

ROLE OF PKK MOTHERS IN PROMOTING WOMEN'S REPRODUCTIVE HEALTH THROUGH BUTTERFLY PEA FLOWER TEA UTILIZATION

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ABSTRACT

Women's reproductive health remains an important issue that requires promotive and preventive efforts at the community level. One of the local herbal plants increasingly used for health purposes is butterfly pea flower (*Clitoria ternatea*), which is known to contain antioxidants beneficial for maintaining body health. This study aimed to describe the role of PKK mothers in the utilization of butterfly pea flower tea for maintaining women's reproductive health. The study used a descriptive quantitative design and was conducted among PKK mothers in Bangkalan, East Java. The population consisted of all PKK mothers in the study area, and 26 respondents were selected using a total sampling technique. Data were collected using structured questionnaires covering respondent characteristics, level of knowledge, and the role of PKK mothers in reproductive health education. The data were analyzed descriptively using frequency distributions and percentages. The results showed that most respondents had good knowledge regarding the benefits of butterfly pea flower tea and women's reproductive health (76.9%). Most respondents also demonstrated good roles in promoting reproductive health through health education and community activities (65.4%). The study concludes that PKK mothers have an important role in promoting reproductive health awareness through the utilization of local herbal plants, particularly butterfly pea flower tea, within the community.

Keywords: butterfly pea flower tea; community health promotion; herbal plants; PKK mothers; women's reproductive health

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INTRODUCTION

Because it has a direct impact on women's quality of life, family well-being, and the development of community health, reproductive health among women remains an important issue at both national and global levels. According to the World Health Organization (WHO), reproductive health refers not only to the absence of illness but also to physical, psychological, and social well-being related to the reproductive system (World Health Organization, 2022). In Indonesia, various reproductive health issues among women, including vaginal discharge, menstrual irregularities, reproductive tract infections, and anemia, are still commonly reported among women of reproductive age. Data from the Indonesian Ministry of Health show that around 75% of Indonesian women have experienced vaginal discharge at least once during their lives, while nearly 45% suffer from recurring symptoms due to limited awareness of reproductive health and inadequate

preventive practices (Kementerian Kesehatan Republik Indonesia, 2022).

Growing public interest in natural and herbal health products has encouraged the use of medicinal plants as preventive and promotive strategies for women's reproductive health. One medicinal plant that has recently attracted significant attention is butterfly pea flower (*Clitoria ternatea*), which is widely prepared as herbal tea because of its rich anthocyanin, flavonoid, and antioxidant content (Mukherjee, P. K., Kumar, V., Kumar, N. S., & Heinrich, 2022). Various studies have demonstrated that butterfly pea flower possesses anti-inflammatory, antioxidant, and antimicrobial properties that may support hormonal balance and help reduce oxidative stress associated with reproductive health problems (Marpaung, 2020). Moreover, the consumption of herbal beverages increased considerably following the COVID-19 pandemic, as communities became more conscious of self-care practices and natural health maintenance

through the use of family medicinal plants (Kementerian Pertanian Republik Indonesia, 2021). Nevertheless, despite its promising advent ages, the use of butterfly pea flower tea as a means of promoting reproductive health remains relatively limited in many communities because of insufficient knowledge and the absence of structured health education programs.

Community empowerment has an important role in enhancing public awareness regarding the utilization of herbal resources, particularly through women's organizations such as the Family Welfare Empowerment organization (PKK). PKK mothers are regarded as strategic community actors because they actively engage in family health education, medicinal plant cultivation initiatives, and community-based health promotion activities. Research conducted by Sari, R., Widiyaningsih, E., & Lestari (2023) found that training programs for PKK mothers on butterfly pea flower processing effectively increased community knowledge and awareness of herbal health products. Likewise, Rahmawati, D., & Putri (2022) highlighted that PKK mothers make substantial contributions to the dissemination of reproductive health education due to their close relationships with women and families within the community. These findings suggest that PKK mothers possess considerable potential to serve as agents of change in encouraging herbal-based reproductive health practices among women.

