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Literature Review

Literature Review: Relationship of Lifestyle with Incidence of Primary Dysmenorrhea in College Students

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ABSTRACT

Introduction: Menstruation is periodic and cyclic bleeding from the uterus, accompanied by endometrial desquamation. In specific individuals, menstruation can cause pain called dysmenorrhea, which is characterized by mild, moderate, and severe menstrual pain. Primary dysmenorrhea is not a life-threatening disorder, but it can hurt women's quality of life. Prevalence of menopause in Indonesia An estimated 55% of women of reproductive age experience pain during menstruation.

Material and Methods: We searched articles published from 2014-2020 in PubMed, Proquest, and Google Scholar with the keywords "primary dysmenorrhea" AND "student lifestyle". All data were gathered and analyzed.

Results: The results showed that 8 articles showed the relationship between lifestyle and the occurrence of primary menstrual pain among female students. In comparison, the other two articles show that there is no relationship between lifestyle and primary dysmenorrhea in female students.

Conclusion: This study concludes that an unhealthy lifestyle, such as high stress levels, infrequent exercise, and frequent consumption of fast food, is effective for primary dysmenorrhea during menstruation.

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INTRODUCTION

Menstruation is an important part of the life of a woman of reproductive age [1]. Menstruation is the periodic shedding of blood from the uterus (desquamation) of the uterine lining. For some people, there may be a condition called menstrual dysmenorrhea, which is characterized by mild, moderate or severe menstrual pain. Menstrual pain can hinder teenagers' daily activities, disrupt their concentration on learning, or even force sufferers to rest so they cannot participate in the learning process [2].

Adolescence is a high-risk group because during this stage major physical and mental change occurs [3]. There are two types of menstrual cramps: "primary" and "secondary". Primary menstrual pain is regular menstrual pain that occurs frequently and is not caused by another disease. The pain usually begins a day or two before your period or when menstrual bleeding begins and occurs in the lower abdomen, back, or thighs [4].

According to the World Health Organization (WHO), the global incidence of dysmenorrhea is very high. The average prevalence of dysmenorrhea in adolescent girls ranges from 16.8 to 81%. On average, 45% and 97% of women in Europe experience menstrual bleeding, with the lowest prevalence in Bulgaria at 8.8% and the highest prevalence in Finland at 94%. The prevalence of menstrual pain is high among young women, ranging from 20-90%. In Indonesia, 55% of women of childbearing age suffer from menstrual pain. [5]. A person's lifestyle, such as exercise, smoking, and diet, are factors that may cause early symptoms. Women who experience dysmenorrhoea tend to have lower levels of physical activity, high levels of stress, and frequent consumption of fast food than those who do not experience dysmenorrhoea [6].

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MATERIAL AND METHODS

Literature Search

We searched articles published between 2014 and 2020 in PubMed, Proquest, and Google Scholar with the keywords "primary dysmenorrhea" AND "student lifestyle." Before reviewing abstracts and full texts of selected studies, two authors independently evaluated article titles to identify articles that did not meet our inclusion criteria. Our research approach followed the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P). This assessment was not recorded.

Eligibility Criteria

Studies selected for review met the following criteria: (i) experimental, observational, and qualitative updates of recent studies published from 2014 to 2020 (ii) Focusing on the relationship between the lifestyle of female students and the incidence of primary dysmenorrhea (iii) language Indonesian and English.

We excluded low-quality studies, journal abstracts, systematic reviews, conference abstracts, case reports, opinion articles, news articles, and literature specifically reporting epidemiological outcomes.

Data Extraction

Based on the results of searches using the keywords "student lifestyle" and "primary dysmenorrhoea," 16,943 journals were obtained. Of the journals that matched the keywords of this research, there were 1,299 journals which were then screened 1,299 of these journals. In the screening results, it was found that 1,276 journals had to be excluded because the full text was not available. From the evaluation results, as many as 13 journals were excluded because they did not meet the inclusion criteria, and thus 10 full-text journals emerged from this process, which will be reviewed.

