Jurnal Manajemen dan Pelayanan Farmasi (JMPF)
(Journal of Management and Pharmacy Practice)
ISSN-p : 2088-8139 | ISSN-e : 2443-2946
JMPF Vol 14(4) 2024: 269-280

Factors Related to Herbal Medicine Use in Breastfeeding Mothers in Klaten Regency, Indonesia

Nutrisia Aquariushinta Sayuti[1]*, Nur Atikah[1]
1. Department of Pharmacy, Ministry of Health, Health Polytechnic of Surakarta, Central Java, Indonesia

ARTICLE INFO
Submitted : 20-10-2023
Revised : 22-04-2024
Accepted : 26-08-2024

Published : 31-12-2024

Corresponding Author:
Nutrisia Aquariushinta Sayuti

Corresponding Author Email:
nutrisayuti@gmail.com

ABSTRACT

Background: The diverse plant diversity promotes herbal medicine use for breastfeeding mothers in Klaten to promote postpartum health and breast milk production. However, factors related to herbal medicine use have not yet been studied.

Objectives: The study aimed to identify factors related to herbal medicine use among breastfeeding mothers in the Klaten Regency.

Methods: The study used a structured survey questionnaire in a cross-sectional approach. Survey participants were recruited from community health centers in Klaten. The survey instrument was validated questionnaires that consisted of predisposing, supporting, and need factors. Logistic regression analyzed factors related to herbal medicine used in breastfeeding mothers.

Results: The survey of 111 breastfeeding mothers in Klaten Regency found that 78.40% of respondents used herbal medicine, with most aged 20-35. The most perceived health status of the mother and breastfed child was healthy. Most respondents agreed that herbal medicine was safer and more effective than conventional medicine. The logistical regression revealed that breast milk flow issues (p-value = 0.000) and the belief that herbs are more effective than chemical medications (p-value = 0.008) significantly influence the use of herbal medicine.

Conclusion: The study concluded that the significant factors related to herbal medication use were breast milk's smoothness and the belief that herbal medicine is more efficacious than conventional medicine. The belief is often shaped by social culture and family experiences, leading to the possibility of incorrect information. Health professionals are crucial in providing information about herbal medicine and recommending its use to promote health and prevent health problems.

Keywords: Breastfeeding Mothers; Factors; Herbal medicine; Klaten Regency

INTRODUCTION

Postnatal care is critical because it can prevent maternal and infant deaths. Difficulty in breastfeeding is one of the postnatal problems.[1] This difficulty is also caused by the mother's perception that their milk is not enough for the growth and development of the breastfed baby.[2] The use of herbal medicine during breastfeeding is gaining international attention. Breastfeeding mothers use herbal medicine because of the health benefits for them and their babies. The health literacy of breastfeeding mothers influences the choice of herbal medicines used during breastfeeding. The country's culture also influences health literacy.[3]

The use of herbal medicine during breastfeeding is part of the cultural tradition.[3] Cultural influences have also led to the widespread use of herbal medicine for breastfeeding mothers in Indonesia. Single or polyherbal plants are used in many communities in Indonesia; for example, *papeja* is used in Madura, breastfeeding mother uses uyup-uyup in Jogjakarta, *gepyok* is used in Banjarnegara, and West Nusa Tenggara.[4–7] Herbal medicine uses

during breastfeeding also applies in Klaten Regency. The health profile of Klaten Regency showed that population visits to traditional practices have increased by 77.97% in 2020.[8]

Breastfeeding mothers in Klaten, Indonesia, use herbal medicine for health promotion.[9] Health promotion as referred to the guidebook for the integration of health promotion in health programs in districts/cities, is defined as an effort to increase community capacity through learning from, by and for the community so that community can help themselves and develop community-based activities that are socially appropriate. local culture and supported by health-oriented public policies. This effort includes community empowerment in the household setting, especially community empowerment in caring for pregnant, maternity and postpartum women. Through the activity, it is hoped that mothers and families can provide care for the postpartum period, newborn babies and carry out family planning. Activities included in this community empowerment are socialization of the use of medicinal plants to families and breastfeeding mothers. Empowerment is carried out among health cadres, cross-sector health workers, Family Empowerment and Welfare (PKK), community leaders, mass organizations and professional organizations.[10,11] Conversely, the Klaten Regency government aggressively promotes herbal medicine to maintain the heritage and ancestral culture. All Community Health Centers in Klaten District have implemented several programs. These programs include drinking herbal medicine together, training health cadres in producing and monitoring herbal consumption, and cultivating medicinal plants for self-medication.[12]

Improving the quality of traditional health programs is urgently needed. Improvement is also required to maintain the effectiveness and safety of herbal medicine use, especially its use in breastfeeding mothers. The explanation above describes the benefits of herbal medicine in breastfeeding mothers in the Klaten Regency. However, the factors associated with using herbal medicine have never been studied. James et al. [13] found that 378 of 20-29-year-old women in Sierra Leone, Africa, were most likely to use herbal medicine during breastfeeding. The other significant factors that influenced the decision to use herbal medicine were the breastfed child's age, health state, and herbal medicine's efficacy. The study was cross-sectional, with respondents' self-reporting to assess herbal medicine use. It caused under-reporting or over-reporting, and it's challenging to establish an apparent causal effect. The study also needed to explore reasons women use herbal medicine despite receiving free conventional healthcare.[13]