Although previous studies have discussed butterfly pea flower and community empowerment, most of them mainly focused on economic development, entrepreneurship, food coloring innovation, or general herbal processing. Research specifically examining the role of PKK mothers in utilizing butterfly pea flower tea to maintain women's reproductive health is still very limited, particularly within descriptive research approaches. In addition, previous studies have not comprehensively explored how PKK mothers participate in health education, herbal utilization practices, and dissemination of reproductive health information through community activities. This research gap demonstrates the need for further investigation to obtain a deeper understanding of the actual role of PKK mothers in supporting the utilization of butterfly pea flower tea as an alternative reproductive health maintenance strategy for women.

This study is important because the utilization of local

herbal plants may provide an affordable, accessible, and culturally acceptable approach to reproductive health promotion in the community. In addition to supporting the development of complementary midwifery and community health sciences, this research may strengthen women's empowerment programs through optimizing the role of PKK mothers in family health promotion. This study is expected to complement previous research by providing descriptive evidence regarding the involvement of PKK mothers in utilizing butterfly pea flower tea for women's reproductive health maintenance. Furthermore, the findings are expected to contribute to the development of community-based reproductive health education programs and encourage sustainable utilization of local herbal resources for preventive and promotive women's health care. The novelty of this study lies in its focus on describing the role of PKK mothers as community-based health promoters in utilizing butterfly pea flower tea for women's reproductive health. Previous studies have predominantly explored butterfly pea flower from pharmacological, nutritional, or economic perspectives, whereas evidence regarding the involvement of PKK mothers in reproductive health promotion remains limited.

METHOD

This study employed a descriptive research design. This approach was selected because the objective of the research was to describe the level of knowledge and the role of PKK mothers in utilizing butterfly pea flower tea to promote women's reproductive health, without implementing any intervention or examining relationships among variables. The survey was conducted among PKK mothers in Bangkalan, East Java, in accordance with the characteristics of the local community. Total sampling was applied in this study because all 26 PKK mothers who satisfied the inclusion criteria participated actively. This sampling method was chosen to obtain a comprehensive picture of the knowledge and roles of PKK mothers within the study area.

Data were collected using a structured questionnaire developed based on the objectives of the research. The questionnaire consisted of closed-ended questions covering respondent characteristics, knowledge of butterfly pea flower tea, and the role of PKK mothers in maintaining women's reproductive health. The instrument utilized in this study was

adapted from previously published studies and adjusted according to the aims of the research and the characteristics of the target population. The questionnaire included items designed to assess respondents' knowledge of butterfly pea flower tea and women's reproductive health, as well as their involvement in health promotion activities. Prior to data collection, the adapted instrument was reviewed to ensure the relevance of its content.

Before completing the questionnaire, respondents were provided with an explanation regarding the purpose of the study and the procedures for answering the questions. In addition to questionnaires, simple observations were also conducted on PKK activities related to the utilization of herbal plants and family health practices as supporting data for the study.

The research instrument used is a structured questionnaire that includes sections on respondent characteristics, knowledge about the benefits of butterfly pea flower tea, knowledge about women's reproductive health, and the role of PKK mothers in promoting reproductive health. The study received approval from all participants through informed consent before data collection began. Respondents' identities are kept private and the data is only used for research purposes.

The collected data were processed through several stages, including editing, coding, scoring, and tabulating. Furthermore, the data were analyzed descriptively using frequency distributions and percentages, and the findings were presented in tables and narrative form to facilitate data interpretation.

The research variables include the mother's knowledge and role in PKK regarding the use butterfly pea flower tea to support women's reproductive health. Knowledge is defined as the level of understanding that respondents have about the benefits, content, and usage of butterfly pea flower tea for women's reproductive health. The role of the PKK mother is defined as the involvement of respondents in providing information, education, and support for the use of butterfly pea flower tea and promoting reproductive health in the community. Assessment is carried out using a structured questionnaire, and the measurement results are categorized into good (76–100%), sufficient (56–75%), and insufficient (below 56%).

RESULT

The research concerning the role of PKK mothers in utilizing butterfly pea flower tea to support women's reproductive health involved 26 respondents. Data collection was conducted using questionnaires that included respondent characteristics, knowledge levels, and the role of PKK mothers in delivering reproductive health education related to the use of butterfly pea flowers. A portion of the respondent data was obtained from completed research questionnaires that had been gathered before hand.

