

achieved through various means, such as physical exercise, relaxation techniques, and mood-enhancing activities. Consuming chocolate can be a part of these strategies to alleviate dysmenorrhea pain.¹⁸

Conclusions

The utilization of dark chocolate as a non-pharmacological alternative therapy shows promise in expediting pain reduction in adolescents with dysmenorrhea. However, additional research and larger-scale studies are essential to delve into the long-term effects and determine the optimal dosage of dark chocolate for effectively managing dysmenorrhea. Dark chocolate can serve as a more enjoyable non-pharmacological alternative for alleviating pain associated with dysmenorrhea in adolescents.

References

- Wallace S, Keightley A, Gie C. Review Dysmenorrhoea. *Obstet Gynaecol* 2010;12:149-54.
- Hadianti DN, Ferina F. Senam Yoga Menurunkan Dismenore Pada Remaja. *J Ris Kesehat Poltekkes Depkes Bandung* 2021;13:239-45.
- Nursalam N, Oktaviani DWD, Armini NKA, Efendi F. Analysis of the stressor and coping strategies of adolescents with dysmenorrhoea. *Indian J Public Heal Res Dev* 2018;9:381-6.
- Harsetianingrum RA, Martiana T, Widjajati N. The risk factors analysis of menstrual disorders in women workers of shoe industry, Sidoarjo. *Malaysian J Med Heal Sci* 2019;15:266-9.
- Por CS, Mogana R, Akowuah GA, Chinnappan S, Abdullah NH. Polyherbal Formulation for Primary Dysmenorrhea: A Review. *Res J Pharm Technol* 2022;15:1891-900.
- Nakame RM, Kiwanuka F, Robert A. Dysmenorrhoea among students aged 18-45 years attending University in Uganda: A cross-sectional multicenter study of three Universities in Uganda. *Nurs Open* 2019;6:268-75.
- Por CS, Rajagopal MS, Akowuah GA, Chinnappan S, Abdullah NH. Treatment of Primary Dysmenorrhea Affecting Menstruating Women Using Herbs: A Review. *Nat Prod J* 2022;12:11-23.
- Dawood MY. Dysmenorrhoea and prostaglandins: Pharmacological and therapeutic considerations. *Curr Ther (Seaforth)* 1982;23:71-83.
- Suwito J, Putra ST, Sulistyono A. The Affirmation - Tapping on Pain Perception and Serotonin Serum Level of Post - Caesarian Section patients. *J Ners* 2019;14:124-8.
- Peacock A, Alvi NS, Mushtaq T. Period problems: Disorders of menstruation in adolescents. *Arch Dis Childhood* 2012;97:554-60.
- Ko HN, Sun Le S, Dol Kim S. Effects of Yoga on Dysmenorrhea: A Systematic Review of Randomized Controlled Trials. *Altern Integr Med* 2016;05(04).
- Famararzi M, Salmalian H. Association of psychologic and nonpsychologic factors with primary dysmenorrhea. *Iran Red Crescent Med J* 2014;16(8).
- Prabhu S, Nagrale S, Shyam A, Sancheti P. Effect of yogasanas on menstrual cramps in young adult females with primary dysmenorrhea. *Int J Physiother Res* 2019;7:3129-34.
- Nag U. Effect of Yoga on Primary Dysmenorrhea and Stress in Medical Students. *IOSR J Dent Med Sci* 2013;4:69-73.
- Faizah N, Mukhoirotin M. Pengaruh Pemberian Cokelat Hitam (Dark Chocolate) Dan Jahe Terhadap Intensitas Nyeri Haid (Dysmenorrhea). *J Keperawatan* 2020;8:43-9.
- Hanafi M, Isworo, Arifah S. Pengaruh Pemberian Dark Chocolate Terhadap Dismenoreia Primer Pada Mahasiswa Keperawatan. *J Keperawatan Soedirman* 2017;12:77-83.
- Khairunnisa N, Sukohar A, Hanriko R, Septa T. Hubungan Pemberian Dark Chocolate Terhadap Penurunan Skala Nyeri Menstruasi (Dismenorea Primer) Yang Dipengaruhi Dengan Kondisi Stres Pada Mahasiswa Kedokteran Universitas Lampung. *Majority* 2018;7:81-9.
- Verma A, Kadam A. Does Dark Chocolate Relieve Menstrual Pain in Adult Women?: A Study Among Indian Population. *Int J Physiol* 2019;7:16.
- Hajati A, Brondani M, Angerstig L, et al. Chocolate intake and muscle pain sensation: A randomized experimental study. *PLoS One* 2023;18:1-21.
- Teherán AA, Piñeros LG, Pulido F, Mejía Guatibonza MC. WaLIDD score, a new tool to diagnose dysmenorrhea and predict medical leave in University students. *Int J Womens Health* 2018;10:35-45.
- Nur Asih S, Ateng Yuviska I, Studi Kebidanan Universitas Malahayati. Pengaruh Dark Chocolate Terhadap Pengurangan Nyeri Haid Pada Remaja. *J Kebidanan* 2020;6:497-503.
- Karakay Selçuk A, Baysal E. The effect of dark chocolate and music on pain and anxiety in young women with primary dysmenorrhea: Randomized controlled trial. *Eur J Integr Med* 2022;56.
- Handayani SG, Ayubi N, Komaini A, et al. N-3 polyunsaturated fatty acids (PUFAs) and physical exercise have the potential to reduce pain intensity in women with primary dysmenorrhea: Systematic Review. *Retos* 2023;48:106-12.
- Kusumaningrum T, Nastiti AA, Dewi LC, Lutfiani A. The correlation between physical activity and primary dysmenorrhea in female adolescents. *Indian J Public Heal Res Dev* 2019;10:2559-63.
- Armini NKA, Setyani A, Nastiti AA, Triharini M. Knowledge and peer support for increase Menstrual Hygiene Management (MHM) in adolescents. *Healthc Low-Res Set* 2023;11:111193.
- Aziato L, Dedey F, Clegg-Lampthey JNA. The experience of dysmenorrhoea among Ghanaian senior high and university students: Pain characteristics and effects. *Reprod Health* 2014;11(1).
- Katz DL, Doughty K, Ali A. Cocoa and chocolate in human health and disease. *Antioxidants Redox Signal* 2011;15:2779-811.
- Kurniawati EM, Rahmawati NA, Safitri CT, Hanum SS. Informational and instrumental support related to menstruation: adolescents' perspective. *Int J Public Heal Sci* 2022;11:1317-23.
- Adi AC, Tawakal AI, Rasyidi MF, et al. Effect of cocoa husk Criollo tea on hypercholesterolemia in animal model. *Foods Raw Mater* 2023;11:206-14.
- Natalia S, Astikasari ND. Pengaruh Permen Dark Chocolate terhadap Nyeri Dismenore Primer pada Remaja Putri di SMP Gaya Baru Desa Sumberejo Kecamatan Gedangan Kabupaten Malang. *J Qual Women's Heal* 2019;2:31-7.