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Pattern of Self-medication in Primary Dysmenorrhea among Nursing Students at a Nursing College in Eastern Nepal

Deependra Prasad Sarraf,[1] Basant Kumar Karn,[2] Smita Singh[3]

[1]*Department of Clinical Pharmacology and Therapeutics, B. P. Koirala Institute of Health Sciences, Dharan, Nepal;*
[2]*Department of Child Health Nursing, College of Nursing, B. P. Koirala Institute of Health Sciences, Dharan, Nepal;*
[3]*Department of Pharmacology, National Medical College and Teaching Hospital, Birgunj, Nepal.*

ABSTRACT

Introduction: Primary dysmenorrhea (PD) leads to college absenteeism, interference with daily living activities and higher intake of medications without consulting a physician and/or without a valid prescription.

Objectives: To estimate prevalence of PD, to know the pattern of self-medication in dysmenorrhea and to know the impact of dysmenorrhea on academic performance among undergraduate nursing students.

Methods: A cross-sectional study was conducted among undergraduate nursing students at a nursing college in Eastern Nepal using a semi-structured questionnaire consisting of demographic characteristics, impact of dysmenorrhea on academic performance and self-medication practices. A visual analogue scale was used to assess the severity of dysmenorrhea. Descriptive statistics were used to present the findings.

Results: A total of 125 students participated in the study out of which 64 (51.20%) were 21-24 years old. Eighty-four (67.20%) students had PD that had affected academic performance negatively in 81 (96.43%) students. Fifty six (66.67%) students had lack of concentration during study hours due to dysmenorrhea. A total of 42 (50.00%) students practiced self-medication for relieving the pain during dysmenorrhea. Mefenamic acid (90.48%) was the most common used analgesic. Only 29 (69.05%) students were able to mention the correct dose of the analgesic drug they take and 38 (90.48%) students were not able to mention the correct frequency of the drug intake they were taking during dysmenorrhea.

Conclusions: Dysmenorrhea was highly prevalent among nursing students and had affected their academic performance negatively. The self-medication practices were not appropriate in a significant proportion of the students.

Keywords: Dysmenorrhea; nursing students; mefenamic acid; self-medication.

INTRODUCTION

Primary dysmenorrhea (PD) is a common periodic menstrual pain in young women without pelvic pathology characterized by cramping in lower abdomen, starting within the first eight to 72 hours of menstruation. It affects up to three-quarters of women at some stage of their reproductive life.[1,2] Non-steroidal anti-inflammatory drugs (NSAIDs) and hormonal contraceptives are used for the treatment for PD. Complementary and alternative therapies like exercise, acupuncture, herbal medicines, behavioral interventions, topical heat and dietary supplements are also used for relief of pain in dysmenorrhea.[3] Self-medication is the use of medicines by a person for self-treatment based on self-diagnosed symptoms without consulting a physician and/or without a valid prescription.[4] Responsible self-medication can prevent and treat ailments that do not required medical consultation and provides a cheaper alternative for treating common ailments.[5]

PD leads to school and work absenteeism, interference with daily living activities, limitation in socialization, inefficiency and higher intake of

Correspondence
Dr. Deependra Prasad Sarraf
E-mail: deependraprasadsarraf@gmail.com

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medications.[6-8] Self-medication for PD is a common practice with an incidence of 38–80% due to easy accessibility to over-the-counter drugs. This may lead to inappropriate choice of drugs and inadequate therapeutic dose.[9] A large number of young females studying in medical colleges are under regular pressure of medical studies and examination. There is paucity of data on pattern of self-medication in PD among nursing students of Nepal. Therefore, the present study was conducted to estimate prevalence of PD, to know the pattern of self-medication in PD and to know the impact of dysmenorrhea on academic performance.

METHODS

A cross-sectional descriptive study was conducted among B.Sc. nursing students studying at College of Nursing, B.P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal from February to July 2021. Using the formula $n=z^2*p*q/L^2$, the sample size was calculated with a reference to the findings of a study in which prevalence of self-medication was 78.2%.[10] With prevalence (p) of 78.2%, q as 100-p, permissible error (L) of 10% at 95% confidence interval and 80% power and adding 10% as non-responder, the minimum sample size was 119. Convenience sampling method was used. B.Sc. nursing students studying in first to fourth year were enrolled in the study. The students who were known to have pelvic pathology and who did not give consent to participate were excluded.

