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Experiences and expectations of pregnant women using medicinal plants for childbirth preparation in the Kananga Health Zone, Democratic Republic of the Congo

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ABSTRACT

Introduction
The use of medicinal plants to prepare for childbirth is a widespread traditional practice in many communities. This practice is influenced by cultural beliefs and economic constraints that limit access to modern medical care. These plants are perceived to help shorten labour, relieve contraction pain, and prevent postpartum complications such as haemorrhage. However, scientific data on their actual effects remain limited.

Purpose
This study aims to explore the lived experiences and expectations of women who used medicinal plants during pregnancy, highlighting perceived benefits and any reported side effects associated with this practice.

Methods
A qualitative phenomenological study was conducted using an exploratory approach. Data were collected through semi-structured interviews with 20 women who had used medicinal plants during pregnancy, alongside participant observation of 15 of them. A categorical thematic analysis was performed to identify common motivations and perceptions regarding the effectiveness of these traditional practices.

Results
All participants were married, aged between 23 and 35 years, with a significant proportion having married early. Most (80%) had secondary education, and 55% were housewives. The most commonly used plants included *Gynandropsis gynandra*, *Erythrophleum suaveolens*, and *Bridelia ferruginea*. Deliveries were generally quick (between 5 and 9 hours), with regular contractions, and 95% of cases were eutocic. At one minute, 75% of newborns had an optimal APGAR score. The women reported benefits such as reduced pain, shorter labour, and easier recovery. However, some noted undesirable effects, including a decrease in sexual sensitivity.

Conclusion
The study highlights the cultural significance and perceived effectiveness of medicinal plants in childbirth preparation. Nonetheless, the occurrence of side effects points to the need for further clinical research to better understand their efficacy and ensure safe use.

INTRODUCTION

Medicinal plants are widely used by women of childbearing age in Africa for various reproductive health purposes, including conception, pregnancy management, and childbirth preparation. In the Central African region—particularly in the Democratic Republic of the Congo (DRC)—up to 80% of the population depends on traditional medicine for primary healthcare needs (Ngbolua et al., 2011a, 2011b). These practices include the use of plant-based remedies—administered as decoctions, infusions, or topical applications—to facilitate labour, reduce pain, or manage complications during pregnancy and delivery (Menga et al., 2024; Mawunu et al., 2024, 2025; Tlhapi et al., 2024).

While some of these plants are believed to offer benefits such as improved uterine contractions and reduced labour duration, others are known to be toxic and may lead to serious complications, including miscarriage, uterine rupture, foetal distress, or even maternal or neonatal death (Koren, 2013; Ngbolua et al., 2011a, 2011b). However, empirical evidence concerning the safety, efficacy, and specific uses of these plants remains fragmented, and scientific validation is often lacking.

Kananga, located in Kasai-Central Province, presents a relevant setting for investigating these practices, given the widespread use of medicinal plants in maternal care and the limited integration of traditional medicine into formal healthcare strategies. Despite anecdotal and ethnobotanical reports, there is a notable absence of systematic, localised research exploring which plants are used, how they are prepared, and why women choose them during pregnancy and childbirth.

This study addresses this gap by exploring the lived experiences and expectations of women in the Kananga Health Zone who use medicinal plants to manage their pregnancies and prepare for childbirth. Specifically, it seeks to:

- Identify the plant species used, their methods of preparation, and perceived indications;
- Understand women's motivations and expectations in using these remedies;
- Describe how the use of these plants influences their childbirth experiences.

By investigating these aspects, the study contributes to a more nuanced understanding of maternal health practices in the DRC and supports efforts to develop culturally responsive maternal care policies that balance traditional practices with biomedical safety considerations.

METHODS

Study Framework

The study was carried out in health facilities within the Kananga Health Zone, in the town of Kananga, capital of Kasai-Central Province, in the Democratic Republic of the Congo.

