

## Original Article

# Assessment And Comparison of Dysmenorrhea in Terms of Severity of Pain and Utilization of Non Steroid Anti-Inflammatory Drugs among Unmarried and Married Women

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### Abstract

**Introduction:** Dysmenorrhea means painful menstruation. The menstrual period is a natural phenomenon which occurs throughout the reproductive years of every woman. Most female experience some degree of pain and discomfort in their menstrual period.

**Aim:** The objective of the study was to assess and compare the dysmenorrhea in terms of severity of pain and utilization of NSAIDs among unmarried and married women.

**Materials and Methods:** Non Experimental research approach with comparative survey research design was used. The sample size comprised of 163 women which includes 100 unmarried and 63 married women selected by purposive sampling techniques of selected institutes of M.M. University Mullana. Numeric pain rating scale and Utilization of NSAIDs performa was used to assess severity of pain and utilization of NSAIDs during menstruation respectively.

**Results:** On the first day of menstruation, there was significant difference in the level of severity of pain among unmarried and married women as majority (78.57%) of unmarried experienced worst pain whereas majority (80%) of married reported mild pain during menstruation. There was no significant difference in the level of severity of pain among unmarried and married women on second and third day of menstruation. There was no significant difference in the utilization of NSAIDs during first, second and third day of dysmenorrhea among unmarried and married women

**Conclusion:** It concluded that there was significant difference in the level of severity of pain among unmarried and married women on first day of menstruation as majority (78.57%) of unmarried experienced worst pain whereas majority (80%) of married reported mild pain during menstruation. There was no significant difference in the utilization of NSAIDs during first, second and third day of dysmenorrhea among unmarried and married women

**Key words:** Dysmenorrhea, Severity of pain and Utilization of non steroid anti-inflammatory drugs

## Introduction

Adolescence is the period of transition from childhood to adulthood. WHO has defined adolescence as the age group of 10 to 19 years (Ganguli & RatnaMajumdar 2003, WHO 2015) Adolescence in girls has been recognized as a special period which signifies the transition from girlhood to womanhood. This transitional period marked with the onset of menarche, an important milestone. One of the major physiological changes that take place in the adolescent girls is the onset of menarche, which is often associated with problems of irregular menstruation, excessive bleeding and dysmenorrhoea. (Dhingra & Kumar 2009, Agarwal & Agarwal 2010).

Menstruation is a periodic discharge of blood mucus and epithelial cells from the uterus, it is usually occurs at monthly intervals throughout the reproductive cycle. In modern time for many girls physical problem can arise in relation with menstruation such as dysmenorrhoea, weight gain, headache, backache, breast tenderness, mood swings and depression etc. (Dutta 2007, Gumanga & Kwame-Aryee 2012)

The menstrual period is a natural phenomenon which occurs throughout the reproductive years of every woman. Most female experience some degree of pain and discomfort in their menstrual period. (Poureslami & Osati 2008, Gumanga & Kwame-Aryee 2012) It can be less painstaking and easy for some teens and young women, but for others menstrual period can be heavy and painful with cramps, which may be accompanied by some other symptoms and complications such as nausea, vomiting, diarrhoea, headache, weakness and fainting (Angeline & Preethi 2008, Omidvar & Begum 2011, Dambhare, Wagh & Dudhe 2012).

Dysmenorrhea means painful menstruation. The prevalence of dysmenorrhea is very high and at least 50% of women experience this problem throughout their reproductive years. Like all muscles, the uterus contracts and relaxes. Most uterine contractions are never noticed, but severe ones are painful (Angeline & Preethi 2008). Dysmenorrhea is differentiated as primary or secondary. Primary dysmenorrhea that occurs in the absence of anatomic abnormalities or pelvic pathologic disorders in which pain begins at the

onset of the menstrual flow and lasts for 12- 48 hours. Primary dysmenorrhea is the occurrence of a physiologic alteration and it usually appears 6 to 12 months after menarche, when ovulation is established. Many women have pain with their periods, especially when they are in their teens. In most cases, menstrual pain does not mean a more serious problem, although sometimes it can be associated with endometriosis or uterine fibroids, non-cancerous tumors in the uterus (Howkins & Bourne 2008).