The study of Millinga et al.[14] showed that herbal medicine use in breastfeeding mothers was linked to education level and low breast milk production. The survey by Millinga et al.[14] was conducted at a single health center, and it may not fully represent the views of other breastfeeding women because of participant bias and recall bias. However, it is the first study documenting the significant factor and the pattern of herbal medicine use among breastfeeding mothers in Tanzania. [14]

The two studies were conducted in different countries with different histories and cultures. It makes different results of the predictor factors of herbal medicine use. The various health developments of both countries also cause different results of predictor factors for herbal medicine use. Both studies also mention limitations regarding the area of sampling locations. Hence, the results were only valid for the research locations. The results can only be generated in the same regions or countries. Therefore, studying factors related to herbal medicine use in breastfeeding mothers in Klaten Regency is essential. Another reason for the importance of researching factors related to the use of herbal medicines in breastfeeding mothers is that the research results can describe health problems and health needs in breastfeeding mothers. Therefore, research on factors related to the use of herbal medicine in breastfeeding mothers in Klaten is essential. The research results can be used as material and a reference for adding new programs in traditional health services carried out by community health centers in Klaten. The research results can also be used as a reference for other countries because it provides an overview of the characteristics of breastfeeding mothers who encourage behavior to maintain health through herbal medicine. The research can also be helpful as a reference source for policymakers in forming guidelines for using herbal medicines during breastfeeding. Thus, this study aimed to determine the factors associated with the action/behavior of using herbal medicine in breastfeeding mothers in the Klaten Regency.

METHODS

Study design

The study was conducted on breastfeeding mothers under the guidance of four (4) community health centers (*Pusat Kesehatan Masyarakat (Puskesmas)*) in Klaten District. The study period was from February to November 2022, starting from preparing proposals, arranging permits, validating questionnaires, recruiting respondents, collecting data, analyzing data and preparing reports. The study was a non-intervention type study with a cross-sectional research design. Validated questioner was used to find data about factor related to herbal medicine use in breastfeeding mothers.

Population and samples

The study was conducted on breastfeeding mothers who breastfed their children up to a maximum of one (1) year old who visited integrated service posts, toddler classes, and the village poly, which are under the working area of four (4) community health centers in Klaten District. Breastfeeding mothers who refused to participate in the study was excluded. The sample size was calculated using the sample size calculation formula for a cross-sectional study, based on formula 1.

$$n = Z^2 . \frac{p.q}{d^2} \quad \ldots\ldots(1)$$

In this calculation, Z is 1.96 with a 95% confidence interval. d is the margin of error of 0.10, and p is the expected proportion based on the average prevalence of herbal use in breastfeeding mothers. The proportion is 20.99% based on the results of a survey on the percentage of traditional medicine users in Indonesia in 2014 because there is no proportion of the use of herbal medicines among breastfeeding mothers in Klaten. q is the proportion of breastfeeding mothers who do not use herbal medicine (1-p). The results of the sample calculation were 64 respondents, which is the minimum sample size for the study.

Recruitment of respondents carried out in April 2022 after an ethical permit has been issued. The respondent recruitment process was carried out as follows: Midwives, who play a pivotal role in the maternal and child health program at the *Puskesmas*, coordinate integrated service posts (*Posyandu*), toddler classes, and the village poly, which is under the work area of the *Puskesmas*. The work area has a growth and development assessment program for babies and toddlers, which involves breastfeeding mothers as program participants. The midwives provided recommendations to breastfeeding mothers who were program participants and met the inclusion criteria as potential survey respondents. The research team screened breastfeeding mothers as potential respondents when they visited posyandu, village polyclinics, and toddler classes. The screening was done by explaining the research, objectives, benefits, and technicalities of the research, as well as their willingness to participate.

Respondents willing to participate were explained further information about the survey activities, volunteering to participate in the study, procedures, obligations as a respondent, benefits of the study, and confidentiality of the research. Further explanation about the study was as follows: 1) The explanation regarding volunteering to be a respondent is the freedom of potential respondents to participate in the survey. If the respondent decides to participate, they are free to withdraw or change their mind at any time without being subject to fines or sanctions. 2) Explanation of research procedures is an explanation of filling out the questionnaire or interview according to the questionnaire if the respondent wishes, filling in identity, signing the consent form, and answering questions according to the questionnaire. 3) The obligation as a respondent is to answer the questionnaire. If anything needs to be clarified, respondents can ask the research team. 4) The benefit of the study is to increase public understanding of factors related to the use of herbal medicine, which helps provide an overview of the health problems and needs of breastfeeding mothers and adds references in realizing new health programs in Klaten Regency. 5) The explanation regarding research confidentiality is that all information relating to the respondent's identity will be kept confidential and only known by the researcher.

Prospective respondents who agreed to become respondents filled out and signed a 'written consent form after explanation'. It showed the respondent's agreement to participate in the survey. Survey data was collected through face-to-face interviews between the research team and respondents or by completing questionnaires. Respondents were guaranteed confidentiality and could opt out at any time when answering questions.

Study instruments

The instrument in this study was a questionnaire that had been tested for validity. The questions in the questionnaire contain several factors that are thought to be related to a person's behavior, namely predisposing factors, supporting factors, and need factors. Predisposing factors consist of age, education level, employment status, parturition status, gender of breastfed child, problems with fluency of breastmilk (low breastmilk supply), mother's perceived health status, perceived health status of the current child, the status of living with parent or parents in law, experience side effect after using herbal medicine and have a special diet during breastfeeding. Supporting factors consist of the husband's support, family support, and health professional support (health profesionals have explained about herbal medicine). The need factor is the respondent's opinion that herbal medicines are more effective and safer than chemical or conventional medicines.[11-12]

Respondents' ages were divided into three categories: less than 20, 20 to 35, and more than 35. Respondents' education was categorized into three levels, namely primary, secondary, and higher education. Higher education is academy education or more than an academy; the secondary level of education is senior high school, while the primary education level is junior high school and elementary school.

