



# Study the pattern of drug use in dysmenorrhea, its effectiveness and problems faced during therapies in young female

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## KEYWORDS

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## ABSTRACT:

### Background:

Primary dysmenorrhea is common problem of reproductive age. Various methods used for the pain relief including drugs from the different systems of medicines. Over-the-counter analgesics naproxen, ibuprofen, diclofenac, aspirin, ketoprofen etc. used rampantly. Many times these drugs results into adverse effects. Present study was planned to find out pattern of use of drugs and adverse effect effects encountered. Study was a cross sectional, unicentric, descriptive study. Participants in the study were female students from BVDU College and Hostel and their families of 15 to 40 age. The questionnaire was used to collect the data from the female willing to participate. Participation was voluntary and responses were anonymous. Questionnaire consisted of the drugs used, dose, duration, medications used from the different systems on medicines and their adverse effects experienced by them. Effectiveness of these medications was also be assessed. Data generated was analyzed using Graph pad prism software.

94.7% of the respondents having pain, beginning within the first two days of their menses. 46.3% suffer from painful periods every month. 21% shows severe pain and menstrual flow. The common symptoms that accompanied dysmenorrhea were fatigue, tiredness, nausea vomiting, diarrhoea, joint pain and mood changes. Most of them 54% uses allopathic medicine for the fast pain relief and is confirmed on pain scale. Dysmenorrhea is a major health problem which can be incapacitating the women. More attention is required in the form of educational modules to reduce the burden of its negative consequences.

## INTRODUCTION

Dysmenorrhea is the painful menstrual periods which are caused by uterine contractions predominately because of the prostaglandins. There are two types of dysmenorrhea, Primary dysmenorrhea refers to recurrent pain without underlying pathology. Pain usually begins one or two days before onset of menstrual cycle or when bleeding actual starts. Pain intensity varying from mild to severe intensity in the lower abdomen, back or thighs. Pain is usually periodic and predictable that occurs just before or during menstruation and typically last 12 to 72 hours, and also associated with other symptoms, such as nausea and vomiting, fatigue, and even diarrhea. Many times also associated with perimenstrual symptoms like mood swings, feeling upset, anxious or irritable, tiredness or trouble sleeping, bloating or tummy pain, breast tenderness and headaches. It is the most common gynecological problem among females all over the world. In reproductive age 16%-91% in women suffer

from dysmenorrhea and severe pain is seen in 2%-29% of the women.<sup>[1]</sup>

Secondary dysmenorrhea is mainly due to underlying cause such as infection in female reproductive system such as polycystic ovaries. In secondary dysmenorrhea usually pain begins early stage of the menstrual cycle and remain for longer duration than the usual common menstrual cramps. It is usually not accompanied by nausea, vomiting, fatigue or diarrhea.

Dysmenorrhea usually treated with conventional therapies.<sup>[2]</sup> Non-steroidal anti-inflammatory drugs are used for the treatment, they are associated with the adverse effects, sometimes may cause some severe gastrointestinal side effects and are intolerable by some women.<sup>[3]</sup> Therefore, many women seek alternative therapies from Ayurveda, homeopathy etc. to cope with the condition considering no adverse effects with these medicines. Most of them are self-medicated with over-the-counter drugs or sometimes from the previous



prescription<sup>[4]</sup> without the knowledge about the dose, duration and adverse effects, whereas some of them uses the herbs or supplements and age old remedies for pain relief. Using self-medication methods in this tender age may be responsible for the long term ill effects and even the effect on fertility in future life. So, it becomes very important to know the pattern of drug use and adverse effects encountered during the therapy to plan the safe and effective therapy.

## METHODOLOGY

Study area was BVDTU Medical College campus and women visiting to hospital, Pune. Cross sectional, Unicentric, descriptive study, study participants were female students from BVDTU College and Hostel and their families.

This was questionnaire based study include female participants between age group 15 to 40 from Bharati Vidyapeeth Deemed to be University Medical College, Ayurveda, homeopathy and visiting to Bharati hospitals and willing to participate. Participation was voluntary and responses were anonymous.

Approval from Institutional Ethics Committee was obtained before starting the study. Necessary information like how we will be doing, why we will be doing, etc. regarding this study was explained to the participants. Participants were allowed to ask questions/queries regarding the study. We answered all the questions and clear their doubts.

