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## The Level Of Knowledge on the Use Of NSAIDs As Analgesic For Dysmenorrhea Case In Faculty of Health Universitas Muhammadiyah Lamongan

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### ABSTRACT

Non-steroidal anti-inflammatory (anti-inflammatory) drugs, or better known as NSAIDs (Non-Steroidal Anti-Inflammatory Drugs) or NSAIDs are a group that has analgesic (pain reliever), anti-pyretic (fever) properties. to determine the level of knowledge on the use of NSAIDs as anti-pain in cases of dysmenorrhea in the University of Muhammadiyah Lamongan. The research design used in this research is descriptive, in taking the sample using the total sampling technique. Collecting data by distributing questionnaires with data analysis presented in tabular form. The results of this study indicate that of the 266 respondents, almost all respondents know about knowledge of dysmenorrhea well (83.8%). In the results of this study, there were still respondents who did not know the proper use of NSAIDs as analgesic. So in this case the role of pharmaceutical personnel is needed in providing information or education to people who consume NSAIDs, in order to achieve a quality of life for the community and avoid unwanted therapeutic responses.

**Keywords:** NSAID ; dysmenorrhea ; analgesic

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## INTRODUCTION

*Dysmenorrhea* is a very painful pain due to cramping in the uterus that precedes and accompanies menstruation, the complaint of *dysmenorrhea* is cramping-like pain and its location in the lower abdomen and can spread to the back and thighs. *Dysmenorrhea* can have mild to severe effects that can interfere with daily activities <sup>(1)</sup>. *Dysmenorrhea* or painful menstruation is a symptom that most often causes young women to go to the doctor for consultation and treatment <sup>(2)</sup>

The number of NSAIDs (*Nonsteroidal Anti-inflammatory Drugs*) sold freely (*over-the-counter*) that is used as the main treatment of *dysmenorrhea*, because the use of NSAIDs is not mild, especially side effects on the gastrointestinal tract, due to their action of inhibiting the biosynthesis of prostaglandins, which are important substances in several organs. In general, NSAIDs cause side effects in three organ systems, namely the gastrointestinal tract, kidneys and liver <sup>(3)</sup>. NSAID class drugs are known to exert a bleeding effect or increase the risk of bleeding <sup>(4)</sup>.

According to data from the *World Health Organization* (WHO) in 2013, the incidence of *dysmenorrhea* was 1,769,425 people (90%) of women who experienced *dysmenorrhea* with 10-15% experiencing *dysmenorrhea* severe. The incidence of *dysmenorrhea* in the world is very large, an average of 50% of women who experience it <sup>(5)</sup>. In Indonesia, the incidence of *dysmenorrhea* is 107,673 people (64.25%) <sup>(6)</sup>

NSAID therapy can reduce the intensity of menstrual pain by reducing intra-uterine pressure and lowering the level of prostaglandin F2 *alpha* in menstrual fluid. According to Sari, W. P's research study, NSAIDs provide improvement in 80-85% of patients studied, for example from NSAID therapies such as ibuprofen, mefenamic acid, naproxen, ketoprofen, celecoxib, and diclofenac proven to be effective in inhibiting the cyclooxygenase enzyme which causes decreased prostaglandin production. reduce discomfort in *dysmenorrhea* primary <sup>(7)</sup>

The results of the initial survey in November 2019 conducted by researchers showed that there were several types of NSAIDs used by students at Muhammadiyah University in Lamongan as an anti-pain, *dysmenorrhea* namely mefenamic acid, Ibuprofen, Paracetamol, Antalgin. This is in line with research (Fatima *et al*, 2017) which states that the use of NSAIDs that are often chosen to be used as analgesics in medical students is paracetamol, ibuprofen, mefenamic acid, and diclofenac <sup>(8)</sup> Based on this description, the authors want to know the pattern of NSAID use among *dysmenorrhea* respondents in the student environment of the Muhammadiyah University of Lamongan Health Faculty.

## METHOD

This research method is a descriptive method. This research was conducted from January to February 2020 at the Muhammadiyah University Lamongan Campus. The population in this study were all female respondents at the University of Muhammadiyah Lamongan who used NSAIDs as analgesic *dysmenorrhea*. The technique used to collect data was a questionnaire with a total sampling technique,

namely the inclusion criteria of female students who had menstruation and *dysmenorrhea* who used NSAID drugs, while the exclusion criteria were female students who used non-pharmacological therapies such as the use of warm compresses, consuming herbal jamu, do not consume drugs.

