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Full Length Research Paper

Medicinal plants used for contraception and pregnancy-related cases in Malawi: A case study of Mulanje District

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Malawi's maternal mortality rate is one of the worst. Due to shortfalls in modern hospitals, women resort to medicinal plants. The study investigated medicinal plants used as contraceptives, for treating pregnancy-related cases and general illnesses. Focus group discussions, key informants, participant observations and questionnaire interviews were employed. Data were analysed through Statistical Package for Social Scientists (SPSS). Five plant species were documented for child spacing, 21 for pregnancy-related cases and 30 for curing general illnesses. In all cases, roots were the most widely used parts. Stomach pains and miscarriage comprised the most commonly mentioned cases. The most widely used application methods were drinking of infusion. However, validity of other methods (like putting plant parts on the roof wearing plant parts around waist) is questionable. More studies are required to assess the properties of these medicinal plants. Considering that medicinal plants are alleged to contribute to uterine ruptures, further studies are required to determine the safety of these plants. There is also need to verify validity of the questionable application methods. High dependence on roots jeopardizes survival of the plants hence more studies are needed to determine whether the properties found in roots are found in other parts of the plant.

Key words: Ethno botany, medicinal plants, home-based healthcare, pregnancy, ethno-medicine.

INTRODUCTION

Maternal mortality is one of the global pressing issues. The most affected are developing countries. Although a call was made in 1987 by World Health Organisation (WHO), United Nations Fund for Population Activities (UNFPA) and the World Bank to reduce maternal mortality, it remains high to date. Consequently, the call has been reiterated in one of United Nations Millennium Development Goals.

The goal aims at reducing maternal mortality ratio by three-quarters by 2015 (The Health Foundation Consortium, 2007).

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In the context of Malawi, maternal mortality has been at an alarming rate and it is one of the highest (IRIN, 2005). Malawi's maternal death rate is as worse as the rates experienced by war-torn countries like Sierra Leone and Angola. The latest census data states that maternal mortality for Malawi is around 984 maternal deaths per 100,000 live births (National Statistical Office, 2004). In view of this, the government established the Safe Motherhood Programme whose aim is to reduce maternal and child mortality through, among other things, creating awareness, at community level, of the risks of pregnancy and the need for utilizing conventional health services. In addition, government has made substantial investment in the health sector to enable people access medical facilities. About 80% of the population of Malawi lives within 8 km radius of a primary health care facility.

