
Medicinal plants used in some gynaecological morbidity ailments in western Uganda

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Abstract

Gynaecological morbidity is one of the most severe conditions under reproductive health. Healthcare providers and planners in Uganda have not taken it seriously among rural communities. This study was carried out mainly to document indigenous knowledge on medicinal plants used by traditional healers in the treatment of some gynaecological morbidity ailments in reproductive healthcare in western Uganda. In addition, the methods of preparation and administration of herbal medicines including the plant parts utilized were established. The research methods used included informal conversations, semi-structured interviews and discussions, and field excursions. The documented conditions under gynaecological morbidity discussed in this paper include excessive-bleeding (hypermenorrhoea), painful menstruation (dysmenorrhoea), irregular menstruation and prolapsed uterus. Fifty-two medicinal plants have been documented as being used in the treatment of these ailments and conditions. Leaves are the most commonly harvested plant parts and the most common growth forms harvested are the herbs 51.9%, followed by trees 25% and shrubs 17.3%. Over 50% of these herbal remedies are harvested from the wild ecosystems. The main methods of herbal remedies preparation were boiling, squeezing and pounding and the medicines are administered orally. The nutritional status of individuals plays a vital role in the well-being and in fighting diseases as some medicinal plants are used as foodstuffs like *Lycopersicon esculentum* Mill., *Mangifera indica* L., *Carica papaya* L., *Cucurbita pepo* L., *Physalis minima* L., *Rumex abyssinicus* Jacq., *Daucus carota* L., *Zingiber officinale* Roscoe and *Ananas comosus* (L.) Merr.

Key words: gynaecological morbidity, herbal medicine, western Uganda

Introduction

Traditional medical practitioners (TMPs) play an important role in the healthcare of thousands of people living in rural areas in western Uganda. There is at least one TMP for every 290 people compared with one western-trained medical doctor for every 10,000 people in urban areas and 50,000 people in rural areas in Uganda (IK Notes, 2003).

Gynaecological morbidity is one of the most severe conditions under reproductive health that has not been taken seriously among rural communities by health care providers and planners in Uganda. Over 70% of the rural women in western Uganda are reported being ill at any one time (Neema, 1999). According to Uganda National Health Policy of 1999, maternal related conditions account for number one cause of death and disease burden followed by malaria and HIV/AIDS (NHP, 1999). The conditions, disorders and ailments under gynaecological morbidity are immense and these burden the majority of the female population. Barton & Wamai (1994) report that the most important barriers to women's healthcare delivery include, distance, healthcare costs, gender inequality, lack of funds and lack of proper transportation to and from the health units. The most prevalent diseases that are associated with gynaecological attributes discussed in this paper include excessive bleeding, painful and irregular menstruation and prolapsed uterus. Medicinal plants used in the management of disorders and ailments that cause gynaecological morbidity are capable of producing good results in women's health and well-being (Pampalona-Rogers, 2000) as some plants like *Carica papaya* have nutritional and medicinal values.

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This study was carried out to document the medicinal plants used by traditional healers in the treatment of some gynaecological morbidity ailments in reproductive health care in western Uganda. In addition, the methods of preparation and administration of herbal medicines including the plant parts utilized have been established. This study is vital in gender equity to basic healthcare provisions and national development through indigenous knowledge (IK) innovations and bio-prospecting.

Methods

The study was carried out in Bushenyi and Kasese districts in western Uganda between January 2000 and March 2003. The sampling sites were mainly in the sub-counties of Kichwamba and Katerera neighbouring Queen Elizabeth Biosphere Reserve and the fishing villages (human settlements) within the biosphere reserve. These fishing villages included, Katwe, Mweya, Katunguru, Hamukungu, Kahendero and Kayanja. The neighbouring Parishes included Katolhu and Nyakatonzi in Kasese District and Kichwamba and Katerera sub-counties in Bushenyi District. Another village that was sampled was Kitagata sub-county in Bushenyi district. Queen Elizabeth Biosphere Reserve is found in western Uganda. It was established in April 1952 as Queen Elizabeth National Park and designated a Biosphere Reserve by UNESCO in November 1979. It straddles the Equator and is located on the floor of the rift valley. It has several lakes which include Lakes Edward and George and the several salt lakes like Lakes Katwe, Nyamunuka, Muvumuli and Kitagata. It lies astride Latitude: 00°15'S - 00°10'N and Longitude: 29°45' - 30°05'E. Lake George basin is a wetland, internationally recognized as a RAMSAR site. The biosphere reserve is about 2500 km². The biosphere reserve is composed of Kigezi Wildlife Reserve (330 km²), Kyambura Wildlife Reserve (157 km²) and Kibale Forest Corridor (339 km²) which form its buffer in Uganda. The biosphere reserve also consists of Virunga National Park (8090 km²) that is found in the Democratic Republic of Congo. Kasese, Bushenyi, Rukungiri and Kabarole Districts in western Uganda share the biosphere reserve. The ethnic groups represented in the area of study are mainly the Bakonjo, Banyankole, Batooro, Banyaruguru, Baziba, Basongora, Congolese, Baganda, Banyarwanda and the Bakiga. The composition is highly mixed because of the migrants coming in for fishing, salt winning and various businesses and national

