Awareness among Breastfeeding Women Regarding Herbal Medicine Use in Primary Health Care of Tegal, Indonesia

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ABSTRACT

Background: *Exclusive breastfeeding is essential for infant growth and maternal health. However, factors such as low milk production often hinder breastfeeding success. Herbal medicine is commonly used to stimulate milk production, yet awareness of its proper use among breastfeeding mothers remains inconsistent. Limited evidence exists on the factors influencing this awareness, particularly in primary health care settings.*
Method: *A cross-sectional observational study was conducted in March–April 2025 at the Primary Health Care Centers in Tegal Regency, Central Java, Indonesia. A total of 116 breastfeeding mothers were selected using purposive sampling. Data were collected through structured questionnaires covering maternal, child, and family characteristics as well as awareness of herbal medicine use. Data were analyzed using univariate and bivariate methods.*
Result*: Most breastfeeding mothers reported awareness and use of herbal medicine to support milk production. Factors associated with higher awareness included maternal age, employment status, and parental support. Many mothers, however, did not inform health workers about their herbal use. The conclusion is Awareness of herbal medicine use among breastfeeding mothers is influenced by maternal and family factors. Primary health care providers should play a stronger role in improving mothers' understanding of breastfeeding challenges, appropriate herbal use, and the safety of herbal preparations.*

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INTRODUCTION

Exclusive breastfeeding is vital for infant growth and maternal health, offering protection against infections and supporting cognitive development.(1)(2) Despite these benefits, many mothers experience difficulties due to insufficient milk production influenced by physiological and psychosocial factors.(3)(4) To overcome this issue, various traditional practices such as consuming Herbal Medicine (HM) are widely used to stimulate milk production. However, awareness and understanding of breastfeeding mothers regarding the safe and effective use of HM remain inconsistent, especially within primary health care settings. This knowledge gap highlights the need for further research and education to ensure that the use of herbal remedies supports, rather than compromises, the success of exclusive breastfeeding.(5)

Suboptimal breastmilk production can be influenced by various factors, including the mother's physiological condition, stress level, unbalanced diet, as well as environmental and social factors.(6,7) Insufficient milk production can result in failure of exclusive breastfeeding, which contributes to an increased risk of malnutrition and disease in infants.(8)

Exclusive breastfeeding in Indonesia is a critical public health issue, with rates varying across regions and populations. Overall, exclusive breastfeeding rates in Indonesia are reported to range between 42% and 54.1%, depending on the study and region.(9–12) From an epidemiological perspective, the figures reported in the 2019 SUSENAS survey reflect the national patterns and challenges related to breastfeeding practices in Indonesia. The data showing that 35.97% of children aged 12–17 months were still breastfed suggests that approximately one in three children continued receiving the nutritional and immunological benefits of breast milk during the second year of life. However, the significant decline to 16.88% among children aged 18–23 months indicates limited adherence to the World Health Organization's recommendation of continued breastfeeding up to two

years. Furthermore, the finding that only 27.81% of infants aged 0–5 months received exclusive breastfeeding reveals that a large proportion of infants are introduced to complementary food too early, undermining the protective effects of breast milk against malnutrition and infections. These statistics, when viewed collectively, illustrate uneven breastfeeding coverage and insufficient program effectiveness, highlighting the need for strengthened health promotion, counseling, and policy interventions to ensure optimal breastfeeding practices across Indonesian regions.(13) This issue is also a concern, especially in the context of access to information and interventions that can support successful breastfeeding.

Based on the research, the use of herbal remedies for increasing breast milk production involves both traditional and clinical evidence supporting their efficacy, with varying levels of scientific validation. Herbal tea, including galactagogue blends such as those studied has been shown in randomized controlled trials to significantly enhance milk volume and early infant weight gain, indicating a measurable lactogenic effect.(14,15) Likewise, *beras kencur*—a Javanese rice and aromatic ginger herbal tonic effectively stimulated breast milk secretion through improved maternal relaxation and circulation.(16) *Katuk* leaves (*Sauropus androgynus*) (17), another widely used herbal galactagogue in Indonesia, were found to increase prolactin hormone levels and support sustained lactation according to local empirical and clinical records. Complementary approaches such as warm herbal compresses (18) were shown to elevate oxytocin levels, facilitating milk ejection, while combined herbal steam baths with endorphin massage (19) have yielded synergistic effects by improving both relaxation and hormonal balance. Overall, those studies demonstrate that herbal-based interventions—especially when used together with supportive techniques—can positively affect milk production and maternal well-being. However, the article emphasizes that awareness and understanding among breastfeeding mothers remain inconsistent, and many do not consult health professionals. This indicates that while herbal remedies appear effective and culturally accepted, their safe and evidence-based application still requires stronger health education and integration within primary care.