Type of Research

This was a descriptive phenomenological study conducted in health facilities across the Kananga Health Zone between 15 March and 20 May 2023.

Population and Sample

The study population comprised 20 women who had used local medicinal plants during their most recent pregnancy to prepare for and facilitate childbirth. Of these, 15 parturients were directly observed during the delivery process.

To be eligible, participants had to meet the following inclusion criteria:

1. Have experienced at least one pregnancy;
2. Have used local medicinal plants at least once, particularly during their most recent pregnancy;
3. Be able to express themselves in one of the research languages (French and/or Tshiluba, the local language spoken at the study site);
4. Provide free and informed consent to participate in the study after being fully briefed on its purpose and objectives, with assurance that they could withdraw at any time without consequence.

Variables of Interest

The dependent variable was the use of medicinal plants by the women during childbirth. Independent variables included:

1. Perceptions of medicinal plants for childbirth preparation;
2. Practices related to their use during pregnancy and delivery;

3. Communication and promotion needs regarding herbal therapies;
4. Experience of use;
5. Knowledge of the medicinal plants, including types, indications, benefits, and risks;
6. Perceptions of risks to mother and child;
7. Methods of preparation;
8. Dosage;
9. Routes of administration;
10. Indications;
11. Perceived effectiveness of the plants;
12. Income-generating activities;
13. Consequences of use;
14. Information-sharing practices;
15. Involvement of modern medicine for harmonisation;
16. Perceived benefits; and
17. Recommendations for improving traditional oxytocic pharmacotherapy.

Operational Definitions

Medicinal plants refer to drugs of plant origin, at least some of which possess therapeutic properties. These plants may also serve as food, condiments, or hygiene aids. A medicinal plant is defined as one whose organs—such as leaves or bark—exert curative properties when administered in specific doses and according to defined procedures.

A *woman in labour* is any woman who has recently given birth, while *childbirth* refers to all the physiological events leading to the natural expulsion of one or more viable foetuses. When women use medicinal plants during childbirth, the goal is often a pain-free experience, achieved through the psychological and physiological effects of the plants.

A *parturient* is a woman in labour or about to give birth. Her perceptions are typically shaped by personal experiences, as well as those of relatives, friends, and other women in her community.

Data Collection

Two primary methods were used: individual semi-structured face-to-face interviews and participant observation. Interviews were conducted with women who had used local medicinal plants during pregnancy, at a time and place of their convenience. Each interview lasted approximately 30 to 45 minutes and began with a key question prompting participants to describe their experience with medicinal plants.

Participant observation focused on the 15 women during active labour. Using a structured observation grid and partogram, the researchers documented labour duration, contractions, the state of the amniotic sacs, fluid appearance, delivery type, and herbs used.

The data collection tools included:

- An **observation grid**, capturing details such as duration of labour, contractions, and delivery type;
- A **semi-structured interview guide**, covering participant demographics, use of medicinal plants, perceptions, practices, information needs, and expectations regarding traditional herbal therapy promotion.

Data Processing and Analysis

Data were analysed using inductive thematic content analysis. Interview transcripts were read thoroughly, and meaning units were extracted and grouped into themes manually. Observational data collected via partograms were analysed quantitatively by calculating the frequencies of observed features.

Data quality was ensured through field validation and post-collection review. Researcher triangulation enhanced credibility, and participant feedback supported the validation of findings. Categorical analysis allowed for the organisation of responses into cross-cutting themes, reflecting the overall meaning and addressing the research objectives from multiple perspectives.

Ethical Considerations

Ethical principles—including respect for persons, beneficence, and justice—were rigorously observed, particularly in maintaining participant confidentiality and anonymity. All participants gave informed consent prior to participation. In addition, appropriate ethical and administrative approvals were obtained before commencing the research.

RESULTS

The results of this study are presented in two formats: the first focuses on interviews conducted with women who used medicinal plants during pregnancy, and the second draws from participatory observation of parturients based on the partogram during the active phase of labour. The findings revealed several key categories concerning the use of medicinal plants by pregnant women.

