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## Knowledge of the causes and management of dysmenorrhea among students in the faculties of nursing and pharmacy in Niger delta university, Bayelsa State, Nigeria

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### Abstract

Dysmenorrhea is defined as painful menstruation due to prostaglandin secretion that is associated with cramps. It is a recurrent crampy pain that occurs during the menstruation. This study aimed at identifying student pharmacists and student nurses' knowledge of dysmenorrhea and pattern of treatment of dysmenorrhea. A random simple sampling techniques was employed. A total of 380 questionnaires were retrieved from the participants cutting across 200 level to 500 level student pharmacists and student nurses. The study was conducted in Niger Delta University in the Faculties of Nursing and Faculty of Pharmacy. Ethical approval was gotten from the Niger Delta University Ethics committee. Participants were mostly within the age group of 21 to 25 years. Most of the participants were single and were Christian worshippers. Participants always reported that they suffer from dysmenorrhea often. Also, their siblings and mothers were indifferent. There was a statistically significant difference ( $p = 0.005$ ) between student pharmacists and student nurses that reported that they suffer from dysmenorrhea often. The majority of the pharmacist reported that dysmenorrhea symptoms were severe among those who were affected. Participants reported inadequate knowledge of the causes/or risk factors for dysmenorrhea. There was no statistically significant difference ( $p = 0.55$ ) with knowledge of the causes/or risk factors for dysmenorrhea among the student pharmacists and student nurses. Non-pharmacological management of managing dysmenorrhea were not effective when used except for exercise and application of heat to the stomach surface. There was no statistically significant difference ( $p = 0.49$ ) between the student pharmacists and student nurses that used the non-pharmacological management in treating dysmenorrhea. Pharmacological management of dysmenorrhea were very effective among those who used it. There was a statistically significant difference ( $p = 0.001$ ) between the student pharmacists and student nurses that used the pharmacological method in managing dysmenorrhea. More attention in educating the participants on the causes/or risk factors of dysmenorrhea is required in the study center. We recommend that causes/or risk, and management of dysmenorrhea in the student pharmacists and students nurses' curriculum should be reviewed to cover up the gaps identified in this study. Also, the need to engage a Family physician, gynecologist, or a reproductive health officer in the University health center /or clinic to educate the female student pharmacists, student nurses and other female student in the university population is urgently required.

**Keywords:** Student pharmacist, student nurses, dysmenorrhea, Niger delta university and Bayelsa state

### Introduction

Dysmenorrhea is defined as painful menstruation due to high level of prostaglandin secretion that is associated with cramps. It is a recurrent crampy pain that occurs during the menstruation. Dysmenorrhea can be classified as primary without visible pelvic pathology, or secondary with an identifiable pelvic disorder (Osayande and Mehulic 2014, Dutta, 2014) [34, 14]. These reported cramps are usually caused by hyper-production of uterine prostaglandins ( $F2\alpha$ ), which results in myometrial hypercontractility and arterial vasoconstriction (Dutta, 2014) [14]. Those women with dysmenorrhea have higher levels of prostaglandins secretion within the first 2 days of their menses (Hoffman *et al.*, 2016) [18]. Their uterine activities are usually severe menstruation with more intense or well above tissue perfusion thresholds (Smith, 2016) [43].

Dysmenorrhea is one of the most frequently happened gynecological disorders among adolescent girls. (Shehata *et al.*, 2018, Gagua *et al.*, 2012) <sup>[20, 40]</sup>. The prevalence of dysmenorrhea varies among countries ranging from 50% to 90% (Hailemeskel *et al.*, 2016, Subasinghe *et al.*, 2016, Habibi *et al.*, 2015, Ortiz *et al.*, 2010) <sup>[22, 23]</sup>. This is predicated on the definition of dysmenorrhea as painful menstruation and the way it is measured (Aktas, 2015, Potur *et al.*, 2014, De Sanctis *et al.*, 2017) <sup>[39]</sup>. In a related study in Turkish university students, the prevalence was of 87.7% (Midilli *et al.*, 2015) <sup>[30]</sup>, compared to 85.4% in Ethiopia (Hailemeskel *et al.*, 2016) <sup>[23]</sup>, 88% in young Australians (Subasinghe *et al.*, 2016), 89.9% in university students in Iran (Habibi *et al.*, 2015) <sup>[22]</sup> and 64% in a sample of Mexican university students (Ortiz *et al.*, 2010). Dysmenorrhea highest prevalence rate reported was in Egyptian university students with 93% of them had painful menstruation (Shehata *et al.*, 2018) <sup>[40]</sup> and followed by Iran University students (89.1%) (Habibi *et al.*, 2015) <sup>[22]</sup>, and in Ethiopia, among Mekelle University students (71.8%) (Yesuf *et al.*, 2018) <sup>[49]</sup>.