Filling the google form voluntarily was considered as consent. Questionnaire was used for obtaining the

information about the drugs used, dose, duration, medications used from the different pathies and adverse effects experienced by them along with the effectiveness of the medicines used. Visual analogue scale (VAS) was used for measuring the effectiveness of the medicine used. It is a 10 cm in length and has a marker that the patient moves to the point, indicating her pain of intensity. For pain intensity, the scale is anchored by “no pain” at 0 and “worst imaginable pain” at 10. The following cut points on the pain VAS have been recommended: no pain (0–0.4 cm), mild pain (0.5–4.4 cm), moderate pain (4.5–7.4 cm), and severe pain (7.5–10 cm).<sup>[5,6]</sup> Based on this scale effectiveness of different medications used was assessed.

## STATISTICAL ANALYSIS

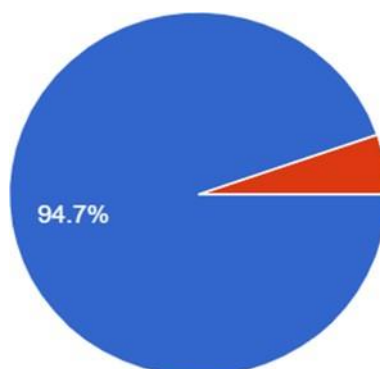
Data generated from the questionnaire and was entered into the MS Excel, Sheet was analysed using Graph pad prism software and presented as mean and standard deviation. The data was analyzed by descriptive statistics were reported as frequencies and percentages.

## RESULTS

Demographic details of the participants (Table 1) along with menstrual data. The mean age of a total of 114 female students was 20.5 years ranging from 18 to 22 years. The average age of menarche was reported as 12.8 years (ranging from 10 to 17), majority of the participants (97.6%) fall between 10 and 17 years. (Table 1)

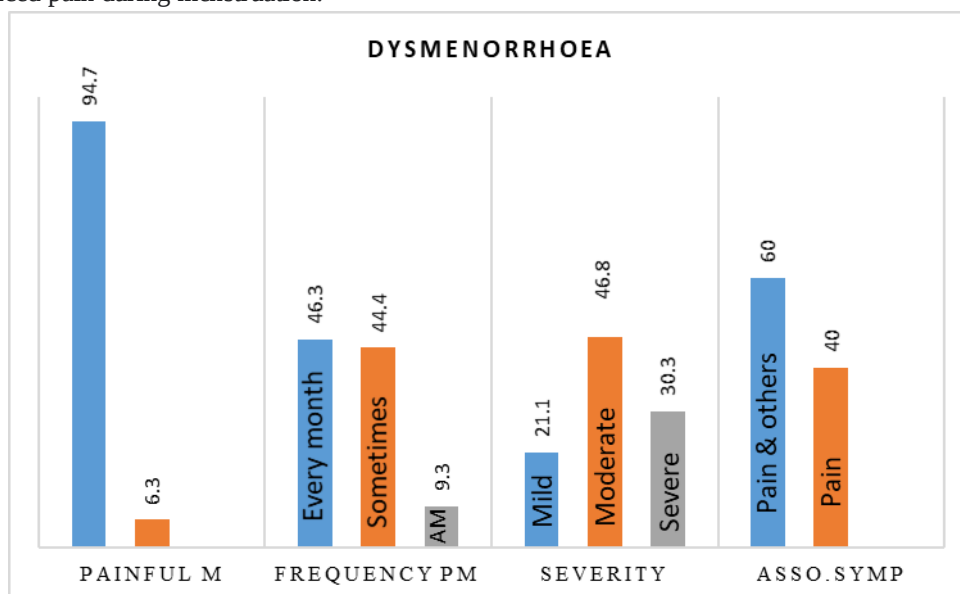
**Table 1: Baseline characteristics of the study population**

| Items             | Characteristics                   | Subjects (n=114) |
|-------------------|-----------------------------------|------------------|
| General           | Age                               | 20.5             |
|                   | Height cm                         | 155.0 (5.1)      |
|                   | Weight in kg                      | 51.0             |
|                   | Body mass index kg/m <sup>2</sup> | 21.2             |
| Physical activity | Exercise                          |                  |
|                   | Regular                           | 66.7 %           |
|                   | Irregular                         | 33.3%            |
| Menstrual cycles  | Age of menarche-years             | 12.8             |
|                   | Menstrual cycle length- days      | 24-32            |
|                   | Duration of menstrual flow-days   | 4-6              |
|                   | Premenstrual symptoms             | 82%              |