The phenomenon of HM use by breastfeeding mothers in Tegal Regency shows a unique trend. Many mothers choose HM as an alternative before resorting to conventional medicine. This preference may be influenced by cultural factors, availability of local resources, and belief in the effectiveness and safety of HM compared to pharmaceutical drugs. However, there are still gaps in the optimal utilization of HM. Lack of accurate information and support from health workers regarding the safety and effectiveness of HM use is one of the main obstacles in its utilization. Therefore, it is important to further explore the pattern of HM use in increasing breast milk production.

This study aimed to determine the level of awareness among breastfeeding mothers regarding the use of HM to enhance breast milk production in Primary Health Care Centers in Tegal Regency, Indonesia. The analytical scope of this research included maternal characteristics (such as age, education, and employment status), child-related factors (including age, gender, birth order, and health condition), and family support variables (such as cohabitation with parents or in-laws and their influence on maternal health). The results are expected to provide insights for health professionals in developing targeted educational and intervention strategies to promote evidence-based HM use and to support the success of exclusive breastfeeding practices.

METHOD

The type of this research was observational with a cross-sectional study design, conducted in March–April 2025 at the Primary Health Care Centers of Tegal Regency, Central Java, Indonesia. The cross-sectional design was chosen because it allows the researcher to assess the level of awareness of breastfeeding mothers regarding the use of HM and to identify associated maternal, child, and family factors. This design is appropriate for describing the current situation and patterns of HM use in the population, facilitating the exploration of correlations between awareness and influencing factors. It also enables efficient data collection from a relatively large sample, making it suitable for public health studies conducted in a community or primary health care setting. The population in this study were all breastfeeding mothers in Primary Health Care Centers of Tegal Regency. The research was carried out in ten Primary Health Care Centers (Puskesmas) located in both rural and urban areas to capture variation in community characteristics, access to health services, and cultural practices related to the use of HM during breastfeeding. The study sample was 116 breastfeeding mothers who were selected using purposive sampling technique. The inclusion criteria for subjects in this study were breastfeeding mothers who were more than 18 years old, had a child with a maximum age of 12 months, and received care for themselves and/or their child at a health facility.

The independent variables consisted of breastfeeding mothers' characteristics, children's characteristics, and family support factors. Each variable was defined operationally and measured using categorical or nominal scales. The mothers' characteristics included age (measured in years, categorized into reproductive age groups), ethnicity (categorized based on regional origin),

educational status (elementary, junior high, senior high, or undergraduate), employment status (employed or unemployed), and number of children breastfed (one or more than one). Children's characteristics were defined by the child's age, gender (male or female), birth order (first, second, or third and above), and health status (healthy or sick) based on maternal self-report. Family support factors consisted of living arrangements (living with parents or in-laws versus not living together) and the role of parents or spouse toward the mother's health (categorized as greater influence or little or no influence). All variables were measured using nominal or ordinal scales and analyzed descriptively and through Chi-Square tests to determine their association with mothers' awareness of HM use during breastfeeding. The dependent variable was awareness about the pattern of using HM in increasing breast milk.

The independent variables were measured using a general questionnaire, while the dependent variable was assessed using a questionnaire on the pattern of HM use. Both instruments underwent content validity and reliability testing prior to data collection. The content validity was evaluated by experts to ensure that the instrument items accurately represented the measured concepts, while reliability testing was conducted using Cronbach's Alpha, yielding a coefficient above 0.70, indicating that the questionnaire items were consistent and reliable for use in this study.

