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Prevalence and Determinants of Herbal Medicine Use Among Breastfeeding Mothers Attending Reproductive and Child Health Clinics in Dar es Salaam, Tanzania: A Cross-Sectional Study

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Abstract

Background: Breastfeeding is critical for infant survival, growth, and development. In Tanzania, despite notable progress in promoting optimal breastfeeding practices, many mothers experience breastfeeding challenges such as perceived low milk supply, breast engorgement, and cracked nipples. To address these challenges, some mothers use herbal medicines. Evidence on the extent of herbal medicine use and its determinants during breastfeeding remains limited in Tanzania, particularly in urban settings such as Dar es Salaam.

Methods: We conducted a hospital-based cross-sectional study of 636 breastfeeding mothers attending Reproductive and Child Health (RCH) clinics at Temeke, Amana, and Mwananyamala Regional Referral Hospitals in Dar es Salaam from March to June 2026. A systematic random sampling technique was used. We collected data through face-to-face interviews using a structured questionnaire and analyzed them in Stata version 18. Descriptive statistics summarized herbal medicine use. Modified Poisson regression was used to identify determinants of herbal medicine use, with statistical significance set at $p < 0.05$.

Results: The prevalence of herbal medicine use during breastfeeding was 70.4%. Black pepper (*Piper nigrum* L.) and pumpkin seeds (*Cucurbita maxima* Duchesne) were the most commonly used herbal medicines, at 62.1% and 33.3%, respectively. The main reason for use was to enhance breast milk production and majority of users, (64.7%) reported using herbal medicines more than twice daily, and at a prolonged period of more than one month. Family members and friends were the primary source of information on herbal medicine use, accounting for 66.3% of responses. Breastfeeding challenges and age of the breastfeeding child were significantly associated with herbal medicine use (aPR = 1.35; 95% CI: 1.24–1.48; $p < 0.001$) and (aPR = 0.84; 95% CI: 0.71–0.98; $p = 0.036$), respectively.

Conclusions: Herbal medicine use during breastfeeding was highly prevalent among mothers attending RCH clinics in Dar es Salaam and was independently associated with breastfeeding

challenges and the age of the breastfeeding child. Routine counseling on herbal medicine use and breastfeeding support should be strengthened within RCH services. Further research is needed to establish the safety and effectiveness of commonly used herbal medicines during breastfeeding.

Keywords: herbal medicine; complementary therapy; breastfeeding; lactation; Tanzania;

Background

Breastfeeding is considered the most optimal method of infant feeding, providing complete nutrition during the first six months of life and offering significant short- and long-term health benefits for both infants and mothers, including protection against infectious diseases, improved cognitive development, and reduced maternal risk of certain chronic diseases(1–6). The World Health Organization (WHO) and Tanzanian guidelines recommend exclusive breastfeeding for the first six months of life, followed by continued breastfeeding together with appropriate complementary feeding until the infant is two years or older(7,8). Tanzania has made notable progress in promoting optimal breastfeeding, whereby approximately 70% of mothers initiated breastfeeding within one hour after birth, and approximately 64% exclusively breastfed their infants for the first six months(9)

Regardless of these successes, many mothers experience breastfeeding challenges that may compromise optimal breastfeeding practices. Previous studies have reported that the most common challenges include perceived insufficient breast milk supply, breast engorgement, nipple soreness, cracked nipples, and mastitis. These conditions often cause anxiety among mothers and may influence them to seek complementary approaches, including herbal medicine, to improve breastfeeding or resolve the challenges they encounter(5,10–16). Herbal medicine remains deeply rooted in many cultures because it is perceived as natural, accessible, affordable, and effective (10,17–23)

Traditional, complementary, and alternative medicine, including herbal medicine, plays a major role in healthcare globally. WHO estimates that a substantial proportion of the world's population depends on traditional medicine for primary healthcare and has developed the Traditional Medicine Strategy (2014–2023) to promote the safe, effective, and evidence-based integration of traditional medicine into health systems(24)(25). Despite the widespread use of herbal medicines during breastfeeding, there is still limited scientific evidence regarding the

safety and effectiveness of their use during lactation (21,25–27). Some herbal medicines consumed during breastfeeding may be transferred to infants through breast milk and have been associated with adverse maternal and infant outcomes, including vomiting, diarrhea, altered sleep patterns, gastrointestinal disturbances, allergic reactions, and, in rare cases, more severe adverse effects (21,23,26,28). Some herbal products may also alter the infant gut microbiome or modulate immune development(29).