Data Analysis

Data analysis is done by analyzing the journals obtained from the data collection process. The stages of analyzing these journals include finding similarities (comparison), finding differences (contrast), recording (criticism), comparing (synthesis), and summarizing all the journals reviewed (summary).

RESULTS

Research was conducted in various regions in Indonesia and two countries, i.e., Iran and China.

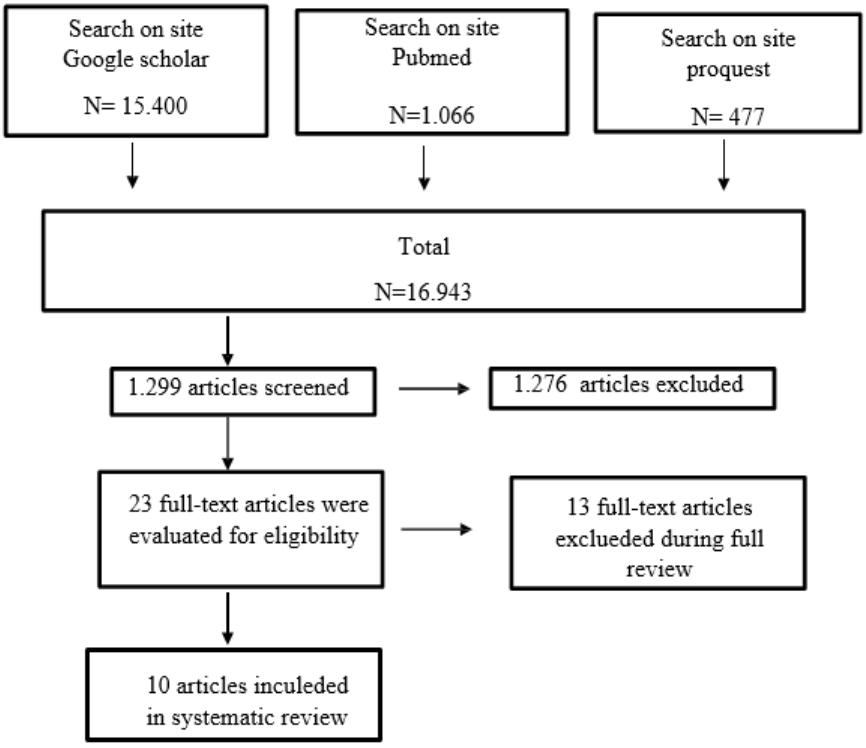


Fig.1. Systematic Reviews and Meta-Analyses Flowchart for Searching Articles

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Table 1. Characteristic of the Studies

First Author Name	Publication Year	Geographical Setting	Study Design	Sample Size
Tsamara and Raharjo [7]	2020	Tanjungpura, Indonesia	Cross-Sectional	48 Student
Sriwati [8]	2020	Padang, Indonesia	Cross-Sectional	146 Student
Masluroh [9]	2018	Jakarta, Indonesia	Cross-Sectional	121 Student
Sari et al. [10]	2015	Padang, Indonesia	Cross-Sectional	165 Student
Herdianti et al. [11]	2019	Bali, Indonesia	Cross-Sectional	96 Student
Nuzula and Oktaviana [12]	2016	Banyuwangi, Indonesia	Cross-Sectional	60 Student
Sundari et al. [13]	2020	Yogyakarta, Indonesia	Cross-Sectional	137 Respondents
Setiani and Veria [14]	2016	Semarang, Indonesia	Cross-Sectional	76 Student
Bavil et al. [15]	2018	Sari, Iran	Comparative Descriptive	250 Student
Hu et al. [16]	2020	China	Cross-Sectional	4606 Student

Sample sizes ranged from 48 to 4604 female students. This research was conducted in 2015 - 2020 (**Table 1**).

