



Plants Used by Pregnant Women at Kipushi City in Democratic Republic of Congo: Prevalence and Indications

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How to cite this paper: Esther, K.I., Kleph, K.Z., Mariette, K.K., Sylvie, Y.N., Andre, W.O.T., Niclette, L., Michel, K.N., Baptiste, K.N.J. and Oscar, L.N. (2017) Plants Used by Pregnant Women at Kipushi City in Democratic Republic of Congo: Prevalence and Indications. *Open Access Library Journal*, **4**: e3390.

<https://doi.org/10.4236/oalib.1103390>

Received: January 19, 2017

Accepted: February 24, 2017

Published: February 27, 2017

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Abstract

The use of plants in our immediate environment in primary health care in Africa and especially among the poor, is a very common practice. Our study aimed to determine the profile and frequency of pregnant using medicinal plants; and to identify medicinal plants most frequently used during pregnancy. We have done a descriptive cross-sectional study, conducted for up March 2014 to June 2014, on a sample of 400 pregnant women who consulted health centers of the city Kipushi during prenatal consultations. Of a total of 400 pregnant consulted during the investigation period, 30% or 7.5% used medicinal plants, 46.67% had an age between 26 and 30 years, the majority of pregnant or 56.67% had a secondary consideration; 13 pregnant using medicinal plants is 43.33% were multiparous pregnant while 10, 33.33% were large multiparous pregnant 12% or 40% were married and 9% or 30% of pregnant were single. The *Birsocorpus orientaris* was the most used plants in pregnant or 16.67% of pregnant monitoring and *Uapaca kirkiana*, *Ficus capensis* or 13.33% and 10% of these used the pregnant *Thespesia garckeana*, *Hibiscus cannabinus* or *Liposes*. These results provide the basis for subsequent studies to experimentally evaluate the potential of these plants. This will make available for women in labor, new substances of natural origin.

Subject Areas

Plant Science

Keywords

Medicinal Plants, Pregnant Women, Prevalence, Indication

1. Introduction

For centuries and even millennia, our ancestors used plants to relieve their pain, heal their ailments and heal their wounds. From generation to generation, they passed on their knowledge and simple experiments by working when they could record them in writing [1].

At the moment when humanity is facing all kinds of diseases and where the care of health issues is proving a real social problem, especially in developing countries with inadequate resources result in low economic systems. A use of readily available local resources constitutes a real workaround and that in view of the Millennium Development Goals. Despite advances in biology and medicine of the time, the majority of people in developing countries lack access to adequate health care due to low economic systems. For this reason, the plant resources figure prominently in the lives of these populations [2].

The African continent is full of very diverse medicinal plants. According to the World Health Organization, more than 80% of the African population makes use of traditional medicine and pharmacopoeia to deal with health problems. On roughly 300,000 species of medicinal plants identified on the planet, more than 200,000 live in the tropics of Africa and have medicinal properties [3].

Medicinal plants are a valuable heritage for humanity and especially for the majority of poor communities in developing countries who depend on it for their primary health care and their subsistence. They use most plant species, both woody and herbaceous, as drugs. A well-held belief is that any plant treats [4].

In all developing countries such as the Democratic Republic of Congo, medicinal plants are the most used medium especially in rural areas to address public health problems. According to the WHO in 2002, over 80% of the African population use plants for their health care needs [5].

Indeed, given the belief in the harmlessness of medicinal plants because of their natural origin, their use becomes increasingly considered a reasonable alternative and safer than conventional therapy? Since pregnant women may have to face fear teratogenicity conventional drugs, it can be assumed that medicinal plants are common therapies during pregnancy. Indeed, studies in, America and elsewhere show that up to 55% of women use medicinal plants during the gestational period [6].

Given the importance and the value we place on this study of the practice of medicinal plants in pregnant, we have set the following objectives:

- Determine the profile of pregnant using medicinal plants;
- Determine the frequency of the use of medicinal plants in pregnant;
- Identify the most frequently used herbs during pregnancy.

2. Material and Method

2.1. Study Site

Kipushi is a southwestern area of the province of Katanga in Democratic Republic of Congo, Located near the border with Zambia (500 m), to the southwest of Lubumbashi, or about thirty kilometers from the latter. This area is known for its important mines copper and of zinc. KIPUSHI territory is perched at 1200 meters altitude on the top shelf Katanga. It owes its existence to what was one of the jewels of the Mining Union: Prince Leopold Mine and its famous V Wells. The population of the territory of Kipushi is estimated at 349,004 inhabitants according to the annual report 2014 of the administration of the territory.