Globally, several studies have reported widespread use of herbal medicines among breastfeeding mothers, driven by breastfeeding challenges such as perceived insufficient breast milk supply, cracked nipples, mastitis, and other difficulties encountered during breastfeeding(5,10,31–37,11,12,16,19,21–23,30). Prevalence estimates have ranged from 37.0% in Sierra Leone to 97% in Iran and Italy(5,19,38). In Tanzania, one study conducted in Morogoro reported that approximately 53.8% of breastfeeding mothers used herbal medicines, with the main reason being to increase breast milk production(10).

Dar es Salaam is Tanzania's largest and most urbanized city, which is characterized by diverse cultural practices, varying socioeconomic conditions, and access to both conventional healthcare services and herbal medicine (39,40). Despite the availability of formal healthcare, herbal medicine continues to be widely practiced (37,41). Most Tanzanian studies have focused on herbal medicine use during pregnancy, childbirth, and management of other health conditions, leaving a knowledge gap regarding breastfeeding mothers(42–44). Generating local evidence on herbal medicine use during breastfeeding is important for improving breastfeeding counselling, informing maternal and child health services, and guiding future research on the safety and effectiveness of herbal medicines during breastfeeding.

This study aimed to determine the prevalence, types, patterns, and determinants of herbal medicine use among breastfeeding mothers attending Reproductive and Child Health (RCH) clinics in Dar es Salaam.

Methods

Study design and setting

This was a hospital-based cross-sectional study conducted in Dar es Salaam region from March to June 2026. The study was carried out at the Reproductive and Child Health (RCH) clinics of Temeke, Amana, and Mwananyamala Regional Referral Hospitals. These hospitals serve mothers from diverse socioeconomic and cultural backgrounds and represent the main public health facilities providing maternal and child health services in Dar es Salaam. The rapidly growing urban population and the existing disparities in healthcare access across the municipalities influenced the study's multi-site design.

Study population and eligibility criteria

The study population comprised breastfeeding mothers aged 18 years and older who were breastfeeding a child aged two years or below and attended RCH clinics for maternal and child health services. Mothers of a child requiring emergency care and breastfeeding mothers who didn't consent were excluded in this study.

Sample size

The required sample size was calculated using the formula: $n = (Z^2pq / d^2) \times DEFF$ (45,46), where $p = 0.54$, based on the prevalence of herbal medicine use among breastfeeding mothers reported in Morogoro, Tanzania (10), $q = (1–0.54)$; $Z = 1.96$ (95% confidence interval); $d = 0.05$ (standard error); and $DEFF = 1.5$ (design effect). After adjusting for a 10% non-response rate and design effect, the final sample size was 636 participants.

Sampling technique

The three RCH clinics at Amana, Temeke, and Mwananyamala hospitals served as case study areas. Where the total sample size of 636 was proportionately allocated to each RCH clinic based on the average monthly client load, resulting in 250 participants for Temeke, 200 for Mwananyamala, and 186 for Amana. Systematic random sampling was used to select eligible breastfeeding mothers within each clinic.

Data collection

A structured questionnaire adapted from similar studies investigating herbal medicine use among breastfeeding mothers and modified based on the literature to fit the local context was used to collect data (10)(19). The questionnaire covered four sections: (I) socio-demographic information, including age, marital status, education level, employment status, and socioeconomic status; (II) maternal and breastfeeding characteristics, including mode of delivery, parity, exclusive breastfeeding practices, breastfeeding-related challenges, age of the breastfeeding child, and number of children currently breastfed; (III) family and social influences related to herbal medicine use; and (IV) herbal medicine use during breastfeeding, including types, reasons for use, frequency and duration, perceived side effects, and sources of information.

