted to measure uterine contractions associated with primary dysmenorrhoea, and Woodbury and co-workers, who in 1947 were the first to identify incoordinated contractions of the uterine muscles in women with primary dysmenorrhoea. Moir stated in 1936 that dysmenorrhoea results from hypercontractility of the uterus causing ischemia and pain. Modern researchers would be able to confirm his theory.