The questionnaire was validated using the Lawshe content validation method. Content validity is based on the resulting Content Validity Ratio (CVR). A data analysis method called CVR, created by Lawshe in 1975, is often used to assess content validity. By using CVR to identify the validation of each question item, a Content Validity Index (CVI) can then be calculated.[15]

Eight (8) panelists who were not part of the research team validated the questionnaire. The panelists consisted of two (2) public health experts, two (2) herbalists, two (2) midwives, and two (2) pharmacists. The questionnaire used to collect content validity data was structured with answer categories: 'important' with a score of 3, 'valuable but not important' with a score of 2, and not important with a score of 1. The answer given by the panelists was converted with a score of 1 if the answer was 'important ' and 'valuable but not important' and a value of 0 if the answer was 'Not important.' After conversion, the panelists' assessments for each question item in the questionnaire were analyzed for content validity using CVR calculations based on formula 2. CVR is the Content Validity Ratio. ne is the number of experts or panelists who answered important/valuable but not important, and n is the number of experts who carried out validation.

$$CVR = \frac{2ne}{n} - 1 \quad \text{.....(2)}$$

Question items in the questionnaire are declared acceptable if the CVR value is equal to or more significant than the critical value. The critical value is based on the number of panelists, as shown in Table I. The Content Validity Index (CVI) value is calculated using formula 3. CVI is the average CVR value for valid question items. The CVI value illustrated that all items on the questionnaire had good content validity.

$$\text{CVi} = \frac{\Sigma\, Valid\ CVR}{number\ of\ valid\ items} \quad \text{.....(3)}$$

Data collection

Face-to-face interviews using validated questionnaires or filling out the questionnaire independently by the respondent were conducted from April 2022 to July 2022. The research team surveyed respondents who were willing to participate in this research and had signed informed consent. A total of 111 questionnaires were distributed to respondents and immediately checked for completeness. If the respondent's answer was incomplete, a re-interview was carried out to the respondents at that time so that there were no incomplete questionnaires, therefore data from 111 respondents was included in the analysis.

Data Analysis

Data was analyzed by researcher after data collection stage. Data was calculated using univariate analysis to describe variables and see their distribution. Bivariate analysis was carried out using the chi-square test with a confidence interval value of 95%, Fisher's exact or Kolmogrov-Smirnov. Bivariate analysis was used to determine the relationship between predisposing factors, support factors, and need factors using herbal

Table I. CVR critical value based on the number of panelists (one-tailed, α = 0.5)[15]

Number of Panelist	CVR Critical Value
5	0.736
6	0.672
7	0.622
8	0.582

medicines. Logistic regression was carried out to determine the factors associated with using herbal medicines. Independent variables in the bivariate analysis with p-values ≤ 0.2 were entered into the initial univariate analysis (model 1) to calculate the raw ORs with 95% confidence intervals. Independent variables with a p-value less than 0.05 in multivariate analysis (model 2) to determine the adjusted odds ratio.

RESULTS AND DISCUSSION

The CVR results for each factor range from 0.750 to 1.000 as can be seen in table II. Each factor was considered valid because the CVR was more than 0.582.[15] The CVI for all factors was 0.986. The questionnaire was valid because the CVI was more than 0.582. As a result, the validated questionnaire has 17 questions about predictor factors for the use of herbal medicine in breastfeeding mothers consisting of age, education level, employment status, parturition status, gender of breastfed child, the problem with the fluency of breastmilk, mother perceived health status, the perceived health status of breastfed child, living with parents or parents-in-law, experienced side effects after using herbal medicine, special diet during breastfeeding, husband's support for herbal medicine, family's support for herbal medicine, health professional's support for herbal medicine, get explanations from health professionals about herbal medicine, agreement that herbal medicine is more effective than conventional medicine, an agreement that herbal medicine is safer than conventional medicine.

The actual total number of participants in the study was 111 respondents. Participants who used herbal medicine were more than non-users (78.4% versus 21.6%). Details of the factors related to the use of herbal medicine are listed in Table I. In terms of predisposing factors, most participants were aged 20-35 years (76.6%), had secondary education (60.4%), and unemployed (87.4%). Multiparous outnumbered primiparous (63.3% versus 36.9%). The gender of breastfed children was predominantly male (52.3%). Herbal medicine users were more multiparous (66.7%), while primiparous and multiparous status were balanced among nonusers of herbal medicine. Herbal medicine users experienced more problems with breastfeeding (64.0%) than nonusers. Most participants perceived health status was healthy (95.5%). The most participants' current child perceived health was healthy (94.6%). Most participants lived with parents or parents-in-law (88.3%) and had no experienced side effects after using herbal medicine (92.8%).

Support factors consist of the husband's support, family's support, and health professional's support in the form of mere support or explanation about herbal medicine. Most participants had husband's support (90.1%) and family's support (91.0%). Most participants had no support from health professionals (63.1%) and no information or explanations regarding herbal medicine (76.6%). The need factor was seen from participants' agreement to the statement that herbal medicine is more effective and safer than conventional medicine. Most participants agreed that herbal medicine is more effective (75.7%) and safer (80.2%) than conventional medicine.