In managing women menstrual pain most of them opted to use self-care such as physical (e.g exercise, stretching or rest), pharmacological (e.g analgesic medication), non-pharmacological (e.g herbal medicine, heat) or psychological strategies (e.g prayer or meditation) without seeking medical advice (Armour *et al.*, 2019) <sup>[8]</sup>. In the process of managing dysmenorrhea, over the counter (OTC) analgesic medications such as ibuprofen, paracetamol, and the application of heat are often utilized (Anikarim *et al.*, 2000, Wong, 2011, Chia *et al.*, 2013, Ortiz *et al.*, 2009). Complementary medicines were sometimes recommended and used as related above earlier, for example, herbal medicines or traditional remedies (MacKichan *et al.*, 2011, Ryan *et al.*, 2009). Many women already use various forms of complementary medicine to manage their menstrual pain in addition to, or instead of, pharmaceutical pain relief, due to a lack of perceived effectiveness (Chang *et al.*, 2012, Chia *et al.*, 2013). This study therefore aims to identify the knowledge of dysmenorrhea and pattern of management of dysmenorrhea among student pharmacists and student nurses.

## Method

### Study Location/Setting

The study was conducted in Niger Delta University in the Faculties of Nursing and Faculty of Pharmacy.

### Study Design and Sample Size

A cross-sectional study design using a validated questionnaire was employed in this study. The population studied was 750 female students from faculty of pharmacy and faculties of nursing in Niger Delta University. There was no bias for ethnicity, age, religion, marital status.

### Sampling Technique

A random simple sampling techniques was employed with 400 questionnaires were distributed among student pharmacist and student nurses. A total of 380 questionnaires were retrieved from the participants cutting across 200 level to 500 level student pharmacists and student nurses. 20 questionnaires were rejected due to incompleteness.

## Instrument for Data Collection

Data was collected using a well-structured questionnaire which was given to only female students in the faculties of pharmacy and nursing. The questionnaire comprises of three sections, namely: demographic data, knowledge of the causes of dysmenorrhea, and pharmacological and non-pharmacological management of dysmenorrhea.

## Method of Data Collection

The questionnaire was administered to 250 female students comprising of hundred females from the faculty of nursing and 150 students from faculty of pharmacy using random sampling. Some of the respondents did not complete their questionnaire. Most of the respondents did not need much assistance while filling the questionnaire.

## Method of Data Analysis

Retrieved questionnaire was analyzed using SPSS version 27 and Graph pad. The data was represented percentages, mean as descriptive data with few inferential statistics analyses.

## Inclusion criteria

Only female students from faculty of nursing and faculty of pharmacy participated.

## Ethical Approval

Ethical approval was gotten from the Niger Delta Ethics committee.

## Results

### Respondents' Demographic Data

A total of 380 female pharmacist and nursing students participated in the event and were commonly within the age group of 21 to 25 years. Most of the participants were single and were Christian worshippers.

### Assessment of Respondents Prevalence and Family History of Dysmenorrhea

Regarding prevalence and family history of dysmenorrhea, participant always reported that they suffer from dysmenorrhea often. Also, their siblings and mothers were indifferent with a high prevalence of dysmenorrhea reported. However, only few cases of hospitalization were reported due to dysmenorrhea. The above was most reported by the student nurses compared to the student pharmacists with a statistically significant difference ( $p = 0.005$ ).