A semi-structured questionnaire was developed with help of relevant literature.[11-13] It comprised of socio-demographic data (age, residence, academic year), presence of dysmenorrhea and its impact on academic life, pattern of self-medication (name of drug, its dose, duration, frequency) and side effects of the drugs. To find out the severity of dysmenorrhea, a visual analogue scale was used which consisted of score from 1 to 10. The questionnaire was pilot-tested and in twelve MBBS female students (10% of the study population) and was modified accordingly; those students were not be included in the final data analysis.

The ethical approval letter was obtained by Institutional Review Committee, BPKIHS (IRC/2062/020). The objectives of the study were briefed to the participants and written informed consent was sought. The investigator visited the lecture theater during the morning class and the questionnaires were distributed and collected after 15 minute on the same day. No incentive was given to the participants. Personal identifying information like name and contact numbers were not recorded to maintain the confidentiality.

The collected data were checked and reviewed for clarity, accuracy and completeness and were then entered into Microsoft Excel 2010. Based on scores from the visual analog scale, the severity of pain was categorized into mild (score 1-3), moderate (score 4-6) and severe pain (score 7-10).[12,14] Descriptive statistics like mean, standard deviation, percentage and frequency were calculated using Statistical Package for the Social Sciences SPSS version 22.0. The study findings were represented as tables and graphs.

RESULTS

A total of 125 students participated in the study out of which 64 (51.2%) were 21-24 years old and 72 (57.6%) were from Sunsari district (**Table 1**).

Forty-three (34.4%) participants had menarche at 13 years of age (**Figure 1).**

Out of 125, 91 (72.80%) participants had regular cycle and 34 (27.20%) had irregular cycle (**Table 2**).

A total of 84 (67.2%) students had dysmenorrhea. The pain started after three years of menarche in 32 (38.1%) students and 27 (32.14%) of the students stated that their sister also had dysmenorrhea. The pain was severe in 52 (44.05%) students (**Table 3**).

Dysmenorrhea had affected academic performance negatively in 81 (96.43%) students. Fifty six (66.67%) students had lack of concentration during study hours due to dysmenorrhea and 32 (38.10%) were unable to complete the assignment in time (**Table 4**).

Table 1: Socio-demographic characteristics of the participants (n=125).

S.N.	Variables		n	%
1	Age category (years)	18 – 20	61	48.80
		21 – 24	64	51.20
2	Academic years	First	31	24.80
		Second	36	28.80
		Third	26	20.80
		Fourth	32	25.60
3	Residence	Sunsari	72	57.60
		Morang	12	9.60
		Jhapa	10	8.00
		Kathmandu	4	3.20
		Dhanusha	4	3.20
		Others	23	18.40

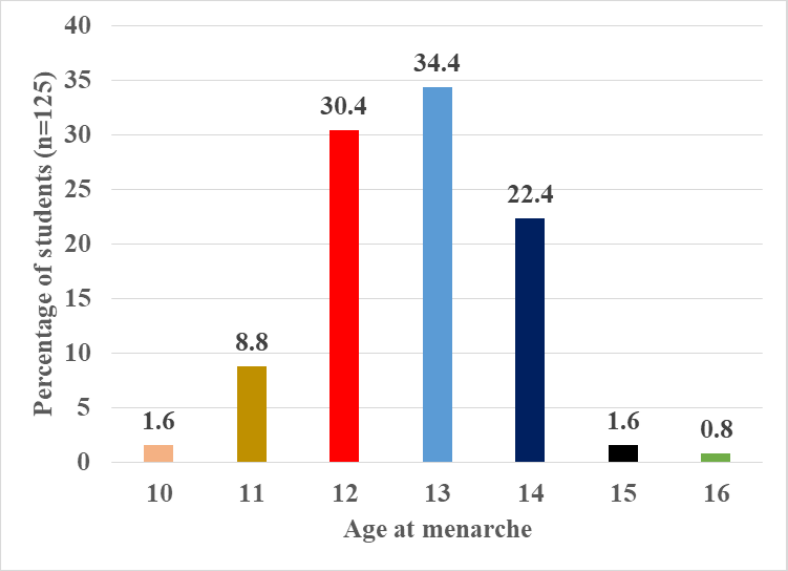

Figure 1: Age of the students at menarche (n=125).

