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Original Article

A STUDY OF THE PREVALENCE OF SELF MEDICATION PATTERN FOR PRIMARY DYSMENORRHEA AMONG UNDERGRADUATE MEDICAL AND DENTAL STUDENTS IN A TEACHING HOSPITAL IN TELANGANA

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ABSTRACT

Objective: To study the prevalence of self-medication by using over-the-counter drugs and non-pharmacological methods for primary dysmenorrhoea.

Methods: A Cross-sectional descriptive study using a self-developed and structured questionnaire as a tool was conducted among medical and dental students with dysmenorrhoea and in the age group of 18-22 y. Statistical analysis was done using the Chi-Square test.

Results: Out of 203 respondents, 30% were self-medicated by using over-the-counter (OTC) drugs and 70% have treated themselves by non-pharmacological methods like taking rest and applying hot fomentation on the abdomen. Among the OTC, 56% of them used a single drug and 44% used a combination of drugs. The most commonly used single drug was mefenamic acid and the most commonly used combination of drugs was mefenamic acid+dicyclomine hydrochloride. Out of those respondents taking OTC only 5% sought gynaecologist advice. A significant number of students were taking rest [Chi-square value = 66.84 $p<0.01$ highly significant], losing attendance in their academics.

Conclusion: Primary Dysmenorrhoea (PD) affects young girls irrespective of the regularity of cycles. The prevailing self-medication pattern is inappropriate; a substantial proportion of girls have inadequate knowledge regarding treatment and the need for gynecologist consultation.

Keywords: Primary dysmenorrhoea (PD), Self-medication, Over-the-counter drugs (OTC)

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INTRODUCTION

Dysmenorrhea is one of the most common health problems in young adolescent girls as it affects 50-90 % of the general population [1]. Primary Dysmenorrhoea (PD), a common gynaecological disorder affecting nearly 50% of menstruating women, is characterized by painful menstruation in the absence of any underlying pelvic pathology [2, 3]. It is confined to the adolescent age group, appearing within 6-12 mo after menarche and coinciding with the onset of ovulation. The prevalence is high among adolescents (50-70%), disrupting education and social life and absenteeism to academics [4].

Dysmenorrhoea is due to prostaglandins, which induce uterine cramps and diminish uterine blood flow, resulting in increased peripheral nerve hypersensitivity, causing pain. The symptoms of primary dysmenorrhoea are colicky suprapubic pain and backache, sometimes associated with nausea, vomiting and rarely syncope [2].

The mainstay of treatment includes non-steroidal anti-inflammatory drugs (NSAIDs), Hormones and Hormone-releasing Intrauterine Devices (IUD). Among NSAIDs ibuprofen, mefenamic acid, naproxen, celecoxib and ketoprofen [5]. Hormones include oral Contraceptive Pills (OCPs) to inhibit ovulation and decrease endometrial proliferation and prostaglandin synthesis. Hormonal treatment is indicated for severe cases of primary dysmenorrhoea. Other hormonal drugs used are medroxyprogesterone acetate, levonorgestrel-releasing intra-uterine devices and GnRH analogues like leuprolide acetate [6]. The use of herbal therapy is very popular because it can be managed alone and is available at health stores, chemists, and supermarkets. This despite the availability of useful, can create problems with dosage control, quality, and drug interactions [7].

Self-medication has traditionally been defined as "the taking of drugs, herbs or home remedies on one's initiative, or on the advice of another person, without consulting a doctor" [8]. Self-medication for PD is common, with an incidence of 38-80% [9] with easy accessibility of Over-the-counter (OTC). There exists a lack of awareness regarding the appropriate choice of drugs and adequate therapeutic dose [10, 11].

The prevailing self-medication pattern is inappropriate, a substantial proportion of girls have inadequate knowledge regarding treatment and the need for gynecologist consultation. hence the present study aims to evaluate the pattern of self-medication by using over-the-counter drugs and non-pharmacological methods for primary dysmenorrhoea.

MATERIALS AND METHODS

Study type

It is a cross-sectional descriptive study done among medical students and also dental students attending pharmacology classes at Osmania Medical College with prior approval from the Institutional Ethics Committee (Ref No. IEC-BHR/OMC/M. NO (05)/P-65).

Inclusion criteria

The inclusion criteria were females aged between 18-22 y, with regular menstrual cycles, with at least four painful menstrual cycles during the preceding six months and willing to give written informed consent.