On the one hand, the respondents' narratives emphasised their personal experiences with these plants, portraying them as allies in alleviating the pain associated with childbirth. On the other hand, the study explored their knowledge of medicinal plants, including the types used, their indications, and their perceived benefits and drawbacks, revealing varying levels of understanding among participants.

Additionally, the women's reflections on potential maternal and neonatal risks highlighted significant concerns about the safety of traditional remedies during pregnancy. Thematic analysis also uncovered various practices related to the use of medicinal plants, particularly regarding preparation methods, dosages, and routes of administration—crucial aspects for ensuring both efficacy and safety. The women also reported outcomes linked to these plants, notably their effectiveness and, for some, their role in income generation.

Finally, regarding communication needs and expectations, three key themes emerged: the sharing of information about medicinal plants, the inclusion of modern medicine to harmonise practices, and the recognition of the benefits of plant-based therapies. These remedies are not only culturally embedded but are also considered valuable for enhancing traditional pharmacotherapy within a broader healthcare framework.

Characteristics of Respondents

The interviews were conducted with a sample of twenty respondents. Their socio-demographic and obstetric characteristics are shown in **Table 1**.

Table 1:
Socio-demographic and obstetric characteristics of the pregnant women interviewed

Characteristics	Categories	Frequencies	Percentage (%)
Age *(age groups)*	20-25 years old	3	20
	26-30 years old	6	40
	31-35 years old	6	40
	Total	**15**	**100**
Marital status	Married	15	100
Level of education	Primary	4	26.7
	Graduation	4	26.7
	Secondary	5	33.3
	Illiterate	2	13.3
	Total	**15**	**100**
Occupation	An agent of the State	1	6.7
	Housekeeper	9	60
	Civil servant	1	6.7
	Farmer	1	6.7
	Resourceful	1	6.7
	Total	**13**	**100**
Age of marriage	13 years old	2	13.3
	15 years old	2	13.3
	16 years old	2	13.3
	17 years old	2	13.3
	18 years old	2	13.3
	19 years old	3	20
	20 years old	2	13.3
	Total	**15**	**100**
Gravidity	2	2	13.3
	3	2	13.3
	4 (incl 1 twin pregnancy)	2	13.3
	5 (incl 1 twin pregnancy)	2	13.3
	6	3	20
	8	1	6.7
	13	1	6.7
	Total	**13**	**100**
Parity	1	1	6.7
	2	4	26.7
	3	3	20
	4	3	20
	5	2	13.3
	6	2	13.3
	Total	**15**	**100**
Number of abortions/ miscarriages	0	7	46.7
	1	3	20
	2	3	20
	5	1	6.7
	Total	**14**	**100**
Previous dystocia	Caesarean section	1	6.7
	Fetal distress	2	13.3
	Vicious presentation	1	6.7
	Prolonged labour	2	13.3
	Macrosomia	2	13.3
	Breech presentation	1	6.7
	No previous history	6	40
	Total	**15**	**100**
History of stillbirth	0	12	80
	1	2	13.3
	3	1	6.7
	Total	**15**	**100**

The analysis of respondents' characteristics showed that their ages ranged from 23 to 35 years, and all were

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married—reflecting the dominance of traditional family structures. Educational levels ranged from no formal schooling to secondary education, with only one participant having attained a graduate-level education. Most of the women were housewives, while others included civil servants and individuals engaged in self-sustaining occupations.

Marriage age ranged from 13 to 20 years, underscoring issues of early marriage. Several participants reported twin pregnancies, and many had experienced five or more childbirths. A few had suffered multiple abortions or miscarriages, with some reporting as many as five. The range of gestational history (from 2 to 13 pregnancies), as well as histories of abortions and dystocia, points to elevated maternal health risks and underscores the importance of antenatal surveillance.