2.2. Study Design

This is a descriptive cross-sectional study for up March 2014 to June, 2014. Our sample consisted of 400 pregnant women who were enrolled in the health centers of the city Kipushi during prenatal consultations. Any pregnant present at the antenatal clinic, with verbal consent to participate in the study was included. Mother does not cooperate were excluded from the study. The following information was collected: using medicinal plants by women, age in years, tribes, level of study, parity, civil status, common names of plants, parts of plants used, administration mode, plant species, Indication, processing mode.

The collected data were coded, entered, processed and analyzed using SPSS 19. Descriptive analysis was performed using the proportions calculations. Verification of tax on names was made in the laboratory of the Faculty of Science of the University of Lubumbashi.

This study was approved by related ethics committee besides and mothers sign informed consent and have a whole understanding of this study. Our study had no binding character. Any information collected from mothers has been and will remain confidential. Similarly, the names of participants will remain confidential and will not be mentioned in the presentation of results or associated to results in any way whatsoever.

3. Results

Table 1 shows that, of a total of 400 pregnant consulted during the investigation period, 30 (7.5%) used medicinal plants.

Table 2 shows that 14 pregnant or 46.67% had an age between 26 and 30 years, followed by pregnant 9 (30%) whose age range was between 22 and 26 years, 33.33% of these were pregnant the Bemba tribe, pregnant practicing agriculture rank first or 36.67%. The majority of pregnant or 56.67% had a secondary consideration; 13 pregnant using medicinal plants is 43.33% were multiparous pregnant while 10 33.33% were large multiparous pregnant 12% or 40% were married and 9% or 30% of pregnant were single.

Table 3 shows *Birsocarpus orientaris* were the most used plants in pregnant or 16.67% of pregnant) monitoring and *Uapaca kirkiana*, *Ficus capensis* or

Table 1. Prevalence of use of medicinal plants by the pregnant.

Women using medicinal plants	Effective (nor)	Percentage (%)
Yes	30	7.5
No	370	92.5
Total	400	100

Table 2. Profile of pregnant using medicinal plants.

Age in years	Effective (nor)	Percentage (%)
18 - 22	1	3.33
22 - 26	9	30.00
26 - 30	14	46.67
30 - 34	6	20.00
Tribes		
Bemba	10	33.33
Sanga	1	3.33
Rund	8	26.67
Luba from Kasai	2	6.67
Luba of Katanga	9	30.00
Profession		
Saleswoman	9	30.00
Household	6	20.00
Farmer	11	36.67
Teachers	2	6.67
Prostitutes	2	6.67
Level of study		
Primary	11	36.67
Secondary	17	56.67
University	2	6.67
Parity		
Primipare	7	23.33
Multipare	13	43.33
Grand multipare	10	33.33
Civil status		
Single	9	30.00
Married	12	40.00
Divorced	6	20.00
Widow	3	10.00

Table 3. Distribution of medicinal plants used by the pregnant.

Common names of plants	The scientific names of plants	Effective (nor)	Proportion (%)
Makole	<i>Thespesia garckeana</i>	3	10.00
Kisongole	<i>Strychnos cocculoides</i>	1	3.33
Masuku	<i>Uapaca kirkiana</i>	4	13.33
Madjere	<i>Phyllanthus mwellerinus</i>	2	6.67
Mukiluakilua	<i>Ficus capensis</i>	4	13.33
Mulenda	<i>Hibiscus cannabinus</i>	3	10.00
Kandasole	<i>Birsocarpus orientaris</i>	5	16.67
Mumono	<i>Ricinus communis</i>	2	6.67
Aloe	<i>Lipose</i>	3	10.00
Matungulupoli	<i>Afranomum alboviolaceum</i>	2	6.67
Lukumba	<i>Cymbopongo citratus</i>	1	3.33
Total		30	100.00

13.33% and 10% of these used the pregnant *Thespesia garckeana*; *Hibiscus cannabinus* either Liposes.

Table 4 shows that 36.6% of pregnant using the roots followed in 30% of the leaves. In connection with the mode of administration of medicinal plants, 50% of pregnant were using oral and 13.3% vaginal or anal (**Table 5**).

4. Discussion

The frequency of use of medicinal plants obtained in our study was approximately 7.5%. This is relatively low compared to other similar studies in sub-Saharan Africa; 12% in Kenya in a district hospital; 50.4% in Ethiopia and 50.0% in Harére [7]. The study by Tariku *et al.* [8] showed that 73.1% of women had used herbal medicines during pregnancy and while Dabaghian Hashem al found a 67% of the 600 pregnant women who had used at least one of the herbal medicines during their current pregnancy or earlier [9]. But the study by Krysell shows a 9% prevalence in Canada [6]. The difference may be due to the characteristics of the study population at the time of the study, the inclusion criteria, the sample size, sampling methods, the type of questions in the questionnaire and method of data collection, but also to the culture and level of study of the different populations studied.