Table 2: Menstrual cycle pattern of the students (n=125).

S.N.	Variables		n	%
1.	Length of your menstrual flow	<5 days	69	55.2
		5 – 7 days	54	43.2
		>7 days	2	1.6
2.	Interval between your menstrual periods	<28 days	29	23.2
		28 – 35 days	85	68
		>35 days	11	8.8

Table 3: Details of primary dysmenorrhea (n=84).

S.N.	Variables		n	%
1	Starting date of menstrual pain	At menarche	26	30.95
		Within 3 years of menarche	26	30.95
		After 3 years of menarche	32	38.10
2	The family member having pain during menstruation	Mother	22	26.19
		Sister	27	32.14
		Both mother and sister	11	13.10
		None	24	28.57
3	Duration of experiencing pain during menstruation	Less than 1 year	10	11.90
		1 – 3 years	16	19.05
		4 years or more	27	32.14
		Not recalled	31	36.90
4	When did the pain start during menstruation?	One day prior to menstrual flow	21	25.00
		2 days before menstrual flow	10	11.90
		More than 2 days before menstrual flow	8	9.52
		On the day of menstruation flow	35	41.67
		After 1 day of menstruation flow	10	11.90
5	Duration of menstrual pain	< 1 day	28	33.33
		1 – 3 days	47	55.95
		>3 days	9	10.71
6	Severity of pain during menstruation	Mild	22	26.19
		Moderate	25	29.76
		Severe	37	44.05
7	Effect of the menstrual pain the sleep	Yes, it disturbs the sleep.	52	61.90
		No, it does not disturb the sleep.	32	38.10

Table 4: Effect of dysmenorrhea on academic performance (n=84).

S.N.	Variables		n	%
1.	Effect of menstrual pain during attending the class/lecture	Absent in the class	17	20.24
		Lack of concentration during study hours	56	66.67
		Difficulty in remembering all that is studied	11	13.10
		Feeling hesitation to go for practical or clinical posting	14	16.67
		None	3	3.57
2.	Effect of the menstrual pain on assignments	Unable to complete the assignment in time.	32	38.10
		Not able to do critical thinking	30	35.71
		Feel to get excuse from teachers	9	10.71
		Not able to do presentations	11	13.10
		Unable to participate in group-work	10	11.90
		None	12	14.29
3.	Effect of the menstrual pain examination	Missed the examination	0	0.00
		No interest to write examination during this time	8	9.52
		Not able to prepare for examination properly	29	34.52
		Getting slow in writing examination	16	19.05
		Lack of concentration	34	40.48
		Poor performance	17	20.24
		None	11	13.10

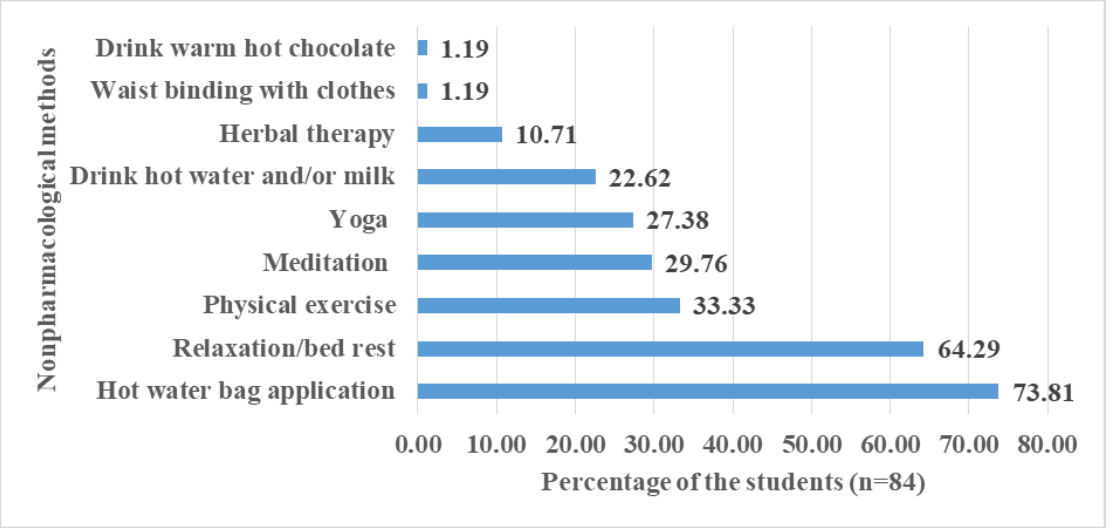

Figure 2: Non-pharmacological methods practiced by the students for relieving of pain in dysmenorrhea (n=84).