Data were collected through face-to-face interviews conducted by trained research assistants, with privacy and confidentiality maintained. Each interview lasted approximately 15–20 minutes, and written informed consent was obtained from all participants before enrollment. Local names of herbal medicines reported by participants were translated into their corresponding botanical names with assistance from a botanist at the Institute of Traditional Medicine, Muhimbili. University of Health and Allied Sciences (MUHAS). All methods were performed in accordance with the relevant guidelines and regulations, such as the Declaration of Helsinki.

Data management and analysis

The data were analyzed using Stata version 18 for statistical analysis. Descriptive statistics were used to summarize study variables. Categorical variables were presented as frequencies and percentages, while continuous variables were summarized using means and standard deviations. Socioeconomic status was assessed using a wealth index score derived from household asset ownership and living conditions, with questions adopted from TDHS 2022(9). Principal component analysis was used to generate wealth scores, and participants were categorized into wealth quintiles ranging from Q1 (lowest) to Q5 (highest).

The prevalence of herbal medicine use was estimated as the proportion of breastfeeding mothers who reported using herbal medicine during the current breastfeeding period. Types and patterns of herbal medicine use were summarized using frequencies and percentages.

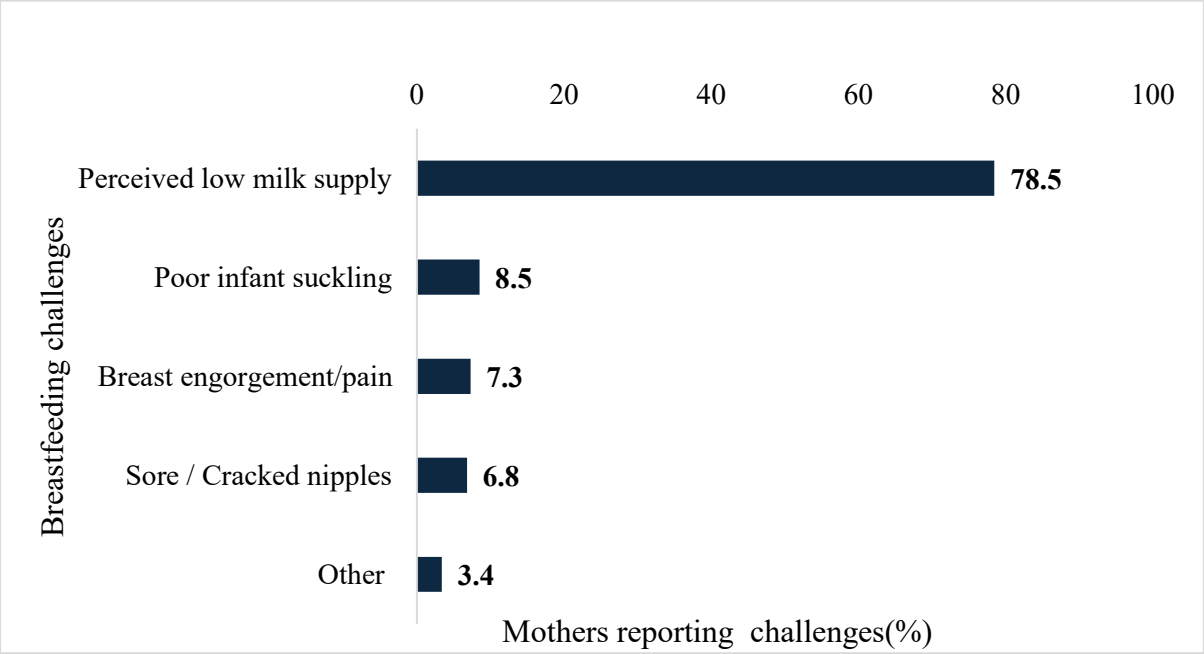
To determine the association between independent variables and herbal medicine use, bivariate analysis using the chi-square test was done. All variables with $p < 0.20$ were included in the multivariable analysis. Modified Poisson regression with robust standard errors was performed to evaluate independent factors associated with herbal medicine use. This approach was preferred because the prevalence of the outcome was common (70.4%) (47). The crude Prevalence Ratio (cPR) and the Adjusted Prevalence Ratio (aPR) were determined, and the significance level was set at $p < 0.05$ with 95% confidence intervals (CI).

