

*Full Length Research Paper*

# Medicinal plants used to induce labour and traditional techniques used in determination of onset of labour in pregnant women in Malawi: A case study of Mulanje District

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Malawi has one of the worst maternal mortality rates in the world with 984 maternal deaths per 100,000 live births. Modern healthcare facilities are not readily accessible hence substantial child deliveries are home-based. The study investigated how labour onset is determined in a village set up, how labour is hastened and medicinal plants used to hasten labour. Focus group discussions, key informants, participant observations and questionnaire interviews were employed. Twenty-seven signs used in ascertaining labour onset were documented. Vaginal water discharge was the most commonly mentioned. 94% of the respondents mentioned of eating maize porridge to hasten labour while the rest stated of drinking tea. The commonly used traditional pitocin was a group of plants locally called *Mwanamphepo* in Vitaceae family. The group is diverse and comprise genera like *Ampelocissus*, *Cyphostemma* and *Cissus*. The concoctions are put in porridge when the woman is due for delivery. Since labour-hastening is alleged to be one of the lead causes of maternal mortality in Malawi, detailed studies are required to investigate whether *Mwanamphepo* plants are dangerous to health. Other methods of hastening labour and their implications on pregnancy outcome should be investigated so as to help women make informed choices when deciding to use labour hastening techniques.

**Key words:** Maternal/child health, home-based healthcare, pregnancy/ labour/delivery, traditional birth attendants.

## INTRODUCTION

Maternal mortality is one of the main challenges facing developing countries. Due to the grave extent of maternal mortality, one of the United Nation's Millennium Development Goals is to reduce maternal mortality ratio by three quarters by 2015 (The Health Foundation Consortium, 2007; Reducing maternal death rates in Malawi. Unpublished progress report, Lilongwe). 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). Malawi's maternal mortality rate is high considering that the world average is 400 per 100,000 while for developing and developed regions is 450 per 100,000 and 9 per 100,000 respectively (WHO, 2007).

Socio-economic status of women and children is a priority on Malawi government's developmental agenda. However, mortality rates still remain high during childbirth. According to the United Nations, little has been

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done to tackle Malawi's alarming maternal mortality rate (Moyo, 2007). Some of the causes for maternal mortality include obstructed labour, prepartum and postpartum haemorrhage and uterus ruptures (Maliwichi, 2002). Therefore, there are efforts to improve the health status of mothers through the Safe Motherhood Programme. The programme is aimed at reducing 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. However, conventional health facilities are not readily accessible.

Reasons include lack of adequate drugs, medical personnel and laboratory equipment. People also complain that the hospital staffs are rude (Maliwichi-Nyirenda and Maliwichi, 2009). Although private hospitals provide better and reliable services, their charges are exorbitant. Considering that 65% of the country's population lives in poverty (National Economic Council et al., 2000), most people cannot afford services provided by the private hospitals. Hence most of the rural people resort to home-based remedies.

Home-based child deliveries are faced with challenges. One of the challenges is poor timing of when child delivery is due. This results in pregnant women being caught unaware of the pending birth. In some instances, the pregnant women seek child delivery assistance when things have already gone out of hand. For instance, in Malawi because many rural women do not attend antenatal check ups, they do not know the expected date of delivery.

As a result, they seek assistance after labour has already commenced. Coupled with irregular rural transport system, it is difficult for the pregnant woman to reach child delivery service point on time. Also, home-based deliveries are alleged to contribute to the high maternal mortality rates that Malawi is experiencing because of the medicinal plants that are consumed particularly for hastening labour. The plants are believed to cause uterine ruptures, one of the major causes of maternal mortality in Malawi.

Despite a substantial number of deliveries being home-based, there is lack of information on how the deliveries are done. Besides, the medicinal plants that are used in hastening labour have not been investigated. The present study investigated how villagers determine onset of labour and techniques and medicinal plants they use to hasten labour.

Such information is necessary as it shows the capacity of the rural people to handle labour. Information on labour hastening techniques and medicinal plants provides baseline information on which further studies can be done to ascertain the medicinal properties of the plants and whether they are safe for consumption or not. The information generated will also facilitate institution of deliberate programmes that will create awareness among women on reliable techniques thus ensuring successful child delivery.