Moreover, experiences of stillbirths and complicated deliveries highlight the need for personalised care, taking into account women's diverse obstetric histories. These findings illustrate the multifaceted challenges surrounding maternal health in this community and underscore the need for culturally sensitive and socially appropriate awareness campaigns to promote safe and informed motherhood.

Medicinal Plants Used for Childbirth Preparation

Testimonies from the study participants demonstrate that medicinal plants are perceived as valuable tools for alleviating the physical and emotional burdens of pregnancy and childbirth. They are seen not only as pain-relieving agents but also as cost-saving alternatives to biomedical interventions.

One participant noted:

"*For me, medicinal plants help a lot. I've just experienced this during my deliveries; these plants reduce the length of labour, lessen the pain of childbirth, and shorten the time of delivery to avoid the worst*" [INT-14-15].

Many women reported using a variety of plants throughout all three trimesters for purposes such as preventing miscarriage, avoiding premature delivery, and ensuring a faster and less painful labour. Descriptions of preparation and administration methods included:

"*NYANYA BUANGA (Annona muricata, also known as soursop) is the plant I use when pregnant. The leaves are kneaded and mixed with palm oil and then introduced vaginally in the form of a suppository to soften the vaginal canal for delivery around the ninth month*" **[INT-2]**.

"*KALATA KALATA (Gynandropsis gynandra) helps me prepare for a swift delivery. The leaves are cooked and consumed twice daily from the eighth to the ninth month of pregnancy. This helps prevent complications, including stillbirth*" **[INT-10]**.

While most women believed these plants posed no risk to the mother or baby, some expressed concerns about discomfort during intercourse due to vaginal application of certain herbs:

"*There's no danger to the mother or baby in using medicinal plants, except for some discomfort during sex*" **[INT-10]**.

Others noted occasional complications:

"*In some cases, women give birth before reaching the maternity hospital, often in unhygienic conditions. Haemorrhagic deliveries have also been reported due to cervical or soft tissue tears, though these are rare*" **[INT-2-4]**.

Practices Related to Medicinal Plant Use

Participants reported using several specific plants to maintain pregnancy and aid childbirth. For example:

"*To facilitate labour, I use the cooked leaves of KEBA KA NYOKA (Erythrophleum suaveolens) and KALATA KALATA (Gynandropsis gynandra), prepared similarly to sweet potato leaves*" **[INT-5]**.

"*In my reproductive life, Aloe vera (NKOLA KUE) helps widen the vaginal canal and pelvic opening. I use the root extract for vaginal baths, especially two weeks before the expected delivery date. This can be used safely for 1–2 months*" **[INT-6]**.

"*I use TSHINKADINKADI (Plectranthus esculentus) by kneading the leaves, forming small balls, and inserting them vaginally three times a day during late pregnancy*" **[INT-7-8]**.

"*I applied MUTAMU MUTOKE (Musa acuminata) at term for vaginal baths, which speed up labour without excessive pain*" **[INT-10]**.

Additionally, medicinal plants were noted as income sources:

"*These plants help me financially. I sell them to other women who need them*" **[INT-6]**.

"*I encourage women to try them—it's not expensive; just a symbolic exchange is enough*" **[INT-11-14-15]**.

Many women expressed high satisfaction:

"*Since using them, my deliveries have improved—no tears, no need for incisions. Labour is quick and smooth*" **[INT-1-2, INT-4-5-7]**.

Needs and Expectations for Communication and Promotion of Herbal Therapies

Respondents expressed strong interest in better communication and integration of traditional medicinal knowledge. They hoped for:

- Wider **information sharing** among peers and elders;
- **Involvement of medical professionals** to standardise doses and reduce risks;
- **Educational opportunities** from traditional and modern carers alike;
- **Recognition** and **organisation** of traditional medicine for childbirth.

Some were open to monetising their knowledge:

"*I'm willing to share my experience if compensated fairly*" **[INT-11]**.

