

Knowledge, attitude and practice of self-medication of mefenamic acid in dysmenorrhea among health science students

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Abstract

Background: Self-medication(SM) is widely practiced in developed and developing countries. SM is very common nowadays because it is accessible, cheap, rapid and convenient solutions. Self-medication is an important public health issue which may affect children and adolescents. Incorrect diagnosis, improper dosage, drug interaction can be seen due to SM. Dysmenorrhea is the one of the most common public health problems which may produce negative impact on female, health, school, work activities and psychological state. The prevalence of dysmenorrhea can be found in between 48.4-84.2% of all reproductive age women in different countries like US, Japan, India. Mefenamic acid is commonly used medication in dysmenorrhea. Mefenamic acid is non-steroidal anti-inflammatory drug (NSAID) can be used for the acute treatment of pain. It is the anthranilic acid derivative class of NSAIDS.

Objective: To assess the knowledge, attitude, and practice of self-medication of mefenamic acid in dysmenorrhea among health science students.

Methodology: The descriptive cross-sectional study was conducted on 343 health science students who were practicing self-medication in dysmenorrhea from May to July 2023 using self- administered questionnaire.

Results and Conclusions: Out of 343 participants, 55.70% of the respondents have an adequate knowledge of self-medication but 44.30% have an inadequate knowledge of self-medication. 76.10 % of the respondents are doing correct practice and 23.90% are doing incorrect practice. 64.4% have positive attitude towards self-medication in dysmenorrhea and 35.6% of the respondents have negative attitude towards self-medication in dysmenorrhea. The study findings highlight need to aware young females regarding self-medication to provide knowledge of benefits, adverse effects, and their impact on health due to wrong use of medication.

Keywords: Self- medication; Dysmenorrhea; Mefenamic Acid; Health science students; NSAID

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1. Introduction

According to the WHO, Self-medication is the selection and use of the drugs to treat self-diagnosed disorders or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms. Self-medication is widely practiced in developed and developing countries. Self-Medication is very common nowadays because it is accessible, cheap, rapid and convenient solutions [1]. Self-medication is an important public health issue which may affect children and adolescents. Incorrect diagnosis, improper dosage, drug interaction can be seen due to SM. People may not be aware about the warning, precaution, storage condition, shelf life and adverse drug reactions which may lead to an increase in the risk of side effects [4].

The lower abdominal pain or pelvic pain which may be radiating to the lower back, legs and inner thighs is known as Dysmenorrhea [5]. Dysmenorrhea is the one of the most common public health problems which may produce negative impact on female, health, school, work activities and psychological state [5]. The prevalence of dysmenorrhea can be found in between 48.4-84.2% of all reproductive age women in different countries like US, Japan, India. Dysmenorrhea can be classified into two categories. Primary dysmenorrhea and Secondary dysmenorrhea.

PD can be defined as painful period in women with normal pelvic anatomy begins during adolescence and lasts up to reproductive age [1]. Prevalence of dysmenorrhea was found to be more than 50% women with severe pain in 2% 29% of women studied. Worldwide, the prevalence of dysmenorrhea can be found between 48.4-84.2% among women of reproductive age [3]. It is affecting daily activities of women and quite severe in about 10%. In context of Nepal, the prevalence among medical students was reported as high as 94%. 64.4% practice self-medication in dysmenorrhea. 14% of 499 female consume Mefenamic acid globally [4]. 26% of 641 females in India and 48% of 269 females in Nepal consume Mefenamic acid without prescription or without consulting healthcare professionals [1, 17].

Knowledge, attitude, and practice of self-medication of Mefenamic acid dysmenorrhea will be studied and their analysis will be done to give the final result. Providing awareness about self-medication of Mefenamic acid has also been a challenging issue. One of the important reasons of self-medication of Mefenamic acid is being unaware of side effects or seeking immediate relief in severe pain.

This study aims to find the knowledge attitude and practice of mefenamic acid among health science students of Purbanchal University and CTEVT. Several studies have reported that SM starts with onset of adolescence and increases with age. Therefore, SM among the health science students is an important topic in scientific research.

The objective of the study is to assess the knowledge, attitude, and practice of self-medication of mefenamic acid in dysmenorrhea among health science students.

1.1. Conceptual Framework

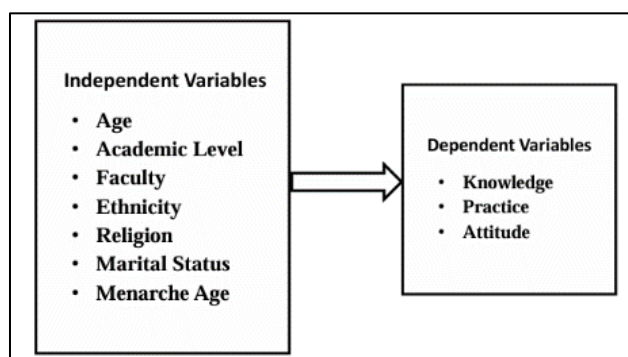


Figure 1 Conceptual Framework

2. Methodology

2.1. Study Design

The descriptive cross-sectional study was conducted among health science students who were practicing self-medication in dysmenorrhea.

