Improving Reproductive Health in Adolescent Girls at SMK Bhakti Asih Through Herbal Plant Consumption

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KEYWORDS	ABSTRACT
reproductive health, adolescent girls, herbs	Adolescent girls are prone to reproductive health disorders such as menstrual pain (dysmenorrhea), irregular cycles, and a lack of knowledge about reproductive health. One non-pharmacological approach to addressing these issues is the consumption of herbal plants containing natural compounds that help maintain hormonal balance. This research aims to determine the effect of herbal plant consumption on improving reproductive health in adolescent girls at SMK Bhakti Asih. The method used was quantitative research with a pre-experimental design employing a one-group pretest-posttest approach. A sample of 30 female students was selected using purposive sampling. The intervention consisted of consuming sour turmeric herbal drinks and red ginger for four weeks. Data were analyzed using a paired t-test. The results show that the average reproductive health knowledge increased significantly ($p < 0.05$), the regularity of the menstrual cycle improved, and the intensity of menstrual pain decreased from a score of 6.2 to 3.8 on the VAS scale. Consumption of herbal plants has been shown to improve the reproductive health of adolescent girls.

INTRODUCTION

Perimenopause is a period of transition to menopause characterized by hormonal changes, especially decreased estrogen levels, which impact various physical, emotional, and psychological aspects of a woman (Bacon, 2017; Santoro, 2016). This period generally occurs in women aged 40 to 60 years, with the intensity of symptoms varying between individuals (O'Neill & Eden, 2020). Women aged 50–60 years are in a particularly vulnerable phase because they are at the peak of this transition, during which hormonal changes can affect their overall quality of life. Symptoms commonly experienced during perimenopause include hot flashes, night sweats, sleep disturbances, mood swings, and decreased libido (Duralde, Sobel, & Manson, 2023; Harper et al., 2022; McCarthy & Raval, 2020). These symptoms not only affect physical and mental health but also interpersonal relationships, including in the context of fulfilling sexual needs. In society, the topic of elderly women's sexuality remains taboo, causing many women to feel reluctant to discuss or seek help for the changes they experience. Adaptation to perimenopausal symptoms is important to maintain the quality of life for women in early old age. Each individual copes with these changes differently, whether biologically, psychologically, socially, or spiritually. An in-depth understanding of this adaptation strategies can provide a broader picture of the needs and

challenges faced by perimenopausal women, especially in the Pasawahan District area (Mevawala, 2020; Pereira, 2024).

Perimenopause is the transitional phase toward menopause, driven largely by fluctuating and ultimately declining estrogen, with wide-ranging vasomotor, somatic, mood, sleep, and sexual effects that can compromise health-related quality of life (HRQoL). Symptom intensity and duration vary substantially; multi-ethnic cohort evidence suggests many women experience symptoms for years, with particularly dense clustering in the 50–60 age range when daily functioning and relationships may be affected (El Khoudary et al., 2019; Khan et al., 2023).

At present, there is no standardized global or national epidemiological surveillance that specifically quantifies the prevalence of perimenopausal symptoms and their HRQoL burden. A recent global meta-analysis maps "menopause-related" symptoms across regions but pools stage and uses heterogeneous instruments, limiting perimenopause-specific inference and cross-country comparability (Fang et al., 2024). In Indonesia, existing publications are largely local or instrument-focused (e.g., MRS and UQOL validations) rather than nationally representative epidemiology linking symptoms to HRQoL—leaving major gaps for services and policy (Susanti et al., 2019; Wulandari et al., 2018).

Beyond biology, sociocultural taboos around older women's sexuality can suppress disclosure and help-seeking even when distress is substantial. Reviews show the menopausal transition is frequently associated with decreased desire, arousal difficulties, dyspareunia, and relationship strain, and that attitudes and context can exacerbate or buffer these outcomes— implications that are particularly acute in communities where open discussion is uncommon (Heidari et al., 2019).