This study has received ethical approval from the Health Research Ethics Committee of Bhamada University Slawi with No.026/Univ.Bhamada/KEP.EC/III/2025. The study began with the signing of informed consent, after which a questionnaire-based interview was conducted. The interviews were carried out by the principal investigator assisted by trained enumerators, who were midwives working in the participating Primary Health Care Centers. Data collection took place at the Puskesmas facilities during scheduled mother and toddler classes, which provided an appropriate setting for reaching breastfeeding mothers in both rural and urban areas of Tegal Regency. This approach ensured that interviews were conducted efficiently and within a familiar community health environment.

Data analysis in this study began with univariate analysis to describe the characteristics of breastfeeding mothers, children, family support factors, and awareness variables, which were presented in frequency tables using mean ± standard deviation or median (minimum–maximum) values. All data were categorical, including nominal and ordinal types. The variables consisted of maternal characteristics (such as age, ethnicity, education, occupation, and number of children), child characteristics (age, gender, birth order, and health status), and family support factors (living with parents or in-laws and the role of family in maternal health). The Chi-Square test was applied for bivariate analysis because both the independent and dependent variables were categorical. This test was selected to determine the presence of a significant association between maternal, child, and family factors and the level of awareness regarding HM use among breastfeeding mothers. The software for data analysis was IBM SPSS Statistics 21.

RESULT AND DISCUSSION

The characteristics of breastfeeding mothers were mostly aged 20-29 years (n=61, 52.9%), Javanese (n=114, 98.3%), and Islam (n= 116, 100%). While the education level of breastfeeding mothers was mostly senior high school (n=49, 42.2%), breastfeeding mothers did not work (n=81, 69.8%), health status was healthy (n=116, 100%), and the number of children was 1 (n=104, 89.7%). (Table 1).

Table 1. Characteristics of breastfeeding mothers

Variable	f (%)
Age	
20-29 years	61 (52.9)
30-39 years	53 (45.7)
40-49 years	2 (1.7)
Ethnic group	
Javanese	114 (98.3)
Sundanese	1 (0.9)
Minangkabau	1 (0.9)
Educational Status	
Elementary School	20 (17.2)
Junior High School	37 (31.9)
Senior High School	49 (42.2)
Undergraduate	10 (8.6)
Employment status	
Employed	35 (30.2)
Un-employed	81 (69.8)
Number of Child	
One	104 (89.7)
> 1	12 (10.3)
Total	116 (100)

The 116 breastfeeding mothers studied explained that the characteristics of breastfeed children were mostly aged 0-6 months (n=104, 89.7%), female gender (n=61, 52.6%), first child order (n=47, 40.5%), and had mostly healthy status (n=114, 98.3%). (Table 2). This study explains that the role of parents towards breastfeeding mothers is mostly greater influence (n=94, 81.0%) and most live with parents (n=82, 70.7%). (Table 3). Most breastfeeding mothers used HM to accelerate milk

production and supply during breastfeeding (n=81, 70%). (Figure 1).

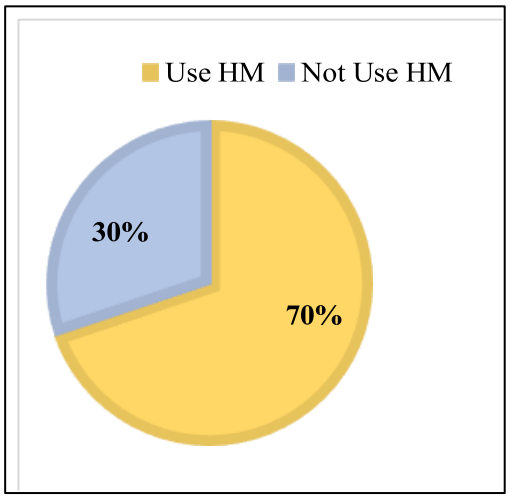

Figure 1. Use of herbal medicine

Table 2. Characteristics of breastfed children

Variable	f (%)
Age	
0-6 months	104 (89.7)
7-12 months	12 (10.3)
Gender	
Male	55 (47.4)
Female	61 (52.6)
The child's number	
First	47 (40.5)
Second	43 (37.1)
Third	24 (20.7)
Fourth	1 (0.9)
Fifth	1 (0.9)
Health status	
Healthy	114 (98.3)
Sick	2 (1.7)
Total	**116 (100)**

