



# The effect of cinnamon (*cinnamomum verum*) aromatherapy administration on the reduction of primary menstrual pain in adolescent girls at state Islamic Junior High School 2 Asahan

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## ABSTRACT

Cinnamon aromatherapy is one that can overcome primary menstrual pain in young women. Cinnamaldehyde (55-57%) and Eugenol (5-18%) are the main components of cinnamon aromatherapy. The activity of cinnamaldehy as an antispasmodic can relieve stomach cramps and Eugenol which can prevent prostaglandins and can reduce inflammation. this was to find out the effect of giving cinnamon aromatherapy to primary menstrual pain in young women. Type of Research This study used the Pre-Experimental Method with the One Group Pretest Posttest design. In this study, the samples taken were 30 class VII students at MTS Negeri 2 Asahan who experienced menstrual pain. The sampling technique used purposive sampling technique. Statistical test results using the Wilcoxon Test. Analysis of the data obtained results, namely before giving cinnamon aromatherapy (Pretest) students experienced moderate pain as many as 14 respondents (46,7%). After giving aromatherapy kayu manis female students who experienced mild pain were 19 respondents (63,3%) and fem ale students who experienced moderate pain were 11 respondents (63,7%) with a value of P=0.000. There is a significant effect of cinnamon aromatherapy on reducing pain intensitas in adolescents who experience primary menstrual pain.

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## 1. Introduction

Between puberty and adulthood, the transitional period known as adolescence is a time of physiological, psychological, mental, emotional, and social maturation (Nurchayani, 2023). Puberty is defined by the development of essential sexual qualities, and the initiation of reproductive organ formation is influenced by this process (Islamy, 2019). During puberty, several things occur, including rapid body growth, development of secondary sexual characteristics, menstruation, and psychological changes (Wulandary,2018).The onset of menstruation, or the menstrual cycle, takes place during the puberty phase for females (Berlianie Poetri et al., 2022)

Cinnamon aromatherapy is one of the remedies that can treat essential feminine discomfort in young women. Cinnamaldehyde (55-57%) and eugenol (5-8%) are the main components of cinnamon

aromatherapy (Yunianingrum, 2018). Eugenol, which can inhibit prostaglandins and reduce inflammation, along with the antispasmodic activity of cinnamaldehyde, can alleviate abdominal cramps (Safitri et al., 2022).

Based on data from the world health organization (who) in 2017, the prevalence of feminine discomfort is high, with an average of 90% experiencing such discomfort, half of which is attributed to essential feminine discomfort (Nurhayati et al., 2018). The prevalence of discomfort in the united states is 85%, italy 84%, australia 84.2%, malaysia 64.4%, thailand 84.2%, and indonesia 64.25%. Referring to information from the indonesian ministry of health in 2016, the female population accounts for 64.52%, with 54.89% of them experiencing additional feminine distress (Maharianingsih et al, 2021).

Based on a survey conducted at state islamic junior high school 2 asahan among female teenage students in the 8th grade, there were 30 students experiencing menstrual pain. When asked, they had never used cinnamon aromatherapy to alleviate menstrual pain and had not consumed any medications or other herbal remedies for pain relief. Given the information above, the author is interested in conducting research on the effect of cinnamon aromatherapy administration on primary menstrual pain in 8th grade female adolescents at state islamic junior high school 2 asahan ( Prayoga, 2022 ).

## 2. Research methods

This study employed the pre-experimental method with a one group pretest-posttest design. This research design includes a pretest before the treatment and a posttest after the treatment (Maloto et al., 2022). This allows for a more accurate assessment by comparing the conditions before and after the intervention. The sampling technique used was purposive sampling, with a total of 30 respondents who experienced primary menstrual pain and met the inclusion criteria while not meeting the exclusion criteria.