Results

Socio-demographic and breastfeeding characteristics of participants

Among 650 breastfeeding mothers approached to participate in the study, 636 agreed to participate, yielding a response rate of 97.8%. The mean age of respondents was 27.8 ± 5.5 years. The majority (57.2%) were aged between 25–34 years, were married (67.9%), had attained secondary education (55.6%), and approximately 46.5% were self-employed. Approximately 60.1% were multiparous, 72.0% had Spontaneous Vertex Delivery (SVD), and 83.8% practiced exclusive breastfeeding. More details are found in **Table 1**.

Nearly a quarter of mothers (27.8%) reported experiencing breastfeeding challenges. Perceived low breast milk supply was the most commonly reported challenge, at 78.5% **(Figure 1).**



**Multiple responses were allowed; therefore, percentages do not add up to 100%*

Figure 1: Reported breastfeeding challenges among mothers who experienced breastfeeding challenges (n = 177)

Table 1: Socio-demographic and breastfeeding characteristics of participants (N = 636)

Category	N	(%)
Age (years), mean (SD) 27.8 (±5.5)		
Age group (years)		
15–24	194	30.5
25–34	364	57.2
≥35	78	12.3
Marital status		
Married	432	67.9
Cohabiting	117	18.4
Single	82	12.9
Divorced	5	0.8
Level of education		
No formal education	8	1.3
Primary education	204	32.1
Secondary education	354	55.6
Tertiary education	70	11.0
Employment status		
Employed	82	12.9
Self-employed	296	46.5
Unemployed	258	40.6
Number of living children		
1 child	248	39.0
2 children	203	31.9
3–4 children	161	25.3
≥5 children	24	3.8
Parity		
Multiparous	382	60.1
Primiparous	254	39.9
Mode of delivery		
Spontaneous Vertex Delivery (SVD)	458	72.0
Caesarean section	178	28.0
Exclusive breastfeeding		
No	103	16.2
Yes	533	83.8
Experienced breastfeeding challenges		
No	459	72.2
Yes	177	27.8
Socioeconomic status (Wealth Quintile)		
Q1 (Lowest)	148	23.3
Q2 (Second)	157	24.7
Q3 (Middle)	108	17.0
Q4 (Fourth)	118	18.5
Q5 (Highest)	105	16.5
Age of the breastfeeding child		
0–6 months	503	79.1
7–12 months	95	14.9
>12 months	38	6.0
Number of children currently breastfeeding		
1 child	628	98.7
More than 1 child	8	1.3

**Wealth Index; based on the questions adopted from TDHS 2022, SD; Standard Deviation*

Prevalence of herbal medicine use

Among the 636 breastfeeding mothers enrolled in the study, 70.4% reported using herbal medicines during the current breastfeeding period (**Figure 2**).