**Figure 1: Pain during the menstruation**

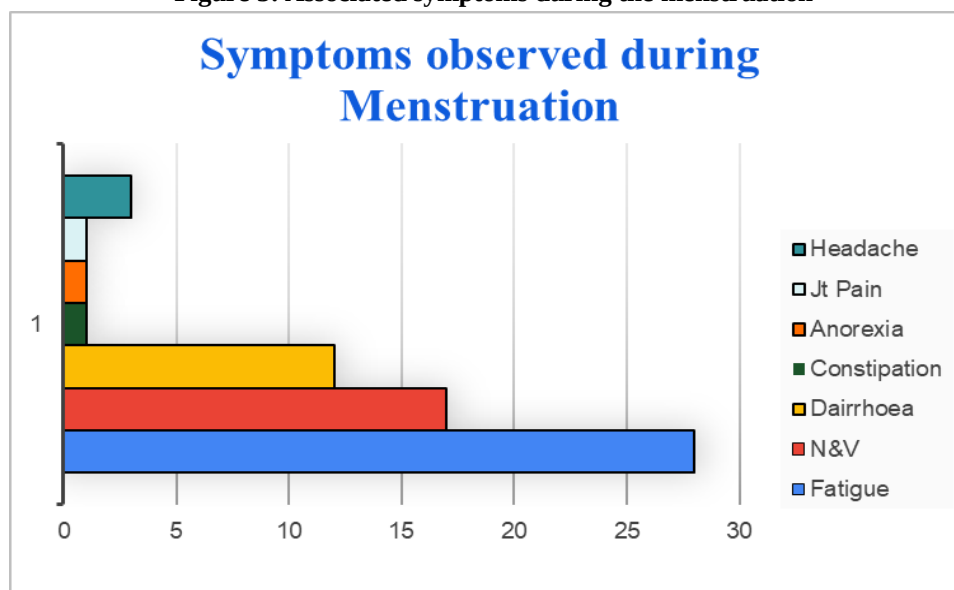
94.7% of the respondents having pain, beginning within the first two days of their menses. 6.3 percent of the females never experienced pain during menstruation.



**Figure 2-Frequency, severity and associated symptoms of Painful menstruation**

**M-Months, PM –Painful menstruation. AM-alternate month, Asso. symp- associated symptoms**  
From them 94.7% women mentioned that they have suffered from menstrual pain. 46.3% women suffer from painful menstruation every month, 44.4% feel

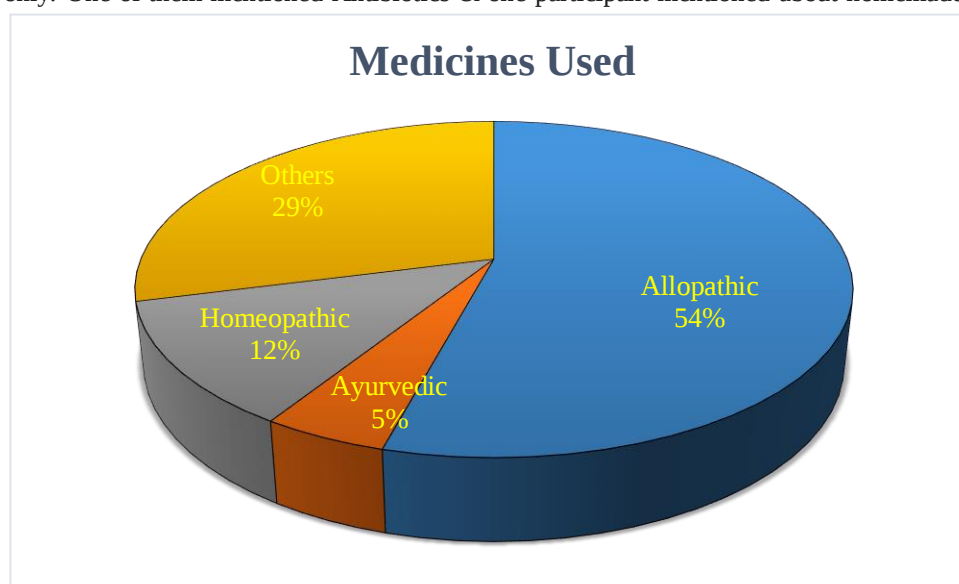
sometimes and 9.3% had pain on every alternate month. 21.1 % women have mild pain, 48.6 % experience moderate pain and 30.3 suffer from severe pain. 60% women had associated symptoms during menstruation whereas 40% had only pain.