## 3. Result And Discussion

### 3.1 Research result

This study was conducted on all respondents in this research, which amounted to 30 respondents who were treated with cinnamon aromatherapy for 15 minutes when experiencing menstrual pain. The results obtained from this research are as follows:

**Table 1.**  
Characteristics of 8th Grade Respondents at State Islamic Junior High School 2 Asahan

No	Demografic Data	Frequency	Percentage (%)
1	Age		
	15 Years	17	56,7
	16 Years	13	43,3
	Total	30	100
2	Menarche	19	63,3
	12 Years	11	36,7
	13 Years		
	Total	30	100

Based to Table 1, it is known that the majority of respondents are 15 years old, with a total of 17 students (56.7%), and the most common age of first menstruation is at 12 years old, with a total of 19 students (63.3%).

**Table 2.**

Primary Menstrual Pain in Female Adolescents Before Cinnamon Aromatherapy Administration in 8th Grade at State Islamic Junior High School 2 Asahan

Primary Menstrual Pain (Pre)	Frequency	%
Mild Pain (1-3)	4	13,3
Moderate Pain (4-6)	14	46,7
Severe Pain (7-10)	12	40,0
Total	30	100

Based on Table 2, it is evident that before the administration of cinnamon aromatherapy in the 8th grade at State Islamic Junior High School 2 Asahan in 2023, the majority of female students experienced moderate menstrual pain, amounting to 14 respondents (46.7%), while 12 respondents (40.0%) experienced severe pain.

**Table 3.**

Primary Menstrual Pain After Cinnamon Aromatherapy Administration in 8th Grade at State Islamic Junior High School 2 Asahan

Primary Menstrual Pain (Post)	Frequency	%
Mild Pain (1-3)	9	63,3
Moderate Pain (4-6)	11	36,7
Severe Pain (7-10)	0	40,0
Total	30	100

Based on Table .3, it is shown that after the administration of cinnamon aromatherapy in the 8th grade at State Islamic Junior High School 2 Asahan in 2023, the majority of female students experienced mild menstrual pain, amounting to 19 respondents (63.3%), while 11 respondents (36.7%) experienced moderate pain.

**Table 4.**

The Effect of Cinnamon Aromatherapy Administration on Primary Menstrual Pain in Female Adolescents at State Islamic Junior High School 2 Asahan

Primary Menstrual Pain	Cinnamon Aromatherapy Administration		Change in Ranking	Z-hitung	p value
	Pre	Post			
	F	F	F		
(1) Mild Pain	4	19	Negative	29	
(2) Moderate Pain	14	11	Positive	0	4,767
(3) Severe Pain	12	0	Ties	1	0,000*

Based on Table 4, it can be observed that the data were tested using non-parametric analysis, specifically the Wilcoxon test, resulting in a p-value of 0.000.

### 3.2 Discussion

According to the research findings, the administration of cinnamon aromatherapy reduced the intensity of primary menstrual pain experienced by 8th-grade female adolescents at State Islamic Junior High School 2 Asahan in the year 2023. Prior to receiving cinnamon aromatherapy, a majority of the students experienced moderate pain, with 14 individuals (46.7%). After the administration of cinnamon aromatherapy, the essential pain intensity for female students diminished to less than substantial discomfort, with 19 individuals (63.3%) experiencing mild pain, while those experiencing moderate pain decreased to 11 individuals (36.7%).

Based on the results of the statistical test using the Wilcoxon test, it is evident that the p-value (0.000) <  $\alpha$  (0.05), which means that the alternative hypothesis ( $H_a$ ) is accepted. Thus, there is a difference in the strength of pretest and posttest menstrual pain in female students. The results of this research indicate a

significant impact of cinnamon-based aromatherapy (*Cinnamomum Verum*) treatment on essential feminine discomfort among 8th-grade female adolescents at State Islamic Junior High School 2 Asahan in the year 2023. These findings demonstrate that the administration of cinnamon-containing aromatherapy to 8th-grade female students at State Islamic Junior High School 2 Asahan in 2023 can effectively reduce primary menstrual pain.