The characteristics of breastfeeding mothers were also involved in the awareness of HM use. The majority of respondents who consumed HM while breastfeeding were between 30 to 39 years old. However, a previous study stated that the age between 25 to 29 years was the age range that consumed many herbal medicines.(20) This age is included in the healthy reproductive age group because the reproductive organs are ready to carry out the reproductive process. This is also related to psychological and mental maturity in supporting exclusive breastfeeding for infants.(21)

Many Javanese use HM during breastfeeding compared to other ethnic groups. Similarly, surveys show that around 16% of US women (22), 20% to 45% of Chinese women (23,24), 59.9% of Australian women (25) and 97% of Italian women (26) use at least one herbal product during breastfeeding. In Java, there are many regions that still use HM with recipes passed down from ancestors that are believed to provide benefits for breastfeeding mothers. These recipes have been proven to work for some breastfeeding mothers based on their experience. Depending on traditional beliefs and practices and trends in different regions, the term herbal product can refer to a variety of herbal ingredients and refer to different dosage forms and preparations. Other research suggests that women also report that using herbal products during breastfeeding is an act of self-empowerment, providing them with a sense of security and other psychological benefits such as increasing their confidence about breastfeeding.(27,28)

The majority of respondents' education level was upper secondary education. Higher levels of education are often associated with the use of non-conventional means of care because people with higher levels of education tend to have better health literacy, making them more likely to practice good health and actively seek additional means of care.(29,30) Education is one of the factors that influence breastfeeding mothers' decision to use herbs. Breastfeeding mothers with higher education tend to have better health literacy, thus often using non-conventional modes of care. Good health literacy makes breastfeeding mothers actively seek additional health care methods that are beneficial for their health conditions1. Higher education fosters a critical attitude in receiving information so that it reinforces the information. There are more and accurate insights on the effectiveness and safety of HM so that their use can be more responsible.(31)

The majority of respondents were unemployed housewives. Low income levels cause the ability to seek treatment to decrease, so HM is preferred because it is cheaper.(31) In addition, the tradition of drinking HM in several ethnic groups in Indonesia is still very strong so that breastfeeding mothers try to continue taking HM. This is different from previous researchers who said that the type of work does not affect the decision to use herbs in breastfeeding mothers. The type of work, both formal and informal, does not affect the use of herbs in breastfeeding mothers.(20,32) Similar results also stated that there was no difference in the type of work between breastfeeding mothers who used herbs and those who did not.(33) Employment status is related to the individual's economic condition. Housewives rely on income from their husbands. Financial dependence causes them to follow their husbands' choices, including the use of HM.(34) The results of the study showed that the number of 1 child was more dominant than >1 child. The number of children is related to the mother's skill in breastfeeding the child, most

of the number of children >2 are more skilled in exclusive breastfeeding than the number of children ≤2.(35) This is not in line with other studies that explain that there is a relationship between the number of children and awareness of the use of HM.(36)

Table 3. Family support factors

Variable	f (%)
Living with parents	
Yes	82 (70.7)
No	34 (29.3)
Role of parents	
Greater influence	94 (81.0)
Little or no influence	22 (19.0)
Total	**116 (100)**

The results of the pattern of HM use among breastfeeding mothers stated that HM used by breastfeeding mothers can increase breast milk production (n=78, 67.2%), the side effects felt after consuming HM are nausea and vomiting (n= 6, 5.2 %), skin rashes (n= 12, 10.3%), and itching (n= 12, 10.3 %). Most breastfeeding mothers did not inform health workers about the use of HM (n= 103, 88.8%), and did not use other products such as conventional medicine to increase breastmilk production (n= 95, 81.9%) and did not take special diets such as adjusting certain diets to facilitate breastmilk (n= 90, 77.5%). The reason is that according to breastfeeding mothers, HM is more efficacious than conventional medicine (n=82, 72.4%), HM is safer than conventional medicine (n=82, 70.7%) and only 20 breastfeeding mothers (17.2%) stated that conventional medicine is useful in improving breastmilk production. (Table 4).

