CHAPTER I
INTRODUCTION

1.1 Research Background

Women typically experience a menstrual period from adolescence to adulthood, which involves the periodic shedding of blood through the vagina, originating from the uterine lining.[1] During menstruation, many women face various symptoms that can cause physical discomfort and may lead to a decrease in activities. One common issue of menstrual disturbances is dysmenorrhea.[2] Dysmenorrhea is caused abnormal uterine contractions, which are caused by an increase in prostaglandins that lead to hypertonicity and vasoconstriction in the myometrium, subsequently triggering pain in the lower abdomen.[3]

According to data from the World Health Organization (WHO) in 2020, the average incidence of dysmenorrhea across countries is 90%, with 10-16% classified as severe.[4] The incidence rate of dysmenorrhea in Indonesia in 2019 was quite high, reaching 60-70%.[5] Based on data from the 2021 East Java Adolescent Reproductive Health Survey (SKRR), approximately 4,653 adolescents were reported to suffer from dysmenorrhea.[6] A preliminary study conducted at Darussalam Gontor University revealed that 80% of female students experienced dysmenorrhea.[7]

Dysmenorrhea can disrupt learning activities and negative impack on women's productivity and quality of life. Female students suffering from dysmenorrhea often find themselves unable to attend classes. When a female

[1] Ammar, Faktor Risiko Dismenore Primer Pada Wanita Usia Subur Di Kelurahan Ploso Kecamatan Tambaksari Surabaya, (Surabaya: *Jurnal Berkala Epidemiologi*, 2019), p. 38

[2] Irianti, *Faktor-faktor yang Mempengaruhi Kejadian Disminore pada Remaja*, (Pekanbaru: Jurnal Menara Ilmu, 2018), p. 8

[3] Rhamadani *et al*, Pengaruh Abdominal Streatching Exercise Terhadap Nyeri Dismenore Pada Remaja Di SMK Pelita Alam, (Bekasi: Skripsi, 2024), p. 23

[4] WHO, *World Health Organization, Dismenorrhea Adolescent*, 2020.

[5] Oktorika *et al*, *Hubungan Index Masa Tubuh (IMT) Dengan Skala Nyeri Dismenorea Pada Remaja Putri Di Sma Negeri 2 Kampar*, (Kampar: Jurnal Ners Research, 2020), p. 124

[6] Wieminaty *et al*, *Terapi Minuman Jahe dalam Membantu Meredakan Nyeri Menstruasi pada Remaja Putri*, (Jember: Jurnal Pengabdian Masyarakat Al-Qodiri, 2023), p. 88

[7] Nisa, *Analisis Hubungan Tingkat Pengetahuan Terhadap Penggunaan Obat Anti Inflamasi Non-Steroid untuk Dismenore pada Mahasiswi Universitas Darussalam Gontor*, (Mantingan, Skripsi, 2024), p. 37

student experiences dysmenorrhea, their learning activities on campus are interrupted, and sometimes they even ask for permission to go home or faint.[8] According to research, 59.2% of women become less active, 5.6% miss school, classes, or work, while 32.2% report no complaints in their daily activities.[9]

Several factors contribute to the incidence of dysmenorrhea. Including being under 30 years old, having a Body Mass Index (BMI) less than 20 kg/m², smoking, early menarche (less than 12 years old), the duration of menstruation, family history, anemia, psychological conditions, exercise, allergies, and hormonal factors.[10] According to a study by Nuraini in 2021, factors contributing to dysmenorrhea include knowledge factors, psychological factors, endocrine factors, organic disorders, allergies, and constitutional factors (stress levels, smoking, eating habits, hemoglobin levels, nutritional status, and age at menarche).[11]