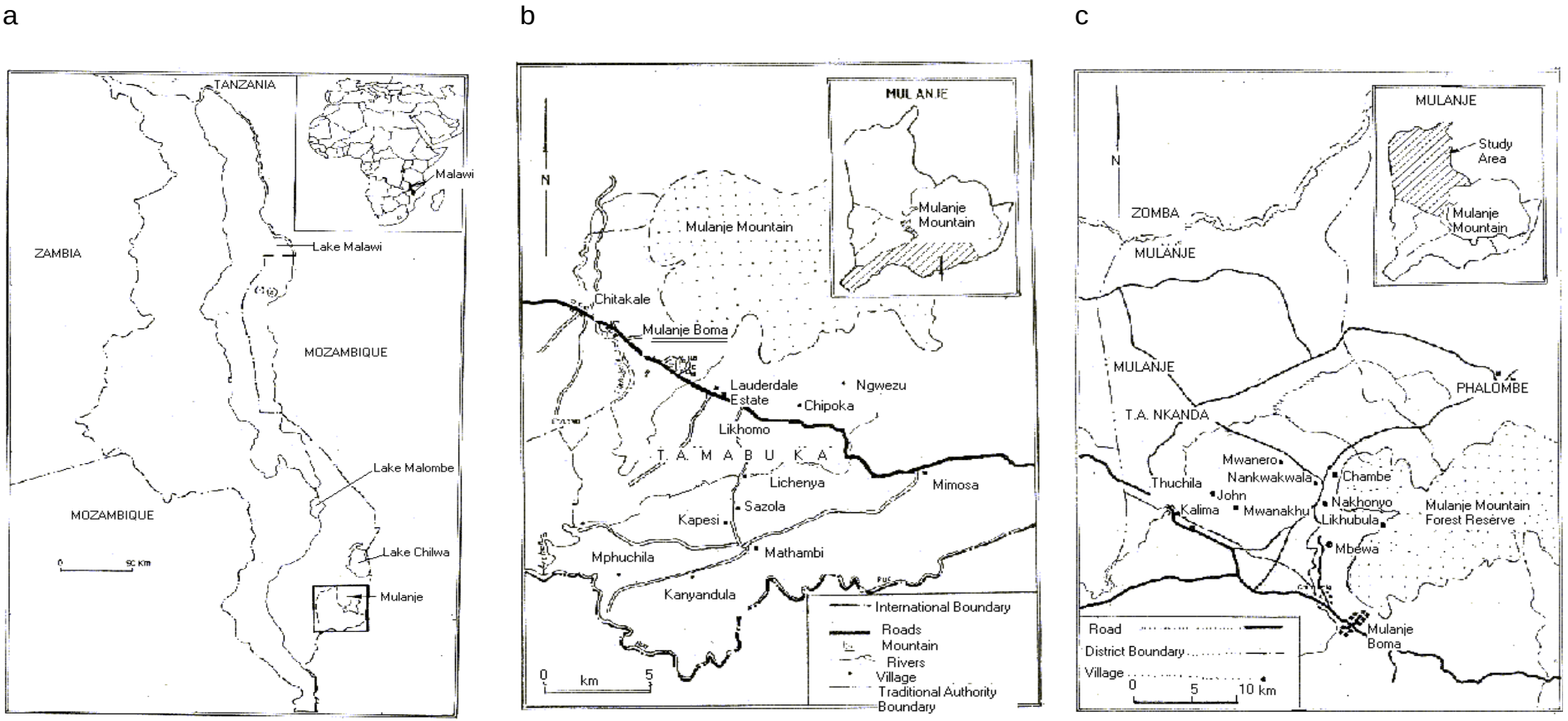

Figure 1. Map of study area showing location of Mulanje district in Malawi (a), Traditional Authority Mabuka (b) and Traditional Authority Nkanda (c).

However, where a health facility is accessible, most of the required services are not available (Malawi Government, 1993). Due to financial constraints, most health facilities do not have the capacity to successfully provide satisfactory services because of lack of drugs, medical personnel and laboratory equipment among other things. This has resulted in most of the urban and rural population relying on traditional medicine for solving primary health care problems.

Most of Malawi's traditional medicine originates from plants because they are many and readily accessible. There are 6,174 plant species (69 of which are endemic), 4,000 animal species; between 500 and 1,000 fish species (Environmental Affairs Department, 1998). Using Mulanje District as a case study, the present study investigated medicinal plants that women useas contraceptives and for pregnancy-related cases.

METHODOLOGY

Study area

The study took place in Mulanje District, south of Malawi (Figure 1a). The study took place in Traditional Authorities (T.A.) Nkanda and Mabuka (Figures 1b and 1c).

In the former, the district hospital is far away while in the latter, it is closer. Four focus group discussions were conducted with people who had experience in maternal and child health care. These included local communities,

Traditional Medical Practitioners, Traditional Birth Attendants, and Maternal and Child Health staff of Mulanje District Hospital, Mulanje Mission Hospital, and Lauderdale, Sayama and Chambe health centres.

Data collection

Questionnaire interviews were also conducted. All Traditional Birth Attendants and Traditional Medical Practitioners in the study sites were purposively sampled. For the general population, every adult found during the questionnaire administration period was interviewed. A total of two hundred and two respondents (142 females and 60 males) were interviewed. 12 key informants were consulted. This involved all people and institutions known to work in maternal and child health related issues.

Data analysis

Data from focus group discussions and key informants was analysed manually by extracting themes and attaching them to similar information obtained from questionnaire interviews. Information from questionnaires was analysed using Statistical Package for Social Scientists (SPSS) computer programme. The data was coded, entered into SPSS and analysed using descriptive statistics to calculate frequencies (numbers and percentages) and make cross tabulations.

Ethics and participants consent

The study was authorised by Mulanje District Commissioner. Permission to interview hospital staff was obtained from the District Health Officer. At village level, the Traditional Authorities, Group Village Headmen and Village Headmen authorised the study. The participants gave verbal consent prior to the interviews.

RESULTS AND DISCUSSION

Pregnant women often use medicinal plants during pregnancy and child birth in many cultures in an effort to maintain good health. Although the use of medicinal plants in Africa has been in existence for thousands of years, there is not much documentation. As a result, the pharmacopoeas are in people's minds and the knowledge is passed orally (Kokwaro, 1995). Therefore, there is need for the information to be documented before it gets lost (Balick and Cox, 1996).