This is consistent with a study conducted by Maharianingsih (2021) on the impact of cinnamon scented remedies on essential feminine discomfort in adolescent girls (Maharianingsih et al, 2021). The research results showed that the typical value of essential feminine discomfort severity in SMA Negeri 1 Sukawati prior to the administration of cinnamon scented remedies was 5.1667, with the majority of respondents experiencing moderate discomfort, specifically 22 individuals (73%). The typical value of essential feminine discomfort intensity after using cinnamon scented remedies was 3.23, with the majority of respondents experiencing mild pain, totaling 25 respondents, while the remaining 5 respondents experienced moderate pain ( Mayang Sari et al., 2022).

This is also in line with the findings of a study by Tarigan (2018), where the majority of respondents, specifically 13 individuals (59.1% of respondents), experienced moderate pain before receiving cinnamon aromatherapy. However, the majority of respondents experienced a decrease in pain intensity after receiving cinnamon aromatherapy, with 13 respondents reporting mild pain (Kusuma Wardani et al., 2021).

Cinnamon aromatherapy, conducted through inhalation, functions to decrease the intensity of perceived primary menstrual pain (Hidayatullah et al, 2022). It operates by stimulating olfactory receptors and transmitting impulses to the emotional centers in the brain, known as the limbic system. This enables aromatherapy to have a calming effect and enhance blood flow, ultimately leading to a reduction in the intensity of perceived primary menstrual pain (Sari, 2022).

The administration of cinnamon aromatherapy, as noted by utilizes essential oil from cinnamon to alleviate menstrual cramps and reduce the average intensity of menstrual pain in the posttest (Tsamara et al., 2020). Meanwhile, prior to any intervention, the general tendency for female respondents' discomfort levels would remain consistent and even escalate. The aroma of essential oil triggers olfactory responses, transmitting messages to the brain, which in turn induces beneficial relaxation states that have the potential to alleviate pain (Ristiani, 2022).

Aromatherapy has been proven to reduce primary menstrual pain in young women, as hypothesized by researchers (Sari et al., 2021 ). This is due to the presence of key compounds in cinnamon that can act as pain relievers and possess anti-inflammatory effects (Mouliza, 2020). Cinnamon balsam can aid in relaxing tense muscles, alleviating joint pain, and relieving feminine discomfort (Artawan et al., 2022). Additionally, the socialization around this practice is expanding. Natural cinnamon ointments and their aromas help to relax tense muscles, alleviate joint pain, and provide relief for feminine discomfort (Djailani et al., 2021).

#### 4. Conclusion

Considering the outcomes of the conducted research, it can be concluded that there is a remarkable influence of cinnamon-scented (*Cinnamomum Verum*) treatment on the reduction of menstrual pain in adolescent girls experiencing menstrual discomfort (Husna, 2023). Specifically, the majority of respondents, totaling 14 individuals (46.7%), who initially suffered from moderate menstrual pain experienced a substantial improvement. Conversely, a significant number of female students, comprising 19 respondents (63.3%), reported experiencing mild pain after the administration of treatment. There is a significant influence of cinnamon (*Cinnamomum Verum*) aromatherapy administration on primary menstrual pain among adolescent girls in Grade VIII at State Islamic Junior High School 2 Asahan, with the value of the statistical test using the Wilcoxon test yielding  $p = 0.000$  ( $p < 0.05$ ). This result proves that the administration of cinnamon (*Cinnamomum Verum*) aromatherapy is proven effective in reducing the level of primary menstrual pain among adolescent girls in Grade VIII at State Islamic Junior High School 2 Asahan. The results of this study can provide knowledge to adolescent girls about the benefits of cinnamon aromatherapy, which can serve as an alternative treatment for menstrual pain, apart from using

chemical medications. It is hoped that future researchers will conduct research on cinnamon aromatherapy using different methods. Explore variations in the dosage and frequency of cinnamon aromatherapy use to determine if there are significant differences in the reduction of menstrual pain outcomes.