**Figure 3: Associated symptoms during the menstruation**

During the menstruation many women felt various types of symptoms apart from the pain and blood flow. 42.6 % had fatigue and tiredness, 25 % suffered from nausea and vomiting, 17.6% experienced diarrhea, many other symptoms were also found to be associated with like uneasiness, anorexia, fever, headache, body weakness and joint pain.

**Figure 4-Medicines used during menstruation**

4.8% Ayurvedic, 54.2 allopathic, 12% Homeopathy and 29 % do not take any medicine, prefer to take rest, exercise, do meditation only. One of them mentioned Antibiotics & one participant mentioned about homemade remedy.



Reasons for using these medicines- quick pain relief, no adverse effects.

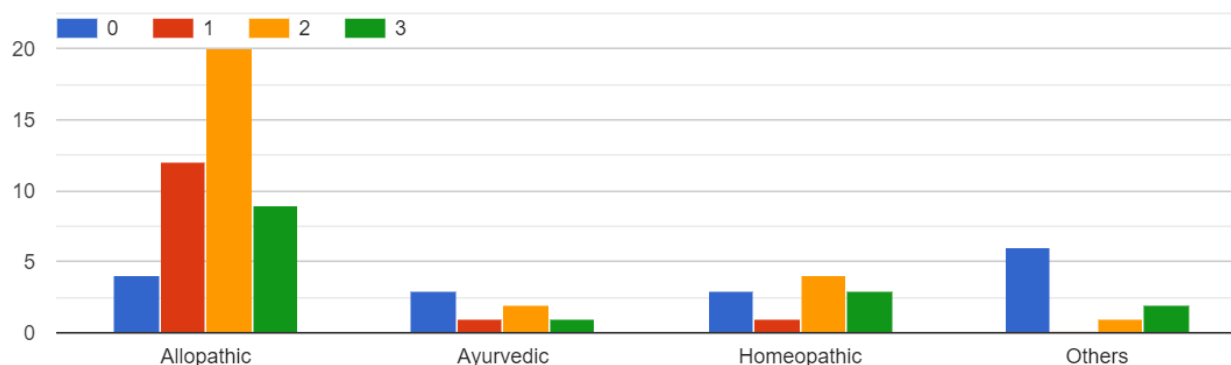
**Table 2: Frequency of medicine requirement**

| Medicine   | Once | Twice | Thrice | All three days |
|------------|------|-------|--------|----------------|
| Allopathic | 32   | 10    | 3      | 1              |
| Ayurveda   | 3    | 0     | 0      | 0              |
| Homeopathy | 5    | 1     | 1      | 3              |
| Others     | 5    | 1     | 0      | 0              |



Most of them preferred to take allopathic medicines (32) for quick pain relief. (3) Used Ayurvedic and 5 received homeopathic medicines considering they have less side effects.

**Figure 4 -Pain relief obtained with these medicines on pain scale**



0-No relief, 1- Mild relief, 2-Moderate relief, 3- Complete relief

Moderate to complete relief is obtained with allopathic medicines and in the maximum number of women.

82% participants were aware about the side effects of the painkillers. 17.9% did not know about it. 93.4 experienced mild to moderate side effects like early periods, heavy periods, and nonspecific discomfort of the drugs used. 6% of them have taken treatment for the side effects.