2.2. Study Area

This study was conducted among Health Science students at Health Science Colleges affiliated to Purbanchal University and CTEVT at Kathmandu Valley.

- Asian College for Advance Studies
- Shankarapur Academy
- Little Buddha College of Health Science
- Kantipur Academy of Health Science

Four colleges were selected by non-probability convenient sampling method. . Primary data were collected via semi-structured questionnaire to assess knowledge, attitude and practice of health science students towards self-medication of mefenamic acid in dysmenorrhea.

2.3. Duration of Study

6 months

2.4. Study Variables

2.4.1. Independent Variables:

- Age
- Marital status
- Faculty
- Menarche Age

2.4.2 Dependent Variables

- Knowledge
- Practice
- Attitude

2.5. Study Population

2.5.1. Inclusion Criteria

- Female students of age group 18 years and above
- Students with Dysmenorrhea.
- Females who were practicing self-medication in dysmenorrhea.

2.5.2. Exclusion Criteria

- Students who were below 18 years.
- Students other than Health Science Students.
- Students who were not willing to participate.

2.6. Sample Size and Sample techniques

The sample size was calculated by using cross sectional formula for finite population.

$$n = Z^2 pq / E^2$$

Where,

n= required sample size

Zα= statistics for a level of confidence (66.3% at 95% confidence interval)

p = prevalence = 0.663

$$q = 1-p = 1-0.663 = 0.337$$

$$E = \text{margin of error} = 5\% = 0.05$$

At 95% confidence interval,

$$1-\alpha = 0.95$$

$$\alpha = 0.05$$

$$Z_{\alpha} = Z_{0.05} = 1.96 \text{ (from table)}$$

$$\text{Now, } n = (1.96)^2 (0.663 \times 0.337) / (0.05) = 343$$

Hence, the sample size was 343. .

2.7. Data Collection and Analysis

The tools used for data collection was self-administered questionnaire. The questionnaire was prepared by using suitable literatures as reference and it contained of 34 multiple choice questions

- Data entry and data analysis was performed using SPSS.
- For descriptive analysis, continuous data was expressed as Mean +Standard deviation.
- Frequencies and percentage were calculated.
- Correct answers and “yes” were scored as 1, while incorrect answers and “no” were scored as 0.

Median was calculated. Knowledge below median was defined as inadequate and knowledge equal to and above median was defined as adequate knowledge.

Attitude was evaluated using Likert scale. Strongly agree -5, Agree-4, Neutral-3, Disagree-2, Strongly disagree-1. ¹⁷

For practice also correct answers and “yes” were scored as 1, while incorrect answers and “no” were scored as 0. Median was calculated. Practice below median was defined as incorrect practice and practice equal to and above median was defined as correct practice.

For inferential analysis, association between the sociodemographic characteristics like age, marital status, religion, faculty, academic year, ethnicity, age at which respondents got their first period and self-medication of mefenamic acid in dysmenorrhea was generated by using Chi-square test or Fisher exact test (if $n < 5$).

A p value less than 0.05 was considered as level of significance.

2.8. Ethical Consideration

Ethical approval was taken from IRC of Asian College for Advance Studies. Formal permission was taken from supervisor and advisors. The collected information was used for study purpose only. The confidentiality of information was maintained unless there are no legal issues.

2.9. Operational Definition

Knowledge: - means theoretical and practical understanding of the subject matter.

- 3-6: - Adequate Knowledge
- 7-11: - Inadequate Knowledge

Attitude: - a predisposition or a tendency to respond positively or negatively towards a certain idea, object, person or situation.

- 14-19: - Negative Attitude
- 20-29: - Positive Attitude

Practice: - Application of knowledge or practical approach to the subject matter.

- 2-6: - Incorrect Practice
- 7-9: - Correct Practice

3. Results

Age distribution of the study population shows that most of the (60.3%) respondents were of age group 25-27, 29.4% were of age group 21-24 and 10.2% were of age group 18-20. The mean age was found to be 24.25 ± 2.18 (mean \pm SD).

Marital status distribution of respondent's shows majority of the respondents were unmarried (95%) and minority (5%) were married.