Exclusion criteria

Exclusion criteria included women<18 y or>24 y of age, with<4 painful menstrual cycles during the preceding six months, not willing to give written informed consent, and subjects receiving concomitant medications including antipsychotics, antidepressants, and sedative-hypnotics.

Study duration

The study was conducted over three months, commencing from 14th December 2023 till 14th March 2023.

The following data was collected: Demographic characteristics, menstrual history including age at menarche, severity and duration

of dysmenorrhoea, number of days missed at work/class due to dysmenorrhoea and associated symptoms, and details of self-medication including pattern, adequacy of dose, and tolerability.

Statistical analysis was done using Statistical Package for the Social Sciences (SPSS) version 27. The characteristics of demographic and menstrual pain and self-medication patterns were described using descriptive statistics. Adequacy and tolerability assessment was done using the Chi-square test; P values were calculated, with P<0.05 considered statistically significant.

RESULTS

The mean age was 19 y and the mean age of attaining menarche was 13 y among 203 respondents. The survey included respondents in the age group of 18-22 y. Among 203 respondents, 67.5% of students had dysmenorrhoea. Among these 69.4% had regular menstrual cycles and 47.1% had irregular cycles (Chi-square-3.53; P value is 0.06) (table 1), which is not significant, which means primary dysmenorrhoea was present irrespective of the regularity of cycles and age of attaining menarche.

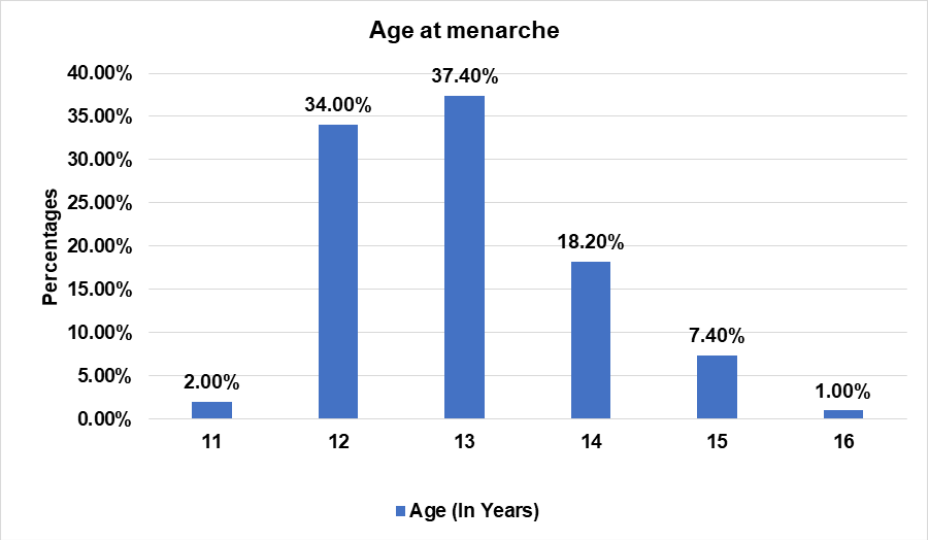

Fig. 1: Percentage distribution of age of students at which they attained menarche

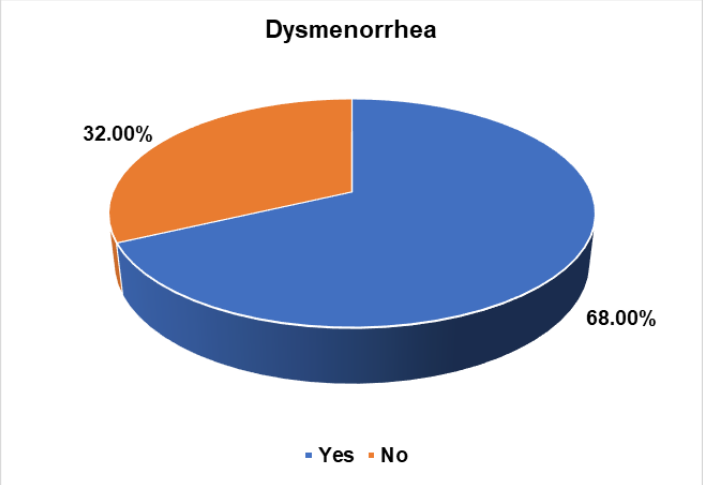

Fig. 2: Percentage distribution of dysmenorrhea in students

Table 1: Regularity of cycles and onset of dysmenorrhea

Cycles	Dysmenorrhea		Total
	No	Yes	
Not Regular	9	8	17
	52.90%	47.10%	100.00%
Regular	57	129	186
	30.60%	69.40%	100.00%
Total	66	137	203
	32.50%	67.50%	100.00%
Chi-square value = 3.53p = 0.06 Not Significant			