## MATERIALS AND METHODS

### Study area

The study took place in Mulanje District, in South of Malawi (Figure 1a). The district borders Mozambique and it is dominated by tea estates, one of the major foreign exchange earners for Malawi after tobacco. People of Mulanje earn their living from subsistence farming and working in tea and coffee estates. The study was undertaken in Traditional Authorities (T.A.) Mabuka and Nkanda. In T.A. Mabuka the following villages were visited: Chipoka, Kanyandula, Kapesi, Likhomo, Mphuchila, Ngwezu and Sazola (Figure 1b). John, Kalima, Mbewa, Mwanakhu, Mwanero, Nakhonyo and Nankwakwala villages were visited in T.A. Nkanda (Figure 1c). T.A. Nkanda was far away from the district referral hospital while in T.A. Mabuka, it was closer.

### Methodology

The study was carried out from November 1999 to December 2001. The information collected is still applicable till date because the situation has not changed. Four focus group discussions were done with 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. Experts in maternal and child health care participated in the focus group discussions.

All Traditional Birth Attendants and Traditional Medical Practitioners in the study sites were sampled during questionnaire interviews. For the general population, every adult available during the questionnaire administration period was interviewed. The interviewees comprised 142 females and 60 males. In terms of key informants, all people and institutions known to work in relation to maternal and child health were purposively targeted. In total, 12 key informants were consulted.

Qualitative data 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

Permission to study in Mulanje District was granted by the District Commissioner. The District Health Officer gave permission for the hospital staff to be interviewed. Traditional authorities, group village headmen and village headmen authorised the study at village level. The participants gave verbal consent prior to the interviews.

## RESULTS

### Indicators of labour onset

Twenty-seven signs were reportedly used in determining the on-set of labour. 36 out of the 147 respondents (that is, 24.5%) who were aware of the signs determine the onset of labour if the woman is discharging water through her vagina.

Frequent abdominal pains was used by 19 respondents (12.9%), painful back by 12 respondents (8.2%), 10