Table 1 Overview of Respondent Characteristics

Characteristics of Respondents	n	%
Age		
20–30Years	4	15.4
31–40Years	11	42.3
>41Years	11	42.3
Education		
Junior High School	2	7.7
Senior High School	9	34.6
Higher Education	15	57.7
Occupation Employed		
	13	50
Unemployed	13	50
Length of PKK Membership		
<1Year	3	11.5
1–2Years	10	38.5
>2Years	13	50
Total	26	100

Based on the table above, most respondents were aged 31–40 years and >41 years, each accounting for 42.3%. The majority of respondents had a higher education background (57.7%), while the distribution of occupation status between employed and unemployed respondents was equal (50%). Most respondents had been members of PKK for more than two years (50%), indicating sufficient experience in community and family health activities.

Table 2 Distribution of Respondent Knowledge Level

Knowledge Level	Frequency(f)	Percentage (%)
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Good	20	76.9
Fair	5	19.2
Poor	1	3.9
Total	26	100

The findings showed that most PKK mothers had a good level of knowledge regarding the benefits of butterfly pea flower tea and women's reproductive health, accounting for 20 respondents (76.9%). Good knowledge levels may be influenced by educational background, participation in PKK activities, and access to health-related information obtained by the respondents.

Table 3 Distribution of the Role of PKK Mothers

Role Category	Frequency (f)	Percentage (%)
Good	17	65.4
Fair	7	26.9
Poor	2	7.7
Total	26	100

The results indicated that most respondents had a good role in the utilization of butterfly pea flower tea to maintain women's reproductive health. PKK mothers were relatively active in providing health education, sharing health-related information, and encouraging the community to adopt healthy lifestyles.

Table 4 Distribution of PKK Mothers Role Activities

Role Activities	Often/Always n(%)	Rarely/Never n(%)
Informing others about the benefits of butterfly pea flower tea	18 (69.2%)	8(30.8%)
Encouraging reproductive health awareness	20(76.9%)	6(23.1%)
Reminding women about intimate hygiene	21(80.8%)	5(19.2%)
Helping others understand the benefits of	17(65.4%)	9(34.6%)

butterfly pea flowers	Supporting PKK activities related to women's health
22(84.6%)	4(15.4%)

The data above indicate that most PKK mothers were actively involved in supporting women's health activities within the community. The most frequently reported activity was supporting PKK programs related to women's health, which was reported by 22 respondents (84.6%).

DISCUSSION

The respondents in this research were primarily adult women aged 31–40 years and those older than 41 years. Adults generally demonstrate greater maturity, broader social experience, and stronger family responsibilities, which enable them to better appreciate the importance of maintaining reproductive health. These results are in line with the findings of Idris, U., Frank, S. A. K., Hindom, R. F., & Nurung (2021), who reported that adult women tend to participate more actively in family and reproductive health programs due to their greater involvement in community social activities. Furthermore, the majority of respondents possessed a relatively high educational background. Earlier studies have suggested that educational level is related to an individual's capacity to access and comprehend health-related information. However, this association was not specifically analyzed in the current research. The findings revealed that most PKK mothers demonstrated good levels of knowledge and active roles regarding the use of butterfly pea flower tea for supporting women's reproductive health. These results suggest that PKK mothers serve not only as coordinators of community social programs but also as educators who promote family health through the utilization of local herbal resources. The substantial level of knowledge among respondents indicates that information concerning the benefits of butterfly pea flowers has increasingly gained recognition and acceptance within the community, particularly among women who actively participate in PKK activities. This situation reflects the strategic contribution of community-based organizations such as PKK in enhancing awareness of women's reproductive health through approaches centered on families and local communities. The results of this study are also

consistent with the expanding application of herbal plants as part of preventive and promotive public health efforts. Butterfly pea flower, scientifically known as *Clitoria ternatea*, contains various bioactive compounds, including flavonoids, anthocyanins, phenolic substances, and antioxidants, which may contribute beneficial health effects. Several previous studies have demonstrated its antioxidant potential and its suitability as a functional food ingredient, thereby supporting its use as a traditional community-based herbal beverage that may contribute to improving public health (Shirodkar, S. M., Multisona, R. R., & Gramza-Michałowska, 2023)