The pain of primary dysmenorrhea and the systemic symptoms that may be associated with it are due to high prostaglandin levels. These prostaglandins cause muscle contractions in the uterus, which cause pain and decrease blood flow and oxygen to the uterus. The levels of prostaglandin F<sub>2α</sub> are especially high during the first two days of menstruation in women with severe primary dysmenorrhea (Nair, Grover & Kanna 2007, Durham et al 2012). Initial treatment is focused on relieving pain. Non-steroidal anti-inflammatory drugs (NSAIDs) -- help relieve pain. They can cause stomach upset, so taking them with food may help. Long-term use can increase the risk of stomach bleeding. NSAIDs include over-the-counter (OTC) medications such as aspirin, ibuprofen (Motrin, Advil), and naproxen (Aleve) (Aggarwal & Agarwal 2010). Nonsteroidal anti-inflammatory drugs like ibuprofen and naproxen which block the effects of pain producing prostaglandins and are more effective than other pain killers like acetaminophen. The other treatment for dysmenorrhea includes nutritional supplements, hormonal contraceptives, non drug therapies such as acupuncture, acupressure, herbal therapies and hormonal treatments (Liu, Xie & Wang 2011, Aziato, Dedey & Clegg-Lamptey 2015)

A wide spectrum of pharmacologic and non pharmacologic measures are used for the treatment of dysmenorrhea. Of these it has been widely claimed that exercise and use of complementary and alternative methods are beneficial for dysmenorrhea. Studies have shown that exercise reduced menstrual cramp and improved associated symptoms (Abbaspour, Rostami & Najjar 2006). According to British Authorities reports, 80% of world women have different degrees of dysmenorrhoea. (British

Medical Authorities.Report 2000). WHO conducted a multi-country population survey of family formation patterns and reproductive health that included questions on menstrual history and menstrual disorders. In menstrual history, menstrual pain in the past three months was collected. The study revealed that many women experience some pain with menstruation. In adult women, pain was reported as 16% to 58% and in adolescent, it was 35% to 78% and among them 3% to 20% of women reported severe dysmenorrhoea that prevents them from participating in their usual activities.(Vincenzo, Sergio 2014)

### Material and Methods

Non Experimental research approach with comparative survey research design was used. The sample size comprised of 163 women which includes 100 unmarried and 63 married women having regular menstrual cycle, suffering from

dysmenorrhea and were in the age group of 18 - 30 years of selected institutes of M.M. University Mullana and selected by purposive sampling techniques. Unmarried and married women with gynecological disorders and undergoing treatment were excluded. Utilization of NSAIDs was used to collect data to assess the utilization of NSAIDs during dysmenorrhea if used then name of the medication and dose of the utilized medication. Standardized (0-10) Numeric Pain RATING Scale was used to assess the severity of pain during menstruation. Scoring of severity of pain was No pain-0, For mild pain- 1-3, For moderate pain- 4-6, For severe pain- 7-8 AND For worst possible pain- 9-10. Content validity of the tools was established by submitted to nine nursing experts. The reliability of utilization of NSAIDs were found to be 1.0 by using test retest method (acceptable range is 0.7-1.0).

### Phase I

The screening of the sample was done by asking questions to know the women who were suffering from dysmenorrhea.

Personal variables and menstrual characteristics was filled up to collect baseline data and to know expected due date of menstruation.

### Phase II

Two days prior to the expected due date of menstruation, researcher approached the study subjects.

On the actual date of onset of menstruation, investigator approached the study subjects Numeric pain rating scale and utilization of NSAIDs checklist was filled up by participants.

Researcher approached the study subjects daily for day wise data collection and data was collected till pain subsided by using paper pencil technique.