### Assessment of the knowledge of the Causes/or Risk Factors for Dysmenorrhea

The majority of the student pharmacist and student nurses reported that dysmenorrhea symptoms were severe among those who were affected. A statistically significant difference ( $p = 0.003$ ) between those that reported dysmenorrhea and those who did not. Participants reported inadequate knowledge of the causes/or risk Factors for dysmenorrhea. There was no statistically significant difference ( $p = 0.55$ ) with knowledge of the causes/or risk factors for dysmenorrhea among the student pharmacists and student nurses.

### Assessment of Respondents' Use of Non-pharmacological management

A higher proportion of the participants reported that the non-pharmacological management in managing dysmenorrhea were not effective when used. There was no statistically significant different ( $p = 0.49$ ) between the student pharmacists and student nurses that used the non-pharmacological management in treating dysmenorrhea.

#### **Assessment of Respondents' Use of Pharmacological Management of Dysmenorrhea**

In like manner, a higher proportion of the participants reported that the pharmacological management of treating dysmenorrhea were very effective among those who used it. There was a statistically significant different ( $p = 0.001$ ) between the student pharmacists and student nurses that used the pharmacological management of treating dysmenorrhea.

#### **Discussion**

This study was carried out in Niger Delta University among female pharmacist and nursing students that were mostly single, Christian worshippers and was commonly within the age group of 21 - 25 years. All reference drawn from results are discussed below.

#### **Assessment of Respondents Prevalence and Family History of Dysmenorrhea**

Regarding prevalence and family history of dysmenorrhea, participant always reported that they suffer from dysmenorrhea often. The above was most reported by the student nurses compared to the student pharmacists with a statistically significant difference ( $p = 0.005$ ). This statistically difference might be due to the higher number of the students' nurses that participated in the study. Furthermore, their siblings and mothers were indifferent with high prevalence of dysmenorrhea. However, only few cases of hospitalization due to dysmenorrhea was reported. The above was most reported by the student nurses compared to the student pharmacists with a statistically significant difference ( $p = 0.005$ ) that reported high prevalence of dysmenorrhea. The statistically significant difference is unknown but might be due to the level of patient exposure in their hospital ward round with their preceptors. This study findings are consistent with a study conducted in Spain among university students with 74.8% prevalence of dysmenorrhea cases (Elia *et al.*, 2018) [15]. In like manner, a study carried among Ethiopia female students were not indifference as earlier revealed above, with this study findings with 71.7% prevalence rate of dysmenorrhea reported. Other studies carried out in Turkish university students, reported prevalence rate of dysmenorrhea was 87.7% (Midilli *et al.*, 2015) [30], compared to 85.4% in Ethiopia (Hailemeskel *et al.*, 2016) [23], 88% in young Australians (Subasinghe *et al.*, 2016), 89.9% in university students in Iran (Habibi *et al.*, 2015) [22] and 64% in a sample of Mexican university students (Ortiz *et al.*, 2010). Although, the highest prevalence (93%) rate of dysmenorrhea was reported in Egyptian university students, followed by Iran University students (89.1%) (Shehata *et al.*, 2018; Habibi *et al.*, 2015) [40, 22]. This was followed by Tonata *et al.*, (2020) [45] study with 88.1% prevalence rate of dysmenorrhea. A similar trend of prevalence of dysmenorrhea (41.7%) was reported in a study with self-report questionnaires among Female university students in Changsha city, Hunan province, China (Zahou *et al.*, 2020).