Table III showed that the factors with significant differences between herbal medicine users and nonusers were age (p-value = 0.146), education level (p-value = 0.003), parturition status (p-value = 0.134), problem with fluency of breastmilk (p-value = 0.000), husband's support to herbal medicine (p-value = 0.058), health professional's support to herbal medicine (p-value = 0.171) and agreement that herbal medicine is more effective than conventional medicine (p-value = 0.025). Table IV showed the results of the multivariate logistic regression analysis to determine the predictive factors for using herbal medicine. Participants who experienced problems with fluency breastmilk were more likely to use herbs than participants who did not experience issues with fluency breastmilk (OR: 0.21, 95% CI: 0.000 – 0.111, p-value = 0.000). Participants who agree that herbal medicine is more efficacious than conventional medicine were more likely to use herbal medicine than participants who disagree (OR: 8.886, 95% CI: 1.767 – 44.691, p-value = 0.008). The following discussion is carried out on each factor studied using herbal medicine.

The age of 20 – 35 years old is the reproductive age category. The reproductive organs of women between the ages of 20 and 35 are physically developed. It's ready to carry out the reproductive process, which includes

Table II. Validation Results of Questioner

No	Variables	CVR	Validation criteria	CVI of valid CVR	Validation criteria
1.	age	1.000	Valid	0.986	Valid
2.	Education level	1.000	Valid		
3.	Employment status	1.000	Valid		
4.	Parturition status	1.000	Valid		
5.	Gender of breastfed child	1.000	Valid		
6.	Problem with the fluency of Breastmilk	1.000	Valid		
7.	Mother perceived health status.	1.000	Valid		
8.	Perceived health status of breastfed child	1.000	Valid		
9.	Living with parents or parents in-law	0.750	Valid		
10.	Experienced side effects after using herbal medicine	1.000	Valid		
11.	Special diet during breastfeeding	1.000	Valid		
12.	Husband's support for herbal medicine	1.000	Valid		
13.	Family support for herbal medicine	1.000	Valid		
14.	Health professionals' support for herbal medicine use	1.000	Valid		
15.	Get explanations from health professionals about herbal medicine	1.000	Valid		
16.	Herbal medicine is more efficacious than conventional medicine.	1.000	Valid		
17.	Herbal medicine is safer than conventional medicine.	1.000	Valid		

Table III. Factors Associated with the Use of Herbal Medicines

No	Variables	Total n=111(100%)	Herbal medicine users n=87(78.4%)	Nonusers n-24(21.6%)	p-values
1.	**age**				0.146*
	<20	3 (2.7)	1 (1.2))	2(8.3)	
	20-35	85(76.6)	67(77.0)	18(75.0)	
	>35	23(20.7)	19(21.8)	4(16.7)	
2.	**Education level**				0.003*
	higher	12(10.8)	5(5.7)	7(29.2)	
	Secondary	67(60.4)	57(65.5)	10(41.7)	
	primary	32(28.8)	25(28.7)	7(29.2)	
3.	**Employment status**				1,000
	employed	14(12.6)	11(12.6)	3(12.5)	
	Unemployed	76(87.4)	21(87.5)	97(87.4)	
4.	**Parturition status**				0.134*
	Primiparous	41(36.9)	29(33.3)	12(50.0)	
	Multiparous	70(63.3)	58(66.7)	12(50.0)	
5.	**Gender of breastfed child**				0.256
	Male	58(52.3)	43(49.4)	15(62.5)	
	Female	53(47.7)	44(50.6)	9(37.5)	
6.	**Problem with the fluency of Breastmilk**				0.000*
	Yes	71(64.0)	68(78.2)	3(12.5)	
	No	40(36.0)	19(21.8)	21(87.5)	
7.	**Mother perceived health status**				1,000
	Healthy	106(95.5)	83(95.4)	23(95.8)	
	sick	5(4.5)	4(4.6)	1(4.2)	
8.	**Perceived health status of breastfed child**				1,000
	Healthy	105(94.6)	82(94.3)	23(95.8)	
	sick	6(5.4)	5(5.7)	1(4.2)	

Table III. (Continued)

No	Variables	Total n=111(100%)	Herbal medicine users n=87(78.4%)	Nonusers n-24(21.6%)	p-values
9.	**Living with parents or parents in-law**				0.473
	Yes	98(88.3)	78(89.7)	20(83.3)	
	No	13(11.7)	9(10.3)	4(16.7)	
10.	**Experienced side effects after using herbal medicine**				0.367
	Yes	8(7.2)	5(5.7)	3(12.5)	
	No	103(92.8)	82(2.6)	21(87.5)	
11.	**Special diet during breastfeeding**				1,000
	Yes	4(3.6)	4(4.6)	0(0.0)	
	No	107(96.4)	83(95.4)	24(100)	
12.	**Husband's support for herbal medicine**				0.058*
	Yes	100(90.1)	81(93.1)	19(79.2)	
	No	11(9.9)	6(6.9)	5(20.8)	
13.	**Family support for herbal medicine**				0.219
	Yes	101(91.0)	81(93.1)	20(83.3)	
	No	10(9.0)	6(6.9)	4(16.7)	
14.	**Health professionals' support for herbal medicine use**				0.171*
	Yes	41(36.9)	35(40.2)	6(25.0)	
	No	70(63.1)	52(59.8)	18(75.0)	
15.	**Get explanations from health professionals about herbal medicin**				0837
	Yes	26(23.4)	20(23.0)	6(25.0)	
	No	85(76.6)	67(77.0)	18(75.0)	
16.	**Herbal medicine is more efficacious than conventional medicine**				0.025*
	Agree	84(75.7)	70(80.5)	14(58.3)	
	Disagree	27(24.3)	17(19.5)	10(41.7)	
17.	**Herbal medicine is safer than conventional medicine.**				0.247
	Agree	89(80.2)	72(82.8)	17(70.8)	
	Disagree	22(19.8)	15(17.2)	7(29.2)	

exclusive nursing or lactation—women at 20 – 35 years old experience psychological and mental stability. In general, age can affect comprehension, understanding, mindset, knowledge, and ability to make decisions or actions.[16,17]

