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Strategies for Handling Dysminore in Adolescents

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Abstract---Background of the problem: Dysmenorrhea has been identified as a public health problem because of its high prevalence. Dysmenorrhea is a condition that affects various aspects of a woman's life. Although this condition occurs in many women, it is often underestimated and underdiagnosed, and therefore untreated. Early diagnosis of dysmenorrhea is very important. Therefore, women who experience menstrual pain and other accompanying symptoms during menstruation should be referred to an experienced gynecologist for differential diagnosis. Destination: The scoping review was conducted to map the available evidence on the dysmenorrhea treatment strategies used by adolescents to cope with their dysmenorrhea. Method: The database used by Pubmed, Ebsco, Science Direct and gray literature, namely Google Scholar with inclusion criteria, original articles, published above in 2017 published in English, articles discussing strategies for dealing with dysmenorrhea in adolescents, free full text and open access articles. Exclusion criteria for review articles, opinion articles, and organizational documents/guidelines. The eligibility of articles was assessed using the Joanna Briggs Institute tools (JBI), and the Critical Appraisal Program (CSAP). Results: The worldwide prevalence of dysmenorrhea ranges between 50% and 90%. A total of eleven studies said most of women used pharmacological methods to relieve menstrual pain. The most commonly chosen analgesics are those containing ibuprofen, drotaverine, and paracetamol. Most of the study participants stated that they were satisfied with the effect of pharmacotherapy. The findings of a number of other studies that physical activity can contribute to the improvement of symptoms associated with dysmenorrhea. Exercise is a protective factor to prevent dysmenorrhea. Physical activity is an effective treatment for primary dysmenorrhea. Conclusion: Non-pharmacological mechanisms can be an alternative for women who are not interested in pharmacological treatment. The World Health Organization (WHO) found that self-medication in individuals with lower medication knowledge may result in several potential risks. The need to inform young women about the appropriate and effective management of dysmenorrhea. Future research should focus on improving menstrual pain management and promoting menstrual health literacy for women with dysmenorrhea.

Keywords---adolescents, handling dysmenorrhea, strategies

Introduction

Based on WHO (WHO, 2018), the age limit for adolescents is 10 to 19 years. The number of males aged 10 to 19 years was 21,864.1 million and the number of females was 22,470.9 million (Bappenas, 2019). Dysmenorrhea has been identified as a public health problem due to its high prevalence. The incidence of dysmenorrhea in the world is quite high, namely, 43-93% of women have dysmenorrhea, on average more than 50% of women in each country experience it, and 5-10% of them have dysmenorrhea so severe that they leave their activities 1-3 days a month (Tariq et al., 2009).

Dysmenorrhoea is a condition that affects various aspects of a woman's life. Although this condition occurs in many women, it is often underestimated and poorly diagnosed, and therefore untreated. Early diagnosis of dysmenorrhoea is very important. Therefore, women who experience menstrual pain and other accompanying

symptoms during menstruation should be referred to an experienced gynecologist for a differential diagnosis (Tricco et al., 2016).

Primary dysmenorrhea is a spasmodic abdominal pain that occurs minus abnormalities in the gynecological organs. Secondary dysmenorrhea is spasmodic abdominal pain caused by abnormalities in gynecological organs such as endometriosis and ovarian cysts (Habibi et al., 2016). Dysmenorrhea has the following signs of pain levels: level I, the pain feels short, and those who undergo it can still do day-to-day activities, level II, pain is very troubling because those who are experiencing painkillers such as paracetamol or Eve usually have unbearable pain proven and grade III pain because it takes several days to rest. They suffer from pain experiencing dizziness with fainting metabolic disorders to back pain in diarrhea and pain in the inner thigh (Ratnawati, 2018).

Efforts to deal with adolescent health are regulated in Law number 36 of 2009 concerning health, including reproductive health in the sixth part of articles 71 to 77. Article 77 paragraph 3 states that reproductive health is carried out with promotive, preventive, curative and rehabilitative activities. The effort formed is in the form of the Adolescent Care Health Service (PKPR) program which has been developed since 2003. The government is realizing the health of the students. In the form of UKS programs to improve the ability to live healthily in the environment (Kemenkes RI., 2018).