Women expected these remedies to lead to safe deliveries:

"*I expect an easy, complication-free delivery with minimal tearing and no excessive amniotic fluid*" **[INT-10-11-12]**.

"*These plants help eliminate issues like haemorrhage and ensure safe childbirth*" **[INT-7-14-15]**.

Table 2:
Socio-demographic Characteristics of Parturients Who Used Medicinal Plants

Characteristic	Number (n=20)	%
Age group *(years)*		
18 – 23	10	50
24 – 29	7	35
≥30	3	15
Total	**20**	**100**
Occupation		
Housekeeper	11	55
Nurse	2	10
Cultivator	3	15
Saleswoman	3	15
Teacher	1	5
Total	**20**	**100**
Marital status		
Married	19	95
Single	1	5
Total	**20**	**100**
Education level		
Primary	4	20
Secondary	16	80
Total	**20**	**100**
Husband's occupation		
Farmer	3	15
Nurse	6	30
Small business	6	30
Teacher	2	10
Dressmaker	3	15
Total	**20**	**100**

These findings show a predominance of young, married women—mostly housewives—who have completed secondary education. Even in households where husbands are healthcare professionals, traditional medicine remains widely accepted and trusted. This reinforces the need for integrative public health messaging that bridges modern and traditional healthcare practices.

Table 3:
Monitoring of Parturients Who Used Medicinal Plants to Prepare for Childbirth

Parameters	Number	%
Duration of childbirth labour		
5 hours	4	20
6 hours	5	25
7 hours	4	20
8 hours	5	25
9 hours	2	10
Total	**20**	**100**
Uterine contractions		
Regular contractions	20	100
Irregular contractions	-	-
Water bag		
Presence of water pockets	15	75
Broken water bags at home	5	25
Total	**20**	**100**
Appearance of amniotic fluid		
Clear amniotic fluid	18	90
Cloudy amniotic fluid	2	10
Total	**20**	**100**
Types of Childbirth		
Eutocic	19	95
Dystocic	1	5
Total	**20**	**100**
Plants used		
Kalata kalata (Gynandropsis gynandra) + keba ka nyoka (Erythrophleum suaveolens)	5	25
keba ka nyoka (Erythrophleum suaveolens)	4	20
Mutamu mutoke (*Musa acuminata*) + Tshidiata mbemba (*Dichrostachys cinerea*)	2	10
Tshidiata mbemba (*Dichrostachys cinerea*) + Tshinkadi nkadi (*Plectranthus esculentus*)	2	10
Mudiantondo (*Bridelia ferruginea*)	4	20
Kalata kalata (*Gynandropsis gynandra*)	3	15
Total	**20**	**100**
Newborn		
APGAR 10 à 1 minute	15	75
APGAR 5 à 1 minute	5	5
Total	**20**	**100**

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Labour durations ranged from 5 to 9 hours, with most women experiencing regular contractions. While 75% arrived with intact amniotic sacs, 25% had ruptures at home. Amniotic fluid was mostly clear (90%), and the majority of births were eutocic (95%).

Commonly used plants included combinations of *Gynandropsis gynandra* and *Erythrophleum suaveolens*. APGAR scores were favourable, with 75% of newborns scoring 10 at one minute.

These results suggest relatively positive outcomes, but continuous medical monitoring remains essential to ensure safety.