Our study proved that breastfeeding mothers in the Primary Health Care of Tegal Regency working area were more likely to use HM during breastfeeding. This is in line with previous research that there is a high awareness in the use of HM among breastfeeding mothers in Indonesia, specifically in Klaten.(37) In addition, breastfeeding mothers in Tanzania explained that the majority of breastfeeding mothers used HM during breastfeeding.(36)

The use of HM during breastfeeding occurred because breastfeeding mothers in the Tegal area demonstrated a strong awareness of HM use, as evidenced by their high awareness that herbal remedies can facilitate milk production, and, conversely, by their low awareness or preference for conventional drugs. The reason why most breastfeeding mothers were aware of this was because herbal medicines were more efficacious and safer than conventional medicines. Previous studies have also reported that the reason breastfeeding mothers use HM is their belief that it is natural and safe.(38) The use of HM in breastfeeding mothers is part of a cultural tradition. It is because of the Asian background that contributes highly in using HM that has become a tradition. In studies involving women in Asian cultures, female elders or other family members were important sources of information about herbal medicines.(23,39,40) These are in accordance with our research, which explains that HM usage information comes from friends and family.

However, our study is not in line with other studies which explain that in a study in Saudia Arabia, the pattern of using HM in facilitating breast milk production is still low in postpartum women. This is because the majority believe that the use of herbs is not safe.(41) There is a potential for adverse effects to occur in the potential use of HM. In our study, a small proportion of respondents experienced side effects such as nausea and vomiting, rash, and itching. Previous studies have found gastrointestinal effects of turmeric and tamarind and antihypertensive effects of tamarind that cause nausea and dizziness.(42) Research in Turkey explains that most breastfeeding mothers are unaware of the side effects of using HM.(43)

The problem that occurred in our study was the hesitation of HM users to inform health professionals. Breastfeeding mothers in Turkey prefer to consult their relatives for information about traditional and complementary medicine methods.(44) Therefore, it is difficult to track the types of HM use among breastfeeding mothers attending routine health check-ups. Only a small proportion of HM use among breastfeeding mothers in the Primary Health Care of Tegal Regency working area were informed to health workers. The use of HM should come from the recommendation of a doctor or health worker.(41) In addition, there is a high desire in breastfeeding mothers to learn about the safety and efficacy of HM.(43) Thus, it is important to provide information on the use of HM to health workers.

Figure 2 shows that the sources of information on the use of HM in facilitating breast milk production and supply during breastfeeding were health workers (n=4, 3.4%), HM practitioners (n=1, 0.9%), media (n=18, 15.5%), friends (n=51, 44.0%), family (n=42, 36.2%). Breastfeeding mothers who used HM and did not use HM had a habit of using special dietary patterns to facilitate breast milk production and supply during breastfeeding by regularly consuming vegetables (n=26, 66.7%), *jamu* (HM) (n=4, 10.3%), nuts (n=1, 2.6%), cow's milk (n=2, 5.15%), water (n=3, 7.7%), goat milk (n=1, 0.9%), steeped *katuk* leaves (n=1, 2.6%), and eggs (n=1, 2.6%).(Figure 3).

Table 4. Awareness on the use of herbal medicine in improving breastfeeding

Awareness	Agree		Disagree	
	f	%	f	%
Did you use any herbal medicine during breastfeeding?	81	69.8	35	30.2
Does the herbal medicine you are using improve your milk production and supply?	78	67.2	38	32.8
Are there any side effects of nausea and vomiting from using herbal remedies?	6	5.2	110	94.8
Are there any side effects of skin rashes from using herbal remedies?	12	10.3	104	89.7
Are there any side effects of itching from using herbal remedies?	12	10.3	104	89.7
Did you inform your health professional about the use of herbal medicine?	13	11.2	103	88.8
Do you use other products such as conventional medicine to increase breast milk production?	21	18.1	95	81.9
Are you on a special diet to adjust your diet to facilitate breastfeeding?	26	22.4	90	77.6
Do you think herbal medicine is more efficacious than conventional medicine?	84	72.4	32	27.6
Are herbal medicines safer than conventional medicines?	82	70.7	34	29.3
Is conventional medicine useful for breastfeeding?	20	17.2	96	82.8