In a study held by Sandra (2017), explaining adolescent knowledge about dysmenorrhea treatment, 74.20% of adolescents consumed hot water, 66.10% used warm compresses, 61.30% did moderate exercise, and 58% received massage and 50.00% did not take medication, 43.50% drank water (room temperature) and 32.20% of adolescents rested. A study after Lestari et al. (2018), showed that they experienced menstrual pain, and found that 82% of women caused pain, 40.2% drank hot water and suppressed the diseased area, 37.2% of women asked for parental help when problems occurred and only 12.4% of young women sought help from a doctor. According to research by Indrawati (2018), from the more information that adolescents have about dysmenorrhea, the more knowledge they have about how to overcome dysmenorrhea, the more enthusiastic they are to overcome dysmenorrhea problems, and it is expected that the government will pay attention (Bellis et al., 2020; Sinaga et al., 2020; Anggraini & Ekawati, 2020). Problem Solving dysmenorrhea problems can be done as psychomotor behavior. Thus, the author is interested in conducting a review of the relevant evidence and in accordance with the topic of the problem described above by using the Scoping review technique which aims to map the latest evidence related to the treatment of dysminore in adolescents (Femi-Agboola et al., 2017; Hestiantoro et al., 2012; Munn et al., 2018).

Method

The framework in this scoping review uses the rules of Preferred Reporting Items for Systematic Reviews and Meta-Analysis for Scoping Review (PRISMA-ScR) (Vlachou et al., 2019). The adapted PRISMA-ScR flowchart includes the following steps: (1) Identify results from systematic searches; (2) Perform filtering by title and abstract; (3) Assessment of eligibility based on full text; (4) Critical assessment; (5) The appropriate article is included (Harel, 2006; Davis & Westhoff, 2001; O'Connell et al., 2006).

Study identification – search and initial screening

The article search technique is created using several datasets and sources to search for literature. The databases taken are Pubmed, science direct, and Ebscho. Another literary source used is Google scholar. The criteria for exclusion and inclusion are as follows:

Table 1
Inclusion and exclusion criteria

| Inclusion Criteria | Exclusion Criteria |
|--|--|
| 1. Original article | 1. Thesis, thesis, draft, report, book |
| 2. Article published in English | 2. Opinion articles |
| 3. Article on disminor handling behavior | 3. Publication manuscript |
| 4. Articles from 2017 | |
| 5. Free Full text | |

The keywords used in the article search are teenagers OR adolescents AND treatment OR management AND dysmenorrhea OR menstrual pain OR painful menstruation.