Table 4:
Herbal Medicines Used by Pregnant Women

Plant species	Parts used	Preparation methods	Administration methods
Kalata-Kalata= *Cleome gynandra* **L. (Cleomaceae)**	Leaves	Cooking	Eating and rubbing
Tshinkadinkadi= *Coleus esculentus* (N.E.Br.) G.Taylor (Lamiaceae)	Leaves	Cooking	Eating
Mudima**=** *Dioscorea* **spp.**	Leaves	Decoction	Enema and intimate toilet
Tshimantenta = *Aspilia africana* (Pers.) C.D.Adams (Asteraceae)	Leaves	Decoction	Drink
Patates douces = *Ipomoea batatas* (L.) Lam. (Convolvulaceae)	Leaves	Decoction	Eating
Keba ka Nyoka= *Erythrophleum suaveolens* (Guill. & Perr.) Brenan (Fabaceae)	Leaves	Cooking	Eating
Tshilongo (Nkola Kue) = *Aloe vera* (L.) Burm.f. (Asphodelaceae)	Leaves	Decoction	Intimate toilet
Mbata ya mayi= *Euphorbia hirta* L. (Euphorbiaceae)	Leaves	Cooking	Drink
Nyanya Buanga = *Annona senegalensis* Pers. (Annonaceae)	Leaves	Decoction	Intimate toilet
Gombo (mulembue)= *Abelmoschus esculentus* (L.) Moench (Malvaceae)	Fruit and leaves	Cooking	Food

Table 4 summarises the medicinal plants most frequently used by pregnant women. Leaves are the most commonly used parts, with cooking and decoction being the dominant preparation methods. Administration routes include oral intake and intimate hygiene applications. These practices, rooted in local tradition, reflect the deep cultural and therapeutic value of medicinal plants in this context.

However, it is essential to expand awareness about the potential risks of certain species. This highlights the need for careful and informed use, ongoing community education, and research into the efficacy and safety of traditional remedies in maternal healthcare.

DISCUSSION

This study reveals a significant reliance on local medicinal plants among pregnant women as part of childbirth preparation. Despite 80% of participants having attained secondary education, most were unemployed or involved in petty trade, indicating a low socio-economic status. While 95% of the deliveries observed were eutocic, the women attributed shorter labour durations and reduced pain to the use of traditional herbal remedies. However, decisions surrounding plant use were primarily shaped by socio-cultural norms—particularly reliance on elder women and community-shared knowledge. These findings highlight a persistent gap between educational attainment and functional health literacy within the context of maternal health.

The correlation between education and improved health-seeking behaviour is supported by Bayati et al. (2018), who emphasise that education enhances understanding of disease processes and medical interventions. However, as in Rwanda, where low income remains a significant barrier to accessing formal healthcare, many women prioritise basic needs, such as food, over health-related expenditures (Siborurema et al., 2012). This underscores that education alone may not ensure informed health decisions if not coupled with improved economic conditions and targeted health literacy interventions.

The observed gap between formal education and actual health knowledge aligns with the findings of Svendsen et al. (2020), who argue that health literacy is significantly influenced by socio-economic conditions rather than just years of schooling. The strong cultural inclination towards traditional remedies also mirrors findings by Buor et al. (2023), who report that health decisions are often guided more by elder advice than by biomedical recommendations. Although the women in this study perceive medicinal plants as safe and effective, this belief is challenged by

studies such as Tebeu et al. (2008), who warn against the undocumented and potentially toxic effects of traditional remedies. For example, Gruber and O'Brien (2011) confirm that plant-derived compounds such as cyclotides, although effective in stimulating uterine contractions, can induce severe adverse effects at higher doses.

These findings have significant implications for maternal health policy, particularly in resource-limited settings. Firstly, they underscore the need to strengthen health literacy—particularly among economically disadvantaged populations—through culturally sensitive educational campaigns on the risks and benefits of medicinal plants. Secondly, the high rate of eutocic births among herbal remedy users raises important questions about the potential integration of traditional medicine into formal healthcare systems. However, such integration must be approached with caution. It requires rigorous scientific validation, dosage standardisation, and clear guidelines regarding interactions with biomedical treatments.

Lastly, the socio-cultural influences on maternal health behaviour—especially the reliance on older women and traditional knowledge—should not only be seen as barriers but also as potential levers for change. Engaging community elders and traditional birth attendants in health education efforts could enhance both the acceptability and the effectiveness of maternal health interventions.