3.1. Faculty distribution of the respondents

Table 1 Faculty distribution of the respondents

Faculty of Respondents	Frequency (f)	Percentage (%)
Diploma in Pharmacy	97	28.3
Bachelor in Pharmacy	85	24.8
Bachelor in public health x	40	11.7
Nursing	69	20.1
Health Assistant	21	6.1
Others	31	9.0

3.2. Distributions of Age of First Period

Table 2 Distribution of Age of First Period

Menarche Age (Years)	Frequency (f)	Percentage (%)
10-12	110	32.1
13-16	233	67.9

3.3. Practice of Respondents

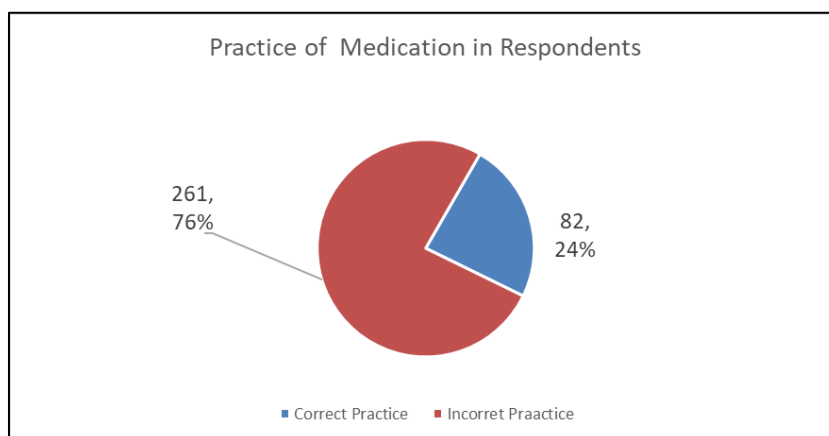


Figure 2 Practice of Medication

3.4. Level of Knowledge of self-medication

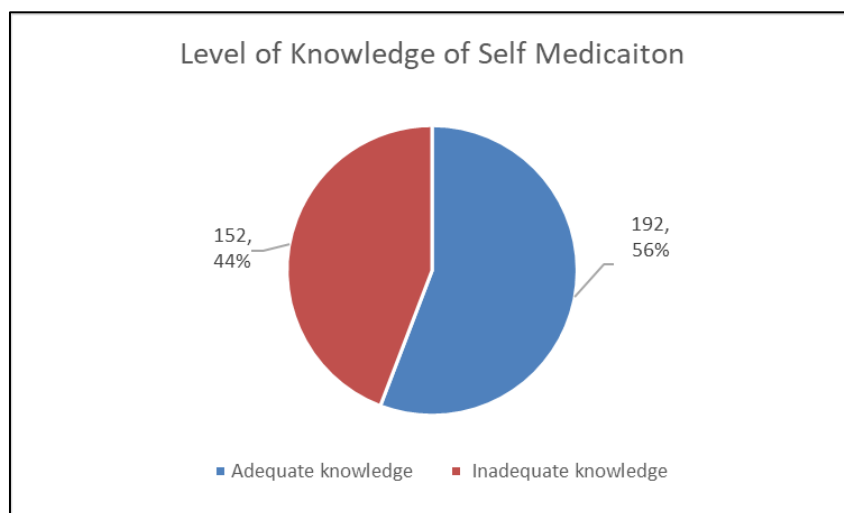


Figure 3 Knowledge of self-medication

3.5. Attitude of Respondents

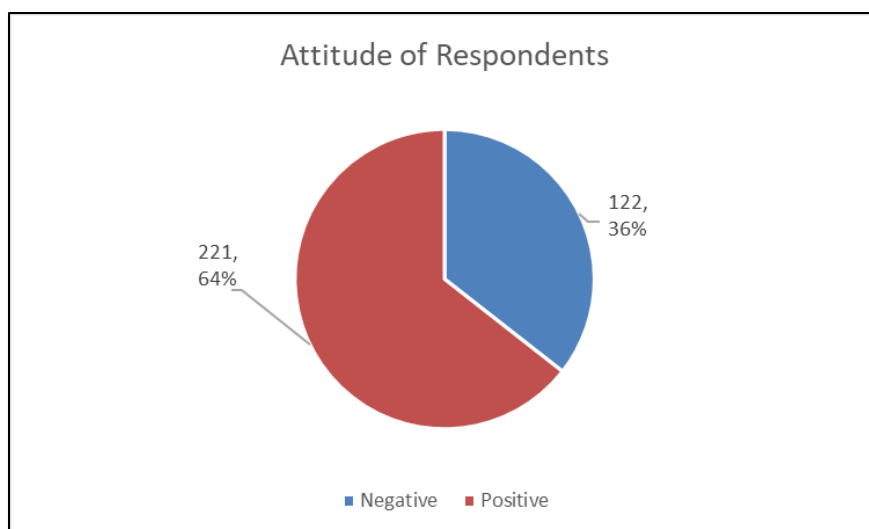


Figure 4 Attitude of Respondents

3.6. Knowledge of self-medication of Mefenamic Acid

Table 3a Knowledge of self-medication of Mefenamic Acid

Question	Frequency (f)	
	NO	YES
Do you know about self-medication	44 (12.8 %)	299 (87.2%)
Do you know the correct dose	210 (61.2%)	133 (38.8%)
Do you know the correct frequency and duration of drug	194(56.6 %)	149 (43.4%)
Do you think self-medication is always advantageous	279 (81.3)	64 (18.70
Is mefenamic acid safe to consume	128(37.3 %)	215 (62.7%)
Does long term use of mefenamic acid result in adverse effect	40 (11.7%)	303(88.3%)