Table 5: Self-medication practices in dysmenorrhea (n=42).

S.N.	Variables		Frequency	Percentage
1	Frequency of intake of medicines to relieve/lessen menstrual pain	Every month during menstruation	11	26.19
		Sometimes	20	47.62
		Occasionally	11	26.19
2	Duration of intake of medicines to relieve/lessen menstrual pain	1 days	33	78.57
		2 days	6	14.29
		3 days	2	4.76
		4 days	1	2.38
3	Name of the medicines taken to relieve/lessen menstruation pain	Mefenamic acid	38	90.48
		Ibuprofen+Paracetamol	3	7.14
		Paracetamol	2	4.76
		Nimesulide	1	2.38
4	Able to mention the correct dose of the drugs	Yes	29	69.05
		No	13	30.95
5	Able to mention the correct frequency of the drugs intake	Yes	3	7.14
		No	39	92.86
7	Experience of any side effects of the drug during its use for relieving the menstrual pain	Yes	4	9.52
		No	38	90.48

Non-pharmacological methods practiced by the students for relieving of the pain during dysmenorrhea were hot water bag application (62, 73.81%) followed by relaxation/bed rest (54, 64.29%) (**Figure 2**).

A total of 42 (50%) students practiced self-medication for relieving the pain during dysmenorrhea. Most of the students (47.62%) took analgesics sometimes to relieve/lessen menstrual pain and 33 (78.57%) took the drugs for 1 day. Mefenamic acid (90.48%) was the most common used analgesic by the student for dysmenorrhea. Only 29 (69.05%) students were able to mention the correct dose of the analgesic drug they were taking and 38 (90.48%) students were not able to mention the correct frequency of the drugs intake (**Table 5**).

DISCUSSION

Primary dysmenorrhea is a crampy, recurrent pain in the lower abdomen during menses in the absence of demonstrable disease and is one of the most common problem affecting majority of the females of reproductive age group. It has a major impact on the quality of life, work productivity and health-care utilization.[15] The undergraduate nursing students are usually within the adolescent and adulthood period. They face a lot of challenges relating to reproductive life issues that may have profound effect on their day to day life issues including academic performance.[16] The present study had found that majority of the undergraduate nursing students (34.40%) had menarche at 13 years of age. Similar findings were also reported by Rakhshaee et al in which majority of participants (74.30%) had menarche at the age of 13-14 years.[17] However, this finding was different than the results from Ogunnaike et al in which 46.90% had their first menstruation between the ages of 9-11 years.[18]

The present study found a high prevalence of dysmenorrhea (67.20%) among the students and similar findings were also reported in other studies.[19,20] This finding was lower than studies conducted in Iran (73.2%).[17] Nearly one-third (32.14%) of the students had positive family history of dysmenorrhea in the first-degree relatives and similar finding was also reported by other studies.[19,21] The pain was severe in more than one-third (44.05%) of the students which was similar to a study done in Iraq (44.4%).[22] The severe pain during dysmenorrhea may be also due to secondary causes like endometriosis which is an estrogen-dependent inflammatory disease characterized by ectopic growth of endometrial stroma and glands affecting 5% to 15% of women of reproductive age.[23] Therefore, the timely consultation with the gynecologist might help the students having severe pain during menstruation. In the present study, it was found that dysmenorrhea began at the onset of menstrual flow (41.67%) and mostly lasted for one to three days (55.95%). This was comparable to the finding of Rakhshaee et al.[17] There is increased endometrial synthesis of prostaglandins during menstruation in dysmenorrhea and the prostaglandins cause uterine contractions resulting in pain.[10] Over half of students had sleep disturbance during dysmenorrhea which was similar to finding of Saeed et al.[22]