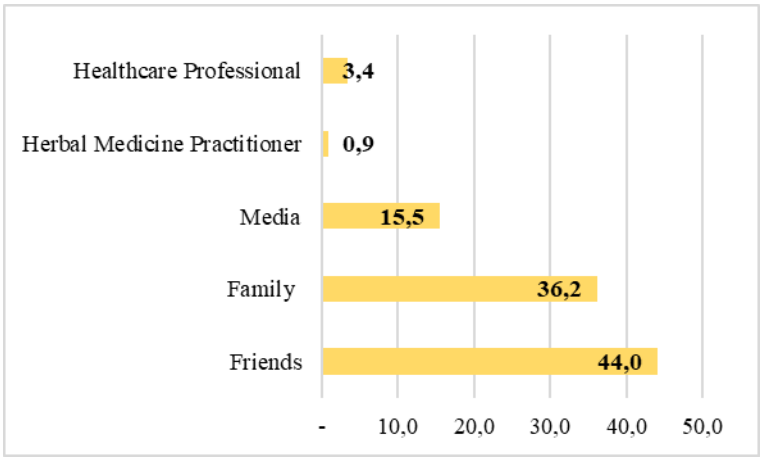

Figure 2. Data on sources of herbal medicine information

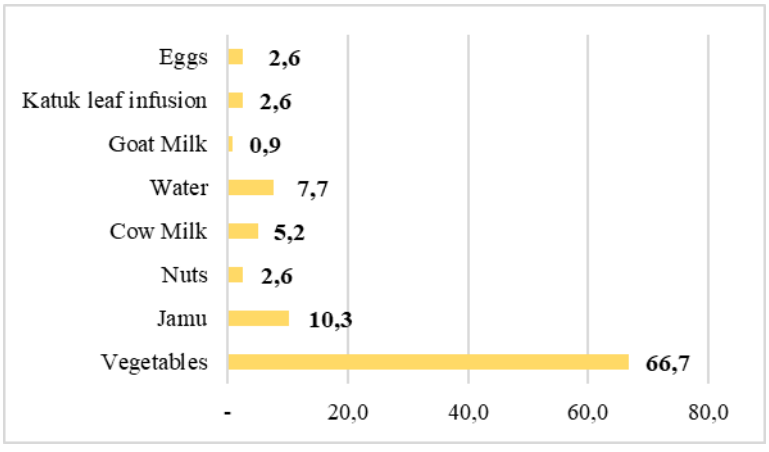

Figure 3. Data on breastfeeding mothers who use special dietary patterns

Table 5. Maternal Characteristics, Child Factors, and Family Factors Associated with Herbal Medicine Use

Variables		Use herbal medicine		F (%)	P-value
		Yes f (%)	No f (%)		
Maternal Characteristics					
Age	20-29 years	34 (55.7)	27 (44.3)	61 (100)	0.000*
	30-39 years	46 (86.8)	7 (13.2)	53 (100)	
	40-49 years	1 (50.0)	1 (50.0)	2 (100)	
Ethnic group	Javanese	79 (69.3)	35 (30.7)	114 (100.0)	1.000
	Sundanese	1 (100.0)	-	1 (100.0)	
	Minangkabau	1 (100.0)	-	1 (100.0)	
Educational Status	Elementary School	15 (75.0)	5 (25.0)	20 (100.0)	0.408
	Junior High School	22 (59.5)	15 (40.5)	37 (100.0)	
	Senior High School	37 (75.5)	12 (24.5)	49 (100.0)	
	Undergraduate	7 (70.0)	3 (30.0)	10 (100.0)	
Employment status	Employed	30 (85.7)	5 (14.3)	35 (100.0)	0.026*
	Un-employed	51 (63.0)	30 (37.0)	81 (100.0)	
Number of Children	1	75 (72.1)	29 (27.9)	104 (100.0)	0.180
	>1	6 (50.0)	6 (50.0)	12 (100.0)	
Breastfeeding child factors					
Child Age	0-6 months	74 (71.2)	30 (28.8)	104 (100.0)	0.507
	7-12 months	7 (58.3)	5 (41.7)	12 (100.0)	
Child Gender	Boys	47 (73.4)	17 (26.6)	64 (100.0)	0.462
	Girls	34 (65.4)	18 (34.6)	52 (100.0)	
Parturition Status	First/Primiparous	34 (72.3)	13 (27.7)	47 (100.0)	0.843
	Second	30 (69.8)	13 (30.2)	43 (100.0)	
	Third	15 (62.5)	9 (37.5)	24 (100.0)	
	Fourth	1 (100.0)	-	1 (100.0)	
	Fifth	1 (100.0)	-	1 (100.0)	
Child Health Status	Health	80 (70.2)	34 (29.8)	114 (100.0)	0.514
	Sick	1 (50.0)	1 (50.0)	2 (100.0)	
Family Support					
Living with your parent or partner's parent	Yes	55 (67.1)	27 (32.9)	82 (100.0)	0.378
	No	26 (76.5)	8 (23.5)	34 (100.0)	
Role of parent or partner's parent on mother's health	Greater influence	61 (64.9)	33 (35.1)	94 (100.0)	0.019*
	Little or no influence	20 (90.9)	2 (9.1)	22 (100.0)	