#### **Assessment of the knowledge of the Causes/or Risk Factors for Dysmenorrhea**

Most of the student pharmacists and student nurses reported that dysmenorrhea symptoms were severe among those who were affected. A statistically significant difference ( $p = 0.003$ ) was reported if those who are affected by dysmenorrhea were severe or not. Participants showed inadequate knowledge of the causes/or risk factors for dysmenorrhea. There was no statistically significant difference ( $p = 0.55$ ) with knowledge of the causes/or risk factors for dysmenorrhea among the student pharmacists and student nurses. This inadequate knowledge of cause and risk factors of dysmenorrhea might be attributed to the poor health seeking behavior, lack of funding to access good health, poor health facilities, lack of access to health facilities/or health professionals (Tonata *et al.*, 2020) [45]. This study findings agreed with Tonata *et al.*, (2020) [45] study carried out in Namibia with less than half (46%) of the student that had adequate knowledge of dysmenorrhea causes and risk factor. Also, Osonuga and, Martins, (2019) cross-sectional study involving to two hundred female undergraduate students of the University of Cape Coast (UCC), Ghana was consistent with this study findings. This potentiates a great danger to the women in the study environment. The need for educating the women on the causative agent and risk factors of dysmenorrhea is a public health concern.

#### **Assessment of Respondents' Use of Non-pharmacological management**

The majority of the participants reported that the non-pharmacological management of managing dysmenorrhea were not very effective when used. There was no statistically significant different ( $p = 0.49$ ) between the student pharmacists and student nurses that used the Non-pharmacological management in treating dysmenorrhea. The above related findings might be attributed to poor knowledge and inappropriate application of the non-pharmacological methods in management of dysmenorrhea. On the contrary, Aboualsoltani *et al.*, (2020) [21] systemic review on non-pharmacological treatments of primary dysmenorrhea was reported to be effective. Although, application of heat (placing hot towel on tummy) and exercise has been the most effective non-pharmacological management of dysmenorrhea reported. This may be due to permeability of the capillary which increases blood flow, reduced muscles tension and increased blood viscosity (Armour, *et al.*, 2019; Karim 2018) [8]. Ke *et al.*, (2012) study have found that applying health of 36.5–50% on the stomach reduces pain associated from dysmenorrhea. The application of local heat can reduce muscle tension/spasms, relax abdominal muscles and pain. Furthermore, application of heat increases pelvic blood circulation to eliminate local blood and body fluid retention and diminish congestion and swelling, thereby enabling a reduction in pain (Ke *et al.*, 2012).

#### **Assessment of Respondents' Use of Pharmacological Management of Dysmenorrhea**

Regarding pharmacological management of dysmenorrhea, most of the participants reported that the pharmacological management of dysmenorrhea were very effective among those who used it. There was a statistically significant different ( $p = 0.001$ ) between the student pharmacists and

student nurses that used the pharmacological management of treating dysmenorrhea. Ibuprofen was very effective in dysmenorrhea management which agreed with Emdex (2021) [16] on Nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and naproxen effectiveness in managing primary dysmenorrhea. The low rate of Naproxen use might be connected to its high cost in the market where customers are unable to afford it considering their standard of living and low economic status, since this is a low-income country. Paracetamol is also effective (77.33%) based on these results, but NSAIDs appear to work better than paracetamol (Marjoribanks *et al.* 2015) [35]. More than half of the students accepted that piroxicam is effective in dysmenorrhea management as revealed in Unkels (2012) [47] study. This is expected based on NSAIDs' prowess of inhibiting prostaglandins, given that these physiological hormones are responsible for pain associated with dysmenorrhea. The above related findings corroborated with Linda, (2005) [27], study in the United State of America with NSAIDs as first line therapeutic agent for managing primary dysmenorrhea. Marjoribanks *et al.*, (2010) [35] systematic review was not indifferent with NSAIDs' role in management of dysmenorrhea. More than half of the student reported ineffectiveness of diclofenac which is contrary to Uncles (2012) study that NSAIDs are effective for patients with primary dysmenorrhea. Lastly, antibiotics has shown to be ineffective (62%), despite their pharmacological prowess of treating pelvic inflammatory disease that can cause dysmenorrhea.

### Recommendation

This study strongly recommends that more attention in educating the participants on the causes and risk factors of dysmenorrhea is required. We recommend that causes/or risk and management of dysmenorrhea in the student pharmacists and students nurses' curriculum should be reviewed to cover up the gaps identified in this study. Furthermore, the need to engage a family physician, gynecologist, or a reproductive health officer in the University health center /or clinic to educate the female student pharmacists, student nurses and other female student in the university population will help in improving the knowledge of dysmenorrhea causes/or risk factors and how to prevent the severe effects of dysmenorrhea. Awareness of the negative consequences of dysmenorrhea should be given to reduce the physical and psychological stresses that affect women and their families. Lastly, policy makers should encourage early identification and management of dysmenorrhea.

