

CHAPTER I

INTRODUCTION

1.1 Research Background

Menstruation usually lasts 3 to 8 days, with an average cycle of approximately 28 days.¹ One common issue women face during menstruation is menstrual pain, or dysmenorrhea. The prevalence of dysmenorrhea in Indonesia is high, affecting approximately 64.25% of adolescents, within the general range of 60-75%. Three-quarters of these adolescents experience pain that ranges from mild to severe, while the remaining quarter suffer from severe pain that is often managed with various methods, including painkillers. Dysmenorrhea involves cramping of the uterine muscles, causing pain in the abdomen, pelvis, and lower back.² This condition is associated with increased prostaglandin production and an imbalance in progesterone levels.³ Additionally, dysmenorrhea can be a sign of inflammation in the endometrium during menstruation.⁴

Dysmenorrhea is generally not life-threatening, particularly primary dysmenorrhea, which results from hormonal changes during menstruation. However, secondary dysmenorrhea caused by certain medical conditions, such as endometriosis, can cause fertility problems, tubal infections, or even ectopic pregnancy. The pain caused by dysmenorrhea often interferes with daily activities, becoming a reason for someone's absence from school or work.⁵ During menstruation, women usually experience physiological changes in their bodies that can affect their quality of life, such as irritability, difficulty sleeping, fatigue, weakness, rapid mood swings, physical complaints such as headaches, abdominal pain, joint pain, nausea, vomiting, diarrhea or constipation, breast pain, and acne on the face.⁶

The pain caused by menstrual cramps can be relieved using medications such as acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs), diclofenac,

¹ Miranti, Wijaya, and Deddy Ilyas, "Efektivitas Kunyit Asam Dalam Mengatasi Dismenorea Pada Remaja (Studi Kasus Siswi Kelas X SMK Az-Zawiyah Tanjung Batu)," *Jurnal Pendidikan, Sains Dan Teknologi* 2, no. 2 (2023): 883–91, <https://doi.org/10.47233/jpst.v2i2.1269>.

² Rika Herawati, *Faktor-faktor Yang Mempengaruhi Kejadian Nyeri* (2017).

³ Herawati, 1.

⁴ Merk Showa et al., "Menara Ilmu" XII, no. 10 (2018): 47–51.

⁵ Showa et al.

⁶ Herawati, *Faktor-faktor Yang Mempengaruhi Kejadian Nyeri*, 1.

ibuprofen, and naproxen. NSAIDs work by inhibiting the production of prostaglandins, thereby relieving pain.⁷ In addition to medication, dysmenorrhea can also be treated with herbal therapy. One of the herbal remedies used by the Prophet Muhammad SAW is black cumin or *habbatussauda* (*Nigella Sativa*). As narrated by Bukhari, the Prophet Muhammad SAW said, "*In habbatussauda (black cumin) there is a cure for every disease except death.*"⁸

Habbatussauda (*Nigella sativa*), also known as black cumin, is a plant that can help treat various diseases, including menstrual pain.⁹ This is because *black cumin* contains thymoquinone, which has analgesic, anti-inflammatory, and emmenagogue effects that can inhibit the formation of thromboxane A₂ and leukotriene B₄, thereby inhibiting the cyclooxygenase and 5-lipoxygenase pathways.¹⁰ Inhibiting the cyclooxygenase (COX) enzyme can reduce pain and inflammation, thereby alleviating the discomfort felt.¹¹

In addition to *habbatussauda*, pineapple can also be used to treat dysmenorrhea. Pineapple is rich in nutrients, including proteins, fats, carbohydrates, minerals, and vitamins.¹² This enzyme may reduce menstrual pain by inhibiting the production of prostaglandins, which mediate pain and inflammation. The pectin, vitamin C, and bromelain enzyme content in pineapple can reduce pain and improve blood circulation.¹³ Bromelain enzyme reduces bradykinin levels and the release of

⁷ Ezat Samadipour et al., "Local Usage of Nigella Sativa Oil as an Innovative Method to Attenuate Primary Dysmenorrhea: A Randomized Double-Blind Clinical Trial," *Oman Medical Journal* 35, no. 5 (2020): 1–6, <https://doi.org/10.5001/OMJ.2020.109>.

⁸ Abu Abdullah Muhammad bin Ismail bin Ibrahim. Imam Bukhari Al-Bukhari, *Shahih Bukhari No 5255* (Maktaba al-Bushra, 2022).

⁹ Samadipour et al., "Local Usage of Nigella Sativa Oil as an Innovative Method to Attenuate Primary Dysmenorrhea: A Randomized Double-Blind Clinical Trial."