Does long term use of mefenamic acid result in dependency	75(21.9%)	268 (78.1%)
Mefenamic acid should be taken according to recommended dose	17(5.0 %)	326(95.0%)
You can increase and decrease the dose as much as you want	320 (93.3%)	23(6.7%)
You should stop taking medication as soon as you feel better	114(33.2%)	229 (66.8%)

Among those respondents who think self-medication is always advantageous as per Table 3, i.e. 64, why do they find it advantageous was questioned with following results

Table 3b Why to respondents think self-medication is advantageous (among total 64 respondents)

Reason	Frequency (f) Percentage	Percentage (%)
Quick relief	45	70.3
Convenient use	10	10.9
Economical	2	3.1
Time saving	7	10.9
Total	64	100.0

Table 3c Knowledge about use of mefenamic acid

Use	Frequency (f)	Percentage (%)
Dysmenorrhea (painful period)	329	95.9
Oligomenorrhea (irregular period)	6	1.7
Gastritis	7	2.0
Headache	1	0.3

3.7. Attitude towards self-medication in dysmenorrhea

Table 4 Attitude towards self-medication in dysmenorrhea

S.N	Question	Frequency (f)				
		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	You should take medication for dysmenorrhea	15 4.4 %	159 46.45	74 21.6 %	79 23.0%	16 4.7%
2	Medication always cures the pain	9 2.6%	100 29.2%	54 15.7%	54 15.7%	16 4.7%
3	Taking medication without consulting healthcare professionals is right	133 38.8%	187 54.5%	6 1.7%	10 2.9%	7 2.0%
4	Consequences of self-medication may affect your health adversely	5 1.5%	16 4.7 %	16 4.7 %	202 58.9%	104 30.3%
5	Self-medication of mefenamic acid should be controlled	0	28 8.2%	37 10.8%	219 63.8 5	59 17.2%
6	Proper dose should be taken by consulting healthcare professionals	3 0.9%	4 1.2 %	5 1.5 %	152 44.3 %	179 52.2%

3.8. Practice of Self-medication

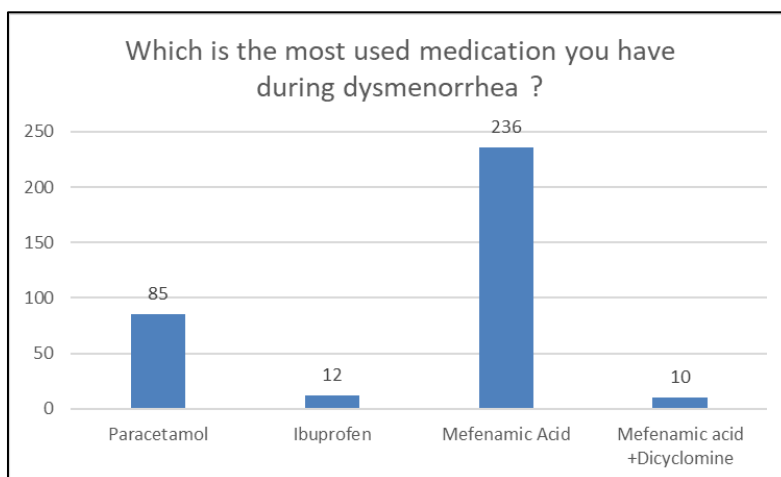


Figure 5 Medicine used in dysmenorrhea

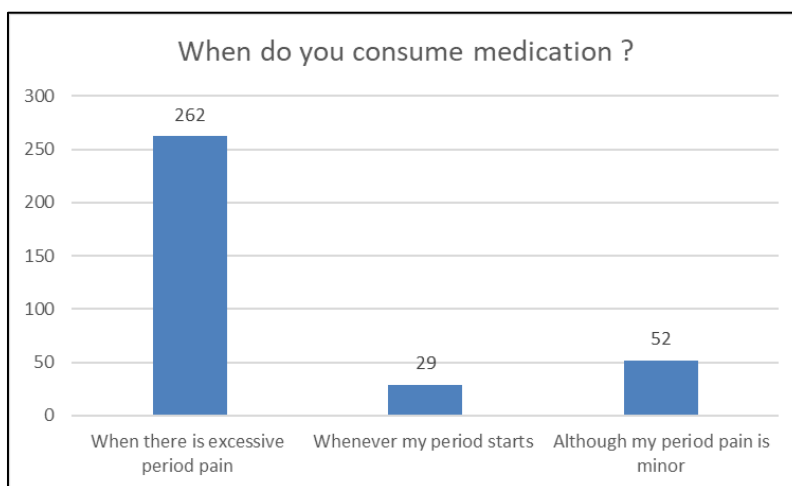


Figure 6 When does respondent consume medication?