Most of the participants in the study had secondary education. The level of education is directly proportional to the quality of life. Someone with a higher level of education is expected to have the ability to think logically and understand health information. Women with moderate to high education levels can accept new information and change to maintain health, especially regarding breastfeeding. There is motivation to find information and experience. The information obtained can be used as knowledge and applied to maintain health.[18]

The majority of participants were housewives. Housewives usually have more time to care for their children and to provide exclusive breastfeeding.[17] However, working women can gain experience, add insight, and create a mindset that plays a role in decision-making, including breastfeeding the baby.[19]

Multiparous dominated the characteristics of the paticipants. The result did not follow the research result of Vardanjani et al[19] on breastfeeding mothers in Shiraz, Iran, which showed that primiparous was the most prevalent among breastfeeding mothers (64.4%). The highest proportion of primiparous is mainly due to the high number of health referrals in this group because of the less experience with breastfeeding.[19] The level of anxiety at breastfeeding is different betweeen primiparous and multiparous. Primiparous women feel more anxious than multiparous womwn. Most primiparous worry about the future while breastfeeding and caring for babies. Women with primiparous must adapt to the afterbirth situation, while women with multiparous get used to the presence of new family members.[18] Therefore, primiparous women can overcome the fear of breastfeeding

Table IV. Potential predictors of herbal use in breastfeeding mothers using multivariate analysis

Variables	Crude			Adjusted		
	OR	95% CI	p-values	OR	95% CI	p-values
age						
<20	0.102	0.000 – 26.534	0.422			
20-35	0.747	0.087 – 6.442	0.791			
>35	NA	NA	NA			
Education Level						
Higher Education	7.003	0.686 – 71.510	0.101			
Secondary Education	0.340	0.060 – 1.919	0.222			
Primary Education	NA	NA	NA			
Parturition status	0.316	0.067 – 1.486	0.145			
Problem on Fluency of Breastmilk	0.011	0.001 – 0.083	0.000*	0.021	0.004 – 0.111	0.000**
Husband's support for herbal medicine	1,719	0.155 – 19.037	0.659			
Health professionals' support for herbal medicine	2,898	0.498 – 16.865	0.236			
Agreement that herbal medicine is more efficacious than conventional medicine	7,740	1,254–47,786	0.028*	8,886	1,767 – 44,692	0.008**

problem by consuming herbal medicine. Vardanjani et al[19] reported that most primiparous consumed herbal medication (97.1%), and 65.8% did not experience breastfeeding problems.

The most gender of the babies was male (52.3%). The research conducted by Habtewold[20] stated that breastfeeding mothers with male children had a 31% higher chance of exclusive breastfeeding for the first six (6) months than mothers with female children. Mothers with male newborns had a 2% higher chance of breastfeeding within 1 hour after birth than female newborns, although not significantly. Meta-analysis stated that newborn gender was related substantially to exclusively breastfeeding. Early initiation of breastfeeding was significantly associated with antenatal care but not with the gender of the breastfed baby.[20]

Most participants had problems with breastfeeding (64.0%). Kent et al.[21] stated that postpartum women with an average age of 32.6 ± 4.4 years old experienced difficulties in breastfeeding. It is due to the perception of insufficient milk (PIMS), which is indicated by the mother's feeling that the breastfed baby look dissatisfied after breastfeeding. PIMS requires infant formula or the role of a lactation consultant to resolve the problem. Poor breast milk production is the most common cause of breastfeeding failure, and the use of herbal medicine (galactagogues) is often used to increase breast milk production.[22]

Most mothers' perceived health status was healthy (95.5%). Scime et al[23] investigated the relationship between illness perception and exclusive breastfeeding in pregnant women with chronic conditions. The results stated that 61.8% of pregnant women with chronic conditions planned to breastfeed exclusively for six months. Perceptions of worsening disease and disease symptoms and the impact of disease on physiological functions of the body are associated with a low intention to breastfeed for up to six months exclusively. The research by Zubaran and Foresti[24] on breastfeeding mothers in southern Brazil stated that success in breastfeeding is significant to the health and the mother's well-being. Health status is a critical factor in diagnosing depression postnatally. Evaluation of the health of mothers can help measure the effectiveness of breastfeeding and remind health professionals to estimate the complexity of breastfeeding problems in breastfeeding mothers.[24]

Postpartum and breastfeeding mothers often face health issues like coughs, infections, and mastitis, which require medication. Most medicines are safe and have rare side effects, but some may be contraindicated. The use of drugs must be monitored by health professionals.[23] The lack of research regarding the use of herbal medicines during breastfeeding has led to a lack of evidence regarding the safety of using herbs for breastfeeding mothers. Many sources contain conflicting findings and safety recommendations for lactation, confusing breastfeeding mothers and health professionals.[22]