Our study found that the roots were much used by pregnant or 36.67%. Our results are not consistent with those in the literature. Indeed, studies by ethnobotanics Zirihi (1991) 64.49%, Tra Bi (1997) 70% Ouattara (2006) 44.26% Zerbo *et al.* (2007) 41%, N'Guessan (2008) 51.22% Lakouetene *et al.* (2009) 67%, Zerbo *et al.* (2011) 31% and Diatta *et al.* (2013) 46% showed that the leaves were the parts mainly used in various therapeutic preparations [10]. One might worry about overuse leaves of medicinal plants, but studies by Poffenberger *et al.*

Table 4. Distribution of medicinal plants used by the party and its mode of administration by the pregnant.

Parts of plants used	Effective (n = 30)	Proportion (%)
Roots	11	36.6
Leaves	9	30.0
Bark	5	16.7
Fruit	5	16.7
Administration mode		
Oral	15	50.0
Bath	7	23.4
Vaginally	4	13.3
Anally	4	13.3

Table 5. Distribution of medicinal plants according to their kinds and ways of treatment.

Plant species	Indication	Processing mode
<i>Thespesia garckeana</i>	Membrane rupture	Roots decoctus: Drink morning, evening drinks at 9 months of pregnancy. Leaves: make a sitz bath to 9 months.
<i>Strychnos cocculoides</i>	Uterine contractions, contracted pelvis	Roots decoctus: Drink morning, evening 2 glasses. pounded leaves mixed with palm oil: make the anus to 8 months pregnant.
<i>Uapaca kirkiana</i>	Uterine contractions, rupture of the membrane	+Pounded leaves of palm oil: vaginal 9 months of pregnancy. Roots decoctus: drinking. Peel: cover
<i>Phyllanthis mwallerinus</i>	Uterine contractions, cervical dilation	Roots: sitz bath for 9 months of pregnancy. Leaves and dried to powder + palm oil: anally 9 months of pregnancy.
<i>Ficus capensis</i>	Stimulate uterine contractions, rupture of the membrane	Roots decoctus: Drink 1 glass morning and evening to 9 months of pregnancy.
<i>Hibiscus cannabinus</i>	Dilation of the cervix, rupture of the membrane	Prepared fruit decoctus: drink morning and evening to 9 months of pregnancy.
<i>Birsocarpus orientaris</i>	Contracted pelvis, uterine contractions	Roots: sitz bath for 6 to 7 months of pregnancy. pounded leaves + oil: anally 9 months of pregnancy.
<i>Ricinus communis</i>	Avoid tear, rupture of the membrane	Decoctus leaves: Drink 1 glass morning and evening. Roots make the powder + palm oil: vaginally. Peel: hedge.
<i>Liposo</i>	Avoid tearing, stimulate contractions	Peel: to powder + palm oil. Roots decoctus: Drink morning. Sheets prepared: drink morning and evening to 9 months of pregnancy.
<i>Aframomum alboviolaceum</i>	Stimulate uterine contractions	Roots: to put the powder in the anal. decoctus Sheets: drink morning and evening to 9 months of pregnancy.
<i>Cymbopongo citratus</i>	Rupture of the membrane, contracted pelvis, neck opening	Roots decoctus: drink morning and evening. Leaves: powder + palm oil. Peel: hedge.

showed that the removal of 50% of the leaves of a tree does not significantly affect its survival. Also, the high frequency of use of sheets can be explained by the ease and speed of harvesting but also by the fact that they are the site of photosynthesis and storage of secondary metabolites responsible for the biological properties of the plant [11]. But note that the study undertaken by Bene Kouadio has shown that the roots, with 10% of cases were the second group of the most used organs after the leaves [10].

Among the administration routes, the most used was oral in 50% of cases. N'Guessan and Dibong *et al.* also found that 94.44% of respondents have used the oral route [12]. Nevertheless, several studies reveal other ways [10]. The difference found in modes of administration would be due to the different people's cultures. With us, the majority of preparation for medicinal plants are potions, since these are the most simple and easy to achieve.

The predominance of 3 families (*Birsocarpus orientaris*, *Uapaca kirkiana*, *Ficus capensis*) which have the largest number of medicinal plants traditionally used for their likely effects oxytocin, is explained by the fact that these families are members, from the perspective of the number of species they contain, the largest of the flora of the city of Kipushi. We note with Ouattara, 03 1.78% representing plants of plants directory identified during ethno pharmacological study conducted in the region of Divo. Tra Bi showed that 08 plant species (8.88%) constituted the bulk of the arsenal of taxa used to ease childbirth. Zirihi (1991) reported that the Bete Department Issia (Central West of Ivory Coast) employ 05 plants, or 4.31% of all known plants. Vangah (1986) indicates that the Akan ethnic groups in the coastal region of the Ivory Coast use 24 species of plants engaged in oxytocin effects; these plants represent 7.97% of all known plants. Adjanohoun and Aké Assi (1979) has reported 5 species of plants, or 1.65% of the repertoire of taxa identified during their study on medicinal plants of Ivory Coast. This variability is due to changes in the methods of investigation; it could be explained by differences in region and vegetation.