## 5. References

- Akademi, J., & Prayoga, F. (N.D.). *Pengaruh Aromatherapy Kayu Manis Terhadap Dismenore Primer Pada Remaja Putri* (Vol. 5, Issue 2).
- Berlianie Poetri Mahasiswa Program Studi, F. S., Yatsi Madani, U., & Afrioza Dosen Universitas Yatsi Madani Rina Puspitasari Dosen Universitas Yatsi Madani, S. (2022). Pengaruh Aromaterapi Kayu Manis Terhadap Nyeri Haid Primer Pada Remaja Di Desa Pasir Gadung Tangerang. *Jurnal Sains Dan Kesehatan (Jusika)*, 6(2).
- Dokter Fakultas, P., Tsamara, G., Raharjo, W., & Ardiani Putri, E. (2020). *Hubungan Gaya Hidup Dengan Kejadian Dismenore Primer Pada Mahasiswi Program Studi The Relationship Between Lifestyle With The Incident Of Primary Dysmenorrhea In Medical Faculty Female Students Of Tanjungpura University* (Vol. 2).
- Hidayatullah, H., & Rejeki, S. (2022). Efektifitas Bubuk Kayu Manis Terhadap Penurunan Skala Nyeri Pada Klien Arthritis Gout. *Ners Muda*, 3(2). <https://doi.org/10.26714/Nm.V3i2.8387>
- Husna. (2023). *Upaya Penurunan Nyeri Dismenorea Dengan Terapi Relaksasi Benson Pada Remaja Putri Di Dusun Balerejo Watugung Baturetno Wonogiri*.
- Islamy, A. (N.D.). Faktor-Faktor Yang Mempengaruhi Siklus Menstruasi Pada Remaja Putri Tingkat Iii. In *Jurnal Keperawatan Jiwa* (Vol. 7, Issue 1).
- Kesehatan Stikes Bethesda Yakkum Yogyakarta, J., Asda Djailani, Y., Rosyidi Prodi, M. S., & Stikes Jayapura, K. (N.D.). Gambaran Pengetahuan Remaja Putri Tentang Upaya Penanganan Dismenore Di Smp It Insan Cendekia Doyo Baru Kabupaten Jayapura. *Jurnal Kesehatan*, 11(1).
- Kusuma Wardani, P., Cipta Casmi, S., Studi Kebidanan Sarjana Terapan, P., & Aisyah Pringsewu, U. (2021). Hubungan Siklus Menstruasi Dan Usia Menarche Dengan Dismenor Primer Pada Siswi Kelas X. In *Jurnal Ilmu Kesehatan Indonesia (Jiksi) E-Issn* (Vol. 2, Issue 1).
- Maharianingsih, N. M., & Poruwati, N. M. D. (2021). Pengaruh Pemberian Aromaterapi Kayu Manis Terhadap Intensitas Nyeri Dismenore Primer Pada Remaja. *Jurnal Ilmiah Medicamento*, 7(1), 55–61. <https://doi.org/10.36733/Medicamento.V7i1.1262>
- Maloto, R. A. H., Hadi, S. P. I., & Sari, F. (2022). Pengaruh Pemberian Kayu Manis Terhadap Penurunan Nyeri Haid Pada Remaja Putri: Systematic Literature Review. *Malahayati Nursing Journal*, 4(7), 1672–1688. <https://doi.org/10.33024/Mnj.V4i7.6408>
- Medika Tiara Mayang Sari, A., Amalia, R., Yunola, S., Mayang Sari, T., Studi, P. S., Studi Diii Kebidanan, P., Studi Profesi Bidan, P., & Studi Diii Kebidanan Poltekkes Kemenkes Palembang, P. (N.D.). *Faktor-Faktor Yang Berhubungan Dengan Dismenore Pada Remaja Putri*. <https://doi.org/10.36729/Jam.V8i1>
- Mouliza, N. (2020). Faktor Yang Berhubungan Dengan Kejadian Dismenore Pada Remaja Putri Di Mts Negeri 3 Medan Tahun 2019. *Jurnal Ilmiah Universitas Batanghari Jambi*, 20(2), 545. <https://doi.org/10.33087/Jiubj.V20i2.912>
- Nurchayani. (2023). *Pengaruh Aromaterapi Kayu Manis Terhadap Dismenore Pada Mahasiswi S1 Ilmu Keperawatan Unissula*.
- Nurhayati, T., Pgmi, J., Syekh, I., & Cirebon, N. (2018). *Perkembangan Perilaku Psikososial Pada Masa Pubertas*.
- Pertumbuhan Perkembangan Remaja Dan Implikasinya Terhadap Masalah Kesehatan Dan Keperawatannya Ade Wulandari, K., & Wulandari Program Studi Diii Keperawatan Bima, A. (N.D.). *Karakteristik Pertumbuhan Perkembangan Remaja Dan Implikasinya Terhadap Masalah Kesehatan Dan Keperawatannya*.
- Riset Kesehatan Nasional, J., Putu Artawan, I., Ketut Alit Adianta, I., Ayu Manik Damayanti, I., Studi Sarjana Keperawatan, P., Kesehatan, F., Teknologi Dan Kesehatan Bali, I., & Studi Sarjana Farmasi Klinik Dan