Breastfed children's most perceived health state was healthy (94.6%). The result followed the research of James et al.[27] at healthcare facilities in Sierra Leon, which stated that most breastfed children were in good health (63.0%). Breastfeeding mothers maybe not use herbal medicines when their breastfed child has health problems. It is cause the reliability of drug safety information is only sometimes accurate. Although breastfeeding is actively promoted, the issue of medicines use during breastfeeding has received little attention. In addition, studies on breastfeeding women and their babies are rare, and clinical risk assessment for many of the medications required by breastfeeding women is often hampered by a lack of data.[25]

Several health problems in infants make breastfeeding unsuitable. An example is babies with galactosemia, who cannot digest or tolerate breast milk because their bodies are unable to break down the sugar galactose. Infants with classic galactosemia should be given special foods free of lactose and galactose.[26]

Most respondents lived with parents or in-laws, and the role of parents may be influential in medicine selection decisions. Herbal medicine, as a culture inherent in Java, cannot be separated from the role of parents or parents-in-law who suggest its use. This is why information regarding the use of herbal medicine is mainly obtained from parents rather than health professionals.[27]

Eight percent (8%) of respondents had experienced the side effects of herbal medicine. Herbal medicine is considered to have minimum side effects because it is made from natural ingredients and is free from synthetic chemicals.[28] However, debate about the evidence for the safety of using herbal medicine still exists. The experience of side effects from herbal medicine may influence their decision to use it during breastfeeding.[14]

Most respondents did not undergo a special diet during breastfeeding. A special diet is included as a factor that may be related to the use of herbal medicine during breastfeeding because some breastfeeding mothers prefer a special diet to increase breast milk and maintain health compared to using herbal medicine. The special diet is the addition of ingredients believed to increase milk production in daily food, such as cassava leaves or peanuts. It may also be due to the limited supply of herbal medicine, which functions as a galactagogue in specific regions or areas.[13]

Most respondents received their husband's support in using herbal medicine. The husband's support is vital to the well-being of breastfeeding mothers. The husband's support gives encouragement or guidance if the mother experiences problems from pregnancy to postpartum. A husband is a family member who is very close to the mother. All actions taken or decided by the husband related to smooth breastfeeding will impact the wife's psychological state and the smooth running through the puerperium and breastfeeding.[29]

The data shows that 91% of participants get family support in using herbal medicine in user and nonuser groups. Mothers' attitudes towards breastfeeding are influenced by various factors, including their own experiences or other people's experiences with breastfeeding in the family or relatives, customs (habits), and breastfeeding beliefs in their respective regions.[30] Confidence can grow due to receiving sociocultural influences from someone or family who has the same interest or goal to get cheap and effective treatment by using herbal medicines. The possibility of choosing herbal medicines is becoming more significant because of the habits passed down and supported by family. [25]

The data showed that few respondents received support from health professionals to use herbal medicine (41%). The number of respondents who received explanations about herbal medicines during breastfeeding was also low (23.4%). James et al.[11] stated that the lack of support and information about herbal medicine from health professionals was caused by a pessimistic perception of the safety of herbal medicine, so they considered herbal medicine not very relevant for medical discussion. Breastfeeding mothers may not tell health professionals who care for them about herbal medicines. They fear health professionals' reactions and potential damage to the relationship and trust between patients and health professionals because health professionals consider that herbal medicines are not always safe.[13]

The data showed that most respondents agreed that herbal medicines are more efficacious and safer than chemical or conventional drugs. The dissatisfaction with the conventional health care system, low cost, accessibility, perceived efficacy, safety, and cultural acceptance of herbal medicine may explain the high use of herbal drugs in breastfeeding mothers.[13] The agreement was because of the effectiveness and safety of the herbal medicines used among breastfeeding mothers, which were based more on experience evidence than clinical evidence. It raises the need to evaluate the safety and efficacy of herbal medicine through pharmacological studies for scientific evidence.[14]

This study showed that the factors related to herbal medicine use were the problem of smooth breastfeeding and the perception or attitude of agreeing with the statement that herbal medicines are more efficacious than chemical drugs. Respondents who had issues with the smoothness of breastfeeding used herbal medicines more than respondents who had no problems with the smoothness of breastfeeding. These results followed a study conducted by Millinga et al[14]., which stated that mothers with low milk supply tend to choose herbal medicines over conventional ones (OR = 15.526 (95% CI = 5.564–43.327), p-value < 0.001). Herbal medicine was used because it modulated milk production and managed breast and nipple pain.[14]

Respondents who agreed that herbal is more effective than conventional medicine were more inclined to utilize herbal medicine than respondents who disagreed. Research by Jamet et al.[13] also found that the perception of herbal medicine's efficacy is a significant factor in its use. James et al.'s study showed that mothers who agree with the belief that herbal medicine is more effective than conventional drugs during breastfeeding are more likely to use it. However, this difference is not statistically significant.[13]

As mentioned above, the result depends on social culture. Herbal medicine has been used for many years based on experience, so the belief in its efficacy has developed in society.[27] Most of the information and recommendations regarding herbal medicine use in breastfeeding mothers were also obtained from the family. The information obtained should be reviewed again to prevent misinformation and achieve the expected results, especially regarding the benefits of traditional medicine as an alternative to family medicine.[19]