However, in developed countries and some developing countries, the practices are well documented (Cotton, 1996). For example, a study of Hamachali women, by Neetu Sharma in India observed that for curing pregnancy-related discomforts (like constipation, abdominal pain, colds and cough), locally available plant species such as *Terminalia chebula* Tetz., *Terminalia bellirica* Roxb., *Emblica officinalis* Gaertn., *Trchyspermum ammi* Sprague, *Methantha arvensis* DC, *Elattaria cardomomum* L., *Viola odorata* L. and *Glycyrrhiza glabra* L. were commonly used (Indian Journal of Traditional Knowledge, 2008). Morgenstern K (2002) study (http://www.sacredearth.com/ethnobotany/remedies/childbirth2.php) on herbs for pregnancy and child birth, indicated that to induce stronger contractions during child birth in some cultures, herbs such as Squaw Vine (*Mitchella repens*), Beth Root (*Trillium erectum*), Golden Seal (*Hydrastis canadensis*) and Blue Cohosh (*Caulophyllum thalictroides*) may be given. When there is excessive bleeding after delivery an internal astringent, such as a tea made from Shepherds Purse (*Capsella bursa-pastoris*) and Ladies Mantle (*Alchemilla vulgaris*) is used to control the bleeding. Beth Root (*Trillium erectum*), Yarrow (*Achillea millefolium*) and Oak bark (*Quercus robur*), when taken as a tea, help to reduce the dilated womb to its normal size and shape (http://www.sacredearth.com/ethnobotany/remedies/childbirth2.php).

While some of the medicinal plant preparations used may address maternal health needs, health hazards of most plants are not known.

In the present study, the respondents demonstrated vast knowledge in ethno-medicine. Numerous plant species were reported to be medicines for child spacing, pregnancy-related cases and for curing general illnesses.

Contraceptives

With respect to child spacing, five plant species were documented (Table 1). Two species belonged to Fabaceae family while the rest were each from Cucurbitaceae, Guttiferae and Myrtaceae. Two were trees whereas the rest were herbs, shrubs and climbers. The mostly used parts were barks (for three species). The rest were roots, stem and seed.

Pregnancy-related cases

Twenty one plant species were reported to be used for pregnancy-related cases. The majority (11) of the species used to treat pregnancy-related cases belonged to Fabaceae family. Stomach pains and miscarriage comprised the most commonly mentioned cases. Roots were the most widely used parts (Table 2).

The study shows that people rely heavily on plants for medicine. This poses a conservation challenge because without sustainable harvesting, survival of most plant species is at stake.

In terms of application method, the most widely used methods was drinking of infusion (mentioned 12 times) and adding to porridge (8 times). Interestingly, there were other application methods whose validity is questionable. For example, putting the plant parts on the roof or untying of a knot by the woman. Wearing of the plant parts around the waist was also mentioned and it was specifically used in preventing miscarriage. Probably such methods are mere cultural beliefs.

Table 1. Plant species used as contraceptives.

Species name			Habit	Part used	Preparation and application method
Family	**Botanical**	**Local**			
Cucurbitaceae	*Lagenaria sphaerica* (Sond.) Naud., (*Sphaerosicyos sphaericus* (E.Mey.) Hook.f)	Sopa	Climber	Roots	Wear around waist
Guttiferae	*Psorospermum febrifugum* Spach, (P. albidum Engl.).)	Mdima	Shrub	Bark	Wear around waist
Myrtaceae	*Psidium guajava*	Gwafa	Tree	Stem	Wear around waist
Fabaceae (sub-family Papilionoideae)	*Vigna subterranean*	Nzama	Herb	Seed	Drink infusion after delivery and dispose of remnant with placenta
					Drink raw seeds with water
				Seeds	Swallow seeds.
	Ormocarpum kirkii S.Moore	Nsungachuma	Tree	Bark	Drink infusion

Table 2. Some plant species used for pregnancy-related cases.

Species name			Use	Part (s) used	Preparation and application method
Family	**Botanical**	**Local**			
Anacardiaceae	*Mangifera indica* L.	Mango	Cure stomach pains	Stem bark	Soak in water and drink infusion
Fabaceae (Sub-family *Caeasalpinoideae*)	*Bauhinia petersiana* Bolle	Muimiko	Prevent miscarriage	Stem bark	Wear around waist
Euphorbiaceae	*Ricinus communis* L.	Nsatsi	Cure for post maturity	Roots and leaves	Soak in water and drink infusion
Fabaceae (sub-family *Papilionoideae)*	*Dalbergia melanoxylon* Guill. and Perr.	Phingo	Avoid miscarriage	Seeds	Wear around waist
Icacinaceae	*Apodytes dimidiata* E. Mey. ex. Arn	Mzaza	Post maturity cure	Leaves and roots	Pound, add water and drink infusion
Moraceae	*Ficus kirkii* Hutch.	Kachere	Damage in the stomach after delivery	Bark	Pound, cook in water and add to porridge
Papilionaceae	*Dalbergia nitidula Welw. ex Bak.*	Nansula	Infertility	Roots	Boil in water and drink infusion

Table 2. Contd.