DISCUSSION

Of the ten articles, there are several similarities (compare). Some similarities were found in variables such as stress levels, physical activity, and fast food consumption. There are also several other similarities, namely, the research design used is a cross-sectional design, and the sample used is female students. Then, we also have the same measuring tool to measure stress levels, namely using the DASS (Depression Anxiety Stress Scala) questionnaire. Apart from that, of the 10 articles, there were 8 with the same research results. The results of the same study show that lifestyle is related to the occurrence of dysmenorrhea in female students. A person's lifestyle, such as exercise, stress, eating fast food, smoking, and diet are all factors that may lead to primary menstrual pain [17]. Women who experience dysmenorrhoea tend to have low activity levels, high-stress levels, and frequent consumption of fast food [16].

The differences between the ten articles above are in the year of research, population and sample size, sampling technique, and analysis results found. Several studies show that female students who experience high levels of stress, often consume fast food, and rarely do physical activity tend to experience primary dysmenorrhoea [7]. Women who consume less caffeine have less pain during their periods [18]. According to Sari Diana et al. [10], the cause of primary dysmenorrhoea is the frequency of consuming fast food. High levels of stress have a greater influence on the occurrence of primary dysmenorrhoea. So, the higher the level of stress, the higher a person's level of primary dysmenorrhoea. Respondents who experienced primary dysmenorrhoea were likelier to have light activity than respondents with heavy physical activity levels [11].

Two reviewed studies elucidated that there is no relationship between stress levels and primary dysmenorrhoea. The reason put forward by this article as to why the results of the research are not in line with the theory that has been put forward is because the study has a weakness, namely that it does not assess other risk factors related to primary dysmenorrhoea and the obstacles to research that use questionnaires are not being able to measure the honesty of respondents and obtain data when filling in The questionnaire is not fixed because it depends on mood and cannot measure cortisol levels directly [12].

In primary dysmenorrhea, the patient refers to a low abdominal pain that is moderate to intense and is usually accompanied by symptoms such as nausea, tiredness, irritability, headache, dizziness, vomiting and diarrhea. The symptoms may occur before and/or during menstruation, and last up to three days after menstruation, decreasing in intensity from the first day [19]. Several risk factors cause primary dysmenorrhea, including family history, age < 30 years, early menarche (< 12 years), longer menstrual cycle, nulliparous, low body mass index, low socioeconomic status and lifestyle [17].

Primary dysmenorrhea is influenced by the age of the woman [20]. The relationship between exercise, stress levels, fast food consumption, and the incidence of primary dysmenorrhoea explains that when stressed, the body will produce excessive estrogen and prostaglandin hormones. These estrogens and prostaglandins excessive contraction of the uterus, causing menstrual cramps [21]. The hormone adrenaline also increases, causing muscle tension in the

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body, including the muscles of the uterus, and leading to pain during menstruation. Fast food contains high levels of omega-6 unsaturated fatty acids, low levels of omega-3 fatty acids, and lots of salt and refined sugar. The intake of fatty acids in the diet begins the release of prostaglandins, which cause dysmenorrhea. Physical activity can reduce sympathetic activity so that pain is reduced. Physical activity also increases blood flow to the pelvis and can reduce stress in primary dysmenorrhea [10].

Results for all reviewed articles showed that the measuring tool used to measure stress levels was the DASS (Depression Anxiety Stress Scala) questionnaire. Then, efforts to reduce the incidence of primary dysmenorrhoea in female students are by providing education regarding a good and correct lifestyle, such as reducing consumption of fast food and frequently doing physical activity in daily life, at least doing light exercises such as sports or doing housework.

CONCLUSION

The lifestyle of a female student tends to have a greater influence on the incidence of primary dysmenorrhoea. Eating fast food is more likely to experience primary dysmenorrhoea. Rarely doing physical activity and frequently experiencing stress are at risk of experiencing primary dysmenorrhoea. Education regarding a good and correct lifestyle is needed to minimize the incidence of primary dysmenorrhoea in female students.

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CONFLICT OF INTEREST

The authors declared no conflict of interest.

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