## Results

### Demographic characteristics

The demographic and social characteristics of the sample presented in Table 1 show that nearly half (47%) of the unmarried subjects were in the age group of 18- 21 years, whereas less than half (42.86%) of married women were in the age group of 21-24 years. Most of the unmarried (77%) and married women (74.60%) were students. Majority of unmarried (61%) and married women (68.25%) belonged to Hindu religion. Most of unmarried (71%) and married

women (66.66%) were vegetarian. More than half (56%) of unmarried and majority of married women (65.08%) belonged to urban area. The computed Chi -square was not found to be statistically significant with occupation, religion, dietary habits and native place at 0.05 level of significance, so group was homogeneous on the basis of occupation, religion, dietary habits and native place whereas the computed chi-square was found to be statistically significant with age at 0.05 level of significance, so group was heterogeneous on the basis of age.

**Table 1: Frequency and Percentage Distribution of Unmarried and Married Women in terms of Personal Variables**

		N-163					
S.No.	Personal variables	Unmarried women N-100		Married women N- 63		df	Chi-square/ Yates Correction
		f	%	f	%		
<b>1.</b>	<b>Age</b>						
1.1	18- 21 years	47	47	06	9.52	1	<b>44.22*</b>
1.2	21-24 years	30	30	27	42.86		
1.3	24-27 years	22	22	18	28.57		
1.4	27-30 years	01	01	12	19.05		
<b>2.</b>	<b>Occupation</b>						
2.1	Teacher	23	23	16	25.40	2	0.05 <sup>NS</sup>
2.2	Student	77	77	47	74.60		
<b>3.</b>	<b>Religion</b>						
3.1	Hindu	61	61	43	68.25	3	3.90 <sup>NS</sup>
3.2	Sikh	35	35	19	30.16		
3.3	Muslim	01	01	01	1.59		
3.4	Christian	03	03	00	00		
<b>4.</b>	<b>Dietary habits</b>						
4.1	Vegetarian	71	71	42	66.66	2	4.10 <sup>NS</sup>
4.2	Non- vegetarian	23	23	20	31.75		
4.3	Eggtarian	06	06	01	1.59		
<b>5.</b>	<b>Native Place</b>						
5.1	Rural	44	44	22	34.92	1	1.37 <sup>NS</sup>
5.2	Urban	56	56	41	65.08		

$$\chi^2(1) = 3.84, \chi^2(2) = 5.99, \chi^2(3) = 7.82$$

**Table 2: Frequency and Percentage Distribution of Unmarried and Married Women In Terms of Menstrual Characteristics**

		N-163					
Menstrual characteristics		Unmarried women n=100		Married women n=63		df	Chi-square/ Yates correction
		F	%	F	%		
<b>1.</b>	<b>Age at menarche</b>						
1.1	≥12 years	05	05	10	15.87	3	6.53 <sup>NS</sup>
1.2	12-13 years	42	42	26	41.27		
1.3	14-15 years	43	43	24	38.10		
1.4	16-17 years	10	10	03	4.76		
<b>2.</b>	<b>Any family history of dysmenorrhea</b>						
2.1	Yes	39	39	21	33.33	3	1.58 <sup>NS</sup>
2.2	No	61	61	42	66.67		
2.3	If yes						
2.3.1	Mother	26	26	11	50		
2.3.2	Sister	18	18	11	50		
<b>3</b>	<b>Duration of pain</b>						
3.1	Less than 1 day	10(37.04%)	10	17(62.96%)	26.98	4	<b>15.60<sup>NS</sup></b>
3.2	1 day	51(57.96%)	51	37(42.04%)	58.74		
3.3	2 day	26(78.79%)	26	07(21.21%)	11.11		
3.4	3 day	11(84.61%)	11	02(15.39%)	3.17		
3.5	More than 3 days	2(100%)	2	00(00)	00		
<b>4</b>	<b>Type of pain</b>						
4.1	Continuous pain	62	62	29	46	1	3.38 <sup>NS</sup>
4.2	Intermittent pain	38	38	34	54		