park staff all living in and around Queen Elizabeth Biosphere Reserve.

The ethnobotanical data collection methods included visiting traditional healers to document the IK regarding medicinal plants used, gender and socio-cultural aspects. Informal and formal conversations, discussions and semi-structured interviews with them, market surveys and field visits were conducted to generate ethnobotanical data (Martin, 1995). Voucher specimens of medicinal plants used were collected, identified and documented.

The research methods used were mainly those that promoted free sharing of information between the researcher, the herbalists and other people. To reach the TMPs and traditional birth attendants (TBAs), the local authorities (Local Councils), Herbalists Associations in villages and chairpersons of Wildlife Clubs were consulted. The ethnomedical data regarding the diseases treated, medicinal plants used, plant parts used, methods of preparation and administration were collected and analysed.

The informal conversations were held with the specialist resource users and other knowledgeable people on particular ailments. The meeting places were the gardens, women group meetings, at their homes, and any other places convenient to them. Through conversations, the sources of knowledge of the healers on medicinal plants, the medicinal plants used and changes in the availability of medicinal plants were established. Those who were more knowledgeable were later followed up and interviewed further especially the TBAs. Focused discussions were held with them later for formal recording. In some instances, young mothers were visited too. This was done to verify the information gathered and the spread of the IK in reproductive health care among the different reproductive groups.

The people interviewed were mainly the herbalists (both men and women) and TBAs. In this selection to some extent, ethnic groups were recorded where possible because different people use the same plants differently. The time and place of interviews were arranged according to the schedules of the respondent. Depending on where the interviews and discussions were held, recording was done immediately or afterwards or appointments were made for more details in a more convenient place arranged with the respondent.

Field visits and excursions were arranged with the healers for places far from their homesteads or took place concurrently with the interviews and discussions. This was done with individuals or groups depending on where the

Table 1 Medicinal plants used in the treatment of gynaecological morbidity conditions

