

# Physician's Knowledge and Treatment of Primary Dysmenorrhea

Sandra L. Visner, and Robert L. Blake, Jr., MD  
Columbia, Missouri

Recent advances in knowledge have increased understanding of the etiology of primary dysmenorrhea and provided new approaches to the treatment of this disorder. Primary care physicians in Missouri have been surveyed to determine the extent to which new knowledge about primary dysmenorrhea has been utilized in patient care. The majority of physicians who responded to a mailed questionnaire were aware of the role of prostaglandins in the pathogenesis of dysmenorrhea and used prostaglandin inhibitors in management. Congenital cervical stenosis, neurosis, and physical inactivity were also frequently cited as causal factors of this disorder. Older physicians and osteopathic physicians were less likely to prescribe prostaglandin synthetase inhibitors for this condition. The reported prevalence of dysmenorrhea in the respondents' practices was lower than that estimated in the literature. The findings suggest that the condition is underdiagnosed and that effective pharmacotherapy may be underutilized.

The etiology of primary dysmenorrhea (menstrual pain occurring in the apparent absence of organic pelvic pathology) has long been a subject of major interest. Proposed explanations of this condition have ranged from structural defects to psychosocial maladjustment. Hippocrates first suggested congenital cervical stenosis as a

possibility; other putative causes have included uterine retroflexion, uterine anteversion, fundal hypoplasia, faulty pelvic posture, physical inactivity, neurosis, and inability to accept the feminine role. Attribution of primary dysmenorrhea to psychogenic factors has been particularly popular and persistent.<sup>1</sup> A gynecology textbook published in 1979 speculates that women who suffer dysmenorrhea are tense, neurotic, nonathletic, mother dominated, and have low pain thresholds.<sup>2</sup> However, recent research has substantially clarified the pathophysiology of dysmenorrhea and provided a sound basis for pharmacologic therapy.<sup>3-5</sup>

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From the Department of Family and Community Medicine, University of Missouri-Columbia, Columbia, Missouri. Requests for reprints should be addressed to Sandra L. Visner, Box M 345, Health Sciences Center, University of Missouri-Columbia, Columbia, MO 65212.



In 1938 it was recognized that ovulation was a prerequisite for primary dysmenorrhea.<sup>6</sup> This finding led to efforts to suppress ovulation to manage the condition, an approach that gained considerable efficacy with the advent of oral contraceptives. The ground for more specific therapeutic intervention was laid in 1957 with the initial recognition of the link between prostaglandin production and primary dysmenorrhea.<sup>7</sup> Subsequent studies have demonstrated that the menstrual blood of dysmenorrheic women contains higher levels of prostaglandins than that of nonaffected women.<sup>8</sup> More recently, clinical studies have confirmed the value of prostaglandin synthetase inhibitors (PGSIs) in the management of primary dysmenorrhea.<sup>3,5,9,10</sup> Several drugs in this class are approved by the Food and Drug Administration for use for this condition.

The rate and extent to which scientific medical advances are incorporated by physicians into their clinical practices vary. This study examines the extent to which recently acquired knowledge about the pathogenesis and treatment of primary dysmenorrhea has been disseminated to physicians in the state of Missouri. It also explores possible associations of primary care specialty and age with beliefs about etiology and the use of particular treatments and identifies sources of physician knowledge about dysmenorrhea.

## Methods

Primary care physicians in Missouri were surveyed by mailed questionnaire in the summer of 1983. The study sample was selected as follows: every fifth medical general practitioner or family physician and every fifth medical obstetrician-gynecologist listed alphabetically in the American Medical Association *American Medical Directory*, 1982, and every third osteopathic physician (through the letter S) listed alphabetically in the 1982 *Directory of the Missouri Board of Registration for the Healing Arts*. The sample of 400 consisted of 193 general practitioners or family physicians, 109 obstetrician-gynecologists, and 98 osteopathic physicians, representing approximately

20 percent of the state general practitioners or family physicians, 20 percent of the obstetrician-gynecologists, and 15 percent of the osteopathic physicians.

The questionnaire, specifically developed for this study, elicited demographic data, information about the location and type of practice, an estimate of the prevalence of primary dysmenorrhea in the practice, and treatments prescribed for the condition before and after 1980. Beliefs about the cause of primary dysmenorrhea were assessed with a series of yes or no response-type questions. Respondents were also asked to indicate from a list their sources of information about the condition. Statistical significance was determined with the chi-square test.