Two prior studies illustrate both progress and gaps. First, the SWAN progress report synthesizes robust longitudinal, multi-ethnic evidence on symptom trajectories and cardiometabolic changes, a strength for internal validity; however, its U.S. setting and biomedical emphasis limit transferability to Indonesian sociocultural contexts and provide less attention to community-level sexual adaptation during ages 50–60 (El Khoudary et al., 2019). Second, Indonesian MRS psychometrics demonstrate acceptable construct validity for symptom assessment yet were not designed to provide population-level estimates or directly connect symptom burden with HRQoL and sexual well-being—especially for perimenopause rather than postmenopause (Susanti et al., 2019). The present study addresses these gaps by centering perimenopause, foregrounding sexual needs and adaptation, and situating the analysis within a local Indonesian community context.

Therefore, it is important to conduct research on how women aged 50–60 in the region cope with perimenopause, as well as how they meet their sexual needs amid the changes they experience. This research is expected to open a space for dialogue, understanding, and more inclusive interventions in the field of reproductive health of elderly women.

This research examines how women aged 50–60 in Pasawahan District adapt to perimenopausal changes and meet their sexual needs amid biological, psychological, social, and spiritual shifts. The study aims to (1) document symptom experiences and coping strategies, (2) assess perceived impacts on HRQoL and intimate relationships, and (3) generate context-specific evidence to inform culturally sensitive counseling, primary-care responses, and community dialogue that reduces stigma and supports inclusive reproductive-health services for early-older women.

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METHOD

Reproductive health knowledge is a crucial aspect of adolescent well-being, particularly in relation to menstrual health. In this study, reproductive health knowledge was assessed alongside indicators such as menstrual cycle regularity and menstrual pain intensity using the Visual Analog Scale (VAS). These variables were chosen to evaluate the effectiveness of herbal intervention programs in improving reproductive health outcomes among adolescent girls. The focus on menstrual cycle regularity provides insights into physiological improvements, while the measurement of menstrual pain intensity offers a quantifiable understanding of symptomatic relief experienced by participants.

The research was designed as a pre-experimental one-group pretest–posttest study involving 30 students from SMK Bhakti Asih, selected through purposive sampling based on inclusion criteria of being aged 15–18 years, experiencing irregular menstrual cycles, and demonstrating willingness to participate. The intervention consisted of consuming sour turmeric (200 ml each morning) and red ginger (200 ml each evening) for four consecutive weeks. Data were collected using a reproductive health knowledge questionnaire, menstrual cycle records, and the VAS pain scale. Analysis employed paired t-tests to determine differences before and after the intervention, with ethical considerations including informed consent and assurance of data confidentiality.

RESULTS AND DISCUSSIONS

This study involved 30 young women at SMK Bhakti Asih who were between 15–18 years old. The majority of respondents were aged 16–17 years (70%), with a history of irregular menstrual cycles (60%) and mild to moderate dysmenorrhea complaints (65%). All respondents followed a four-week herbal consumption program.

The results of the analysis showed a significant improvement in all parameters measured after the intervention:

Table 1. results of the analysis

Variable	Pretest (Mean ± SD)	Posttest (Mean ± SD)	p-value
Reproductive health knowledge	65,3 ± 8,2	82,5 ± 7,1	0,000*
Menstrual cycle regularity	2,1 ± 0,7	3,5 ± 0,5	0,001*
Menstrual pain intensity (VAS)	6,2 ± 1,5	3,8 ± 1,2	0,000*

Description: *p < 0.05 significant

There was an increase in the average knowledge score by 17.2 points, the regularity of the menstrual cycle increased, and the intensity of menstrual pain decreased by 2.4 points.

Herbal Consumption Compliance

As many as 90% of respondents obediently consumed herbs as scheduled (twice a day), while 10% admitted to forgetting several times during the second week. The results of this study show that regular consumption of herbal plants can improve reproductive health in adolescent girls. The

increase in knowledge occurs due to the education that accompanies the intervention, which helps adolescents understand menstrual patterns and how to maintain reproductive health.