The findings also revealed that most respondents understood the benefits of butterfly pea flowers as an herbal beverage containing antioxidants that may help maintain women's health. The good level of knowledge observed among respondents may be related to various factors, including educational background, access to health information, and participation in PKK activities. However, the present study did not specifically analyze the association between these factors and respondents' knowledge levels. According to the health behavior theory proposed by Notoatmodjo, S. (2018) education and experience are important factors in shaping health knowledge and behavior. Individuals with higher educational attainment tend to be more receptive to new information, including information regarding the use of traditional herbal remedies for maintaining reproductive health. In addition to educational factors, active involvement in PKK organizations may also explain why respondents had a relatively good understanding of the benefits of butterfly pea flower tea. PKK activities are closely related to family health education, family medicinal plants (TOGA), healthy lifestyles, and women's empowerment programs. A supportive social environment enables PKK mothers to obtain health-related information more easily and exchange experiences regarding women's health. These findings indicate that social interaction within community groups may improve health knowledge through informal and continuous educational processes.

The results of this study are in line with the research conducted by Jeyaraj, E. J., Lim, Y. Y., & Choo (2022) which reported that butterfly pea flowers contain anthocyanins and flavonoids with high antioxidant activity that may benefit human health. Antioxidants play an important role in neutralizing free

radicals that may trigger various health problems, including reproductive health disorders in women. Similarly, Lakshan, S. A. T., Jayanath, N. Y., Abeysekera, W. P. K. M., & Abeysekera (2021) stated that butterfly pea flowers have potential as a functional beverage because of their beneficial bioactive compounds. These findings support the current study, as almost all respondents recognized the health benefits of butterfly pea flowers and considered them suitable for daily herbal consumption. This study also supports the findings of Purwanto, H., Aprilia, D., & Sulistiyani (2022), who reported that butterfly pea flower extract possesses strong antioxidant activity and has the potential to be developed as a natural health beverage. In addition, Marpaung (2020) explained that butterfly pea flowers contain flavonoids and bioactive compounds that function as natural anti-inflammatory and antioxidant agents. However, previous studies mainly focused on biological compounds and herbal product development, whereas the present study expands the discussion toward the social and community empowerment aspects through the role of PKK mothers in maintaining women's reproductive health. Apart from having good knowledge, most PKK mothers in this study had also carried out their roles as provider health information within the community. These roles were reflected in activities such as encouraging women to maintain reproductive health, reminding them about intimate hygiene, and supporting the safe and appropriate use of herbal remedies. The most frequently reported activity was supporting PKK programs related to women's health. This finding indicates that PKK functions as a strategic community-based health promotion medium capable of reaching society directly through family-oriented approaches.

The findings of this study are consistent with the research conducted by Rahmadani, T., Setiani, S., Cahyani, P. I. G., Rastanti, H., & Putra (2024), which reported that PKK activities improved community skills in processing butterfly pea flowers into family health products. Rustanti, E., Semi, S., Wiraghani, S. R., Rukiati, S. R., & Safitri (2024) also explained that empowering PKK groups may increase community participation in utilizing herbal plants for family health purposes. Furthermore, Ekowati, D., Pratiwi, A., & Lestari (2024) stated that empowering PKK mothers through the utilization of butterfly pea flowers not only increased public health awareness but also provided