$$\chi^2(1) = 3.84, \chi^2(3) = 7.82, \chi^2(4) = 9.49$$

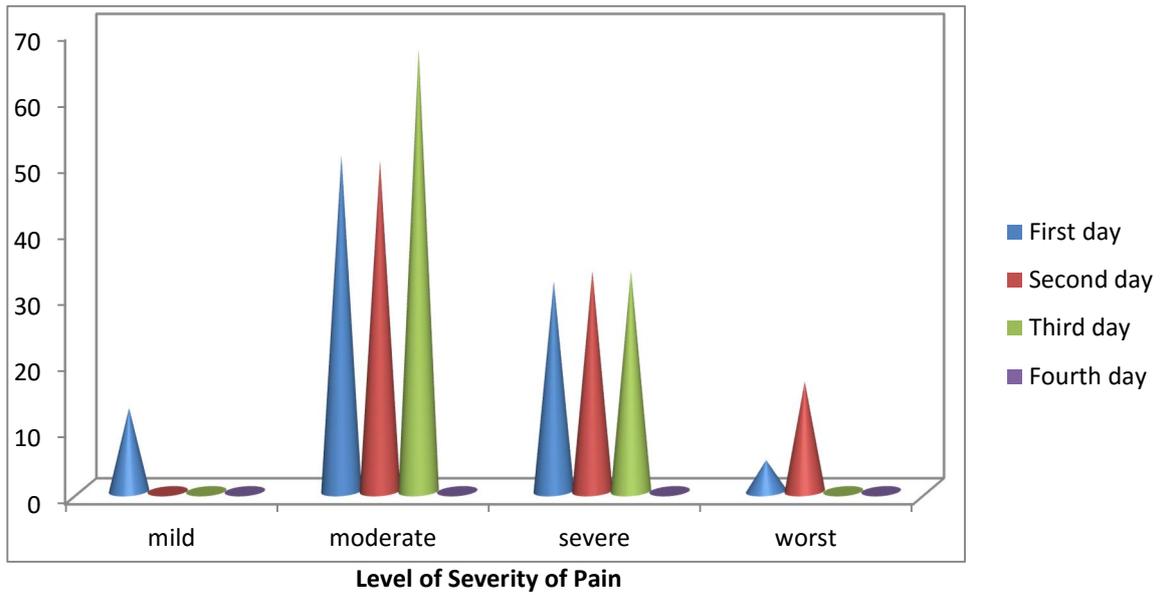


Figure 1: Conical Graph Showing Percentage distribution of Unmarried in terms of level of severity of pain