One of the factors commonly experienced by women with dysmenorrhea is stress levels.[12] Stress causes disruptions in the secretion of adrenaline and cortisol, which affect prostaglandin synthesis. Stress can also reduce the production of progesterone and alter prostaglandin synthesis.[13] According to research conducted by Achyar and Rofiqoch in 2020, one factor that influences dysmenorrhea is stress, with an impact of 67.3%.[14] Other studies have also shown that stress tends to cause dysmenorrhea, with a likelihood of 3.781 times higher incidence.[15]

[8] Ningsih *et al*, *Efektivitas Paket Pereda Nyeri pada Remaja dengan Dismenore*, (Depok: Jurnal Keperawatan Indonesia, 2019), p. 68

[9] Salamah, *Hubungan Pengetahuan dan Sikap Remaja Putri terhadap Perilaku Penanganan Dismenore*, (Bekasi: Jurnal Ilmiah Kebidanan Indonesia, 2019), p. 124

[10] Andriyani *et al*, *Hubungan Antara Anemia, Status Gizi dan Faktor Psikologis (Stress) dengan Kejadian Dismenorea*, (Pekanbaru: Jurnal Penelitian Kesehatan Suara Forikes, 2019), p. 198

[11] Nuraini *et al*, *Hubungan Usia Menarche, Status Gizi, Stres dan Kadar Hemoglobin Terhadap Kejadian Dismenorea Primer pada Mahasiswi Fakultas Kedokteran, Universitas Mulawarman*, (Samarinda: Jurnal Sains Dan Kesehatan, 2021), p. 35

[12] Achyar *et al*, *Stres, Lama Tidur, Lama Penggunaan Hp dan Hubungannya dengan Dismenore*, (Purwokerto: Jurnal Ilmiah Rekam Medis dan Informatika Kesehatan, 2020), p. 1

[13] *Ibid*, p. 4

[14] *Ibid, p. 3*

[15] *Ibid*, p. 6

The incidence of dysmenorrhea can be influenced by other factors such as the macronutrient and micronutrient content in the foods consumed.[16] Eating habits are influenced by individual, social, and environmental factors. Unhealthy eating habits, such as consuming foods with insufficient nutrients, skipping meals, and eating at irregular times, can lead to various health problems.[17] A study found that 49.8% of female students only eat twice a day, with the frequency of consuming vegetables, fruits, meat, and dairy products being relatively low.[18] According to research conducted by Damayanti *et al* in 2021, there is a relationship between eating habits and the severity of dysmenorrhea.[19]

Hemoglobin levels can also influence the incidence of dysmenorrhea.[20] Dysmenorrhea can occur due to an increase in prostaglandin levels in the blood, which leads to stimulation and a decrease in blood flow.[21] A decrease in blood flow leads to lower oxygen levels and a reduced pain threshold in the afferent pelvic nerve fibers. This indicates that the lower the hemoglobin levels in women of reproductive age, the more likely they are to experience dysmenorrhea.[22] Research conducted by Pundati *et* al in 2020, it was shown that there is a relationship between hemoglobin levels and dysmenorrhea.[23] However, in contrast to the study conducted by Nuraini *et al* in 2021, which

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[16] Negi *et al*, *Menstrual abnormalities and their association with lifestyle pattern in adolescent girls of Garhwal*, (India: Journal of family medicine and primary care, 2018), p. 45

[17] Kabir *et al*, *Factors influencing eating behavior and dietary intake among resident students in a public university in Bangladesh*, (Bangladesh: Journal of medical sciences, 2019), p.78

[18] Bede *et al*, *Dietary habits and nutritional status of medical school students: the case of three state universities in Cameroon*, (Cameroon: The Pan African medical journal, 2020), p.35

[19] Damayanti *et al*, *Hubungan Kebiasaan Makan dengan Derajat Keparahan Dismenorea pada Remaja Putri*, (Surabaya: Indonesia Midwifery and Health Scince Journal, 2021), p. 83

[20] Anurogo, *Cara Jitu Mengatasi Nyeri Menstruasi* (Yogyakarta: Penerbit Andi, 2018), p. 34