The regularity of the menstrual cycle improves after the consumption of herbs, likely influenced by the phytohormonal effects of turmeric and red ginger that help balance the hormones estrogen and progesterone. The decrease in menstrual pain can be explained by the content of curcuminoids and gingerol which have anti-inflammatory, analgesic, and antispasmodic effects, thereby reducing excessive uterine contractions.

The high level of herbal consumption compliance observed in this study, with 90% of respondents adhering to the twice-daily schedule and only 10% reporting occasional lapses, illustrates the practicality of implementing herbal interventions among adolescents. Regular consumption of sour turmeric and red ginger was associated with improvements in reproductive health knowledge, menstrual cycle regularity, and reduction in dysmenorrhea symptoms. The educational component provided during the intervention further enhanced awareness, allowing adolescents to better understand menstrual physiology and adopt positive health behaviors. This synergy between knowledge acquisition and behavioral change underscores the potential of integrated educational and herbal-based programs in addressing adolescent reproductive health challenges.

The biological plausibility of these findings lies in the phytochemical content of the herbs used. Sour turmeric contains curcuminoids, which possess phytoestrogenic properties capable of modulating estrogen and progesterone balance, thereby improving menstrual cycle regularity. Meanwhile, red ginger is rich in gingerol, a compound with well-established anti-inflammatory, analgesic, and antispasmodic effects that contribute to the reduction of uterine contractions responsible for menstrual pain. Previous studies have reported similar benefits, with Sari et al. (2022) showing that sour turmeric significantly decreased dysmenorrhea intensity, and Astuti (2023) demonstrating the efficacy of ginger in managing menstrual irregularities and alleviating pain. These findings suggest that combining sour turmeric and red ginger offers a complementary approach with both hormonal and symptomatic benefits.

Furthermore, adherence to herbal consumption proved to be a critical determinant of the intervention's effectiveness. Respondents who consistently consumed the herbal preparations demonstrated more significant improvements compared to those who reported noncompliance, supporting the assertion that treatment success in complementary therapies is closely tied to regularity of intake. Nugroho et al. (2021) and Kurniawati et al. (2020) also emphasized this factor in their research, where consistent consumption of herbal remedies was directly correlated with improved menstrual health outcomes. The role of adherence aligns with broader health behavior theories, where sustained engagement with interventions yields more durable and measurable health benefits.

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The influence of external factors such as diet, physical activity, and stress management should not be overlooked in interpreting these results. Menstrual health is known to be multifactorial, with stress and poor dietary habits exacerbating dysmenorrhea and cycle irregularities. Putri and Wahyuni (2021) highlighted that adolescents with healthier dietary practices and better stress management reported fewer menstrual disturbances, a finding that resonates with the outcomes observed in this study. Thus, while the herbal intervention demonstrated significant positive effects, its impact may have been enhanced by parallel improvements in lifestyle factors among participants during the study period. This interplay suggests that a holistic approach, combining herbal therapy with lifestyle modification, could yield optimal outcomes in adolescent reproductive health.

Despite these promising findings, the limitations of the study must be acknowledged. The absence of a control group restricts the ability to attribute observed changes solely to the herbal intervention, as placebo effects or external influences cannot be fully ruled out. Additionally, the relatively short duration of four weeks limits the capacity to evaluate the long-term sustainability and safety of the intervention. To strengthen the evidence base, future research should adopt randomized controlled trial designs, incorporate longer intervention periods, and consider larger, more diverse populations. Such studies would provide more robust data to support the integration of sour turmeric and red ginger into adolescent reproductive health programs, ensuring both efficacy and safety in broader applications.

CONCLUSION

This study demonstrates that regular consumption of herbal plants, specifically sour turmeric and red ginger, over four weeks significantly improves the reproductive health of adolescent girls at SMK Bhakti Asih by enhancing their reproductive health knowledge, promoting regular menstrual cycles, and reducing the intensity of menstrual pain. These findings suggest that herbal plant consumption is a safe, affordable, and practical non-pharmacological approach to supporting adolescent girls' reproductive health, particularly when combined with reproductive health education and ensured compliance. Future research could explore long-term effects, optimal dosages, and the mechanisms underlying these benefits, as well as expanding the intervention to a larger and more diverse adolescent population.