In this study, the questionnaire contained 10 statements which were answered directly by respondents without being represented by other people. Respondents provide answers to statements submitted by researchers with the choice of answers "True" and "False" with an assessment score of True = 1, False = 0. Analysis. The data analysis technique used in this study was based on the percentage formula and assessment criteria. The assessment criteria according to <sup>(9)</sup> the measurement of the respondent's knowledge is based on the respondent's answer to all the statements given, good knowledge if the value is > 75%, sufficient if the value is 40-75% and less if the value is <40%.

## RESULTS

Table 1 Demographic Data Distribution of Student Respondents at the Faculty of Health, University of Muhammadiyah Lamongan

Characteristics	F (%)	Total (%)
<b>Age (Year)</b>		266 (100,00)
18-19	92 (34,58)	
20-21	141 (53,00)	
22-25	33 (12,41)	
<b>Study Program</b>		266 (100,00)
S1 Nursing	103 (38,7%)	
D3 Midwifery	36 (13,5%)	
D3 Pharmacy	106 (39,8%)	
D3 Physiotherapy	21 (7,8%)	
<b>Length of menstruation</b>		266 (100,00)
< 7 days	66 (24,81)	
7 days	142 (53,38)	
7 – 14 days	53 (19,92)	
14 days	15 (5,63)	

Table 2 Measurement Results Knowledge of NSAID Use for *Dysmenorrhea*

Indicators of Understanding	Measurement Results		Information
	F	%	
Indication of using NSAIDs as analgesics for <i>dysmenorrhea</i>	232	87,22	Good
Timing of taking NSAIDs as analgesics (when menstrual pain only)	240	90,23	Good
Use of Analgesic Drugs for <i>dysmenorrhea</i> (non-opioid group)	247	92,86	Good
Examples of analgesic drugs used for <i>dysmenorrhea</i> (mefenamic acid, ibuprofen, paracetamol, antalgin)	253	95,11	Good
Potential for NSAID interactions with other drugs (interactions with antihypertensives in the CCB and ARB classes)	158	59,40	Enough
Drinking rules to take NSAIDs as analgesics (after meals)	204	76,70	Good
Appropriate dosage of NSAIDs with types of drugs as analgesics *	157	59,02	Enough
Maximum frequency of using NSAIDs as analgesics (3-4 times a day)	47	17,66	Less
Accuracy of how to consume NSAIDs (swallowed with drinking water)	215	80,82	Good
Potential side effects of NSAIDs (diarrhea, bloating, stomach irritation)	67	25,19	Less

\*Mefenamic acid dosage 250mg - 500mg; Ibuprofen 200mg - 800mg; Parasetamol 200mg - 400mg; Antalgin (Methampiron) 500mg - 1000mg

\* F: Number of Respondents who answered 'Correct'

\* Total of All Respondents: 266

Table 3 Results of Overall Respondents

Knowledge Level Category	Average Result Percentage of Indicators of Understanding (%)
Good	87,16
Enough	59,21
Less	21,42

## DISCUSSION

Based on the results of research conducted on female respondents at the Faculty of Health, Muhammadiyah University of Lamongan, it is known that the level of knowledge of female students regarding the use of NSAIDs as analgesics for *dysmenorrhea* is in a good category. Demographic data of respondents showed that female respondents who used the most NSAID drugs during

*dysmenorrhea* were respondents aged 20 years. This is in accordance with the theory that the same result of the peak incidence of *dysmenorrhea* occurs in late adolescence and early in the age of 20 years, the incidence of *dysmenorrhea* in adolescents is reported to be 92% <sup>(10)</sup>. Menstrual pain often occurs in young women, because it has not reached psychological and biological maturity (especially the maturity of the reproductive organs, namely the growth of the endometrium is not yet complete), the frequency of pain will decrease with age, this is due to the deterioration of the uterine nerves due to aging <sup>(11)</sup>. Many women of reproductive age experience physical discomfort or feel tortured just before or during menstruation, one of the physical discomforts that can interfere with their daily activities during menstruation, namely *dysmenorrhea* <sup>(12)</sup>. Other demographic data, many female students who experienced menstrual duration of 7 days were 142 female students (53.38%). Menstrual periods are common, still within normal limits. The prolonged menstrual period can affect a person's psychology, which ultimately affects their daily activities to be disturbed <sup>(2)</sup> The length of menstruation is more than normal for 7 days of menstruation causing uterine contractions, which occurs longer resulting in the uterus contracting more frequently and the more prostaglandins released. Some of the factors *dysmenorrhea* include age *menarche* earlier, prolonged menstrual periods, heavy menstrual blood volume, family history of *dysmenorrhea*, obesity, alcohol consumption, physical activity or adequate exercise, and stress <sup>(6)</sup>.