- Komunitas, P. (N.D.). Hubungan Nyeri Haid (Dismenore Primer) Dengan Kualitas Tidur Pada Mahasiswi Sarjana Keperawatan Tingkat Iv Itekes Bali Tahun 2022 (The Correlation Between Menstrual Pain (Primary Dysmenorrhea) And Sleep Quality In Year 4 Bachelor Of Nursing Students Of Itekes Bali, 2022). <https://Ejournal.Itekes-Bali.Ac.Id/Jrkn>
- Ristiani. (2022). Tesis Efektifitas Aromaterapi Lavender Dan Kayu Manis Terhadap Intensitas Nyeri Dan Kadar Endorfin Pada Remaja Putri Dengan Dismenorea Primer The Effectiveness Of Lavender And Cinnamon Aromatherapy On Pain Intensity And Endorphins Levels In Adolescent Girls With Dysmenorrheal Primer.
- Safitri, A. A., Jolyarni, N., Mkm, S., & Rahayu, T. A. (2022). Pengaruh Pemberian Minuman Air Kunyit Putih (Curcuma Zedoaria Roscoe) Terhadap Penurunan Dismenore Pada Remaja Putri Kelas Xi Di Sma Negeri 1 Deli Tua Kabupaten Deli Serdang Tahun 2020 The Effect Of Giving White Turmeric Water (Curcuma Zedoaria Roscoe) On The Reduction Of Dysmenorrhea In Class Xi Teenage Girls At Sma Negeri 1 Deli Tua, Deli Serdang District In 2020.
- Sari. (2022). Pengetahuan Remaja Putri Tentang Penatalaksanaan Dismenore Di Smk Al Ittihad Aek Nabara Kecamatan Bilah Hulu Kabupaten Labuhanbatu Tahun 2022. *Gentle Birth*, 5(2).
- Sari, A. P., & Usman, A. (N.D.). Efektifitas Terapi Akupresur Terhadap Dismenore Pada Remaja. <https://Jurnal.Umj.Ac.Id/Index.Php/Jkk>
- Yunianingrum. (2018). Pengaruh Kompres Hangat Dan Aromaterapi Lavender Terhadap Penurunan Nyeri Dismenore Primer Pada Remaja Putri Di Pondok Pesantren As Salafiyah Dan Pondok Pesantren Ash-Sholihah Sleman.