## Results

Forty of the 400 questionnaires were returned as undeliverable and an additional 27 were completed by physicians who did not meet eligibility criteria. Of the remaining 333 practicing physicians, 126 (38 percent) completed and returned the questionnaire. Respondents comprised 41 percent of the general practitioners and family physicians, 39 percent of the obstetrician-gynecologists, and 30 percent of the osteopathic physicians who presumably received the questionnaire.

Of the respondents, 7 percent were female; 35 percent were aged less than 40 years, 32.5 percent were aged 40 to 55 years, and 32.5 percent were aged over 55 years; 57 percent were residency trained; and 59 percent were board certified. Approximately equal numbers had urban, suburban, and rural practices.

There was considerable variability in the estimated prevalence of dysmenorrhea in respondents' practices. Slightly more than one half of the respondents reported that fewer than 12 percent of their female patients of reproductive age complained of dysmenorrhea. Only one physician reported that more than 25 percent of his patients of reproductive age had this complaint. In the questionnaire primary dysmenorrhea was defined as menstrual pain in the absence of identifiable or-



Table 1. Percentage of Respondents Prescribing a Given Treatment During Two Periods

	Prior to 1980		Since 1980		P Value**
	Frequently*	Infrequently	Frequently	Infrequently	
Sedatives and tranquilizers	7.1	73.8	4.0	78.6	NS***
Prostaglandin synthetase inhibitors	28.6	52.4	76.2	13.5	<.01
Oral contraceptives	23.0	61.9	23.8	65.1	NS
Other prescription analgesics	34.1	50.0	16.7	71.4	<.05
Counseling	3.2	81.0	2.4	84.1	NS
Oophorectomy or hysterectomy	0.8	81.7	0.0	86.5	NS
Sacral neurectomy	0.8	82.5	0.0	87.3	NS

\*On a scale of 1 to 5, respondents reporting 1 or 2 were considered to have infrequent use and those reporting 4 or 5, frequent use of the treatment  
\*\*By chi square, comparing the proportion of frequent use before 1980 and after 1980  
\*\*\*NS P > .05

ganic pelvic pathology. Approximately one half of the respondents considered the dysmenorrhea to be primary in more than 60 percent of their patients with the complaint. The other half considered less than 40 percent of their patients to have primary dysmenorrhea. Sixty percent of the respondents reported that they almost always inquire about menstrual pain during the course of a routine checkup, while 11 percent make such inquiries only sometimes or rarely.

Table 1 shows the frequency with which respondents used several treatment modalities prior to and since 1980. Since 1980 there has been a significant increase in the use of PGSI and a decrease in the use of other prescription analgesics. Sedatives and tranquilizers, counseling, oophorectomy or hysterectomy, and sacral neurectomy were used very infrequently during each period. The frequency of oral contraception use did not change.

Differences in therapeutic approaches by specialty and age were found. Obstetrician-gynecologists were more likely to prescribe PGSI after 1980 than were general practitioners or family physicians, who were more likely to prescribe them than osteopathic physicians. The difference between obstetrician-gynecologists and osteopathic physicians was statistically significant

( $P < .01$ ). The obstetrician-gynecologists were also significantly more likely to prescribe oral contraceptives than the other two physician groups both before and after 1980. Physicians who were younger than 40 years were significantly more likely to use PGSI before and after 1980 than physicians aged over 40 years. There was no association between practice location and treatment preferences. The small number of female respondents precluded analysis of the effect of physician gender.

Table 2 provides information about respondent beliefs regarding causal factors for primary dysmenorrhea. Uterine muscle contractions and increased uterine prostaglandin production were cited by a large majority as responsible for the condition. One half of the respondents thought that cervical obstruction was a causal factor. Substantial numbers considered neurosis, physical inactivity, and inability to accept the female role as responsible for the condition. Osteopathic physicians were more likely than the two medical groups to attribute primary dysmenorrhea to physical inactivity, uterine retroflexion, and faulty pelvic posture.