Limitations

Several limitations affect the generalisability and interpretation of this study's findings. The sample size was relatively small (20 women interviewed and 15 observed), and there may be selection bias, as only women who agreed to participate and who could speak French or Tshiluba were included. Additionally, self-reported data on plant use and perceived effects are subject to recall bias and social desirability bias.

A further limitation is the lack of phytochemical and clinical data to support the safety and efficacy of the medicinal plants cited, such as *Cucumis myriocarpus*, *Musa acuminata*, and *Dichrostachys cinerea*. Without laboratory analyses and clinical trials, it is difficult to assess the true pharmacological impact of these plants on maternal outcomes.

Lastly, the study did not document plant preparation methods, dosages, or potential interactions with modern drugs in detail, limiting the ability to assess toxicological risks accurately and comprehensively.

CONCLUSION AND RECOMMENDATIONS

This study highlights the widespread use of medicinal plants among women in the Kananga Health Zone to prepare for and facilitate childbirth—practices driven by cultural norms, economic constraints, and limited access to formal healthcare. While these remedies are widely perceived as beneficial—reducing labour duration, alleviating pain, and preventing complications—they also present notable risks due to the absence of scientific validation, standardised dosages, and documented side effects.

To address these challenges, the following recommendations are proposed:

1. **Implement targeted health education programmes** aimed at improving maternal health literacy, particularly among women and influential community members such as traditional birth attendants and elders.
2. **Foster collaboration between biomedical healthcare providers and traditional practitioners** by developing inclusive training and referral systems that encourage mutual respect and shared care.
3. **Promote rigorous scientific research** into the pharmacological properties, safety, and efficacy of commonly used medicinal plants in pregnancy and childbirth.
4. **Develop national regulatory frameworks** to ensure the safe and evidence-based integration of traditional medicine into maternal healthcare services.

Such approaches, grounded in scientific evidence and cultural sensitivity, could enhance maternal health outcomes while preserving valuable traditional knowledge.

Ethical Approval: The study protocol was approved by the Bioethics Committee of ISTM-Kinshasa under reference number 0011/CBE/ISTM/KIN/RDC/PMBBL/203.

Conflicts of Interest: None declared.

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REFERENCES

Alkhaldi, D. M., & Alkhammash, S. S. (2023). Prevalence, knowledge, and attitudes toward herbal medicines among pregnant women attending antenatal clinic in Prince Mansour Military Hospital in Taif. *Journal of Family Medicine and Primary Care, 12*(7), 1446–1453. https://doi.org/10.4103/jfmpc.jfmpc_295_23

Bayati, T., Dehghan, A., Bonyadi, F., & Bazrafkan, L. (2018). Investigating the effect of education on health literacy and its relation to health-promoting behaviors in health center. *Journal of Education and Health Promotion, 7*, 127. https://doi.org/10.4103/jehp.jehp_65_18

Buor, D., Agyemang, S., & Awuku, P. (2023). The determinants of utilisation of herbal medicine among pregnant women in the Asante Akim North District, Ghana. *Maternal and Child Health Journal, 27*, 1886–1896. https://doi.org/10.1007/s10995-023-03676-7

Gruber, C. W., & O'Brien, M. (2011). Uterotonic plants and their bioactive constituents. *Planta Medica, 77*(3), 207–220. https://doi.org/10.1055/s-0030-1250317

Koren, G. (2013). *Thèse de doctorat en Pharmacie*. Université Toulouse, Paul Sabatier.

Mawunu, M., Malungo, A. D., Cuca Afonso, L., Luyeye, L., Ndiku, L., & Ngbolua, K. (2025). Medicinal plants traditionally used by the rural Kimalalu people in the municipality of Songo (Uíge province), Northern Angola. *Natural Resources for Human Health, 5*(1), 40–69. https://doi.org/10.53365/nrfhh/192950

Mawunu, M., Mandombe, J. L., Bránquima, M. F., Dunda, J. T., Ngbolua, K. N., Kafuti, M., Munkolo, P. M., Ndiku, L., & Luyeye, L. (2024). Ethnobotanical and phytopharmacological approaches to uterotonic medicinal plants in DRC. *African Research Journal of Biosciences, 1*(2), 17–40.