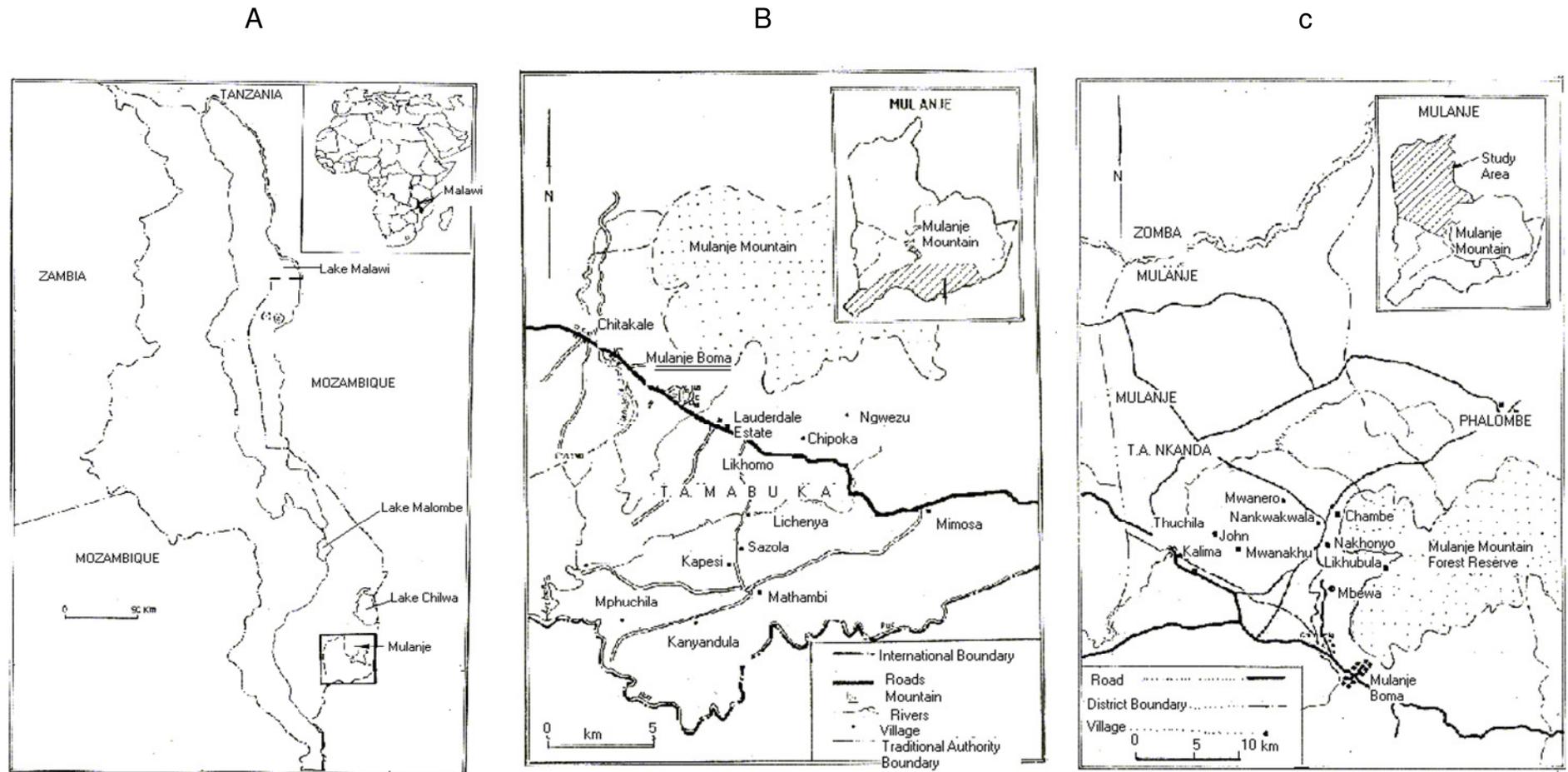


Figure 1. Map of study area showing location of (a) Mulanje district in Malawi (b) Traditional Authority Mabuka and (c) Traditional Authority Nkanda.

respondents used vaginal discharge (locally called 'ukazi'), 9 respondents (6.1%) used blood discharge, painful leg(s) by 7 respondents (4.8%), descending stomach and painful stomach by 6 respondents (4.1%), each. Other signs included vaginal dilation, restlessness, failure to eat and

vigorous foetal kicks (Table 1).

**Techniques for hastening labour**

The study found that when labour was slow,

people had techniques and medicinal plants which they used in order to hasten it. Eating maize porridge was found to be the mostly used technique. This was stated by 16 out of the 17 respondents who answered this question (that is, 94%). One respondent (that is, 5.8%) reported use of tea to

**Table 1.** Indications of labour onset.

| Indicator  | Frequency (N = 147)   |                  |
|--|-----------------------|------------------|
|  | Number of respondents | % of respondents |
| Water discharge                                  | 36                    | 24.5             |
| Abdominal pains (frequent)                       | 25                    | 17.0             |
| Painful back                                     | 12                    | 8.2              |
| Slippery vaginal discharge ( <i>ukazi</i> )      | 10                    | 6.8              |
| Bloody vaginal discharge                         | 9                     | 6.1              |
| Painful leg / s                                  | 7                     | 4.8              |
| Descending stomach                               | 6                     | 4.1              |
| Dilation of vagina                               | 5                     | 3.4              |
| Vigorous baby kicks                              | 5                     | 3.4              |
| Breaking up of something inside the stomach      | 4                     | 2.7              |
| Shivering like somebody suffering from Malaria   | 4                     | 2.7              |
| Urinating frequently                             | 3                     | 2.0              |
| Painful vagina                                   | 3                     | 2.0              |
| Failure to walk (paralysis of one leg)           | 2                     | 1.4              |
| Stiffness of legs and back                       | 2                     | 1.4              |
| Woman becomes very strong                        | 2                     | 1.4              |
| Defecating frequently                            | 2                     | 1.4              |
| Appearance of hair from vagina                   | 1                     | 0.7              |
| Expected due date                                | 1                     | 0.7              |
| Feeling heavy on vaginal part and legs           | 1                     | 0.7              |
| Lack of appetite                                 | 1                     | 0.7              |
| Painful navel                                    | 1                     | 0.7              |
| Quick breathing                                  | 1                     | 0.7              |
| Restlessness                                     | 1                     | 0.7              |
| Discomfort when sleeping on the sides            | 1                     | 0.7              |
| Using a scale to determine the expected due date | 1                     | 0.7              |
| Woman becoming inactive                          | 1                     | 0.7              |
| Total  | 147                   | 100.3            |

warm the stomach.