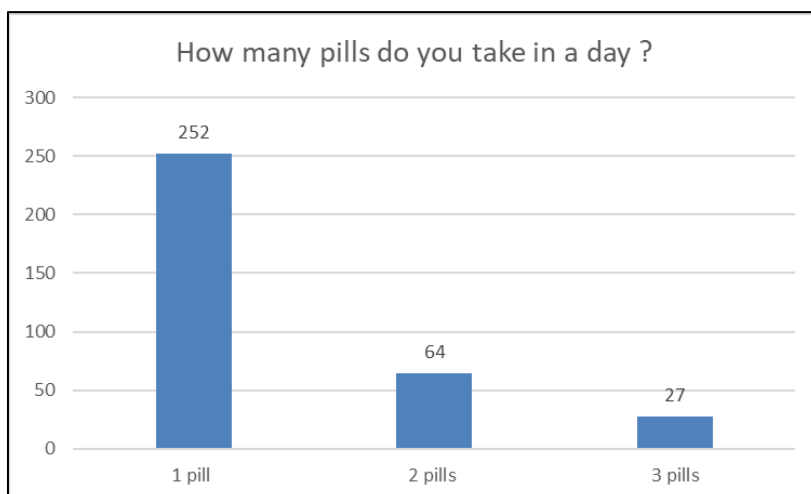


Figure 7 Number of Pills per day

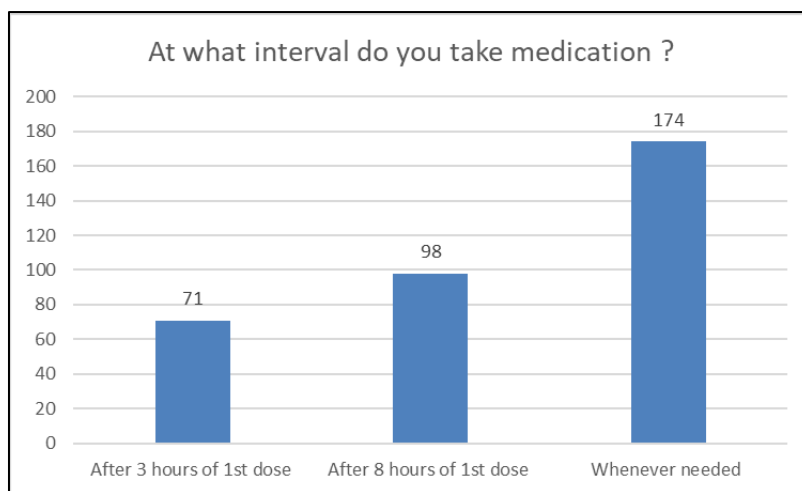


Figure 8 Interval of taking medication

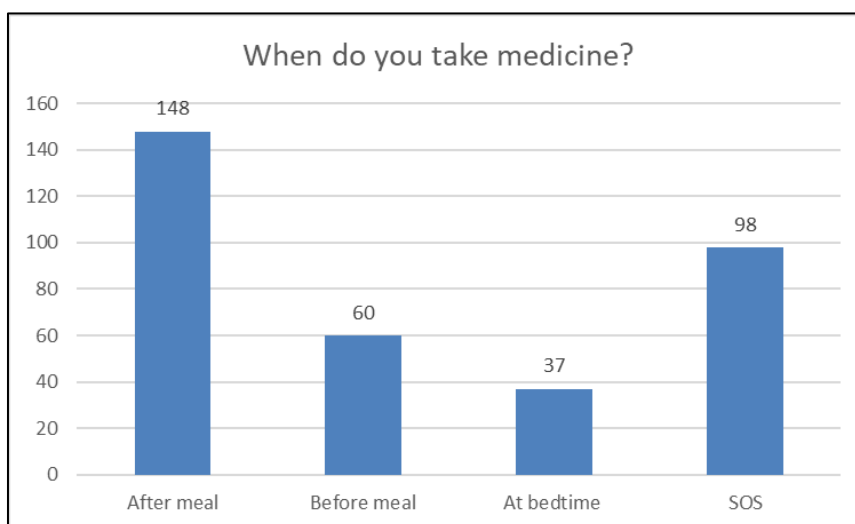


Figure 9 Time of taking medication

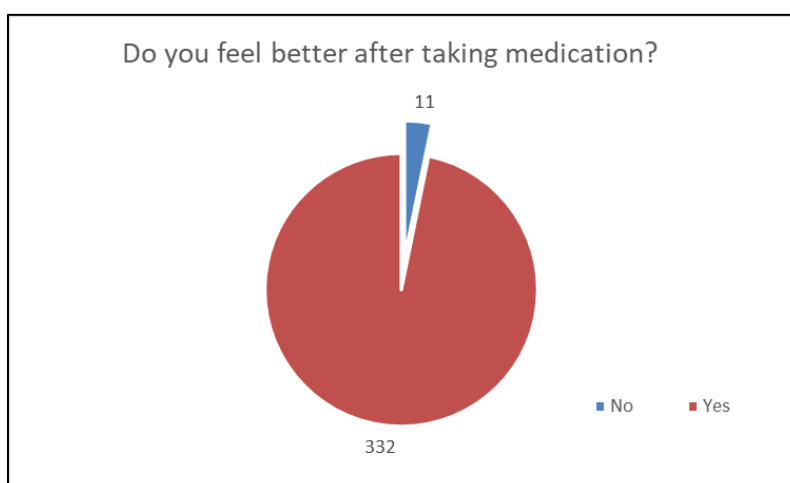


Figure 10 Respond after taking medication

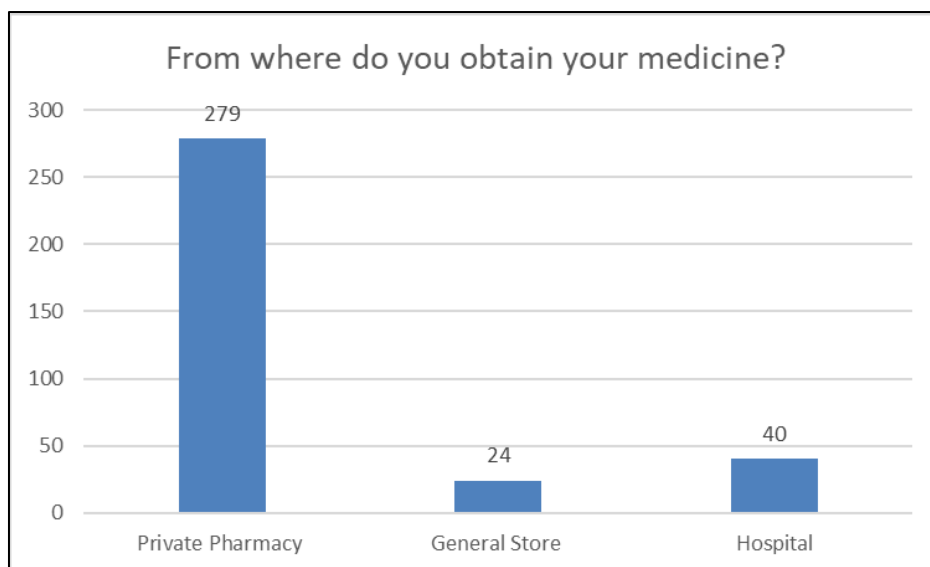


Figure 11 Source of medicine

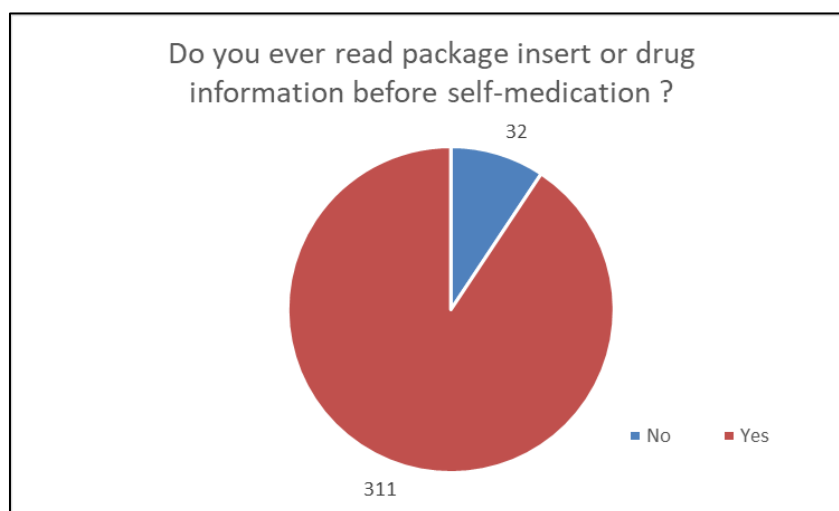


Figure 12 Requirement of information before medication

Table 5 Location of storage of Medicine

Where do you usually store medication	Frequency (f)	Percentage (%)
Refrigerator	17	5.0
Medicine box	321	93.6
Kitchen rack	5	1.5

Table 6 Respondent response on change in shape, color and odor

What do you do if the drug shows a change in shape, colour, and odour	Frequency (f)	Percentage (%)
Immediately discard the drug	328	95.6
Continue using until it expires	11	3.2
Continue using it even after it expires	4	1.2

3.9. Association of Socio-Demographic characteristic with knowledge

Table 7 Age and level of knowledge

	Level of Knowledge		
Age	Adequate	Inadequate	p value (chi square)
18-20	11 (5.8%)	24 (15.8%)	0.009
21-24	60 (31.4%)	41 (27.0%)	
25-27	120 (62.8%)	87 (57.2%)	

Table 8 Marital status and Level of knowledge

	Level of Knowledge		
Marital Status	Adequate	Inadequate	p value (chi square)
Married	11 (5.8%)	6 (3.9%)	0.442
Unmarried	180 (94.2%)	146 (96.1%)	