The level of knowledge on the use of NSAIDs is divided into several indicators, the first indicator is an indication of the use of NSAIDs as an analgesic. The respondents who answered correctly according to the answer key were 87.22% including the good knowledge category. The next indicator for the timeliness of using NSAIDs that should be used when only menstrual pain is included in the category of good knowledge (90.23%). This is because all respondents come from the health faculty who are familiar with the term analgesic as an anti-pain. The pain conditions experienced during *dysmenorrhea* are generally such as: cramps, and centered on the lower abdomen, and sometimes so severe that they interfere with activity. From the results of Utami's analysis, VW (2015) shows that good knowledge of young women about *dysmenorrhea* will have a 5 times chance of being correct in terms of preventing *dysmenorrhea*, when compared to young women with poor knowledge <sup>(13)</sup>.

Indicators with examples of analgesic drugs used for *dysmenorrhea* along with indicators of drug groups are mefenamic acid, ibuprofen, paracetamol, antalgin (95.11%) from the non-opioid group (92.86%). This is consistent with the theory that mefenamic acid is the most preferred type of NSAID for the treatment of *dysmenorrhea* <sup>(14)</sup>. The mechanism of action of the drug mefenamic acid works by inhibiting prostaglandins through inhibition of the cyclooxygenase enzyme, so that it can be used as a comparative drug. According to the Family Medicine and Primary Care Study, mefenamic acid is the mainstay of therapy for *dysmenorrhea*, because it can produce a significant reduction in pain response and less side effects than ibuprofen, naproxen <sup>(15)</sup>. Apart from mefenamic acid, paracetamol was well tolerated and the incidence of gastrointestinal side effects was also low <sup>(16)</sup>. As for the indicators of knowledge of side effects, respondents had less knowledge (25.19%). This is probably due to the

respondent's lack of awareness of several cases that could arise regarding the potential side effects of NSAIDs. The intended side effects are in the form of stomach disorders such as: diarrhea, bloating, stomach irritation, and if taken for a prolonged period of time with repeated use, it can increase the risk of stomach bleeding<sup>(17)</sup>. There is an effect of potential side effects on gastric disorders, therefore it is necessary to know the proper rules for taking NSAIDs to prevent these side effects. The results showed that the respondents had a good level of knowledge (76.70%) that the drinking rules for consuming NSAIDs were after meals */post coenam* (pc)<sup>(18)</sup>.

Other indicators that are still related to preventing the emergence of NSAID side effects, it is necessary to know the potential for NSAID drug interactions with other drugs, and the results of the respondents' knowledge of these interactions are sufficient to know (59.40%). One of the drugs that can potentially cause interactions with NSAIDs is the CCB antihypertensive class, amlodipine. This is in accordance with the study<sup>(19)</sup> that a total of 66.36% occurred the potential for interaction between NSAIDs and amlodipine which was also influenced by variations in the blood pressure response by each patient<sup>(20)</sup>. In addition, it is important to know the suitability of dosages, as well as the rules for using NSAIDs as a preventive measure in case of interactions.

The frequency of use in the use of mefenamic acid is the following rule: drink it after meals, 3-4 times a day. In the indicator of the maximum frequency of NSAIDs that can be consumed per day, the respondents are less knowledgeable, but the indicator of the accuracy of how to consume NSAIDs is different. The frequency of using NSAIDs should be taken 3-4 times a day with an estimated time interval of every 8 hours, and more precisely swallowed with drinking water, this is also seen in indicators of good understanding of respondents<sup>(18)</sup>. Based on the overall results of the study without the distribution of indicators, the highest percentage results were obtained in the category of good knowledge (87.16%), however, evaluation of understanding is still needed to improve several indicators with sufficient and insufficient knowledge levels. This effort can be done by participating in continuous counseling or seminars so that they can maintain up-to-date information related to education on the use of NSAIDs as analgesics.

### CONCLUSIONS AND RECOMMENDATIONS

The level of knowledge of students at the Faculty of Health, University of Muhammadiyah Lamongan about the use of NSAIDs as an analgesic incases is *dysmenorrhea* in the good category with a percentage of 87.16%. Suggestions for further research are to attend counseling or seminars continuously so that they can maintain updated information related to education on the use of NSAIDs as analgesics, then re-measure their level of knowledge.

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