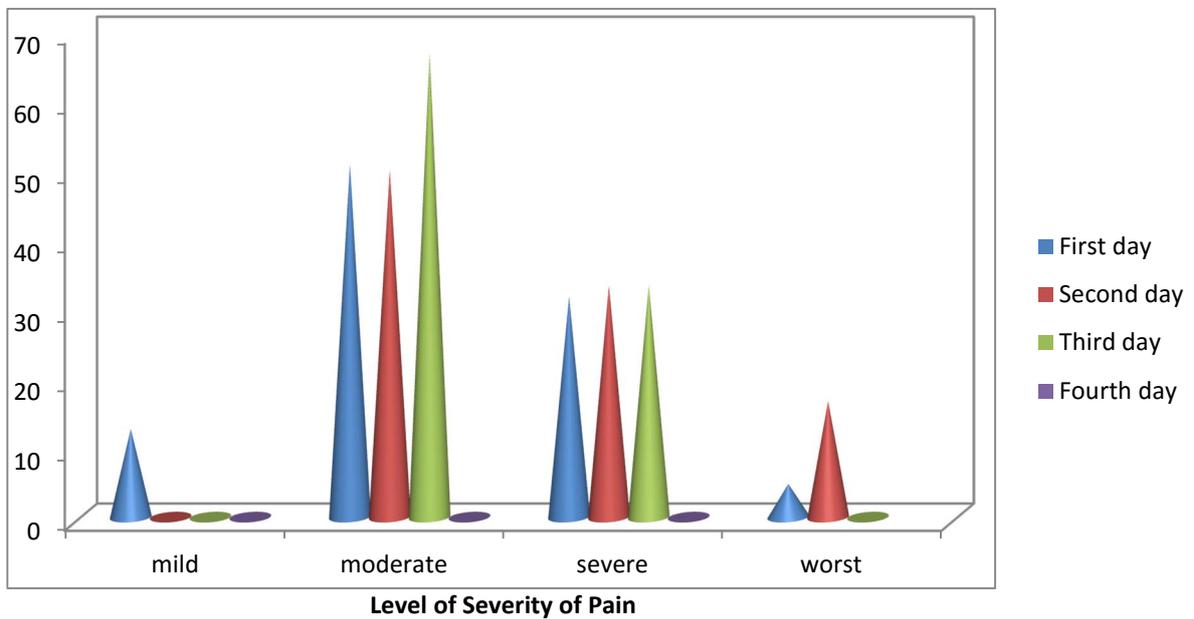


Figure 2: Conical Graph Showing Percentage distribution of Unmarried in terms of level of severity of pain

**Table 3: Mean, Standard Deviation, Mean Difference, Standard Error Difference and t value of Severity of Pain during Menstruation among Unmarried and Married Women**  
N-163

Day	Group	Mean	Standard Deviation	Mean Difference	Standard Error Difference	t value	p value
First n-163	Unmarried women	6.71	1.72	0.81	0.23	2.82*	0.05*
	Married women	5.90	1.85				
Second n-44	Unmarried women	6.58	1.57	0.08	0.71	0.11	0.90
	Married women	6.50	1.64				
Third n-17	Unmarried women	5.21	1.89	0.12	1.28	0.10	0.92
	Married women	5.33	1.53				

t(161) =1.97, t(42) = 2.02, t (15)=2.13 \*significant(p≤0.05)

**Table 4: Frequency and Percentage Distribution of Unmarried and Married Women in terms of Utilization Of NSAIDs During Menstruation**

Utilization of NSAIDs IN UNMARRIED WOMEN		Unmarried Women								Married Women							
		First day n-100		Second day n-38		Third day n-14		Fourth day n-3		First day n-63		Second day n-6		Third day n-3		Fourth day n-0	
		f	%	f	%	f	%	f	%	f	%	F	%	f	%	f	%
1	YES	48	48	21	55.26	05	35.71	02	66.67	22	34.92	02	33.33	--	--	--	--
2	NO	52	52	17	44.74	09	64.29	01	33.33	41	65.07	04	66.67	03	100	--	--
3	MEFTAL SPAS	25	52.1	14	66.67	02	40	01	50	11	50	01	50	--	--	--	--
4	DICLOFENAC SODIUM	11	23	04	10.53	01	20	--	--	05	22.72	01	50	--	--	--	--
5	PCM	05	10.4	01	2.63	01	20	--	--	03	13.66	--	--	--	--	--	--
6	COMBIFLAM	05	10.4	01	2.63	--	--	01	50	03	13.63	--	--	--	--	--	--
7	Drotin –M	02	4.1	01	2.63	01	20	--	--	--	--	--	--	--	--	--	--
8	Frequency																
8.1	OD	32	66.67	16	76.19	04	80	01	50	10	45.45	01	50	--	--	--	--
8.2	BD	13	27.08	03	14.28	01	20	01	50	08	36.37	--	--	--	--	--	--
8.3	TDS	03	6.25	02	9.53	--	--	--	--	04	18.18	01	50	--	--	--	--

### Menstrual Characteristics

Data presented in Table 2 shows that less than half (43%) of unmarried women attained their menarche at the age of 14-15 years whereas for married women (41.27%) it was 12-13 years. Majority of unmarried (61%) and married women (66.67%) were having no family history of dysmenorrhea. Half (51%) of unmarried and more than half (58.74%) of married women were reported to have pain for one day. The computed Chi-square value (15.60) of duration of pain was found to be statistically significant at 0.05.