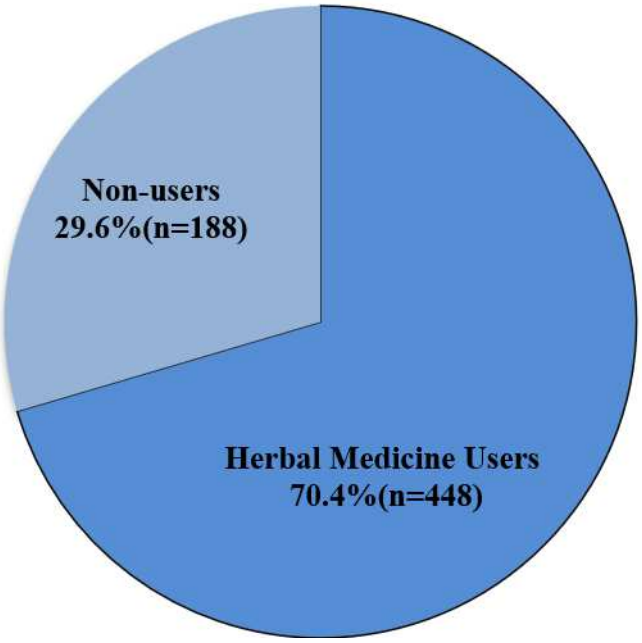


Figure 2: Prevalence of herbal medicine use among breastfeeding mothers (N = 636)

Types of herbal medicines used

Black pepper (*Piper nigrum* L.) was the most commonly reported herbal medicine (62.1%), followed by pumpkin seeds (*Cucurbita maxima* Duchesne) (33.3%). Overall, 526 mentions of herbal medicines were recorded, indicating that some mothers reported using more than one herbal medicine during breastfeeding **(Table 2).**

Table 2: Types of herbal medicines used by breastfeeding mothers (N = 448)

Common name	Botanical Name	n (%)
Black pepper	*Piper nigrum* L.	278 (62.1%)
Pumpkin seeds	*Cucurbita maxima* Duchesne	149 (33.3%)
Ginger	*Zingiber officinale* Roscoe	19 (4.2%)
Clove	*Syzygium aromaticum* (L.) Merr. & L.M. Perry	10 (2.2%)
Garlic	*Allium sativum* L.	8 (1.8%)
Cassava	*Manihot esculenta* Crantz	7 (1.6%)
Raw ground nuts	*Arachis hypogaea* L.	5 (1.1%)
African Eggplant	*Solanum aethiopicum L.*	3 (.7%)
Juice with a mixture of herbs	*Mixed herbal preparation*	3 (.7%)
Dried banana peels	*Musa acuminata* Colla	1 (.2%)
Moringa	*Moringa oleifera* Lam.	1 (.2%)
Coconut tree roots	*Cocos nucifera* L. *(radix)*	1 (.2%)
Total Mentions		**526**

**Multiple responses allowed; percentages calculated as proportion of 448 herbal medicine users*

Patterns of herbal medicine use

As summarized in Table 3, the majority (64.7%) reported consuming herbal medicine more than twice daily, for a longer duration of more than one month (55.6%). The major reason for herbal medicine use was to enhance breast milk production (65.0%). Family members and friends were the primary source of information on herbal medicine use, accounting for 66.3%. Only 4.5% of herbal medicine users perceived that they experienced side effects following herbal medicine use, and the most common was abdominal pain**.**

Table 3: Patterns of herbal medicine use among herbal medicine users (N = 448)

Characteristic	n (%)
Frequency of herbal medicine use (N = 448)	
More than twice daily	290 (64.7)
Twice daily	113 (25.2)
Once daily	25 (5.6)
Occasionally	20 (4.5)
Duration of herbal medicine use (N = 448)	
Less than 1 week	46 (10.3)
1–4 weeks	153(34.2)
More than 1 month	249 (55.6)
Reasons for herbal medicine use (N = 448)	
Boosting breast milk production	291 (65.0)
Initiation of breast milk production	105 (23.4)
Supporting immunity and general well-being during postpartum	104 (23.2)
Main source of information on herbal medicine use **(N = 445)	
Family/friends	295 (66.3)
Healthcare provider	116 (26.1)
Media	33 (7.4)
Herbal sellers	1 (0.2)
Reported side effects after herbal medicine use (N = 448)	
Yes	20 (4.5)
No	428 (95.5)
Perceived side effects reported *(N = 20)	
Abdominal/Epigastric pain	15 (75.0)
Heartburn/Bloating	4 (20.0)
Abdominal fullness/Gas	1 (5.0)
Mouth ulcers	1 (5.0)

**Multiple responses allowed; **3 participants did not disclose their source of information; ***Percentages based on the 20 participants who reported side effects*

Determinants of herbal medicine use

Based on the bivariate analysis, marital status, mode of delivery, exclusive breastfeeding status, number of living children, number of currently breastfeeding children, parity, and wealth index quintiles were excluded from the multivariable analysis because they had p >0.2.