The sources from which respondents obtained most of their information about primary dysmenorrhea were personal and patient experience,



**Table 2. Percentage of Respondents Indicating Whether Each Factor Listed May Be Responsible for the Pain of Primary Dysmenorrhea\***

	Yes	No
Uterine retroflexion	29.4	65.1
Congenital cervical obstruction	50.8	44.4
Neurosis	40.5	50.8
Physical inactivity	34.9	55.6
Faulty pelvic posture	26.2	61.9
Uterine muscle contractions	84.9	9.5
Inability to accept feminine role	23.8	64.3
Uterine ischemia	48.4	37.3
Increased uterine prostaglandin production	85.7	7.1

\*A total of less than 100% for an item is due to some subjects not responding to the item

29 percent; journal articles, 23 percent; medical school courses, 20 percent; and residency training, 19 percent. Fewer than 5 percent of the respondents indicated that drug company advertisements and representatives were important sources of information. There was no correlation between source of information and beliefs about cause or therapeutic practices.

## Discussion

A large majority of respondents to the survey believe, in accordance with current scientific evidence, that uterine contractions and elevated uterine prostaglandins are involved in the pathogenesis of primary dysmenorrhea. However, many also attribute causation to factors that have little or no scientific basis. It is evident that most respondents believe that the concept of multiple causation applies to this disorder, with increased prostaglandin synthesis constituting a vital physiologic step in the process. This finding suggests that, at least in the case of prostaglandins and dysmenorrhea, recent scientific advances are fairly rapidly integrated into clinical practice with-

out displacing preexisting explanatory theories.

The temporal pattern of changing PGSI use revealed in the study provides additional evidence of the incorporation of scientific advances into clinical practice. While use of PGISs increased from 1980 for each specialty group studied, differences were evident. Use of these agents was highest for obstetrician-gynecologists and lowest for osteopathic physicians, suggesting a relationship between degree of specialization and propensity to adopt new practices. PGSI use was also more frequent among younger physicians, suggesting that older physicians may be slower or more reluctant to change practice behavior. There was some confounding of age and specialty, which could not be effectively sorted out because of small numbers.

The data suggest that PGISs tended to replace the use of other prescription analgesics over time. Despite the belief of a significant minority of respondents in a psychogenic basis for dysmenorrhea, very few respondents frequently employed sedatives, tranquilizers, or counseling in management.

The respondents' information about primary dysmenorrhea came from several sources, most notably practice experience and journals. Few physicians cited pharmaceutical promotional activities as a major source.



There are methodologic limitations to this study. While the initial sample of 400 physicians was probably representative of the population of nonpediatrician primary care physicians in the state, the subgroup that actually responded to the questionnaire may well not have been. Any selection bias present would probably operate to overestimate recent knowledge about prostaglandins in primary dysmenorrhea and the use of PGSI in the broader population. It is also possible that recall problems affected the reporting of therapy employed prior to 1980. It is very unlikely, however, that the large increase in PGSI use that was found is secondary to recall errors. The potential for reliability and validity problems is inherent in the use of mailed questionnaires. While the questionnaire was pretested on a small group of physicians, no validity assessment was performed.

The true prevalence of primary dysmenorrhea is difficult to determine. Estimates of prevalence based on several surveys range from 40 to 80 percent of ovulating women,<sup>9,11-13</sup> with 10 to 15 percent of sufferers experiencing one to three days of incapacitating pain.<sup>3,12,14</sup> Physicians responding to the questionnaire reported much lower rates in their practices. In addition, within the sample there was substantial variation in the proportion of dysmenorrhea considered to be primary. Numerous factors may account for these discordant estimates of prevalence, including real differences in rates among groups of women, differences in diagnostic criteria, differences in the population at risk or denominator (ovulating women vs women of reproductive age), errors in physician recall, and disparity between physician perception and patient experience. While the data do not allow a clear differentiation between these factors, disparity between physician perception and patient experience probably plays a major role in the lower prevalences based on physician report. A reluctance of some women to mention the problem to their physicians combined with the tendency of some physicians not to inquire or to minimize the complaint probably accounts for a significant portion of the discrepancy. The lower than expected rate of primary dysmenorrhea in physician practices raises a concern about underdetection and subsequent undertreatment of the problem.

## Conclusion

This study demonstrates that recent knowledge about the pathogenesis and therapy of primary dysmenorrhea has been effectively disseminated to a large majority of primary care physicians in Missouri. Despite the limitations of the study, this finding is probably generalizable to other states. While other factors are thought by many physicians to affect the occurrence of this condition, these beliefs infrequently lead to specific therapeutic interventions. The two most common treatments used by respondents are based on firm scientific evidence. The influence of scientifically unsubstantiated explanatory theories relating to psychosocial or structural disturbances on the management of the condition is unclear.

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