| Family | Scientific name | Parts used | Growth form | Conservation | Method of preparation | Method of administration | Aliments treated |
|-----------------|--|--------------|-------------|--------------|------------------------------|--------------------------|------------------|
| Acanthaceae | <i>Barleria splendens</i> E.A. Bruce | L | S | C | Squeezing, boiling | Oral | E.B |
| Aloaceae | <i>Aloe vera</i> L. | L | H | C/W | Squeezing, boiling | Oral | E.B, IPM |
| Amaranthaceae | <i>Achyranthes aspera</i> L. var. <i>sicula</i> L. | L | H | W | Squeezing, boiling | Oral | E.B |
| Amaranthaceae | <i>Aerva lanata</i> (L.) Schult. | L | H | W | Squeezing, boiling | Oral | E.B, IPM |
| Amaranthaceae | <i>Cyathula uncinulata</i> (Schrad.) Schinz | L | H | W | Squeezing, boiling | Oral | E.B |
| Anacardiaceae | <i>Mangifera indica</i> L. | L | T | C/W | Squeezing, boiling | Oral | E.B |
| Asparagaceae | <i>Asparagus flagellaris</i> Baker | L | H | W | Squeezing, boiling | Oral | E.B |
| Asteraceae | <i>Bidens pilosa</i> L. | L, SE, R | H | W | Squeezing, boiling | Oral | E.B |
| Asteraceae | <i>Conyza stuedelii</i> A. Rich. | L | H | W | Squeezing, boiling | Oral | E.B |
| Asteraceae | <i>Crassocephalum crepidioides</i> (Benth.) S. Moore | L | H | W | Squeezing, boiling | Oral, sitting in herbs | E.B, PU |
| Asteraceae | <i>Emilia coccinea</i> Sweet | B, L | S | W | Squeezing, boiling | Oral | E.B |
| Asteraceae | <i>Laggera alata</i> (DC.) Oliv. | L | H | W | Squeezing, boiling | Oral, sitting in herbs | E.B, PU |
| Asteraceae | <i>Microglossa pyriformis</i> Kuntze | L, R | H | W | Squeezing, boiling | Oral | E.B |
| Asteraceae | <i>Senecio hadiensis</i> Forssk. | L, R | S | C/W | Squeezing, boiling | Oral | E.B |
| Asteraceae | <i>Tagetes minuta</i> L. | L | H | C/W | Squeezing, boiling | Oral | E.B |
| Asteraceae | <i>Vernonia amygdalina</i> Del. | L, R | S | W | Squeezing, boiling | Oral | IPM |
| Asteraceae | <i>Vernonia lasiopus</i> O. Hoffm. | L, R | H | W | Squeezing, boiling | Oral | E.B |
| Bignoniaceae | <i>Markhamia lutea</i> K. Schum. | B | T | C/W | Squeezing, boiling | Oral | IPM |
| Bromeliaceae | <i>Ananas comosus</i> (L.) Merr. | FR-PE | H | C | Squeezing, boiling | Oral | E.B |
| Caesalpiniaceae | <i>Cassia occidentalis</i> L. | L, R | H | W | Squeezing, boiling | Oral | IPM |
| Canellaceae | <i>Warburgia ugandensis</i> Sprague | B, L, R | T | W | Pounding, squeezing, boiling | Oral | E.B |
| Caricaceae | <i>Carica papaya</i> L. | R, L, FR | T | C/W | Chewing, squeezing, boiling | Oral | E.B |
| Chenopodiaceae | <i>Chenopodium opulifolium</i> DC. | L, B, ST, SE | H | C/W | Pounding, squeezing, boiling | Oral, sitting in herbs | E.B, IPM, PU |
| Convolvulaceae | <i>Ipomoea batatas</i> (L.) Lam. | L, RT | H | C | Squeezing, boiling | Oral | IPM |
| Crassulaceae | <i>Kalanchoe crenata</i> Haw. | L | H | C/W | Squeezing, boiling | Oral | E.B |
| Cucurbitaceae | <i>Cucurbita pepo</i> L. | FR, L, R, SE | H-CL | C | Squeezing, boiling | Oral | E.B |
| Euphorbiaceae | <i>Croton sylvaticus</i> Hochst. | L | T | W | Squeezing, boiling | Oral | E.B |
| Euphorbiaceae | <i>Manihot esculenta</i> Crantz. | L | S | C | Squeezing, boiling | Oral | IPM |
| Fabaceae | <i>Erythrina abyssinica</i> Lam. | L,B,FL | T | W | Squeezing, boiling | Oral | IPM |
| Fabaceae | <i>Indigofera arrecta</i> A. Rich. | L, R | S | W | Squeezing, boiling | Oral, sitting in herbs | E.B, IPM |
| Fabaceae | <i>Pseudarthria hookeri</i> Wight & Arn. | L | S | W | Squeezing, boiling | Oral, sitting in herbs | E.B, IPM, PU |
| Lamiaceae | <i>Leonotis nepetifolia</i> (L.) R. Br. | L | H | W | Squeezing, boiling | Oral | E.B |
| Lamiaceae | <i>Ocimum gratissimum</i> L. | L | H | C/W | Squeezing, boiling | Oral | E.B |
| Lamiaceae | <i>Plectranthus</i> sp. | L | H | C | Squeezing, boiling | Oral | E.B |
| Malvaceae | <i>Gossypium hirsutum</i> L. | R | H | C | Squeezing, boiling | Oral | IPM |
| Malvaceae | <i>Pavonia burchellii</i> (DC.) R.A. Dyer | L | S | W | Squeezing, boiling | Oral | E.B, IPM |
| Moraceae | <i>Ficus natalensis</i> Hochst. | AR, L | T | W | Pounding, squeezing, boiling | Oral | IPM |
| Myrsinaceae | <i>Maesa lanceolata</i> Forssk. | L, B | T | W | Squeezing, boiling | Oral | E.B |