The family is responsible for the correct information, so the family must update their knowledge about herbal medicines used by breastfeeding mothers. The role of health professionals needs to be increased to provide information on efficacious and safe herbal medicines used during breastfeeding. Pharmacological studies evaluating the safety and efficacy of herbal medicine in breastfeeding mothers also need improvement for scientific evidence. In addition, although the use of herbal medicine among breastfeeding mothers is widespread, no clinical guidelines have been established to promote dialogue between healthcare professionals and breastfeeding mothers to ensure the safe use of herbal medicine, so these clinical guidelines need to be prepared based on scientific evidence. Therefore, health professionals must recommend and supervise herbal medicine to promote health and prevent health problems. The involvement of health professionals can also help prove the efficacy and safety of herbal medicine for scientific use and under stricter supervision use.[31]

The limitation of the study was that the healthcare setting made the views and opinions of respondents not fully representative of other breastfeeding women. In addition, recall bias may arise because of the retrospective study design. Further research is needed to increase effective communication between health professionals and breastfeeding mothers regarding herbal medicine's efficacious and safe use. Additional research is required to increase breastfeeding mothers' knowledge of herbal medicine. The research about the development of effective and safe herbal concoctions for breastfeeding mothers also needs to be increase.

CONCLUSION

Factors related to and contributing to the use of herbs in breastfeeding mothers were the problem of smooth breastfeeding (p = 0.000) and the attitude of agreeing or the belief that herbal medicine is more efficacious than conventional medicine (p = 0.008). Social culture and familial experiences frequently shape the beliefs, which can lead to the transmission of inaccurate knowledge. Health professionals are essential in delivering information about herbal medicine and advising its use to promote and avoid health concerns.

ACKNOWLEDGEMENT

Researchers thank the Surakarta Health Polytechnic for funding DIPA, the midwives for assisting, and all respondents for consenting to participate in this study.

STATEMENT OF ETHICS

The study has been authorized by the Surakarta Health Polytechnic's Health Research Ethics Commission, with a letter of ethical suitability dated April 4 2022, research number : LB.02.02/ 1.1/ 693.6/ 2022.

REFERENCES

1. Ibrahim S, Tiraphat S, Hong S. Factors associated with post-natal care utilization among mothers in

Maldives. *J Public Heal Dev*. 2016;13(3):67-80.
2. Maonga AR, Mahande MJ, Damian DJ, Msuya SE. Factors Affecting Exclusive Breastfeeding among Women in Muheza District Tanga Northeastern Tanzania: A Mixed Method Community Based Study. *Matern Child Health J*. 2016;20(1):77-87. doi:10.1007/s10995-015-1805-z
3. Barnes LAJ, Barclay L, McCaffery K, Aslani P. Complementary Medicine Products Used in Pregnancy and Lactation and an Examination of The Information Sources Accessed Pertaining to Maternal Health Literacy: A Systematic Review of Qualitative Studies. *BMC Complement Altern Med*. 2018;18(1):1-27. doi:10.1186/s12906-018-2283-9
4. Muslichah S, Azrianingsih R, Indriyani S, Arumingtyas EL. Papeja, Herbal Potions During Breastfeeding in Madura (Indonesia): The Use, Perceived Effectiveness, and Documentation of The Plants Used. *Biodiversitas*. 2022;23(10):5139-5148. doi:10.13057/biodiv/d231021
5. Nur Hayati S, Apriyana W, Rosyida VT, et al. Pre - Formulation and Evaluation of Jamu Uyup - Uyup (an Indonesian Herbal Galactogogue). *IOP Conf Ser Earth Environ Sci*. 2019;251(1). doi:10.1088/1755-1315/251/1/012022
6. Kemenkes RI. *Eksplorasi Pengetahuan Lokal Etnomedisin Dan Tumbuhan Obat Berbasis Komunitas Di Indonesia Provinsi Nusa Tenggara Barat*. Badan Penelitian dan Pengembangan Kesehatan; 2017.
7. Kurniawati FR. Hubungan Penggunaan Obat Herbal (Jamu Gepyok) dengan Produksi ASI di BPS Ds. Ngumpakdalem Kec. Dander Kabupaten Bojonegoro Tahun 2017. *J Heal Sci*. 2019;12(1):55-59. doi:10.33086/jhs.v12i1.792
8. Klaten BPSK. *Profil Kesehatan Kabupaten Klaten 2021*. Badan Pusat Statistik Kabupaten Klaten; 2021.
9. Paryono, Kurniarum A. Kebiasaan Konsumsi Jamu untuk Menjaga Kesehatan Tubuh Pada Saat Hamil dan Setelah Melahirkan di Desa Kajoran Klaten Selatan. *J terpadu Ilmu Kesehat*. 2014;1(39):64-72.
10. KPP KK dan P. *Laporan Kinerja Satu Tahun Direktorat Promosi Kesehatan Dan Pemberdayaan Masyarakat Tahun 2016*.; 2016.
11. Depkes RI. *Panduan Integrasi Promosi Kesehatan (Dalam Program-Program Kesehatan Di Kabupaten/Kota) Jilid 1*. 1st ed. Pusat Promosi Kesehatan, Departemen Kesehatan Republik Indonesia; 2006. https://promkes.kemkes.go.id/pub/files/files34039panduan-integrasi-promosi-kesehatan-di-kab_kota.pdf
12. Priyambodo B. Jaga Warisan Leluhur, Pemkab Klaten Gencar Promosikan Jamu Tradisional. Kominfo Kabupaten Klaten. Published 2020. Accessed March 1, 2023. https://klatenkab.go.id/jaga-warisan-leluhur-pemkab-klaten-gencar-promosikan-jamu-tradisional/
13. James PB, Kaikai AI, Bah AJ, Steel A, Wardle J. Herbal Medicine Use During Breastfeeding: A Cross-sectional Study among Mothers Visiting Public Health Facilities in The Western Area of Sierra Leone. *BMC Complement Altern Med*. 2019;19(1):1-11. doi:10.1186/s12906-019-2479-7
14. Millinga VP, Im H Bin, Hwang JH, Choi SJ, Han D. Use of Herbal Medicines Among Breastfeeding Mothers in Tanzania: A Cross-Sectional Study. *Front Pharmacol*. 2022;13(751129):1-10. doi:10.3389/fphar.2022.751129
15. Nengsih NR, Yusmaita E, Gazali F. Evaluasi validitas konten dan konstruk bahan ajar asam basa berbasis REACT. *EduKimia*. 2019;1(1):1-10.
16. Widiastuti YP, Ramayanti ED. Tingkat Pengetahuan Ibu Menyusui Berpengaruh Terhadap Upaya untuk Meningkatkan Produksi ASI Selama Pandemi COVID 19. *NURSCOPE J Penelit dan Pemikir Ilm Keperawatan*. 2021;7(2):97. doi:10.30659/nurscope.7.2.97-106
17. Oktalina O, Muniroh L, Adiningsih S. Hubungan Dukungan Suami dan Dukungan Keluarga dengan Pemberian ASI Eksklusif pada Ibu Anggota Kelompok Pendukung ASI (KP-ASI). *Media Gizi Indones*. 2015;1(10):64-70.
18. Mardjun Z, Korompis G, Rompas S. Hubungan Kecemasan dengan Kelancaran Pengeluatan ASI pada Ibu Post Partum Selama Dirawat di Rumah Sakit Ibu dan Anak Kasih Ibu Manado. *J Keperawatan*. 2019;7(1):1-8. doi:10.35790/jkp.v7i1.22901
19. Vardanjani H, Salehi Z, Alembizar F, Cramer H, Pasalar M. Prevalence and the Determinants of Traditional, Complementary, and Integrative Medicine Use Among Breastfeeding Mothers: A Cross-Sectional Study. *J Integr Complement Med*. 2022;28(1):67-76. doi:10.1089/jicm.2021.0270
20. Habtewold TD, Sharew NT, Alemu SM. Evidence on The Effect of Gender of Newborn, Antenatal Care and Postnatal Care on Breastfeeding Practices in Ethiopia: a Meta-analysis and Meta-regression Analysis of Observational Studies. *BMJ Open*. 2019;9(5):e023956. doi:10.1136/bmjopen-2018-023956
21. Kent JC, Ashton E, Hardwick CM, Rea A, Murray K, Geddes DT. Causes of Perception of Insufficient Milk