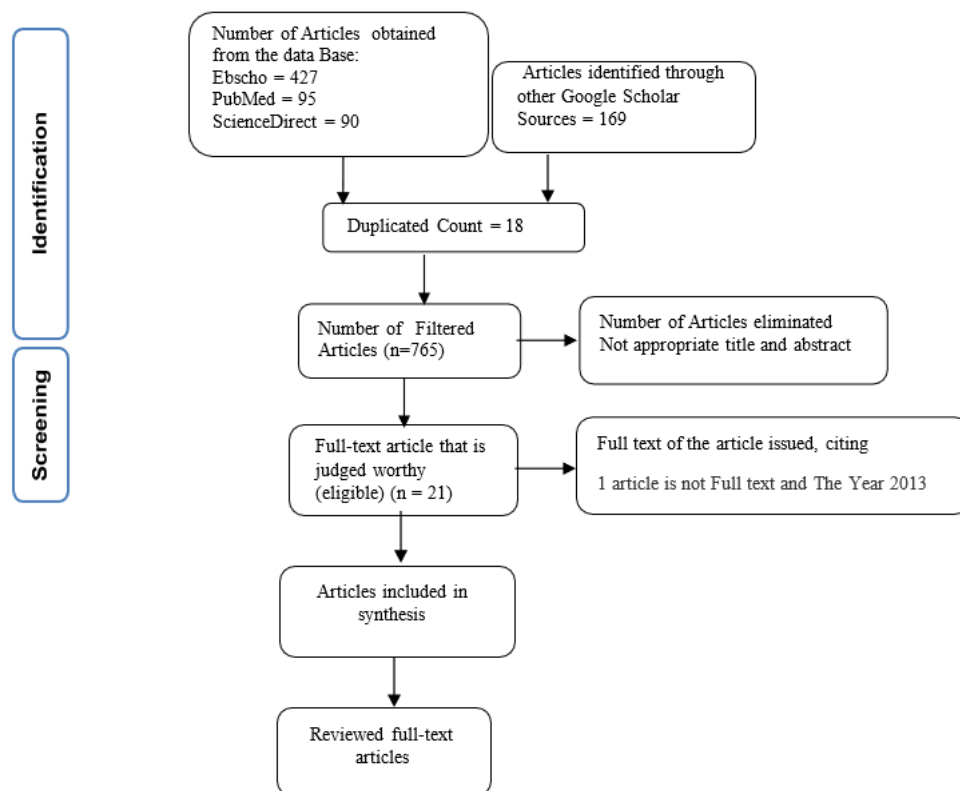


Figure 1. PRISMA Flowcharts

Choice of evidence sources (Steps 2 and 3)

In this step, 765 articles are filtered by title and abstract by marking each note 'Include, Exclude, or Maybe' in Rayyan's program. 744 articles were eliminated from the title and abstract.

Critical Assessment (Step 4)

The exclusion of 1 study based on critical assessment was not full text and was published in 2013, so the remaining 20 articles were included in the synthesis. The authors extract the data as presented in Table 3. Data extraction is performed according to the tables developed in the Scoping Review. The table was tested on several research (Peters et al., 2015), and adjusted to include key information on all studies.

Selection of sources of Evidence

After obtaining evidence, critical appraisal is carried out using the form from JBI Critical Appraisal Tools to assess the quality of the evidence. The selected data meets the criteria set by the researcher.

Data charting

The data are extracted independently by the researcher and the following information is considered for each article: (1) title, first author, year of publication, and country; (2) research methods and instruments; (3) the main results obtained.

Table 2
Charting data

| No | Title/Author/Year | Methods and Instruments | Hasil |
|----|--|--|--|
| S1 | Primary dysmenorrhea and self-care strategies among Chinese college girls: a cross-sectional study (Chen et al., 2019). Chinese | <i>Cross-sectional study.</i> Self-report questionnaire and Visual Analog Scale | Reduced physical activity (94.6%), maintaining warmth (84.6%), communicating dysmenorrhea with friends or classmates 79.0%), drinking warm drinks (75.7%) and avoiding cold drinks and food (74.2%). In addition, only 34.8% of self-medication was with Western medicine (15.6%), traditional Chinese medicine (8.6%), or both (10.6%). |
| S2 | Management of Primary Dysmenorrhea among University Students in the South of Spain and Family Influence, (Parra-Fernández et al., 2020). Spanish | Cross-sectional observational studies. Questionnaire | Only 43.8% used non-pharmaceutical, most often antalgic positioning methods, massage and local heat. |
| S3 | Women's experiences of dysmenorrhoea – preliminary study, (Tataj-Puzyna et al., 2021). Polish | Diagnostic surveys. The questionnaire consists of 26 questions | There were 86.14% of the study participants using pharmacological methods to relieve menstrual pain, and non-pharmacological methods 74.10% women. |
| S4 | Prevalence of dysmenorrhea among university students in Northern Ghana; its impact and management strategies, (Ameade et al., 2018). Ghana | Cross-sectional studies. Questionnaire | Paracetamol is the most commonly used drug. |
| S5 | Pain management and coping strategies for primary dysmenorrhea: A qualitative study among female nursing students, (Fernández-Martínez et al., 2021). Spanish | Qualitative case studies. Video conferencing | Use non-pharmacological strategies and seek advice from other women in their family/social environment. |
| S6 | Dysmenorrhea, associated symptoms, and management among students at King Khalid University, Saudi Arabia: An exploratory study, (Alsaleem, 2018). Saudi Arabia | Cross-sectional study. Questionnaire | There were (66%) of respondents reported using medications, using herbal remedies (69.1%), (23%) respondents reporting consulting a doctor. Most of them consult with friends and family. |
| S7 | Complementary and Alternative Medicine Use for Primary Dysmenorrhea among Senior High School Students in the Western Region of Ghana, (Samba Conney et al., 2019). Ghana | Cross-sectional. Semi-structured questionnaires | 32% use mind-body medications such as endurance and relaxation, 31% use complete and alternative treatments such as hot water therapy, 15% use biological-based drugs such as herbal products, and 22% use manipulative drugs and body-based systems such as exercise. |
| S8 | Knowledge and Self-Management of Dysmenorrhea Among Female Adolescents in Selected Secondary Schools in Ogun State, Nigeria, (Ore & Ogundeko, 2021). Nigeria | Cross-sectional descriptive. Structured questionnaire | Pharmacological paracetamol 61.2% And morphine 5.8 % Nonpharmacological as herbal medicine 38.3 %. |
| S9 | Health-seeking behavior among tertiary school female students with | Cross-sectional | Pharmacies 22.3%, hospitals 13.0% and 1.5% seek health care from herbal and |