[21] Mawaddah *et al*, *Hubungan Kadar Hemoglobin dengan Kejadian Dismenorea pada Remaja*, (Palangkaraya: Jurnal Berkala Kesehatan, 2019), p. 62

[22] Vitiasaridessy, *Kadar Hemoglobin dengan Kejadian Dismenorea pada Remaja Putri*, (Jakarta: Jurnal EduHealth, 2018), p. 34

[23] Pundati *et al*, *Faktor-Faktor yang Berhubungan dengan Kejadian Dismenore pada Mahasiswa Semester VIII Universitas Jendral Soedirman Purwokerto*, (Purwokerto: Jurnal Ilmiah Kesehatan Masyarakat, 2020), p. 41

showed that there is no relationship between hemoglobin levels and dysmenorrhea.[24]

Women who menstruate are considered impure and are prohibited from performing certain acts of worship, such as prayer (salat), fasting, and reading the Qur'an in Islam. However, menstruation is actually a great blessing from Allah SWT because it indicates that women are still capable of having offspring.[25] The issue of menstruation is explained in a hadith of the Prophet Muhammad (SAW) narrated by Bukhari, which states that menstruation is something that Allah SWT has decreed for the children of Adam.[26] Motivated by this explanation, the researcher was motivated to conduct a study titled "The Relationship Between Stress Levels, Eating Habits, and Hemoglobin Levels with the Incidence of Dysmenorrhea."

1.2 Research Problem

Is there a relationship between stress levels, eating habits, and hemoglobin levels with the incidence of dysmenorrhea among female students at the Pesantren-Based University?

1.3 Research Objectives

1. **General Objective**

   To analyze the relationship between stress levels, eating habits, and hemoglobin levels with the incidence of dysmenorrhea among female students at the Pesantren-Based University.

2. **Specific Objective**

   a. To analyze the relationship between stress levels and the incidence of dysmenorrhea among female students at the Pesantren-Based University.

   b. To analyze the relationship between eating habits and the incidence of dysmenorrhea among female students at the Pesantren-Based University.

[24] Nuraini *et al, Hubungan Usia Menarche, Status Gizi, Stres, dan Kadar Hemoglobin Terhadap Kejadian Dismenorea Primer pada Mahasiswi Fakultas Kedokteran Universitas Mulawarman*, (Samarinda: Jurnal Sains dan Kesehatan, 2021), p. 48

[25] Muttaqin, *Menstruasi dalam Perspektif Islam dan Sains*, (Madura: Jurnal Studi Islam, 2019), p. 169

[26] Kemenag RI, Tafsir Surah An-Nahl ayat 11.

c. To analyze the relationship between hemoglobin levels and the incidence of dysmenorrhea among female students at the Pesantren-Based University.

1.4 Research Benefits

1. Theoretical Benefits

The results of this study are expected to provide knowledge or scientific literature that can be used as a reference in the field of nutrition or other healthcare professions to inform women of reproductive age about the relationship between stress levels, eating habits, and hemoglobin levels with the incidence of dysmenorrhea. This information can serve as a valuable source of knowledge for women of reproductive age in general.

2. Practical Benefits

a. For the Researcher

This study is expected to give an experience in designing and conducting research about relationship between stress levels, eating habits, and hemoglobin levels with the incidence of dysmenorrhea.

b. For the Female Students (Respondents)

This study is expected to recommendation on dysmenorrhea to female students at at the Pesantren-Based University, particularly regarding the relationship between stress levels, eating habits, hemoglobin levels, and the incidence of dysmenorrhea.

c. For Future Researchers

The results of this study are expected to serve as literature review related to the incidence of dysmenorrhea caused by stress levels, eating habits, and hemoglobin levels.