Note: *Significant

The results of the Chi-Square test used to determine the factors associated with the use of HM during breastfeeding in breastfeeding mothers are breastfeeding mother characteristics, child characteristics, and family factors. The associated factors were age of the breastfeeding mother (p = 0.000), employment status (p = 0.026), and parental role (p = 0.019). (Table 5). The results of the relationship test on the awareness factor of the pattern of using HM in increasing breast milk explain that the factors that are related are the awareness factor that the HM used facilitates milk production (p = 0.000), there are side effects of nausea and vomiting (p = 0.009), awareness of breastfeeding mothers in informing the use of HM to health workers (p = 0.009), awareness of using conventional medicine (p = 0.000), HM is more efficacious than conventional medicine (p = 0.000), HM is safer (p = 0.000), conventional medicine is useful in facilitating breast milk (p = 0.001) and there are unrelated factors namely side effects of rash and itching each with a value of p = 0.180 and awareness of special dietary patterns (p = 0.810). (Table 6)

The factor of parental support, living with parents or in-laws is also a factor in consuming HM while breastfeeding. In our study, more than half of

breastfeeding mothers who consumed HM lived with their parents/in-laws. Previous studies have reported that mothers-in-law often help with cooking, housework, and taking care of children when mothers return to work.(45,46) Mothers-in-law have a strong influence on infant feeding practices.(47,48) Likewise, support from parents/in-laws for consuming HM while breastfeeding is often considered a way for family members to support mothers in their postpartum recovery.

In addition, child gender characteristics were not associated with the use of HM among breastfeeding mothers in Tegal. This was because most breastfeeding mothers with female infants used HM. This is not in line with previous research that male infants take longer to breastfeed, thus requiring a larger supply of breast milk than females. Respondents explained that there were other factors that caused breastfeeding mothers with female infants to use HM, such as awareness to facilitate breastmilk production. The sex of the newborn child is substantially associated with exclusive breastfeeding.(49) Exclusive breastfeeding practices are higher in girls than boys.

Our study found that child age was not associated with awareness of HM use among breastfeeding mothers. This is because there were breastfeeding mothers with children aged 0-6 months who did not use HM. Concerns of breastfeeding mothers in infants with younger age may experience overdose or side effects from indirect movement on HM are often expressed in the early stages of breastfeeding. In contrast to other studies that explain that there is a relationship between the age of the breastfeeding child and the awareness of HM use, mothers with children < 6 months of age have a higher rate of HM use.(43)

The factor of child order was not found to be related to the awareness of HM use in this study. This is because some mothers with second to fifth children also showed high levels of HM consumption. This finding is inconsistent with the theory stating that primiparous mothers (those with their first child) tend to have higher HM consumption.(33) Child order reflects a mother's experience in breastfeeding; the limited experience of first- time mothers often leads them to seek assistance from health services. In addition, the order of the first child causes anxiety in the mother, so there is a need for adaptation after childbirth. This anxiety is associated with milk production.(50) Therefore, primiparous mothers consume more HM to overcome breast milk production problems due to anxiety.(33) Child health status was not associated with awareness of HM use during breastfeeding among breastfeeding mothers in the Primary Health Care of Tegal Regency working area. This occurred because there were breastfeeding mothers who did not use HM with healthy child health status. Meanwhile, theory explains that breastfeeding mothers who consume HM show that the baby is healthier (51) because there is enough milk in his body during breastfeeding.(49)