¹⁰ Ilyas, "Efektivitas Kunyit Asam Dalam Mengatasi Dismenorea Pada Remaja (Studi Kasus Siswi Kelas X SMK Az-Zawiyah Tanjung Batu)."

¹¹ Dwi Koko Pratoko, "Molecular Docking Senyawa Fitokimia Piper Longum (L.) Terhadap Reseptor Siklooksigenase-2 (Cox-2) Sebagai Antiinflamasi," *Chemistry Progress* 5, no. 1 (2019): 31–36.

¹² Swita Anggraini, Ageng Septa Rini, and Agus Santi Br. Ginting, "Studi Kasus: Pemberian Jus Nanas Dan Jahe Merah Terhadap Disminore Pada Remaja Putri Di PMB S Bangka Selatan," *Innovative: Journal Of Social Science Research* 4, no. 3 (2024): 689–99, <https://doi.org/10.31004/innovative.v4i3.10443>.

¹³ Gani and Syahidah.

arachidonic acid and inhibits prostaglandin production.¹⁴ This reduces pain, improves blood circulation, and can help the wound healing process.¹⁵

To address the problems caused by dysmenorrhea, this study aimed to test the use of habbatussauda and pineapple. Quality of life Quality of life is a measure of a person's well-being and satisfaction with life, covering four aspects: physical, mental, social, and environmental. It is hoped that reducing dysmenorrhea pain will improve the quality of life of respondents. The use of pineapple and black cumin to treat dysmenorrhea as a single therapy has been proven to be effective. However, the use of both in combination has never been done. With this research, it is hoped that therapy for dysmenorrhea will be more optimal due to the use of a combination of black cumin and pineapple juice.

1.2 Research Problems

The research question for this study is:

1. How effective are pineapple juice and *habbatussauda* in reducing dysmenorrhea?
2. How effective are pineapple juice and *habbatussauda* in improving the quality of life of menstruating women who experience dysmenorrhea?

1.3 Research Objectives

The objectives of this study are:

1. To determine the effectiveness of pineapple juice and *habbatussauda* in reducing dysmenorrhea.
2. To determine the effectiveness of pineapple juice and *black seed* in improving the quality of life in menstruating women experiencing dysmenorrhea.

¹⁴ Anggraini, Rini, and Ginting, "Studi Kasus: Pemberian Jus Nanas Dan Jahe Merah Terhadap Disminore Pada Remaja Putri Di PMB S Bangka Selatan."

¹⁵ Gani and Syahidah, "Pengaruh Pemberian Jus Nanas (Ananas Comosus l) Terhadap Intensitas Disminore Pada Remaja Putri."

1.4 Research Benefits

1. Theoretical Benefits

The results of this study are expected to expand scientific knowledge and serve as a reference for future research on using pineapple juice and black cumin as therapies for dysmenorrhea in menstruating women.

2. Practical Benefits

The results of this study are expected to provide an alternative for the public, particularly menstruating women experiencing dysmenorrhea, to self-medicate using *black seed* and pineapple juice to alleviate dysmenorrhea.

1.5 Authenticity of the Research

Research on *black seed* and pineapple juice for managing dysmenorrhea has been conducted by several researchers, as shown in Table 1 below.

Table 1. Authenticity of the Research

Research Title	Research Method	Variables	Research Results	Research Differences
The Effect of Pineapple Juice (<i>Ananas comosus</i> L) Intake on the Intensity of Dysmenorrhea in Adolescent Girls ¹⁶	Experimental	Dependent: Dysmenorrhea Independent: Pineapple Juice	Administration of pineapple juice during menstruation resulted in a decrease in pain levels from moderate (57.6%) to mild (54.5%).	Independent: Combination of pineapple juice and <i>habbatussauda</i>
Local Use of <i>Nigella Sativa</i> Oil as an Innovative Method to Attenuate Primary Dysmenorrhea: A Randomized Double-Blind Clinical Trial ¹⁷	Experimental	Dependent: primary dysmenorrhea Independent: black cumin oil	Administration of black cumin oil during 3 menstrual cycles resulted in a decrease in pain levels from severe pain to moderate pain on average.	Independent: pineapple juice and <i>habbatussauda</i>

¹⁶ Gani and Syahidah.

¹⁷ Samadipour et al., "Local Usage of *Nigella Sativa* Oil as an Innovative Method to Attenuate Primary Dysmenorrhea: A Randomized Double-Blind Clinical Trial."