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|-----|---|--|--|
| | Dysmenorrhea in Delta State, South-South, Nigeria, (Owonaro et al., 2021). Nigeria | scriptive. Structured questionnaire | spiritual homes. 59.8% use Paracetamol and 1.5% use herbs to relieve menstrual pain. Generally, more people visit the facility's private health. |
| S10 | Primary dysmenorrhea among the adolescents in Kwara state, Nigeria: The prevalence, knowledge, and management, (Saka et al., 2018). Nigeria | Cross-sectional. Semi-structured questionnaires | Paracetamol 54 (32%) is the most widely used drug for self-medication while others include Feedline 33 (19.3), Diclofenac 27 (15.8) and Gelucee 25 (14.6). |
| S11 | Experience of dysmenorrhea among a group of physical therapy students from Cairo University: an exploratory study, (Kamel et al., 2017). Cairo | Prevalence studies. The questionnaire was developed by Potal et al | A total (91.2%) did not seek medical consultation for dysmenorrhea, and 62.4% used analgesics. |
| S12 | Prevalence, risk factors, and management practices of primary dysmenorrhea among young females, (Karout et al., 2021). Lebanon | Cross-sectional. Questionnaires of closed and open-ended questions. | Mefenamic acid (26.2%), ibuprofen (25%), and paracetamol (11.5%), which is administered when pain begins (58.2%). Most NSAIDs are more potent than paracetamol in handling primary dysmenorrhea (P=0.001). |
| S13 | Prevalence, Wellbeing, and Symptoms of Dysmenorrhea among University Nursing Students in Greece, (Vlachou et al., 2019). Greek | Cross-sectional study. Questionnaire | Women with moderate and severe pain reported taking pain relievers (nonsteroidal anti-inflammatory drugs NSAIDs), paracetamol, etc., p < 0,0005). |
| S14 | The Impact of Dysmenorrhea on Quality of Life among Spanish Female University Students, (Fernández-Martínez et al., 2019). Spanish | Cross-sectional. Ad hoc surveys | 90.5% of students with dysmenorrhea use pharmacological treatment and 80% self-medicate. |
| S15 | Prevalence, Impact, and Management Practice of Dysmenorrhea among University of Gondar Students, Northwestern Ethiopia: A Cross-Sectional Study, (Gebeyehu et al., 2017). Northwestern Ethiopia | Cross-sectional. The adopted questionnaire was translated into the local language of Amharic and then back into English. | (63,8%) respondents used home remedies as a primary management option. Ibuprofen and diclofenac are the most commonly used drugs for overcoming dysmenorrhea. |
| S16 | Prevalence and Management of Dysmenorrhea Among Secondary School Adolescents in Enugu State, Nigeria, (Onu et al., 2020). Nigeria | Cross-sectional. Questionnaire adapted from previous literature | (31.8%, n = 472) use over-the-counter medications for menstrual symptoms. The age and severity of dysmenorrhea significantly predict the likelihood of using the agent pharmacological for dysmenorrhea. |
| S17 | Prevalence of Primary Dysmenorrhea among Secondary School Students and Its Treatment Modalities in Fayed City, (Abdel-Sattar, 2018). Egypt | Cross-sectional. The questionnaire and the severity of pain were measured with NRS. | (11,9% doctor's consultation, 67.8% of students use Analgesics and 40.7% used appendages (hot water bottles, belly massages, and hot herbal liquids) to reduce menstrual pain. |
| S18 | Prevalence and Impact of Dysmenorrhea Among University Students in Ireland, (Söderman et al., 2019). Irish | Cross-sectional. Questionnaire | The use of analgesics (79.5%), paracetamol is most widely used (60.5%) despite its limited effectiveness. |
| S19 | Acupressure to Reduce Dysmenorrhea in Adolescents, (Siyamti et al., 2021). Indonesian | Quantitative experiments. Assessment of pain intensity using a visual analog scale | There was a difference in the degree of post-acupressure pain in the intervention group with a mean of 2.43 and a p-value of |