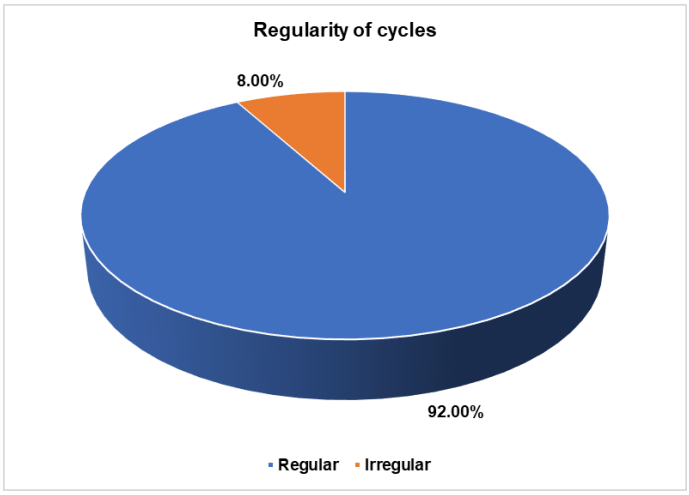

Fig. 3: Percentage distribution of regularity of cycles

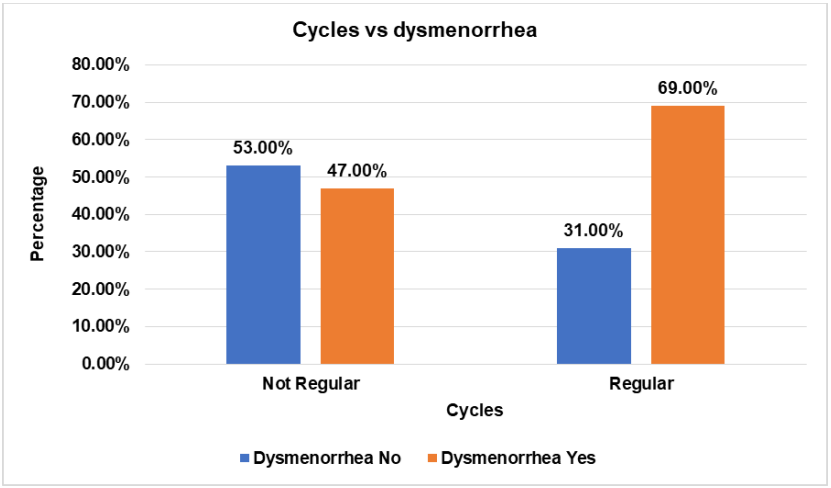

Fig. 4: Percentage distribution of regularity of cycles and dysmenorrhea

Self-medication was practised by 41% of the respondents who had dysmenorrhoea (table 2). The existing pattern of self-medication was as follows 56.1% of them had consumed a single drug, and 43% of them had consumed a combination of two drugs. The most commonly used single drug was mefenamic acid, which belongs to the NSAID group and the combination drug was dicyclomine and mefenamic acid.

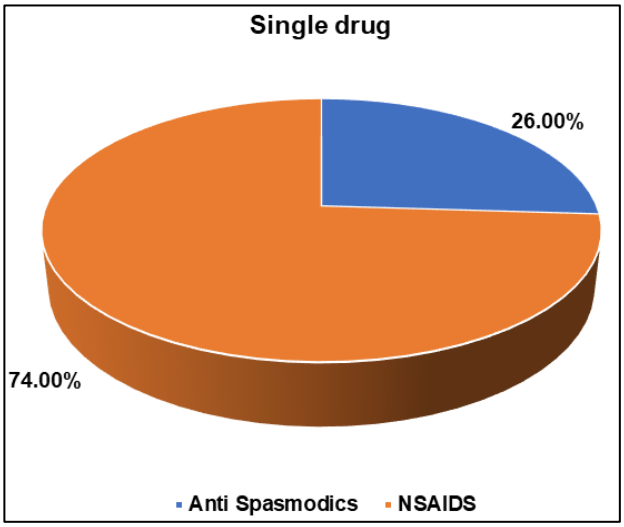

Fig. 5: Percentage distribution of use of antispasmodics and NSAIDs

Table 2: Pattern of self-medication

Drugs	Frequency	Per cent
Combination	18	43.9
Single	23	56.1
Total	41	100.0
Single drug	Frequency	Per cent
Dicyclomine	6	26.1
Mefenamic Acid	17	73.9
Total	23	100.0