Caesalpinaceae	*Bauhinia thonningii* Schum	Chitimbe / muuwa	Post maturity	Stem	Tie a knot, let the woman untie it using teeth
Menispermaceae	*Cissampelos* sp.	Mwanamphepo	Pseudo pregnancy	Tuber	Grind, squeeze and drink the part of the fluid. Add remnant to cooked porridge
Verbenaceae	*Vitex doniana* Sweet	Ntonongoli	Stomach pains (associated with miscarriage)	Leaves	Add to porridge
Vitaceae	*Cissus integrifolia* (Bak.) Planch	*Mwanamphepo wamng'ono*	Swollen legs	Roots	Mix with hot water and make a hot compress over the leg
Vitaceae	*Cissus* sp.	Mwanamphepo	Avoid miscarriage	Roots	Pound, make an infusion and drink
				Roots	Boil in water and drink infusion
Celastraceae	*Hippocratea parviflora* N.E. Br.	Mulimbiko	Avoid miscarriage	Leaves	Pound, make an infusion and drink
					Pound and put on roof
					Rub and add to porridge
			Cure stomach pains	Roots	Boil and drink infusion

General ailments

Thirty medicinal plant species were also documented to be used in treating general diseases that affect pregnant women (Table 3). The diseases were: malaria, stomach-ache, pneumonia, anaemia and cough. These diseases were among the most highly prevalent diseases in the study area. Coincidentally, they are also among the most highly prevalent diseases country-wide. Despite the high prevalence of malaria, only two plant species were found to be used. This scenario could be due to the fact that people normally buy malarial tablets from the grocery shops or market vendors. Stomach-ache (the second highest prevalent) had a wide variety of plant species (17) that were used to treat it.

The most widely used plant parts were roots (mentioned 19 times) followed by bark (16) and leaves (15). The use of barks and roots is detrimental to the survival of the plant hence sustainable utilization is highly important. In terms of application method, drinking of infusion was by far, the most widely used method (mentioned 38 times). Adding to porridge, smelling/ inhaling and using as a warm compress was the other application methods that were documented. These were mentioned 9 times, twice and once respectively.

Conclusion

This study has shown that despite most of the people having low or no formal education, they have vast knowledge of medicinal plants. However, there is lack of literature on ethno-medicine in Malawi. There is need for more studies to be undertaken to document such information before it gets lost. This underscores the need for further research to assess the properties of the medicinal plants documented in this study particularly those used to treat diseases of national importance e.g. malaria and stomach-ache. Considering that medicinal plants are alleged to contribute to uterine ruptures, further

Table 3. Some plant species used to treat general illnesses prevalent among pregnant women.

Disease		Species name			Part(s) used	Preparation and application method
Medical terminology	**Local name**	**Family**	**Botanical**	**Local**		
Anaemia	Kusowa magazi	*Meliaceae*	*Azedaracht indica*	Neem	Leaves	Add water and drink infusion
Cough	Chifuwa	*Mimosaceae*	*Abrus precatorious* L.	Musiye apite	Roots	Grind, add water and drink infusion
Diarrhoea	M'mimba motsekula	*Euphorbiaceae*	*Hymenocardia acida* Tul.	Therutheru	Roots	Soak in water and drink infusion
Malaria	Malungo	*Menispermaceae*	*Jateorrhiza bukobensis* Gilg.	Yellow fever / n'joka	Tuber	Soak in water and drink infusion
Pneumonia	Chibayo	*Chrysobalanaceae*	*Parinari excelsa Sabine*	Muula	Root	Warm on fire and make a compress on ribs.
Stomach-ache	M'mimba	*Rubiaceae*	*Breonadia microcephala* (Del.) Hiern	Chonya	Bark	Soak in water and drink infusion
		Moraceae	*Ficus capensis* Thunb.	Nankuyu	Bark	Pound and add powder in porridge
		Musaceae	*Musa paradisiaca* L.	Nthochi (nthanzi)	Fruits	Wear around waist
					Bark	
		Anacardiaceae	*Mangifera indica* L.	Mango	Bark	Soak in water and drink infusion
						Soak in water and drink infusion
						Boil in water and drink infusion
Trichomonas vaginalis	Mauka / Libale / Likango	*Vitaceae*	*Cissus zombensis* Gilg and Brandt	Mwanamphepo	Roots	Soak in water and drink concoction
		Meliaceae	*Ekebergia benguelensis* Welw. ex DC	Mulepa	Roots	Cook and drink infusion
		Moraceae	*Ficus capensis* Thunb.	Nkuyu	Bark	Soak in water and drink infusion
		Papilionaceae	*Ormocarpum kirkii* S. Moore	Nsungachuma	Leaves Leaves and stem	Boil and drink infusion

studies should be done to determine whether these plant species are safe for consumption by pregnant women. There is also need to verify how effective some application methods such as wearing plant species around the waist and putting them on the roof.

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