So, it is inferred that among married women pain was less than 1 day whereas unmarried reported to have pain more than 3 days. Therefore, there was significant difference in the duration of pain between unmarried and married women. Majority (62%) of unmarried women were having continuous pain whereas more than half (54%) of married women were having intermittent pain. Data presented in figure 1 and 2 shows day wise frequency and percentage distribution of pain score during dysmenorrhea among unmarried and married women. On the first day of menstruation, less than half (45%) of unmarried reported severe pain whereas nearly half (50.79%) of married women experienced moderate pain. On the second day of menstruation, nearly half (47.39%) of unmarried women reported severe pain as compared to half (50%) of married women reported moderate pain. On the third day of menstruation, majority of unmarried (64.28%) and married (66.67%) women reported moderate pain. On the fourth day of menstruation, none of the married women reported any pain whereas 66.67% of unmarried women experienced severe pain and 33.33% reported moderate pain.

The data presented in Table 3 shows that the difference in severity of pain during menstruation among unmarried and married women. On the first day of menstruation, the computed 't' value (2.82) of severity of pain among unmarried and married women was found to be significant at 0.05 level of significance. This shows that the mean difference (0.81) in severity of pain among unmarried and married women was a true difference and not by chance. So, it is inferred that there was a significant difference in the severity

of pain on first day of menstruation among unmarried and married women.

On the second and third day of menstruation, the computed 't' value (0.11) and (0.10) was found to be statistically not significant at 0.05 level of significance. This shows that the mean difference (0.08) and (0.12) respectively in severity of pain among unmarried and married women was not true difference and not by chance. So, it is inferred that there was no significant difference in the severity of pain on second and third day of menstruation among unmarried and married women. So, it is inferred that there was significant difference in the severity of pain during first day of menstruation among unmarried and married women.

### Utilization Of NSAIDs During Menstruation

Data presented in Table 4 shows that daywise frequency and percentage distribution of utilization of NSAIDs among unmarried and married women.

On the first day of dysmenorrhea, more than half of unmarried women (52%) and majority of married (65.07%) were not utilizing NSAIDs during menstruation. Out of those who were utilizing NSAIDs, nearly half of unmarried (52.10%) and half of married (50%) were using meftal spas. Majority were taking NSAIDs once a day.

On the second day of dysmenorrhea, majority of unmarried women (55.26%) were utilizing NSAIDs whereas majority of married women (66.67%) were not utilizing NSAIDs. Out of those who were utilizing NSAIDs, majority of unmarried (66.67%) and half of married (50%) were using meftal spas. Majority were taking NSAIDs once a day.

On the third day of dysmenorrhea, majority of unmarried women (64.29%) and all of married women (100%) were not utilizing NSAIDs. However, among those who were utilizing NSAIDs, less than half (40%) of unmarried were using meftal spas. Majority of them were taking NSAIDs once a day.

On the fourth day of dysmenorrhea, none of married women reported any utilization of NSAIDs whereas majority of unmarried women (66.67%) were utilized NSAIDs. Out of those

unmarried who were utilizing NSAIDs, half (50%) of unmarried were using meftal spas and combiflam. The majority of them were taking NSAIDs once or twice a day.

On the first, second and third day of dysmenorrhea, the computed chi-square value (2.69), (0.99) and (1.52) of utilization of NSAIDs respectively among unmarried and married women was found to be statistically not significant at 0.05 level of significance. So, it can be inferred that there was no significant difference in the utilization of NSAIDs among unmarried and married women on first, second and third day of dysmenorrhea. So, it inferred that there was no significant difference in the utilization of NSAIDs during first, second and third day of dysmenorrhea among unmarried and married women.