After adjusting for potential confounders, breastfeeding challenges (aPR = 1.35; 95% CI: 1.24–1.48; p < 0.001) and age of the breastfeeding child (aPR = 0.84; 95% CI: 0.71–0.98; p = 0.036) remained significantly associated with herbal medicine use, as presented in Table 4

Table 4: Determinants of herbal medicine use during breastfeeding

Category	cPR	95% CI	p value	aPR	95% CI	p value
Education level						
No formal education	1.00	—	—	1.00	—	—
Primary education	1.71	0.69–4.21	0.242	1.64	0.68–3.98	0.275
Secondary education	1.96	0.80–4.80	0.142	1.80	0.75–4.36	0.190
Tertiary education	2.06	0.83–5.08	0.118	1.75	0.72–4.28	0.219
Employment status						
Employed	1.00	—	—	1.00	—	—
Self-employed	0.92	0.81–1.06	0.258	0.98	0.86–1.13	0.832
Unemployed	0.86	0.75–0.98	0.031	0.92	0.80–1.06	0.224
Number of living children						
1 child	1.15	0.96–1.39	0.126	1.14	0.95–1.37	0.169
2–3 children	1.02	0.85–1.23	0.827	1.04	0.87–1.25	0.666
≥4 children	1.00	—	—	1.00	—	—
Breastfeeding challenges						
No	1.00	—	—	1.00	—	—
Yes	1.37	1.26–1.50	<0.001	1.35	1.24–1.48	<0.001
Age of the breastfeeding child						
0–6 months	1.00	—	—	1.00	—	—
7–12 months	0.86	0.72–1.01	0.068	0.84	0.71–0.98	0.036
>12 months	0.93	0.74–1.19	0.595	0.98	0.79–1.22	0.835

*****_cPR; Crude Prevalence Ratio, aPR; Adjusted Prevalence Ratio, CI; Confidence Interval._

Discussion

This study found that 7 out of 10 women (70.4%) were using herbal medicine during breastfeeding, indicating that herbal medicine use is a common practice among breastfeeding mothers attending public health RCH clinics in Dar es Salaam. To our knowledge, this is among the few studies conducted in Tanzania that have specifically examined herbal medicine use during breastfeeding.

This prevalence was higher than that reported among breastfeeding mothers in Morogoro, Tanzania (53.8%), Sierra Leone (37.0%), Ethiopia (41.4%), and Australia (60.0%) (6,18,20,23). However, it was lower than the prevalence reported in Ghana (83.8%), Turkey (75.0%), Iran (97.1%), and Italy (97.0%)(10,17,19,20,30,35,38). The observed differences in prevalence across countries may reflect variations in study settings, cultural beliefs, practices regarding herbal medicine use, participants' characteristics, and availability and accessibility of herbal products, as well as how herbal medicine is regarded across different studies. The high use of herbal medicine in our study may also reflect the long-standing role of traditional medicine in Tanzania, where herbal medicines continue to be widely used for health promotion and disease management(18,24,48,49). Deep-rooted cultural practices, family beliefs, and perceptions regarding the efficacy of herbal medicine in resolving breastfeeding problems may have also contributed to the high use of herbal medicine as reported in other studies(10,19).