The analysis of relationships among variables revealed that maternal, family, and awareness factors interacted to influence the use of HM during breastfeeding. Maternal age, occupation, and the perceived influence of parents or in-laws showed statistically significant associations, suggesting that younger mothers who were not employed were more likely to adopt herbal remedies, particularly when influenced by family elders. Educational attainment further moderated awareness by shaping mothers' beliefs and decision-making autonomy regarding herbal use. Awareness-related variables such as perceived efficacy, safety, and trust in herbal products compared to conventional medicine also demonstrated a strong positive relationship with actual usage. Conversely, non-significant variables—such as child characteristics and special dietary habits—indicated that these factors played a lesser role in herbal use decisions. These findings imply a complex interplay between sociodemographic factors, cultural norms, and personal beliefs, where family influence and traditional perceptions act as reinforcing mechanisms for herbal use, while limited health-system engagement reduces professional oversight and evidence-based guidance during lactation.

The cultural context of Tegal plays an essential role the widespread use of HM among breastfeeding mothers. Tegal has a strong tradition of *jamu* (Indonesian herbal tonic) consumption, which is deeply embedded in daily life and passed down through generations. Local communities believe that herbal preparations such as *beras kencur*, *kunyit asam*, and *katuk* leaves not only enhance milk production but also promote maternal recovery and body balance after childbirth. This cultural heritage, combined with the accessibility and affordability of herbal ingredients, reinforces the perception that HM is a safer and more natural alternative to pharmaceutical drugs. Moreover, family elders—especially mothers-in-law— play a central role in transmitting these traditional practices and encouraging their use during the postpartum period. Consequently, in Tegal's rural and semi-urban settings, HM use is not merely a health choice but a reflection of community identity and intergenerational trust in traditional healing wisdom.

To enhance the safe and evidence-based use of HM among breastfeeding mothers, educational interventions involving health professionals are essential. Midwives and primary health care workers can play a pivotal role by providing structured counseling about the benefits, preparation methods, dosage, and potential side effects of locally available herbal galactagogues such as *daun*

kelor (moringa leaves), *katuk* leaves, and *beras kencur*. Integrating herbal education into mother and toddler classes at the Puskesmas level would help increase mothers' knowledge while dispelling misconceptions about herbal safety. Health workers should also be equipped with updated scientific evidence and practical guidelines to ensure that the information they deliver combines traditional wisdom with modern medical understanding. Such an approach not only supports maternal self-confidence and breastfeeding success but also strengthens collaboration between traditional practices and primary health services in promoting safe herbal usage.

The limitation of this study is that it did not examine the variable of breast milk production among breastfeeding mothers in the Primary Health Care of Tegal Regency working area. In addition, our study did not conduct multivariate analysis so the most associated factors could not be known. Further research should look into this area.

CONCLUSION

This study showed that the majority of breastfeeding mothers in the Primary Health Care of Tegal Regency had an awareness of using HM during breastfeeding. Significant factors associated with this awareness included maternal age, employment status, and the role of parental or in-law support. Younger and unemployed mothers were more likely to use herbal remedies, particularly when encouraged by family members who held strong cultural beliefs about the efficacy and safety of herbal preparations. These findings suggest that the influence of family traditions and socioeconomic conditions plays a crucial role in shaping health behaviors related to herbal use.

From a public health perspective, these results imply that primary health care services must integrate culturally sensitive educational programs aimed at improving mothers' knowledge of safe and evidence-based herbal use. Health professionals, especially midwives and community health workers, should provide regular counseling sessions to address misconceptions and guide mothers in choosing effective and safe herbal options. Strengthening community-based education and collaboration with family networks at the Puskesmas level can help optimize breastfeeding outcomes while ensuring that traditional practices remain aligned with modern health standards.

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Conflict of Interest

No potential conflicts of interest relevant to this article were reported

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