## DISCUSSION

Menstruation is the normal physiological phenomenon occurring in the reproductive age of a women. Many of them face the health problems such as premenstrual stress, menstrual pain, scanty or sometimes overt flow and irregular menstrual cycles during the menses.<sup>[7]</sup> Primary dysmenorrhea is defined as menstrual pain in the absence of pelvic disease. It is characterized by increased production of prostaglandins by the endometrium, causing uterine hyper-contraction which is resulting in increased contraction of uterine muscle and ischemia, hypoxia, and pain. Abere Woretaw Azagew et al reported that the prevalence of primary dysmenorrhea among female students was very high. Painful menstrual cramps experienced by women, substantially reduce quality of life during menstruation every month.<sup>[8]</sup> Menstrual pain and discomfort leads to loss of work productivity days and at the same time significant economic burden due to the further consequences.<sup>[9]</sup> Dysmenorrhea being a problem faced by majority of women worldwide and affecting the day to day activities of the women, attention is needed with the proper medicines. Ju H et al reported 50% of women

uses various conventional and non-conventional methods to deal with it.<sup>[10]</sup>

Many inflammatory markers play important role in dysmenorrhea. Prostaglandins are the important ones, which causes uterine contractions and pain. Vasopressin also produces similar effects. Increased vasopressin levels were also reported in women with primary dysmenorrhea. Various methods are used by women with primary dysmenorrhea for pain relief. It can be such as physical activity, manual therapy or physiotherapy, nonsteroidal anti-inflammatory drugs (NSAIDs) like Ibuprofen & Mephenamic acid.<sup>[11]</sup> oral contraceptives<sup>[12]</sup>, acupuncture<sup>[13]</sup>, low levels of topical heat<sup>[14]</sup> and some may use the household remedies like dietary modifications.<sup>[15]</sup> Factors to be remembered while choosing a treatment for dysmenorrhea is treatment availability and their impact on the inflammatory factors in the pathogenesis of dysmenorrhea. A better understanding of the causes of dysmenorrhea may result in effective therapy.<sup>[16]</sup>

In the present study, the participants were from three different disciplines, approximately equal number of participants were involved from Medical, Ayurveda and homeopathy. Primary dysmenorrhea was high in the participants with every month more than 90% (figure 1) and in 46% women experienced every month and 21% from them with high severity and 60% having associated symptoms affecting the quality of life. Study done by Grandi G et al. Observed depression, headache and acne were the major associated symptoms with dysmenorrhea.<sup>[17]</sup>

In our study fatigue, nausea vomiting and diarrhoea were the main associated symptoms observed in these women. (Figure 2) The main finding was that even though the



participants belong to different disciplines of medicine, 54% used allopathic, 4.8% Ayurvedic and 12% Homeopathy used with the belief it provides quick pain relief. From the total, 29 % does not preferred to take medicines even though having mild to moderate pain. (Figure 3) Frequency of administration was once for almost all the medications twice and thrice administration required in very few women. (Table 1) When effectiveness of the method used by participants was analyzed It was observed that most commonly used drugs were NSAIDs like Paracetamol, Ibuprofen, etc. 54% believed analgesics are the effective drugs in relieving menstrual pain. Most common non-pharmaceutical methods of pain relief were, massages, local heat and relaxation techniques. But on the pain scale allopathic medicines appeared to be the most effective in reducing the intensity of pain. (Figure 4) Similar results were observed in the study done by Parra-Fernández ML.<sup>[18]</sup> It seems that other medicines and non-pharmacological measures were less effective in reducing the severe pain but the mild to moderate pain can be managed with these measures. Adverse effects observed were of mild intensity and 6% has taken the medicines to minimize the adverse effects like epigastric pain & hyperacidity. One of them have mentioned that she even not realized that it was an adverse effect of the drug. In study done by Wenbo Nie et al mentioned that OTC Diclofenac is best drug in terms of effectiveness but having worst safety, comparatively ibuprofen appeared safe.<sup>[19]</sup> Chandraprabhawati was the medicine preferred by some of them from Ayurveda. Chandraprabha Vati, is a polyherbal medicine consisting of 37 ingredients has multiple uses like obesity, diabetes, metabolic diseases, and other diseases related to the urinary and genital system.<sup>[20]</sup> Those who used it said to be effective with no adverse drug reactions.

## CONCLUSION

Observations of the study shows that high number of women are suffering from primary dysmenorrhea. Most of them depends on the allopathic medicine for the pain relief. Awareness about the adverse effect was present still some of them suffered from it and taken medicine for it. Educational inputs are needed to all regarding the use of the appropriate drugs for the optimum duration to avoid the complications in the future.

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**ETHICS-** There is no ethical violation as it is based on voluntary anonymous interviews

**AUTHORS' CONTRIBUTIONS-** All authors did equal contribution. All authors read and approved the final manuscript for publication.

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