This study found that black pepper (*Piper nigrum* L.) was the most commonly used herbal medicine, followed by pumpkin seeds (*Cucurbita maxima* Duchesne). Consistent with findings reported in Tanzania, where black pepper, pumpkin seeds, and garlic were among the most frequently used herbal medicines by breastfeeding mothers (10). A similar study in Ghana reported that breastfeeding mothers commonly used locally available foods and herbal products to support lactation and maternal recovery(20). The widespread use of black pepper and

pumpkin seeds may be attributed to cultural beliefs that they can stimulate breast milk production and enhance postpartum recovery(10,35). In contrast to other studies, for instance, garlic and ginger were frequently reported in Ethiopia; cassava leaves and tubers were commonly used in Sierra Leone, while fenugreek, fennel, chamomile, and aloe vera were major herbs used in Australia, Italy, and Egypt (5,17,19,30). These differences may be due to variations in local availability of medicinal plants, cultural beliefs and practices, dietary habits, and traditional postpartum care across different settings.

Nearly two-thirds of herbal medicine users reported consuming herbal medicines more than twice daily, while over half reported using them for longer than one month in this study. These findings demonstrate that herbal medicine use during breastfeeding is not occasional but rather a sustained practice. Similar prolonged use has been reported among breastfeeding mothers in Tanzania, Sierra Leone, Ghana, Australia, Italy, and Turkey; however, the specific herbs used varied across settings.

The frequent and prolonged use observed in this study may reflect a perception that herbal products are natural, safe, easily accessible, and affordable. Such perceptions have also been reported in some studies exploring women's beliefs and attitudes toward herbal medicine use during breastfeeding. (31,36,50).

The most commonly reported reasons for herbal medicine use were to increase breast milk supply, initiate breast milk production, and enhance maternal immunity and general well-being. Similar findings have been reported in previous studies, where herbal medicines were commonly used as galactagogues and to support maternal health during lactation (17,20,31–36,50). The breast milk supply identified as the primary reason for herbal medicine use in the present study may also be linked to the high prevalence of breastfeeding challenges, particularly perceived low breast milk supply, reported among the breastfeeding mothers in this study.

Family members and friends were the primary source of information about herbal medicine use. These findings are supported by other studies, which report that traditional knowledge and shared cultural experiences are the most common sources of information guiding women's decisions regarding herbal medicine use during pregnancy and lactation(19,20,33,36). The influence of family and the importance of cultural beliefs and social norms in shaping maternal health behaviors. Interestingly, healthcare providers were the second most frequently reported source of information. This finding may demonstrate an existing interaction between conventional healthcare services and traditional health practices. Furthermore, it highlights the need for healthcare providers to be equipped with evidence-based knowledge regarding commonly used herbal medicines and their patterns so that they can provide appropriate breastfeeding counseling and support mothers who face challenges.

The low reporting of perceived side effects in this study may be attributed to the widespread perception that herbal medicines are safe because they are natural products. Similar perceptions have been documented among breastfeeding women in Australia and other settings(17,21,26,37). However, the absence of reported adverse effects should not be interpreted as evidence of safety. Herbal medicines contain biologically active compounds that may be transferred to infants through breast milk and potentially affect infant health. Previous studies have suggested that exposure to bioactive plant compounds during lactation may potentially influence infant immune responses, gut microbiome development, and long-term health outcomes. (29,49). Additionally, concerns have been raised regarding herb–conventional drug interactions, and the limited availability of safety data for many herbal medicines used during breastfeeding (21,22,26,52). Therefore, further robust research is needed to establish the safety and efficacy of commonly used herbal medicines among breastfeeding mothers.

This study also found that mothers experiencing breastfeeding challenges were more likely to use herbal medicines. These findings can be explained by the fact that boosting breast milk supply was the major reason for herbal medicine use in this study, and that perceived insufficient breast milk supply was among the most reported breastfeeding challenges. Similar findings have been reported in China, Turkey, Italy, and Ghana, where women experiencing breastfeeding difficulties frequently used herbal galactagogues to support milk production(17,39,41,50). Furthermore, other studies have shown that milk adequacy concerns are the most common reasons mothers seek complementary therapies during lactation(54,55).