1.5 Authenticity Research

Table 1. Authenticity Research

Research Title	Type of Research	Variable	Results	Difference in Research
The Relationship Between Stress Levels and Characteristics of Adolescent Girls with the Incidence of Primary Dysmenorrhea at SMPN 3 Pekalongan.[27]	Survey method with a cross-sectional approach.	Dependent Variable: Primary Dysmenorrhea Independent Variables: Stress Levels and Characteristics of Adolescent Girls	There is a relationship between the stress levels of adolescent girls and dysmenorrhea with a p-value of 0.006 ($p < 0.05$).	Independent Variables: Eating Habits and Hemoglobin Levels
The Relationship Between Eating Habits and the Severity of Dysmenorrhea in Adolescent Girls. [28]	Observational analytic study method with a cross-sectional approach.	Dependent Variable: Dysmenorrhea Independent Variable: Eating Habits	There is a relationship between eating habits and the incidence of dysmenorrhea with a p-value of 0.001.	Independent Variables: Stress Levels and Hemoglobin Levels
The Relationship Between Hemoglobin Levels and the Incidence of Dysmenorrhea in Adolescents at SMA Negeri 4 Palangka Raya. [29]	Analytical survey method with a cross-sectional approach using a purposive sampling technique.	Dependent Variable: Dysmenorrhea Independent Variable: Hemoglobin Levels	There is a relationship between hemoglobin levels and the incidence of dysmenorrhea (p=0.00) among 10th-grade female students at SMA Negeri 4 Palangka Raya.	Independent Variables: Stress Levels and Eating Habits
The Relationship Between Menarcheal Age, Nutritional Status, Stress, and Hemoglobin Levels with the Incidence of Primary Dysmenorrhea in Female Medical Students at	Analytical observational method with a cross-sectional approach.	Dependent Variable: Primary Dysmenorrhea Independent Variables: Menarche Age, Nutritional Status, Stress, and Hemoglobin Levels	There is a relationship between the age of menarche (p=0.016), nutritional status (p=0.042), and stress (p=0.035) with the incidence of primary dysmenorrhea, but there is no relationship	Independent Variables: Eating Habits

[27] Rejeki *et al*, *Hubungan Tingkat Stres dan Karakteristik Remaja Putri dengan Kejadian Dismenore Primer*, (Pekalongan: Jurnal Kebidanan, 2019)

[28] Damayanti *et al*, *Hubungan Kebiasaan Makan dengan Derajat Keparahan Dismenorea pada Remaja Putri*, (Surabaya: Indonesia Midwifery and Health Scince Journal, 2021), p. 83

[29] Mawaddah *et al*, *Hubungan Kadar Hemoglobin dengan Kejadian Dismenore pada Remaja*, (Bandung: Jurnal Berkala Kesehatan, 2019)

Research Title	Type of Research	Variable	Results	Difference in Research
Mulawarman University. [30]			between hemoglobin levels (p=0.055) and the incidence of primary dysmenorrhea.	
The Relationship Between Physical Activity, Nutritional Status, and Stress Levels with the Incidence of Dysmenorrhea Among Female University Students in Bogor City. [31]	Quantitative research method with a cross-sectional approach.	Dependent Variable: Incidence of Dysmenorrhea Independent Variables: Physical Activity, Nutritional Status, and Stress Levels.	There is a relationship between physical activity (p-value = 0.000), nutritional status (p-value = 0.038), and stress levels (p-value = 0.030) with the incidence of dysmenorrhea.	Independent Variables: Hemoglobin Levels

[30] Nuraini *et al*, *Hubungan Usia Menarche, Status Gizi, Stres dan Kadar Hemoglobin Terhadap Kejadian Dismenorea Primer pada Mahasiswi Fakultas Kedokteran Universitas Mulawarman*, (Samarinda: Jurnal Sains dan Kesehatan, 2021)

[31] Aprilia *et al*, *Hubungan Aktivitas Fisik, Status Gizi dan Tingkat Stres dengan Kejadian Dismenore pada Mahasiswi di Kota Bogor*, (Bogor: Jurnal Mahasiswa Kesehatan Masyarakat, 2022).