### Conclusion

This study therefore aims to identify the knowledge of dysmenorrhea and pattern of management of dysmenorrhea among student pharmacists and student nurses. Dysmenorrhea is a common problem among the young adult population. Our findings reveal that dysmenorrhea affects a large part of our university population and is a problem that impacts students' daily life. The study identifies inadequate knowledge of causes and risk factors of dysmenorrhea. NSAIDs were reported to be effective in management of dysmenorrhea. Whereas diclofenac and antibiotics were reported to be ineffective in managing dysmenorrhea. Nonpharmacological method of managing dysmenorrhea

was not effective except for exercise and application of heat on the stomach surface.

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## Appendix

**Table 1:** Respondents' Demographic Data

Variables	Frequency	%
<b>Gender</b>		
Female	380	100%
<b>Age Range</b>		
15-20	133	35%
21-25	182	47.89%
26-30	49	12.89%
31-above	17	4.47%
<b>Marital Status</b>		
Single	368	96.84%
Married	12	3.16%
<b>Religion</b>		
Christian	380	100%
<b>No. of children</b>		
NIL	363	95.52%
1-2	7	1.84%
3-5	10	2.63%
6-above	0	0%
<b>Faculty</b>		
Pharmacy	190	50%
Nursing	190	50%

**Table 2:** Assessment of Respondents Prevalence and Family History of Dysmenorrhea 304

S/N	Experience on dysmenorrhea	Always F (%)			Sometimes (F %)			Never /Not Sure F (%)		
		P	N	Total	P	N	Total	P	N	Total
1	Do you suffer from dysmenorrhea	95 (25.0)	133 (35.0)	228 (60.0)	31 (8.16)	45 (11.84)	76 (20.00)	23 (6.05)	53 (13.95)	76 (20)
2	Have you been hospitalized as a result of dysmenorrhea	19 (5.0)	30 (7.89)	49 (12.89)	38 (10.0)	61 (16.05)	99 (26.05)	118 (31.05)	114 (30.00)	232 (61.05)
3	Does any of your female sibling suffer from dysmenorrhea	57 (15.0)	76 (20.0)	133 (35.0)	57 (15.0)	133 (35)	190 (50.00)	38 (10)	19 (5.00)	57 (15.00)
4	Does your mother suffer from dysmenorrhea	76 (20.0)	95 (25.0)	171 (45.00)	38 (10.00)	57 (15.00)	95 (25.00)	46 (12.00)	68 (18.00)	114 (30.00)
5. How would rate the severity of your dysmenorrhea		Severe			Moderate			Mild		
		114 (30.0)	57 (15.0)	171 (45.0)	46 (12.1)	57 (15.0)	103 (27.10)	68 (17.89)	38 (10)	106 (27.89)