### Medicinal plant preparations used to hasten labour

Four plant species were reported to be used for hastening labour. The Vitaceae family (*Cissus* sp.) were widely used. They were used for various cases such as curing stomach pains and miscarriage prevention. Interestingly, the plants that were used for hastening labour were also used for abortion. The study found that *Cissus* species belong to a group of plants locally called 'Mwanamphepo', a commonly used traditional pitocin. These are allegedly put in porridge when the woman is due for delivery. Mwanamphepo is categorized into two main groups. These are locally called Mwanamphepo wamkulu (big group) and Mwanamphepo wamng'ono (small group). The big group is regarded dangerous if consumed by pregnant women while the small group is not considered dangerous. The small group can

therefore be taken anytime without causing any problems. It was also found that some people take Mwanamphepo belonging to the big group in order to abort. On the other hand, some species within the big group are used to treat infertility. Mwanamphepo plants, considered very important, are numerous. For instance, there is Mwanamphepo Wamagazi (bloody Mwanamphepo), Woning'ina (itchy Mwanamphepo), Wamumtengo (epiphytic Mwanamphepo), and Wantawaleza (rainbow Mwanamphepo). The bloody type is scientifically called *Ampelocissus obtusata*. It is red and when cut, the fluid that comes resembles blood. Itchy Mwanamphepo is scientifically called *Cyphostemma hildebrandtii* and it is itchy when touched. The epiphytic type mostly belongs to Orchidaceae (Orchids) family while the rainbow type comprises *Cissus aristolochiifolia*. *C. aristolochiifolia* is believed to grow in a place where the rainbow originates. The epiphytic type is the only one whose leaves are used. For the other types of Mwanamphepo, roots are used while leaves are believed

to be ineffective.

## DISCUSSION

An important component in the effort to reduce the health risks of mothers and children is to increase the proportion of babies that are delivered in facilities where skilled attendances are available. Services in a health facility include trained health workers, appropriate supplies, equipment to identify and manage complications in a timely manner, and maintenance of hygienic conditions to prevent infections (Phoya and Kang'oma, 2009). In the local Chichewa language of Malawi, the words used to describe pregnant women are 'pakati', meaning 'between life and death' and 'matenda', meaning 'sick'. The leading maternal health problems identified among a population of 3171 women across 172 women's groups in Mchinji district of Malawi were anaemia (present in 87% of the groups), malaria (80%), retained placenta (77%) and obstructed labor (76%) (UCL, 1999 - 2010).

In the 2004 Malawi Demographic and Health Survey (MDHS), Government-run health facilities were used for 42% of the births, while private facilities managed 15% of births. A considerable proportion of births took place at home, either in the respondent's home (29%) or the traditional birth attendant (TBA)'s home (12%) (Phoya and Kang'oma, 2009).

Lack of health facilities for pregnant women in both rural and urban areas of Malawi, contribute to limited accessibility to the few facilities available. Education level, socio-economic status, place of residence and age are major factors influencing access to health facilities or TBAs by pregnant women in Malawi and that; (1) Children born to women less than 34 years of age and first-order births are more likely to be delivered in a health facility than other children. (2) The majority of births in urban areas, births to women with secondary or higher education and to women in the highest wealth quintile occur in a health facility. (3) The proportion of births delivered in a health facility varies from less than 50% in Kasungu and Salima (district) (43 and 46%, respectively) to 79% in Blantyre (commercial city). (4) The assistance of a TBA during delivery is most common in Salima (23%) and least common in Mangochi (4%) and factors related to limited availability of hospitals and people's attitudes may be contributing factors (Phoya and Kang'oma, 2009).

This study documented several signs that villagers use in determining onset of labour and medicinal plants used to induce labour. The most commonly known sign was discharge of water from the vagina. This sign is also used in modern hospitals. However, although this sign is commonly used, other women do not experience it. Therefore, it can be misleading if a woman does not break her waters.