5. Conclusions

Medication by plants is an ancient therapy and millennium. It goes back to the dawn of time. Mankind has always sought to use plants to survive and to draw remedies to relieve his pain. This work was conducted in order to determine the profile of pregnant using medicinal plants, the frequency of the use of medicinal plants in pregnant and to identify the most commonly used herbs during pregnancy.

The results showed 7.5% of pregnant using medicinal plants. The *Birsocarpus orientaris* was the most used plants in pregnant or 16.67% of pregnant) monitoring and *Uapaca kirkiana*, *Ficus capensis* or 13.33% and 10% of these used the pregnant *Thespesia garckeana*, *Hibiscus cannabinus* either Liposes.

The use of more sophisticated methods of screening phytochemical and evaluation of the pharmacological activity of various extracts would be important to complete this ethnobotanical study.

References

- [1] Ouafae, B., Lahcen, Z., Mohamed, F. and Houada, E. (2011) Ethnobotanical Study of Medicinal Plants in the Region of Bel Mechraâ Ksiri (Gharb Region of Morocco). *Acta Botanica Barcinonensia*, **53**, 191-216.
- [2] Mokoso, M., God, J., De Felicien, M.K. and Justin, K.N. (2014) Contribution to the Phytochemical Study of Some Medicinal Plants Antidiabetic from the Town of Bukavu and Its Environs (South Kivu, RD Congo). *Journal of Applied Biosciences*, **75**,

6211-6220.

- [3] Loubna, E. (2015) Ethnobotanical Survey of Antidiabetic Plants with Herbalists in the City of Fez. Sidi Mohamed Ben Abdellah University, Fez.
- [4] Salhi, S., Fadli, M., Zidane, L. and Douira, A. (2010) Floristic and Ethnobotanical Studies of Medicinal Plants in the City of Kenitra (Morocco). *Lazaroa*, **31**, 133-146. https://doi.org/10.5209/rev_LAZA.2010.v31.9
- [5] Dro, B., Soro, D., Koné, M.W., Bakayoko, A. and Kamanzi, K. (2013) Evaluation of the Abundance of Medicinal Plants Used in Traditional Medicine in Northern Côte d'Ivoire. *Journal of Animal & Plant Science*, **17**, 2631-2646.
- [6] Moussally, K. (2009) The Use of Medicinal Plants: Prevalence, Determinants and Risk of Prematurity. Montreal University, Montreal.
- [7] Vanotoo, L., Detoh, E.K., Oduro, J. and Nsiah, R.B. (2015) Utilized Type of Herbal Medicines by Pregnant Women Attending Ante-Natal Clinic in Offinso North District: Orthodox Prescribers Are Aware? *Ghana Medical Journal*, **49**, 227-232.
- [8] Laelago, T., Yohannes T. and Lemango, F. (2016) Prevalence of Herbal Medicine Use and Associated Factoring among Pregnant Women Attending Prenatal Care at Public Health Facilities in Hossana Town, Southern Ethiopia: Facility Based Cross Sectional Study. *Archives of Public Health*, **74**, 7. <https://doi.org/10.1186/s13690-016-0118-z>
- [9] Hashem Dabaghian, F., Abdollahi Fard, M., Shojaei, A., Kianbakht, S.N. and Zafarhandi, G.A. (2012) Use and Attitude on Herbal Medicine in a Group of Pregnant Women in Tehran. *Journal of Medicinal Plants*, **11**, 22-33.
- [10] Kouadio, B., Djeneb, C., N'Guessan, F.N., Yvette, B. and Christmas, Z.G. (2016) Ethnobotanical Study of Medicinal Plants Used in the Department of Transua, District Zanzan (Ivory Coast). *Journal of Animal & Plant Sciences*, **27**, 4230-4250.
- [11] N'Guessan, F.H. and Tra Bi, W.K. (2009) Ethnopharmacological Study of Antimalarial Plants Used in Traditional Medicine among Abbey and Krobou of Agboville (Ivory Coast). *Ethnopharmacologia*, **22**, 42-50.
- [12] N'Guessan, K.N., Guede, N., Kama, N.T. and Boraud, M. (2010) Study Ethnopharmacological Plants Used to Facilitate Childbirth, Countries and Krobou Abbey, South of Côte d'Ivoire. *International Journal of Biological and Chemical Sciences*, **4**, 1004-1016.



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