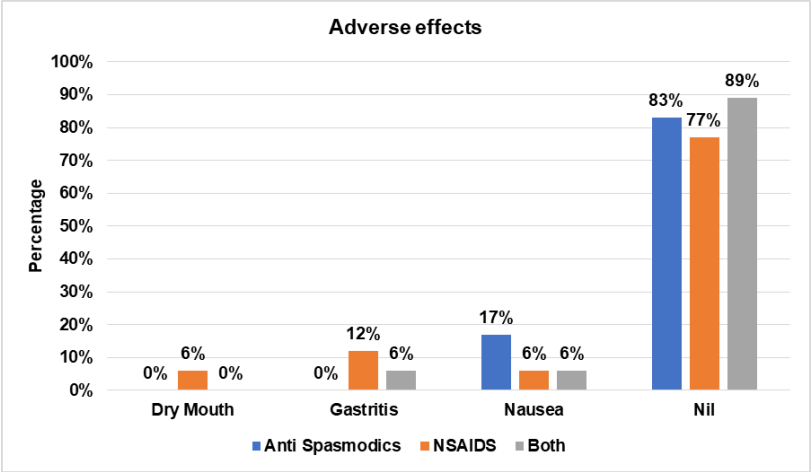

Fig. 6: Percentage distribution of adverse effects following drug intake

An enquiry was made in the questionnaire about whether gynecologist consultation or advice was taken before taking OTC Drugs. Among 203 respondents, 92.7 % did not take gynaecologist consultations or advice and only 7.3% had taken the advice of gynaecologists (Chi-square is 5.07 and P-value is 0.02), which is significant.

Table 3: Dysmenorrhoea-gynaecologist consultation/advice

Dysmenorrhoea	Consulting Gynaecologist		Total
	No	Yes	
No	66	0	66
	100.00%	0.00%	100.00%
Yes	127	10	137
	92.70%	7.30%	100.00%
Total	193	10	203
	95.10%	4.90%	100.00%

Chi-square value = 5.07; p = 0.02; Significant

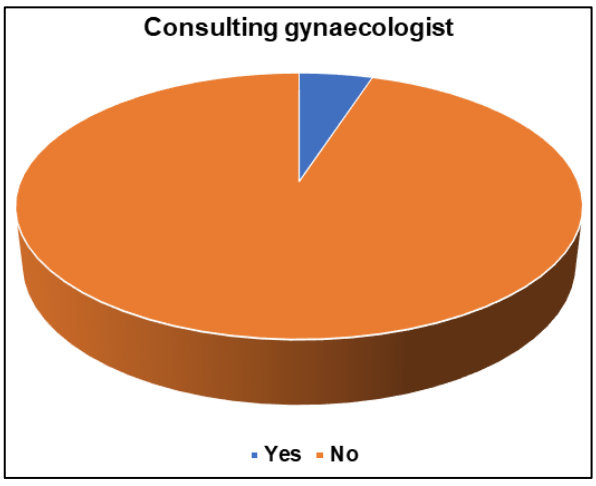

Fig. 7: Percentage distribution of students consulting gynaecologist

Among those respondents who had not taken the gynaecologist's advice 2.5% have done home remedies like applying hot water fomentation over the abdomen. 57.6% took rest, losing attendance at their academics (Chi-square is 6.684 and P-value is 0.01), which is highly significant.