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|-----|---|---|---|
| | | (VAS). | 0.027 (p<0.005). |
| S20 | A Study on the Prevalence of Dysmenorrhea and Its Relationship with Physical Activity among Young Adults, (Ning et al., 2020). Malaysia | Cross-sectional. Structured questionnaire | There is a moderate negative correlation between pain intensity and primary dysmenorrhea, R= -0.42, p<0.035. These results suggest that maintaining good physical activity is important in reducing symptoms of Dysmenorrhea. |

Results and Discussion

Article Characteristics

Sixteen articles are cross-sectional, and 1 diagnostic survey each, Qualitative case study, Prevalence, and experimentation study. As 8,489 women participated in the study. Articles come from 14 countries: 2 from Ghana, 4 from Nigeria, 3 from Spain, and 1 each from Cairo, Egypt, Northern Ethiopia, Ireland, Poland, Greece, Indonesia, Malaysia, China, Saudi Arabia, and Lebanon.

Pharmacological

Most dysmenorrhea goes undiagnosed and untreated, although substantial humanistic and economic burdens are associated with this condition (Sukini, 2017; Wong et al., 2016; Wong & Khoo, 2010; Ernawati et al., 2022). Improving dysmenorrhea management is critical to overcoming this burden, given that treatment is associated with a better quality of health life and cost savings. A previous meta-analysis of clinical trial data across various disease conditions showed that the alignment of treatment with patient preferences was associated with higher treatment satisfaction and better clinical outcomes. Therefore, patient preferences will play an integral role in designing strategies to improve dysmenorrhea management (Akiyama et al., 2018); (Akiyama et al., 2017).

A total of eleven studies say most women use pharmacological methods to relieve menstrual pain. The most commonly chosen analgesics are those containing using ibuprofen, drotaverine, and paracetamol. Most of the study participants stated that they were satisfied with the pharmacotherapy effect (Tataj-Puzyna et al., 2021); (Ameade et al., 2018); (Ore & Ogundeko, 2021); (Owonaro et al., 2021); (Saka et al., 2018); (Kamel et al., 2017); (Karout et al., 2021); (Vlachou et al., 2019); (Gebeyehu et al., 2017); (Abdel-Sattar, 2018); (Söderman et al., 2019). One study showed that most respondents (86.14%) used prescription analgesics and over-the-counter medications. The most frequently chosen are those containing ibuprofen. These substances, such as ketoprofen and nimesulide, belong to the group of nonsteroidal anti-inflammatory drugs, which are effective in the treatment of dysmenorrhoea (Tataj-Puzyna et al., 2021).