additional economic value for families. Compared with previous studies, the present study specifically emphasizes women's reproductive health as part of promotive and preventive community-based health efforts. Although the findings were predominantly categorized as good, several respondents still demonstrated limited participation in providing health education. These differences maybe influenced by factors such as age, organizational experience, self confidence, and occupational responsibilities. Not all PKK mothers possess the same communication skills in delivering health information to the community. In addition, the absence of specific training regarding herbal-based reproductive health education may also affect respondents' levels of participation in health promotion activities. These findings emphasize the importance of community-based women's organizations in strengthening health promotion activities. Community empowerment approaches have been shown to improve awareness, knowledge, and early detection practices related to women's reproductive health. Women's participation in community health programs can facilitate the dissemination of health information and encourage preventive health behaviors at the family and community levels (Indriastuti & Azizah, 2025) Compared with previous studies, the finding soft his study do not contradict earlier research but rather expand the discussion regarding the benefits of butterfly pea flowers. Earlier studies primarily focused on pharmacological activity, antioxidant properties, and herbal product development. In contrast, this study introduces a social dimension by highlighting women's empowerment and the role of community organizations in improving women's reproductive health awareness. The novelty of this study lies in the integration of reproductive health education, local herbal utilization, and women's community empowerment. The high level of knowledge among respondents shows that community organizations like PKK can be an effective way to spread health information. According to the World Health Organization, empowering communities and involving women is an important part of improving reproductive health and achieving sustainable development health goals. Theoretically, the findings strengthen the concept of community empowerment in health promotion. Good knowledge was shown to support the involvement of PKK mothers in disseminating health education within their communities. This study

also demonstrates that community organizations such as PKK can serve as effective platforms for improving women's reproductive health awareness through culturally sensitive and socially connected approaches. Practically, the findings of this study may serve as a reference for health care workers, midwives, and local governments in developing reproductive health education programs based on herbal plants. Butterfly pea flowers may be incorporated into family medicinal plant (TOGA) programs and women's health promotion activities because they are easy to obtain, affordable, and simple to process within the community. In addition, training programs on butterfly pea flower tea processing may also be developed as family economic empowerment initiatives through home based herbal products with both health and economic benefits. In recent years, butterfly pea flower has received increasing scientific attention because of its diverse pharmacological properties. Several studies have demonstrated its antioxidant, antimicrobial, anti-inflammatory, and cytoprotective activities, which are primarily attributed to its rich content of anthocyanins and flavonoids. Furthermore, research has highlight edits potential application as a functional beverage with health promoting benefits. These findings support the potential integration of butterfly pea flower tea into community-based health promotion initiatives targeting women's health (Krawczyk, K., 2025).

STUDY LIMITATIONS

This research has several limitations. First, the relatively limited number of respondents, which resulted from applying total sampling within only one PKK group, may restrict the extent to which the findings can be generalized to wider populations. Second, the descriptive study design does not permit the analysis of causal relationships or statistical correlations between respondents' levels of knowledge and their roles in supporting women's reproductive health promotion. Consequently, the results should be understood as a depiction of the conditions that existed within the specific research setting. Future studies are encouraged to utilize analytical research designs involving larger and more diverse participant groups in order to obtain a more comprehensive understanding of the factors that influence the use of butterfly pea flower tea in promoting women's reproductive health.

An additional limitation of this research is that the questionnaire was adapted and revised from previous studies without undergoing formal validity and reliability assessments before the data collection process. Therefore, future investigations are advised to examine the psychometric characteristics of the instrument, including its validity and reliability, prior to its wider implementation.

CONCLUSION

The findings of this research indicated that the majority of PKK mothers possessed good knowledge and played active roles in utilizing butterfly pea flower tea to promote women's reproductive health. In general, the respondents understood the benefits of butterfly pea flowers as an antioxidant-rich herbal beverage that may contribute to maintaining women's health. Factors such as educational attainment, involvement in PKK programs, and access to health-related information contributed to the respondents' level of knowledge and participation in health promotion efforts. The results further suggest that PKK can function as an effective community-based organization for advancing reproductive health education and encouraging the utilization of local herbal plants among families and communities. Nevertheless, this study was constrained by its relatively small sample size and descriptive research approach; therefore, future studies involving larger populations and more comprehensive methodologies are required to reinforce these findings.