Menga, M. P., Gerengbo, G. K., Monizi, M., Mansengo, C. A., Mpiana, T. P., Virima, M., & Ngbolua, K. N. (2024). Integrating ethnobotany and artificial intelligence to validate the potential bioactivity of two medicinal plants traditionally used in the treatment of influenza in IBI-Village and surrounding areas, Democratic Republic of the Congo. *Natural Resources for Human Health, 4*(3), 230–246. https://doi.org/10.53365/nrfhh/187385

Ngbolua, K. N., Rafatro, H., Rakotoarimanana, H., Urverg, R. S., Mudogo, V., Mpiana, P. T., & Tshibangu, D. S. T. (2011). Antimalarial activity of some medicinal plants from the Democratic Republic of Congo: In vitro and in vivo evaluation. *International Journal of Biological and Chemical Sciences, 5*, 1797–1804. https://doi.org/10.4314/ijbcs.v5i5.3

Ngbolua, K. N., Rakotoarimanana, H., Rafatro, H., Urverg, S. R., Mudogo, V., Mpiana, P. T., & Tshibangu, D. S. T. (2011). Ethnobotanical survey and in vitro antiplasmodial activity of medicinal plants used in the Democratic Republic of Congo. *International Journal of Biological and Chemical Sciences, 5*, 345–353.

Ramazani, I. B., Ntela, S. M., Ahouah, M., Ishoso, D. K., & Monique, R. T. (2022). Use of traditional medicine among pregnant women in the Democratic Republic of Congo. *BMC Pregnancy and Childbirth, 22*(1), 452. https://doi.org/10.1186/s12884-022-04783-z

Siborurema, L., Vyankandonder, J., & Utz, B. (2012). Fistules urogénitales d'origine obstétricale : Aspects épidémiologiques, socioéconomiques, cliniques et thérapeutiques à l'Hôpital de Ruhengeri, Rwanda. *Éditions Universitaires Européennes*.

Sumankuuro, J., Soyen, C., Crockett, J., Ibrahim, M., Ngmenkpieo, F., & Wulifan, J. (2020). Women's motivation and associated factors for herbal medicine use during pregnancy and childbirth: A systematic review. *Health, 12*, 572–597. https://doi.org/10.4236/health.2020.126044

Svendsen, M. T., Bak, C. K., Sørensen, K., Pelikan, J., Riddersholm, S. J., Skals, R. K., Mortensen, R. N., Maindal, H. T., Bøggild, H., Nielsen, G., & Torp-Pedersen, C. (2020). Associations of health literacy

with socioeconomic position, health risk behavior, and health status: A large national population-based survey among Danish adults. *BMC Public Health, 20*, 565. https://doi.org/10.1186/s12889-020-08498-8

Tebeu, P. M., de Bernis, L., Boisrond, L., Le Duc, A., Mbassi, A. A., & Rochat, C. H. (2008). Connaissance, attitude et perception vis-à-vis des fistules obstétricales par les femmes camerounaises: Une enquête clinique conduite à Maroua, capitale de la province de l'extrême Nord du Cameroun. *Progrès en Urologie, 18*(6), 379–389. https://doi.org/10.1016/j.purol.2008.03.020

Tlhapi, D., Malebo, N., Manduna, I. T., Lautenschläger, T., & Mawunu, M. (2024). A review of medicinal plants used in the management of microbial infections in Angola. *Plants, 13*(21), 2991. https://doi.org/10.3390/plants13212991

Wake, G. E., & Fitie, G. W. (2022). Magnitude and determinant factors of herbal medicine utilization among mothers attending their antenatal care at public health institutions in Debre Berhan Town, Ethiopia. *Frontiers in Public Health, 10*, 883053. https://doi.org/10.3389/fpubh.2022.883053