Table 9 Faculty and Level of knowledge

	Level of Knowledge		
Faculty	Adequate	Inadequate	p value (chi square)
Diploma in Pharmacy	49 (25.7%)	48 (31.6%)	0.549
Bachelor in Pharmacy	48 (25.1%)	37 (24.3%)	
Bachelor in Public Health	21 (11.0%)	19 (12.5%)	
Nursing	43 (22.5%)	26 (17.1%)	
Health Assistant	10 (5.2%)	11 (7.2%)v	
Others	20 (10.5%)	11 (7.2%)	

Table 10 Menarche age and level of knowledge

	Level of Knowledge		
Menarche Age	Adequate	Inadequate	p value (chi square)
10-12	64 (33.5%)	106 (69.7%)	0.522
13-16	127 (66.5%)	46 (30.3%)	

4. Discussion

Dysmenorrhea characterized by painful menstrual cramps, is a common gynecological condition that affects a significant number of women worldwide [14]. Among the commonly used over-the-counter drugs for dysmenorrhea, mefenamic acid stands out as a nonsteroidal anti-inflammatory drug (NSAID) with analgesic and anti-inflammatory properties [15]. Self-medication, defined as the use of medications without the guidance or prescription of a healthcare professional, has gained popularity as a convenient approach to managing dysmenorrhea [16]. Understanding the knowledge, attitudes, and practices surrounding self-medication with mefenamic acid in dysmenorrhea is crucial to ensure safe and effective use of the drug and promote women's health.

This study involved 343 participants who are females, which is more than that of the study conducted by Bharati et.al. [1].

The current study showed that more than half of the respondents (55.7%) had an adequate knowledge of the self-medication which was less than the finding of Malla et.al, [7], (90.43%) conducted among medical and dental students. Our finding was more than the study done by Kaewmoongkun et.al. among public health students (6.7%) [3] and also more than the finding of Shah et.al. (14.6%) among university students [8]. The variation in the knowledge might be due to the different sample size and only inclusion of female participants.

Less than half of the respondents (44.3%) had inadequate knowledge which was more in contrast to the study done by Malla et.al. (9.566%) since it was done among medical and dental students [7]. Two third of the respondents were found to have correct practice (76.1%) of self-medication which was more than the study conducted by Malla et.al., (37.39%) [7] and more (47.64%) than the finding in the study conducted by Shah et.al., which was conducted among university students [8]. Only 23.9% of the respondents were found to have incorrect practice in our study which was less (36.47%) than the study done by Shah et.al., [9] and was found to be less than the finding of Malla et.al., [7]. Variation in the result might be due to the different sample size and inclusion criteria. The current study revealed that majority (64.4%) of the participants were found to have positive attitude towards self-medication in dysmenorrhea which was less (99.13%) than the study done by Malla et.al., [7] more (40%) than the study done by Kaewmoongkun et.al., [3] and was found to be more (>50%) than the finding of Bekele et.al [12]. Our finding was more (55.5%) than the result revealed in the study conducted by Siraj et.al., among undergraduate health science students in Ethiopia [11].

In the present study, the mean age of the respondent was 24.25 ± 2.18 (mean \pm SD) which was more than in the study of Chen et.al., (19.21 ± 1.026), Chaurasia et.al., (18.92 ± 2.52) and Gyawali et.al., (20.16 ± 1.24) [2, 19]. Most of the study participants were unmarried (95%) which was more (82.7%) to the finding of Chaurasia et.al.[2] but in the study conducted by Bekele et.al., majority (66.68%) of the respondents were married [12].

Minority (35.6%) of the respondents were found to have negative attitude towards selfmedication in dysmenorrhea which was more (0%) than the finding of Kaewmoongkun et.al [3].

The current study showed that there is significant association between knowledge of self-medication and age ($p=0.009$), which indicates that the level of knowledge increases with the age which was different from the finding of Siraj et.al. ($p=0.095$, in pharmacy students) [11] and it was not significantly associated ($p=0.448$) in the study done by Gyawali et.al.,[19]. The finding of current study might be due to the inclusion of health science students from more than one faculty.

The menarche age was minimum 10 and maximum 16 which was similar (minimum 10 and maximum 17) to the study done by Kaewmoongkun et.al [3]. Among all the respondents, most of them (87.2%) knew about the self-medication. In the present study, majority of the respondents (61.2%) were unaware of the correct dose which was similar to the study conducted by Malla et.al., (63.4%) [7]. In the current study, more than half of the respondents (56.6%) did not have knowledge about correct frequency and duration of drug which was similar in contrast to the study done by Malla et.al [7].