Keys; P=Pharmacy; N=Nursing

**Table 3:** Assessment of the knowledge of the Causes/Risk Factors for Dysmenorrhea

SNO	Variables	Yes			No			NOT SURE		
		F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)
		P	N	Total	P	N	Total	P	N	Total
1.	Too high body weight	49 (12.89)	87 (22.89)	137 (36.05)	46 (12.11)	53 (13.95)	99 (26.05)	87 (22.89)	57 (15.00)	144 (37.89)
2.	Too low body weight	34 (8.95)	38 (10.00)	72 (18.95)	87 (22.89)	61 (16.05)	148 (38.95)	68 (17.89)	91 (23.95)	160 (42.11)
3.	Stress	95 (25.0)	122 (32.11)	217 (57.11)	68 (17.89)	34 (8.95)	103 (27.11)	27 (7.11)	34 (8.95)	61 (16.05)
4.	Anxiety	42 (11.05)	38 (10.00)	80 (21.05)	61 (16.05)	80 (21.05)	141 (37.11)	103 (27.11)	57 (15.00)	160 (42.11)
5.	Depression	42 (11.05)	38 (10.00)	80 (21.05)	91 (23.95)	122 (32.11)	213 (56.05)	46 (12.11)	42 (11.05)	87 (22.89)
6.	Cancer	68 (17.89)	129 (33.95)	198 (52.11)	61 (16.05)	34 (8.95)	95 (25.00)	61 (16.05)	27 (7.11)	87 (22.89)
7.	Hereditary	84 (22.11)	95 (25.00)	179 (47.11)	57 (15.00)	34 (8.95)	91 (23.95)	49 (12.89)	61 (16.05)	110 (28.95)
8.	Change of environment	72 (18.95)	65 (17.11)	137 (36.05)	65 (17.11)	57 (15.0)	122 (32.11)	53 (13.95)	68 (17.89)	122 (32.11)
9.	Age at menarche	152 (40.00)	141 (37.11)	293 (77.11)	34 (8.95)	46 (12.11)	80 (21.05)	4 (1.05)	4 (1.05)	8 (2.11)
10.	Irregular diet	57 (15.00)	133 (35.00)	190 (50.00)	72 (18.95)	23 (6.05)	95 (25.00)	61 (16.05)	34 (8.95)	95 (25.00)
11.	Never had a baby	182 (47.89)	167 (43.95)	350 (92.11)	8 (2.11)	11 (2.89)	19 (5.00)	8 (2.11)	4 (1.05)	11 (2.89)
12.	Alcohol consumption	72 (18.95)	46 (12.11)	118 (31.05)	76 (20.00)	80 (21.05)	156 (41.05)	42 (11.05)	65 (17.11)	106 (27.89)
13.	Irregular menstrual flow	171 (45.00)	144 (37.89)	312 (82.11)	27 (7.11)	30 (7.89)	57 (15)	4 (1.05)	8 (2.11)	11 (2.89)
14.	Longer menstrual flow	122 (32.11)	102 (26.84)	224 (58.95)	30 (7.89)	46 (12.11)	76 (20)	53 (13.95)	34 (8.95)	87 (22.89)
15.	Smoking	72 (18.95)	46 (12.11)	118 (31.05)	38 (10)	65 (17.11)	102 (26.84)	80 (21.05)	80 (21.05)	160 (42.11)
16.	Lower level of social support	57 (15.00)	57 (15.00)	114 (30.00)	76 (20.00)	95 (25.00)	171 (45.00)	61 (16.05)	34 (8.95)	95 (25.00)
17.	lifestyle changes	68 (17.89)	46 (12.11)	114 (30.00)	114 (30.00)	80 (21.05)	194 (51.05)	42 (11.05)	30 (7.89)	72 (18.95)
18.	Mood	53 (13.95)	61 (16.05)	114 (30.00)	80 (21.05)	95 (25.00)	175 (46.05)	42 (11.05)	49 (12.89)	91 (23.95)
19.	<b>Mean</b>	84 (22.1)	84 (22.1)	168 (44.2)	61 (16.05)	57 (15.00)	118 (31.05)	49 (12.89)	46 (12.11)	95 (25.00)

Keys; Pharmacy; N: Nursing

**Table 4:** Assessment of Respondents' Use of Non-pharmacological management

SN	Variables	Very effective			Effective			Not effective		
		P	N	Total	P	N	Total	P	N	Total
		F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)
1.	Placing of hot water on stomach	95 (25.00)	84 (22.11)	179 (47.11)	76 (20.00)	68 (17.89)	144 (37.89)	19 (5.00)	38 (10.00)	57 (15.00)
2.	Drinking of hot water	19 5.00	46 12.11	65 17.11	38 10.00	76 20.00	114 30.00	133 35.00	68 17.89	201 52.89
3.	Doing exercise	23 6.05	38 10.00	61 16.05	57 15.00	23 6.05	80 21.05	110 28.95	129 33.95	239 62.89
4.	Having a hot bath	38 10.00	38 10.00	76 20.00	38 10.00	68 17.89	106 27.89	114 30.00	84 22.11	198 52.11
5.	Taking hot drink [Alcohol]	11 2.89	0 0.00	11 2.89	15 3.95	15 3.95	30 7.89	163 42.89	175 46.05	338 88.95
6.	Sleeping on tummy	95 25.00	84 22.11	179 47.11	76 20.00	57 15.00	133 35.00	19 5.00	49 12.89	68 17.89
7.	Warm beverage	46 12.11	38 10.00	84 22.11	76 20.00	65 17.11	141 37.11	106 27.89	49 12.89	156 41.05
8.	Dietary/nutritional supplements	7.6	19	27	57	38	95	125	133	258