#### **Association of Level of Severity of Pain with Selected Variables among unmarried women of First Day**

Data shows that computed chi-square value of level of severity of pain with age (8.79), religion (6.07), dietary habits (5.06) and native place (4.47) were found to be statistically not significant whereas it was found to be statistically significant with occupation (8.40) at 0.05 level of significance. So, it shows that level of severity of pain were independent of age, religion, native place and dietary habits whereas level of severity of pain was dependent on occupation of unmarried women as 39.13% and 44.16% of unmarried and married women who were teacher and student had severe level of severity of pain during menstruation.

#### **Association of Level of Severity of Pain with Selected Variables among Married Women of First Day**

Data shows that computed chi-square value of level of severity of pain with age (4.83), occupation (3.36), religion (2.55), dietary habits (4.09) and native place (5.60) were found to be statistically not significant at 0.05 level of significance. So, it inferred that there was no significant association of level of severity of pain with selected variables. It further shows that level of severity of pain were independent of age, occupation, religion, dietary habits and native place of married women.

## **Discussion**

The present study was carried to assess and compare dysmenorrhea in terms of severity of pain and utilization of NSAIDs among unmarried and married women. Findings of the study further revealed that less than half (41.45%) of unmarried had severe pain whereas more than half (61.48%) had moderate pain. These findings were consistent with the findings of the study conducted by Nair, Grover, & Khana (2007) which reported that 86.1% reported severe pain symptoms, 13.9% had moderate pain symptom and none of them had mild pain symptoms whereas in the study conducted by Al-Kindi & Al-Bulushi (2010) reported that 27% had mild, 41% had moderate and 32% experienced severe pain during menstruation. A similar study was done by El-Gilany, Badawi & El-Fedawy (2005) reported that about 75% of the students experienced mild (53.3%) moderate (30.0%) and severe (14.8%) pain during menstruation.

In the current study, nearly half of unmarried and married women were reported to have pain for one day and having intermittent pain. The study findings were consistent with the findings of the study conducted by Smith & Kaunitz (2006) which revealed that the pain usually begins just before or as menstrual bleeding begins, and gradually diminishes over one to three days. Pain usually occurs intermittent ranging from mild to disabling. In the current study, majority of unmarried and married were using meftal spas and combiflam as pain killer. The study findings are consistent with the findings of the study conducted by Al-Kindi & Al-Bulushi (2010) resulted that the commonest drug used were paracetamol (n-60, 16%) ibuprofen (n-9, 8%) and mefenemic acid (n-12, 3%)

## **Conclusion**

It concluded that there was significant difference in the level of severity of pain among unmarried and married women on first day of menstruation as majority (78.57%) of unmarried experienced worst pain whereas majority (80%) of married reported mild pain during menstruation. There was no significant difference in the level of severity of pain among unmarried and married women on second and third day of menstruation. There was no significant difference in the

utilization of NSAIDs during first, second and third day of dysmenorrhea among unmarried and married women.

### Recommendations

The researcher further recommended that the study can be replicated on larger sample to validate the findings and make generalizations, to assess the impact of dysmenorrhea on quality of life among females and experimental study may be conducted to evaluate the effectiveness of alternative and complementary therapies for dysmenorrhea.

### Implications

The finding of the study can be implemented to teach the nursing students regarding causes, sign and symptoms and treatment modalities of dysmenorrhea to enhance the knowledge and skills to manage the client who are suffering from dysmenorrhea, develop health education material like informational booklet, pamphlets and video on home remedies, exercises, yoga, meditation etc. for females which will give an awareness regarding dysmenorrhea. The community health nurse should be involved in increasing the awareness among adolescents and mothers regarding onset of menarche, dysmenorrhea symptoms, menstrual hygiene through the use of various awareness programmes and by providing health education.

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