In this study, most of the study population (81.3%) thought that self-medication was not always advantageous. Only a few respondents (64, 18.7%) thought it was advantageous. Among those 64 respondents, most of them (70.3%) thought the advantage of self-medication was quick relief which was more than the study conducted by Pathak et.al [6], and more than in the study conducted by Loni et.al., at Majmaah University [18]. Only 0.6% thought its economical and 2% thought its time saving which was very less than the study conducted at Majmaah University [18]. Only 2.9% gave the reason as convenient use which was less than the study done by Pathak et.al. [6].

In the present study, almost all respondents (95.9%) knew that mefenamic acid is used in dysmenorrhea which was much more than study of Bekele et.al [12]. In current study, more than half of the respondents (62.7%) thought that mefenamic acid was safe to consume which was more than that of the study conducted by Malla et.al.[7] and almost similar to the study conducted by Pathak et.al [6].

The present study showed that most of the respondents (88.3%) believed that long term use of mefenamic acid results in adverse effect which was less than that of study done by Malla et.al. [7], more than that of finding of the study done by Bekele et.al.,[12] and more than that of the study done by Siraj et.al.[11]. In this study, most of the respondents (78.1%) thought that long term use of mefenamic acid results in dependency which was less than in the study done by Malla et.al.[7]. In the present study, almost all the respondents believed that mefenamic acid should be taken according

to recommended dose which was similar to the finding of Malla et.al. [7]. The current study showed that most of the respondents (93.3%) thought that they can't increase and decrease the dose as much as they want which was much more than the study done by Siraj et.al.[11]. Two third of the respondents (66.8%) believed that they should stop taking medication as soon as they feel better which was more than the finding of Pathak et.al.[6] .

In the present study, two third of the respondents (68.8%) used mefenamic acid (Meftal) during Dysmenorrhea which was more than the study conducted by Malla et.al. [7]. 24.8% used Paracetamol which was similar to the study done in Serbian medical students. In context of Nepal mefenamic acid (48%), Ibuprofen (20.3%) and Paracetamol (16.3%) [6]. Also in the current finding, only a few respondents used Mefenamic acid+ Dicyclomine which was less than the finding of Bharati et.al [1]. Among the study participants, majority of the study population consumed medication when there was excessive period pain. A few respondents consumed medication whenever their period started which was less than in the carried out by Bekele et.al.,[12]. Very less respondents consumed medication although their period pain was minor which was much less than the finding of Bekele et.al [12]. More than two third of the respondents took 1 pill a day. Half of the respondents took medication whenever needed without consistent interval. Most of the respondents (43.1%) took medication after meal. Very less respondents took before meal and only a few participants took at bedtime which was incorrect practice. Almost all respondents (96.8%) felt better after taking the medication which was nearly similar to the study done by Malla et.al. [7] and more than that of the finding of Bharati et.al. [1].

Majority of the study population (81.3%) obtained medicine from private pharmacy which was similar to the study conducted by Malla et.al. and Pathak et.al. [6, 7]. Very few of the respondents obtained medicine from General store which was less than the finding of Pathak et.al. [6]. the current study showed that most of the respondents (90.7%) read the package insert or the drug information before self-medication which was similar to the study conducted by Pathak et.al. [6]. In the present study, most of the respondents (93.6%) stored the mefenamic acid in medicine box which was almost double than in the study done by Bekele et.al., Very few stored in refrigerator which was similar to the finding of Bekele et.al., and Only 1.5% stored in Kitchen rack which was almost similar to the study conducted by Bekele et.al.[12] . Majority of the respondents (95.6%) immediately discarded the drug which was similar to the study done by Bekele et.al.. [12] ,3.2% continued using it expired which was 1.2% continued using it even after it expired which was very less than the finding of the Bekele et.al. [12].

5. Conclusion

In our study total study population taken was 343 and study was conducted among health science students of Purbanchal University and CTEVT. It was found that more than half of the respondents had an adequate knowledge. The age category and academic year of the respondents were significantly associated with the knowledge of self-medication whereas marital status, religion, faculty, ethnicity and menarche age were not significantly associated with knowledge. Predominantly, health science students of age group 25-27 years and those studying in 4th year were found to have adequate knowledge. In our study, 82.2% of the respondents were found to have positive attitude whereas 10.8% were found to have negative attitude towards self-medication in dysmenorrhea Majority (76.1%) of the respondents were doing correct practice whereas 23.9% were doing incorrect practice of self-medication in dysmenorrhea.

The study was done in female only since the study was about dysmenorrhea. The strength of the study was the high response rate and adequate sample size. Our study was conducted among students studying in various faculties and academic year.

The study was done only in health science students of Purbanchal University and CTEVT in Kathmandu Valley so it can't be generalized. The study included only female respondents who practiced self-medication. The findings were only from self-administered questionnaire and hence it depends on honesty of the respondents which may be biased. Such type of study should be conducted in the community as well because mefenamic acid is commonly used in period cramps by other females in community.

For further study, similar study can be conducted to determine prevalence of self-medication in dysmenorrhea. Comparative research can be done between health science and non-health science students. These findings emphasize the importance of monitoring for potential adverse effects and ensuring proper counseling on their management.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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