		2.00	5.00	7.11	15.00	10.00	25.00	32.89	35	67.89
9.	Herbal medicine	72.2 19.00	46 12.11	118 31.05	68 17.89	102 26.84	171 45.00	49 12.89	42 11.05	91 23.95
10.	Rest	95 25.00	87 22.89	182 47.89	76 20.00	84 22.11	160 42.11	19 5.00	19 5	38 10
11.	Meditation:	0 0.00	0 0.00	0 0.00	8 2.11	0 0.00	8 2.11	190 50.00	182 47.89	372 97.89
12.	Abdominal massage	68 17.89	80 21.05	148 38.95	57 15.00	84 22.11	141 37.11	53 13.95	38 10	91 23.95
13.	Relaxation	11 2.89	15 3.95	27 7.11	49 12.89	57 15.00	106 27.89	129 33.95	118 31.05	247 65
14.	Watched television	0 0.00	0 0.00	0 0.00	4 1.05	0 0.00	4 1.05	186 48.95	190 50	376 98.95
15.	Aromatherapy massage	19 5.00	11 2.89	30 7.89	19 5.00	30 7.89	49 12.89	152 40.00	148 38.95	300 78.95
16.	Hypnotism/Hypnotherapy; Acupuncture; Physiotherapy; Trans Cutaneous Electrical Nerve Stimulation (TENS)); Cognitive Behavioral Therapy (CBT): 100% Ineffective /Not Sure									

Keys; Pharmacy; N: Nursing

**Table 5:** Assessment of Respondents' Use of Pharmacological Management of Dysmenorrhea

SN	Variables	Very effective			Effective			Not effective		
		P	N	Total	P	N	Total	P	N	Total
		F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)
1.	Ibuprofen	76 20	95 25	171 45	95 25	76 20	171 45	19 5	19 5	38 10
2.	Paracetamol	65 17.11	91 23.95	156 41.05	76 20	65 17.11	141 37.11	49 12.89	34 8.95	84 22.11
3.	Aspirin	84 22.11	68 17.89	152 40	68 17.89	57 15	125 32.89	38 10	65 17.11	103 27.11
4.	Diclofenac	38 10	38 10	76 20	38 10	57 15	95 25	114 30	95 25	209 55
5.	Piroxicam	46 12.11	53 13.95	99 22.06	68 17.89	76 20	144 37.89	76 20	61 16.05	137 36.05
6.	Mefenamic acid	27 7.11	15 3.95	42 11.05	23 6.05	15 3.95	38 10	141 37.11	160 42.11	300 78.95
7.	Metamizol	19 5	34 8.95	53 13.95	19 5	11 2.89	30 7.89	153 40.2	144 37.89	297 78.16
8.	Naproxen	57 15	49 12.89	106 27.89	68 17.89	53 13.95	122 32.11	65 17.11	87 22.89	152 40
9.	Antibiotics	65 17.11	19 5	84 22.11	49 12.89	38 10	87 22.89	76 20	133 35	209 55
10.	Contraceptive	0 0	0 0	0 0	46 12.11	38 10	84 22.11	144 37.89	152 40	296 77.89
11.	Herbs	30 7.89	15 3.95	46 12.11	46 12.11	53 13.95	99 26.05	114 30	121 31.84	235 61.84
12.	Blood Tonic	0 0	0 0	0 0	0 0	0 0	0 0	190 50	190 50	380 100

Keys; Pharmacy; N: Nursing