Table 4: Non-pharmacological methods

Dysmenorrhoea	Other remedy			Total
	Home Remedy	No	Rest	
No	0	65	1	66
	0.00%	98.50%	1.50%	100.00%
Yes	5	52	80	137
	3.60%	38.00%	58.40%	100.00%
Total	5	117	81	203
	2.50%	57.60%	39.90%	100.00%

Chi-square value = 66.84; p<0.01, highly significant

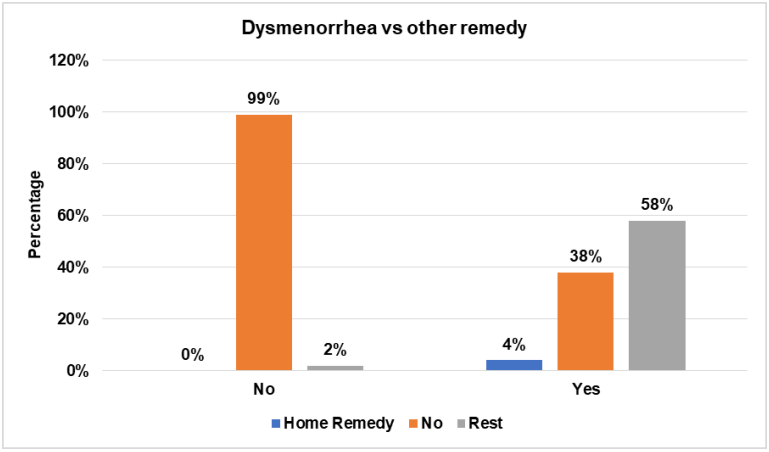

Fig. 8: Percentage distribution dysmenorrhoea versus other remedy

DISCUSSION

It is inferred from our study that the prevalence of self-medication is significant among dental and medical students with similar results from previous studies, probably due to awareness of self-medication and greater access to drug information during their curriculum [12]. Similar to various other studies, a majority reported missing college/work, implicating a negative impact on quality of life with substantial social, economic, and educational consequences [13] respondents used non-pharmacological measures such as massage, topical heat/cooling therapy, exercises which are found to be generally less effective [11, 14, 15].

In 41% of respondents' self-medication was initiated by self/relatives, akin to previous studies [15, 16]. Reasons like lack of initiative to seek medical help, inaccessibility to medical care, dysmenorrhoea considered as insignificant physiological menstrual pain, lack of time to approach a physician as the respondents were students, confidence in self/relatives regarding drug choice based on their prior experience, economical and convenient access to non-pharmacological measures, and readily available OTC drugs may be attributed to the existing above self-medication practices followed by majority of students.

This study showed that the majority of students with moderate to severe dysmenorrhoea resorted to self-medication probably due to the increased burden of morbidity associated with it, necessitating the need for self-medication [17]. Though mefenamic acid was the most commonly used, there existed no statistically significant association between self-medication pattern and severity of dysmenorrhoea, which is similar to the results of a pre-existing study. Mefenamic acid, an NSAID, relieves PD primarily by suppressing endometrial prostaglandin (PG) production, thus alleviating cramps and restoring normal uterine activity. It is also found to decrease the volume of menstrual flow and relieve PG-induced symptoms like headache, bloating, diarrhoea, and breast tenderness [18, 19]. In addition, it is also reported to have direct analgesic action on Central Nervous System (CNS) mediated by interactions with Descending serotonergic pathways, together with modulation of neurotransmission at glycine or N-methyl-D-aspartate receptors independent of cyclo-oxygenase inhibition [20].

LIMITATIONS

The limitations of this study are the small sample size, with only medical and dental students attending a single college. Being a questionnaire-based, the data was retrospective from recollection of memory, and pain relief was based on subjective assessment of the respondents. The results of the study cannot be generalized because it was conducted at a single teaching hospital.

CONCLUSION

In primary dysmenorrhoea (PD), which is spasmodic in nature, the combination of mefenamic acid with dicyclomine is likely to be synergistic. Very few students sought gynecologist consultation. It probably reflects the lack of awareness regarding the appropriate drug of choice, inadequate knowledge regarding treatment and the need for gynecologist advice.

It is observed that the prevalence of self-medication is high among medical students with primary dysmenorrhoea (PD); there is no adequate knowledge of the appropriate selection of effective medication, correct dosing, and awareness of associated side effects and the necessity of gynaecologist advice.

The findings suggest a need to create awareness about the appropriate pharmacological management of primary dysmenorrhoea (PD).

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AUTHORS CONTRIBUTIONS

All authors contributed equally to this work. Dr. Pudutha Madhavi, Dr. N. Karunasree, Dr. Gautham S. N and Dr. Guduru Narayana Prudhvi Raj were involved in the conception and design of the study, data collection, analysis, and interpretation of results. All authors participated in drafting the manuscript, revising it critically for important intellectual content, and approving the final version to be published.

CONFLICT OF INTERESTS

Declared none

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