In terms of hastening labour, maize porridge was

favoured. This is because people believe that the porridge warms the stomach. The warmth makes the baby uncomfortable to remain inside hence comes out. The other reason is that the woman gains strength by eating the porridge thus enabling her to push harder. Despite the people employing labour enhancing techniques, hastening of labour is alleged to be detrimental.

Ministry of Health and Population alleges that it is the main cause of uterus ruptures which are the key sources of maternal mortality.

### Medicinal plants used to induce labour during childbirth elsewhere

Traditional medicine usage for maternal ailments is common in most rural African villages. In Uganda women and children form the bulk of the people reliant on herbal medicine. Health surveys have revealed that over 80% of childbirths are conducted at home with the use of herbal remedies in Bushenyi district. In a study by Kamatenesi-Mugisha and Oryem-Origaa (2007), seventy-five plants used to induce labour were recorded. Kamatenesi-Mugisha et al. (2002) reported that in rural Western Uganda, close to 80% of pregnant women deliver at home and are helped to deliver mainly by traditional birth attendants, mothers-in-law, mothers and friends. To complete the process of childbirth, herbal medicines are widely used to induce labour, removal of retained placenta and management of post-partum bleeding by almost all women that were interviewed. These findings reveal that there is high dependence on herbal medicines and trust in traditional birth attendants in rural areas where there is lack of modern maternal facilities and services.

Seventy-five medicinal plant species and one fungus species mainly toadstool mushrooms in the family Tricholomataceae were documented as being used in inducing labour during childbirth in Uganda. The commonest plant parts used were leaves (85.3%) in combination with other plant parts (Kamatenesi-Mugisha et al., 2002)

### Medicinal plant preparations used to hasten labour in Malawi

The present study found that the hospital staff strongly felt that most pregnant women drink medicinal plant concoctions as pitocin. This is used to enhance labour. This perception conforms to finding of this study which reveals that plants are used as pitocin. The hospitals also give pitocin intramuscularly to pregnant women to help sustain the tone of the uterus during third stage of labour (Ministry of Health and Population, 2000).

Traditional pitocin (locally known as '*Mwanamphepo*') comprises of numerous plant species. Carney (2000)

found that most of *Mwanamphepo* is in *Vitaceae* family. He identified seven plant species namely *Diospyros zombensis*, *Bauhinia thonningii*, *Cissus cornifolia*, *C. integrifolia*, *C. quadrangularis* and *C. rotundifolia* to be used in curing various ailments. Morris and Msonthi (1991) found that *Vitaceae* family is an extremely important family from which at least forty species are used medicinally.

This study found that in some hospitals like Mulanje Mission, vendors sell *Mwanamphepo* concoctions at the hospital's kitchen. One nurse acknowledged seeing pregnant women being given porridge that looks greenish showing that medicinal plants were added to it. The hospital staff felt that use of *Mwanamphepo* was one of the contributing factors towards uterus ruptures. Uterus rupture is alleged to be a very serious case because the woman develops internal bleeding which is only treated at the theatre (Midwife, Mulanje District Hospital, personal communication, 2000). It was further established that these complications lead to death of the baby during labour (Fresh Still Birth). Sometimes the baby dies long before labour and it becomes rotten and its skin scotched (Macerated Still Birth). In almost all cases, delivery is by Caesarean Section. At times, the complications lead to death of the mother

## Conclusion

The study has shown that villagers have expertise of determining labour onset and hastening labour. The study has also documented plant species that are used to hasten labour. Detailed studies are required to document the existing knowledge countrywide. Since in the past, use of plants for hastening labour has been an allegation only, this study is ground-breaking. However, further investigations are needed to determine the effectiveness of the plants that have been documented in this study. Investigations are also needed to determine whether the plant species this study has documented are toxic. Information that will be gathered through such studies will help pregnant women and policy-makers make evidence-based decisions. Considering that same plant species are used to hasten labour and as abortifacients, there is need for further research to understand what dosages are suitable for the plant preparation to be safe for hastening labour and at what dosage is it capable for abortion. Such information will help women make informed choices when deciding to use labour hastening plant species.

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