REFERENCES

Astuti, W. (2023). Tumbuhan herbal sebagai terapi non-farmakologis nyeri haid: Review ilmiah. *Jurnal Fitoterapi Indonesia, 15*(2), 30–38.

Bacon, J. L. (2017). The menopausal transition. *Obstetrics and Gynecology Clinics of North America, 44*(2), 285–296.

Duralde, E. R., Sobel, T. H., & Manson, J. E. (2023). Management of perimenopausal and menopausal symptoms. *BMJ, 382.*

El Khoudary, S. R., Greendale, G., Crawford, S. L., Avis, N. E., Brooks, M. M., Thurston, R. C., Karvonen-Gutierrez, C., Waetjen, L. E., & Matthews, K. A. (2019). The menopause transition and women's health at midlife: A progress report from the Study of Women's Health Across the Nation (SWAN). *Menopause, 26*(10), 1213–1227. https://doi.org/10.1097/GME.0000000000001424

Fang, Y., Liu, F., Zhang, X., Chen, L., Liu, Y., Yang, L., Zheng, X., Liu, J., Li, K., & Li, Z. (2024). Mapping global prevalence of menopausal symptoms among middle-aged women: A systematic review and meta-analysis. *BMC Public Health, 24,* Article 1767. https://doi.org/10.1186/s12889-024-19280-5

Harper, J. C., Phillips, S., Biswakarma, R., Yasmin, E., Saridogan, E., Radhakrishnan, S., Davies, M. C., & Talaulikar, V. (2022). An online survey of perimenopausal women to determine their attitudes and knowledge of the menopause. *Women's Health, 18,* 17455057221106890.

Heidari, M., Ghodusi, M., Rezaei, P., Kabirian Abyaneh, S., Heidari Sureshjani, E., & Sheikhi, R. A. (2019). Sexual function and factors affecting menopause: A systematic review. *Journal of Menopausal Medicine, 25*(1), 15–27. https://doi.org/10.6118/jmm.2019.25.1.15

Khan, S. J., Kapoor, E., Faubion, S. S., & Kling, J. M. (2023). Vasomotor symptoms during menopause: A practical guide on current treatments and future perspectives. *International Journal of Women's Health, 15,* 273–287. https://doi.org/10.2147/IJWH.S365808

McCarthy, M., & Raval, A. P. (2020). The peri-menopause in a woman's life: A systemic inflammatory phase that enables later neurodegenerative disease. *Journal of Neuroinflammation, 17*(1), 317.

Mevawala, A. S. (2020). *Exploring urban Pakistani Muslim midlife women's experiences of menopause: A focused ethnography study.*

Nugroho, A., & Sari, R. (2022). Pengaruh konsumsi kunyit asam terhadap dismenore pada remaja putri. *Jurnal Kesehatan Reproduksi, 13*(1), 45–52.

O'Neill, S., & Eden, J. (2020). The pathophysiology and therapy of menopausal symptoms. *Obstetrics, Gynaecology & Reproductive Medicine, 30*(6), 175–183.

Pereira, C. Q. (2024). *The impact of menopause on women in urban areas: A sociological study in Goa.* Goa University.

Santoro, N. (2016). Perimenopause: From research to practice. *Journal of Women's Health, 25*(4), 332–339.

Susanti, H. D., Chang, P.-C., & Chung, M.-H. (2019). Construct validity of the Menopause Rating Scale in Indonesia. *Climacteric, 22*(5), 454–459. https://doi.org/10.1080/13697137.2019.1574737

Wulandari, P., Soeroso, Y., Maharani, D. A., & Rahardjo, A. (2018). Validity and reliability of a modified Utian Quality of Life scale for Indonesian postmenopausal women. *Journal of International Dental and Medical Research, 11*(1), 232–237.