Supply in Western Australian Mothers. *Matern Child Nutr*. 2021;17(1). doi:10.1111/mcn.13080
22. Budzynska K, Gardner ZE, Low Dog T, Gardiner P. Complementary, holistic, and integrative medicine: advice for clinicians on herbs and breastfeeding. *Pediatr Rev*. 2013;34(8):343-353. doi:10.1542/pir.34-8-343
23. Scime N V, Chaput KH, Brockway ML, Metcalfe A, Nettel-aguirre A, Tough SC. Association of Illness Perceptions and Exclusive Breastfeeding Intentions among Pregnant Women with Chronic Conditions : A Community-based Pregnancy Cohort Study. *J Psychosom Res*. 2023;(June):34-36.
24. Zubaran C, Foresti K. Correlation between Breastfeeding and Maternal Health Status. *Einstein (Sao Paulo)*. 2013;11(2):180-185. doi:10.1590/S1679-45082013000200008
25. Saha MR, Ryan K, Amir LH. Postpartum women ' s use of medicines and breastfeeding practices : a systematic review. *Int Breastfeed J*. 2015;10(28):1-10. doi:10.1186/s13006-015-0053-6
26. Mandal A. When Should I Not Breastfeed My Baby? News Medical Life Sciences. Published 2019. Accessed July 3, 2023. https://www.news-medical.net/health/When-Should-I-Not-Breastfeed-My-Baby.aspx
27. Ismail. Faktor yang Mempengaruhi Keputusan Masyarakat Memilih Obat Tradisional di Gampong Lam Ujong. *Idea Nurs J*. 2015;6(1):7-14.
28. Sumarni W, Sudarmin S, Sumarti SS. The Scientification of Jamu: A Study of Indonesian's Traditional Medicine. *J Phys Conf Ser*. 2019;1321(3). doi:10.1088/1742-6596/1321/3/032057
29. Safaat WON. Hubungan Pengetahuan dan Dukungan Suami dengan Tindakan Perawatan Masa Nifas Normal di Wilayah Kerja Puskesmas Walengkabola Kabupaten Muna Tahun 2021. Published online 2021.
30. Triani D. Gambaran Pola Makan dan Kebiasaan Konsumsi Jamu Ibu Menyusui serta Kelancaran Pemberian ASI Wilayah Medan Tuntungan Tahun 2018. *Skripsi*. Published online 2020. https://repositori.usu.ac.id/bitstream/handle/123456789/24814/151000527.pdf?sequence=1&isAllowed=y
31. Sayuti NA, Atikah N. The pattern of herbal medicines use for breastfeeding mother in Jogonalan , Klaten , Indonesia : a mini survey. *BMC Complement Med Ther*. 2023;23(339):1-16. doi:10.1186/s12906-023-04235-x