Paracetamol (Acetaminophen) or its combination preparation is the most widely used analgesic despite its severe menstrual pain. Despite showing weaker analgesic effects than NSAIDs, paracetamol has a better safety profile and could be appropriate for managing dysmenorrhea in women at risk of peptic ulcer or asthma, a condition in which NSAIDs are contraindicated (Ameade et al., 2018). NSAIDs are the best initial therapy for dysmenorrhea because they have a direct analgesic effect through the inhibition of prostaglandin synthesis and also lower the volume of menstrual flow. NSAIDs are very effective in treating dysmenorrhea if taken before the onset of menstruation and continued until the second day (Yesuf et al., 2018).

If NSAIDs alone are not enough, it can be combined with oral contraceptives. NSAIDs are drugs that work by blocking the production of prostaglandins through the inhibition of cyclooxygenase, the enzyme responsible for the formation of prostaglandins. Common NSAIDs (aspirin, naproxen, and ibuprofen) are very effective in relieving menstrual pain. It works by making menstrual cramps less severe and can prevent other symptoms such as nausea and diarrhea. NSAIDs reduce moderate to severe pain in women with primary dysmenorrhea (Guimarães & Póvoa, 2020).

The research of Karout et al established that drugs are superior to non-pharmacological action in reducing pain scores. Thus, in managing dysmenorrhea, non-pharmacological measures can be adopted as an adjunct therapy and for patients who cannot use analgesics (Karout et al., 2021). The negative aspect of *Self Medication* is that most people are unaware of the side effects and exact dosages of the drugs to be used, or the drug interactions. The World Health Organization (WHO) found that *Self Medication* in individuals with lower treatment knowledge may result in some potential risks (De Sanctis et al., 2020).

Non-Pharmacological

The prevalence of dysmenorrhea worldwide ranges between 50% and 90%. The findings of a number of studies support evidence that physical activity may contribute to the improvement of dysmenorrhea-related symptoms. In general, many doctors advise patients to engage in physical exertion (Eryilmaz et al., 2010; Johnson, 1988; Herliah et al., 2022). In a study by Ortiz et al with mixed interventions of relaxation exercises, Kegel exercises, stretching and jogging, and with a total duration of 50 minutes, three times a week, an increase in pain levels was shown by dysmenorrhea patients when compared to a control group that did not perform any exercise. Sports practice becomes a protective factor to prevent the onset of dysmenorrhea. Doctors say physical activity is an effective treatment for primary dysmenorrhea (Chen et al., 2019); (Tataj-Puzyna et al., 2021); (Fernández-Martínez et al., 2019).

Avoiding exercise due to menstrual pain is counterproductive. Exercise has been shown to increase circulating endorphin levels and has a beneficial effect on depression and acute exercise has been shown to reduce the perception of experimentally induced pain. Given this, women with dysmenorrhea may benefit from regular exercise even during menstruation in physical and psychological menstrual symptoms (Vlachou et al., 2019). Dysmenorrhea is less common in those who do regular exercise three sessions per week compared to those who do not exercise. Exercise is most effective in the prevention of dysmenorrhea when it begins before the first menstruation and remains part of the adult lifestyle (Bavil et al., 2018).

Previous research (Fernández-Martínez et al., 2019), has shown that the use of analgic posture and physical activity, such as walking, helps relieve menstrual pain. With regard to the use of distractions, such as watching television or listening to music becomes habitual in self-care for dysmenorrhea. Other strategies have been shown to be effective in reducing menstrual pain such as hot compresses, regulating diet and acupressure (Fernández-Martínez et al., 2021). The mechanism of acupuncture can be an alternative in women who are not interested in pharmacological treatment, involving the stimulation of nerve fibers and receptors in complex interactions with endorphins and serotonin (Guimarães & Póvoa, 2020).

Conclusion

Non-pharmacological mechanisms can be an alternative in women who are not interested in pharmacological treatment. The World Health Organization (WHO) found that Self Medication in individuals with lower treatment knowledge can result in some potential risks. It is necessary to inform young women about the proper and effective management of dysmenorrhea. Future research should focus on improving menstrual pain management and promoting menstrual health literacy for women affected by dysmenorrhea.

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