The age of the breastfeeding child was independently associated with herbal medicine use, with mothers of children aged 7–12 months having a lower prevalence of using herbal medicines than mothers with children aged 0–6 months, similar to what has been reported in Sierra Leone (19). This finding may reflect mothers' greater concern in establishing and maintaining exclusive breastfeeding during the first six months of life(7,8,10,37). In the present study, the majority of mothers reported practicing exclusive breastfeeding, suggesting a strong commitment to ensuring adequate breast milk supply. Consequently, mothers of younger infants may be influenced to use herbal remedies believed to enhance lactation. As infants grow older and complementary foods are introduced, mothers may become less dependent on breast milk as the sole source of nutrition and therefore less likely to use herbal medicines for breastfeeding-related purposes(9,56).

Even though mothers with higher education levels, those who were employed or self-employed, and mothers with one living child reported a slightly higher prevalence of herbal medicine use, these associations were not statistically significant. Similar findings have been reported in several other studies (10,17,32,34,35). This observation may reflect a difference in accessing health information, financial resources, and awareness of available breastfeeding support options.

Strengths and limitations

This study provides comprehensive information on prevalence, types, patterns, reasons for use, sources of information, and determinants of herbal medicine use among breastfeeding mothers. The study included a relatively large sample recruited from three regional referral hospitals, enhancing the reliability of the findings and providing valuable insights into herbal medicine use in maternal and child health services in urban Tanzania.

Despite these strengths, some limitations should be acknowledged. Information on herbal medicine use was self-reported and may have been subject to recall bias, particularly regarding the frequency, duration, and timing of use. However, only currently breastfeeding mothers were included to minimize recall errors. The identification of herbal medicines relied on participants' reports of local names, which may have resulted in misclassification of some herbal products. To minimize this, all reported local names were reviewed and translated into their corresponding botanical names in collaboration with a botanist from the MUHAS Institute of Traditional Medicine.

Conclusions

Herbal medicine use during breastfeeding was highly prevalent among mothers attending reproductive and child health clinics in Dar es Salaam. This practice is surrounded by multiple factors, with breastfeeding challenges and the age of the breastfeeding child being the significant independent determinants. Black pepper and pumpkin seeds were the most commonly used herbs, primarily consumed to enhance breast milk supply. Strengthening breastfeeding counselling and support services, particularly for mothers experiencing challenges related to perceived insufficient breast milk supply, is an important entry point for addressing unnecessary herbal medicine use and promoting safe breastfeeding practices.

List of Abbreviations

aPR: Adjusted Prevalence Ratio

BF: Breastfeeding

CI: Confidence Interval

cPR: Crude Prevalence Ratio

EBF: Exclusive Breastfeeding

HM: Herbal Medicine

IRB: Institutional Review Board

MUHAS: Muhimbili University of Health and Allied Sciences

PCA: Principal Component Analysis

RCH: Reproductive and Child Health

SD: Standard Deviation

TCAM: Traditional Complementary and Alternative Medicine

TDHS: Tanzania Demographic and Health Survey

WHO: World Health Organization

Declarations

Ethics approval and consent to participate

Ethical approval was obtained from the Muhimbili University of Health and Allied Sciences Research Ethics Committee (MUHAS-REC), with reference number **MUHAS-REC-03-2026-3302**. Permission to conduct the study was obtained from the Regional Administrative Authorities and the management of Mwananyamala, Amana, and Temeke Regional Referral Hospitals, as well as the respective RCH clinics. Written informed consent was obtained from all participants before enrolment, and confidentiality was maintained throughout the study period. All methods were performed in accordance with the relevant guidelines and regulations, such as the Declaration of Helsinki.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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This study was self-funded by the researcher.

Authors' contributions

JSM, DJW, and SCM conceptualized and designed the study, collected and analyzed data, and drafted the manuscript. JM and SC supervised the study design, data collection, and analysis, and critically reviewed the manuscript. All authors read and approved the final manuscript

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