REFERENCE

- Ekowati, D., Pratiwi, A., & Lestari, N. (2024). Pemberdayaan ibu PKK melalui pemanfaatan bunga telang sebagai minuman kesehatan dan produk ekonomi kreatif. *Jurnal Pengabdian Masyarakat Indonesia*, 5(1), 45–52.
- Idris, U., Frank, S. A. K., Hindom, R. F., & Nurung, J. (2021). Family planning practices and the impact on Papuan women reproductive health. *Gaceta Sanitaria*, 35(2), 479–482. <https://doi.org/10.1016/j.gaceta.2021.10.074>
- Indriastuti, R. O., & Azizah, N. (2025). Community-Based Health Promotion: Early Detection and Prevention of Women's Reproductive Health Disorders. *International Conference of Community Service*, 3(2).
- Jeyaraj, E. J., Lim, Y. Y., & Choo, W. S. (2022). Antioxidant, antibacterial, and cytotoxic activities of *Clitoria ternatea* flower extracts. *Food Research International*. <https://doi.org/10.1016/j.foodres.2022.111189>
- Kementerian Kesehatan Republik Indonesia. (2022). *Profil Kesehatan Indonesia 2022*.
- Kementerian Pertanian Republik Indonesia. (2021). *Statistik Tanaman Obat dan Biofarmaka Indonesia*.
- Krawczyk, K., et al. (2025). *Clitoria ternatea: Perspectives on Its Application in Foods and Potential Health Benefits*. *Plants*, 14(12).
- Lakshan, S. A. T., Jayanath, N. Y., Abeysekera, W. P. K. M., & Abeysekera, W. K. S. M. (2021). A commercial potential blue pea (*Clitoria ternatea* L.) flower extract incorporated beverage having functional properties. *Evidence-Based Complementary and Alternative Medicine*, 1–13. <https://doi.org/10.1155/2021/2916914>
- Marpaung, A. M. (2020). Tinjauan manfaat bunga telang (*Clitoria ternatea* L.) bagi kesehatan manusia. *Journal of Functional Food and Nutraceutical*, 1(2), 47–58.
- Mukherjee, P. K., Kumar, V., Kumar, N. S., & Heinrich, M. (2022). The Ayurvedic medicine *Clitoria ternatea*—From traditional use to scientific assessment. *Journal of Ethnopharmacology*, 120(3), 291–301.
- Notoatmodjo, S. (2018). *Pendidikan dan Perilaku Kesehatan*. Rineka Cipta.
- Purwanto, H., Aprilia, D., & Sulistiyani, E. (2022). Aktivitas antioksidan ekstrak bunga telang (*Clitoria ternatea* L.) sebagai minuman herbal kesehatan. *Jurnal Pangan Dan Gizi*, 12(2), 88–96.
- Rahmadani, T., Setiani, S., Cahyani, P. I. G., Rastanti, H., & Putra, A. P. (2024). Pelatihan pembuatan teh dan permen dari bunga telang pada ibu-ibu PKK Dusun Losari Desa Kwangsari Jumapolo Karanganyar. *MAYARA: Jurnal Pengabdian Masyarakat*, 2(1), 21–27. <https://doi.org/10.71382/mayara.jurn.peng.mas.y.v2i1.74>
- Rahmawati, D., & Putri, N. A. (2022). Peran kader PKK dalam meningkatkan edukasi kesehatan reproduksi wanita di masyarakat. *Jurnal Kesehatan Masyarakat Indonesia*, 17(2), 112–119.
- Rustanti, E., Semi, S., Wiraghani, S. R., Rukiati, S. R., & Safitri, D. (2024). Pemberdayaan

- kelompok PKK melalui pendampingan pembuatan simplisia daun sirsak menjadi produk kesehatan di Desa Kebontemu Peterongan Jombang. *Jurnal Pengabdian Masyarakat*, 6(2), 280–285. <https://journal.unublitar.ac.id/jppnu/index.php/jppnu/article/view/310>
- Sari, R., Widiyaningsih, E., & Lestari, P. (2023). Pemberdayaan ibu PKK melalui pelatihan pengolahan bunga telang sebagai minuman herbal kesehatan. *Jurnal Pengabdian Masyarakat*, 8(1), 55–63.
- Shirodkar, S. M., Multisona, R. R., & Gramza-Michałowska, A. (2023). The Potential for the Implementation of Pea Flower (*Clitoria ternatea*) Health Properties in Food Matrix. *Applied Sciences*, 13(12).
- World Health Organization. (2022). Sexual and reproductive health.