Dysmenorrhea is one of the most distressing problems among the undergraduate nursing students which affects the daily routine including the academic performance, assignment and examination and the present study supported this. Dysmenorrhea had affected academic performance in majority (96.43%) of the students. More than two-thirds (66.67%) of the students had a lack of concentration during study hours and more than one-third (38.1%) students were unable to complete the assignment in time. These findings were similar to other studies.[17,22] Menstrual leave act is practiced in Taiwan and some other countries that states that women whose dysmenorrhea condition affects their work performance may take menstrual leave one day per month.[24-26] Similar rule should be practiced in our country for women. Menstrual leave may have the potential to help the students take the time off the classes that they need to resolve menstrual symptoms.

It was interesting to find out that different non-pharmacological methods were used by the students for the pain relieve and it consisted of hot water bag application, relaxation/bed rest, meditation, yoga and physical exercise. Similar findings were also reported by other studies.[22,27] Complementary and alternative therapies like exercise, acupuncture, moxibustion, Chinese herbal medicines, behavioral interventions, topical heat, dietary supplements and transcutaneous electrical nerve stimulation therapy are also beneficial in dysmenorhea.[3,28] Therefore, the practice of these methods should be encouraged.

The present study found that half of the students (50%) with dysmenorrhea practiced self-medication. In contrast to this, lower percentage of the students practiced self-medication in other studies.[9,29,30]

Fatima et al had reported a high prevalence (62.98%) of self-medication in dysmenorrhea.[31] These difference might be due to difference in knowledge level of analgesics, availability of drugs and extent of perceived difficulty of painful menses. Practice of self-medication offers easy access to the over the counter drugs and saves the costly and time-consuming clinical consultations. However, the students should also think of safety issues as a major concern because many diseases might have similar symptoms and there is always chances of an increased risk of misdiagnosis, side effects, drug abuse and misuse. Additionally, self-medication becomes risky sometimes if the individual does not have enough knowledge and understanding of the disease and the medications.[31] The nursing students should be aware of these things as they would become future nurses and may find themselves counseling patients on safe use of medicines.

In the present study, majority of the students (90.48%) use analgesics during dysmenorrhea. Similar findings were also reported by Anand et al.[27] In contrast to this, 78% students consumed antispasmodics and only 22% use analgesics during dysmenorrhea.[29] NSAIDs and hormonal contraceptives are commonly used for treatment for PD and their long-term use may increase the incidence of adverse reactions.[32-35] NSAIDs are taken before the onset of menses and continued through day two for a sustained analgesic effect. But our finding indicated that majority (78.57%) of students used to take these medications when pain started indicating the need for professional consultation. Mefenamic acid was the most common used analgesic by the majority of the students (90.48%) for dysmenorrhea and this finding was similar to the report of Chaurasia et al.[30] In contrast to this, mefenemic acid+dicyclomine (67.4%) was the most common used analgesic by the students in a study by Jayanthi et al.[36]

More than one-third of the students (30.95%) were not able to mention the correct dose of the analgesic drug they were using and majority of them (90.48%) were also not able to mention the correct frequency of the drug intake. This unsafe practice of self-medication might have serious implications including harm to themselves and a constant risk of medication error. This might be due to lack of awareness of the appropriate dose of the drug. Proper educational programs on dysmenorrhea and its management with medications should be given to the students as well as to parents, school teachers, academicians, leaders and hostel administrators that will help to minimize the harmful effects of unsafe self-medication practices. The present study had some limitations. The study had small sample size. The self-reporting nature of the present study might have resulted in a recall bias and over-reporting or under-reporting of the condition. The factors affecting dysmenorrhea like smoking, obesity and stress were not assessed.

CONCLUSIONS

The prevalence of dysmenorrhea along with self-medication practice was high among the nursing students and had affected their academic performance negatively. Mefenamic acid was the most common drug used by the students for self-medication during dysmenorrhea. However, the self-medication practices were not appropriate in a significant proportion of the students with inadequate knowledge regarding appropriate therapeutic doses and frequency of the drug intake. It is very important to create awareness about the causes and treatment of dysmenorrhea and appropriate self-medication practices. Health professional consultation must be promoted to help students with dysmenorrhea.

Conflict of interest: None

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