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|---------------|---|------------|------|-----|------------------------------|------|----------|
| Myrtaceae | <i>Eucalyptus citriodora</i> Hook. | L, FR, GUM | T | C | Squeezing, boiling | Oral | E.B, IPM |
| Myrtaceae | <i>Eucalyptus globulus</i> Labill. | L | T | C | Squeezing, boiling | Oral | E.B, IPM |
| Myrtaceae | <i>Eucalyptus grandis</i> W.Hill. | L | T | C | Squeezing, boiling | Oral | E.B, IPM |
| Myrtaceae | <i>Psidium guajava</i> L. | R, L | T | C/W | Squeezing, boiling | Oral | E.B |
| Polygonaceae | <i>Rumex abyssinicus</i> Jacq. | L, ST | H | C/W | Chewing, squeezing, boiling | Oral | E.B |
| Rubiaceae | <i>Rubia cordifolia</i> L. | L, FR | H-CL | W | Squeezing, boiling | Oral | E.B |
| Rutaceae | <i>Zanthoxylum gillettii</i> (De Wild.) Waterm. | B, R | T | W | Pounding, squeezing, boiling | Oral | E.B |
| Solanaceae | <i>Lycopersicon esculentum</i> Mill. | L, R | H | C | Squeezing, boiling | Oral | E.B |
| Solanaceae | <i>Physalis minima</i> L. | L | H | W | Squeezing, boiling | Oral | E.B |
| Solanaceae | <i>Solanum terminale</i> Forssk. | L, R | H | W | Squeezing, boiling | Oral | E.B |
| Umbelliferae | <i>Daucus carota</i> L. | RT | H | C | Squeezing, boiling | Oral | IPM |
| Verbenaceae | <i>Clerodendrum myricoides</i> (Hochst.) Vatke | L | S | W | Squeezing, boiling | Oral | E.B |
| Vitaceae | <i>Cyphostemma adenocaula</i> Wild & Drum. | L, R | H-CL | W | Squeezing, boiling | Oral | E.B, IPM |
| Zingiberaceae | <i>Zingiber officinale</i> Roscoe | RT | H | C | Squeezing, boiling | Oral | IPM |

L, Leaves; RT, root tuber; R, roots; B, bark; ST, stem; FR, fruits; SE, seeds; GUM, gum; EL, flowers; AR, aerial roots; FR-PE, fruits peelings; H, herbs; H-CL, climbing herbs; S, shrubs; T, trees; C, cultivated; W, wild; E.B, excessive bleeding; IPM, irregular and painful menstruation; PU, prolapsed uterus.

herbs were collected. In the shared areas such as the fishing villages, or the multiple use areas, group excursions were conducted. The data collected were to supplement the information on plant names, plant parts used, collection of the herbarium voucher specimens and conservation status of these medicinal plants. The medicinal plants collected were given the voucher numbers and then later identified in the Botany Department Herbarium of Makerere University.

Results

The common conditions under gynaecological morbidity discussed in this paper include, excessive-bleeding (hypermenorrhoea), painful menstruation (dysmenorrhoea), irregular menstruation and prolapsed uterus. About 160 respondents were interviewed.

Fifty-two medicinal plant species distributed among 30 families in 49 genera have been documented for treating gynaecological morbidity conditions in reproductive health care in western Uganda (Table 1). The family Asteraceae has the highest number of plant species (ten) harvested followed by Myrtaceae (four), Amaranthaceae, Lamiaceae, Myrtaceae and Solanaceae each with three species in that order. All other families are represented by two or one species each. Twenty medicinal plant species distributed among fifteen families and eighteen genera have been documented for treating irregular and painful menstruation. Forty-two medicinal plant species distributed among 24 families have been documented for treating excessive bleeding. Four medicinal plant species were recorded for being used in the treatment of prolapsed uterus disease or disorder and the herbal remedies were from the family Asteraceae, Chenopodiaceae and Fabaceae.

The wild harvested medicinal plants constitute 53.8% (28), the cultivated 25% (13) and the partially cultivated and domesticated constituted 21.2% (11). Leaves are the most commonly harvested plant parts, followed by roots and bark. From *Cucurbita pepo*, four different plant parts, namely fruits, leaves, roots and seeds are harvested for use in the treatment of various conditions. In the case of *C. papaya*, *Warburgia ugandensis*, *Chenopodium opulifolium*, *Erythrina abyssinica* and *Eucalyptus citriodora* three different plant parts each are used as herbal remedies.

The most common growth form used are herbs 51.9% (27), followed by trees 25% (thirteen), shrubs 17.3% (nine) and climbing herbs 5.8% (three). The most common methods of herbal preparation were boiling, squeezing and

pounding. The most common method of herbal administration was mainly oral 90.4% (47) and those for sitting in herbs add up to 9.6% (five). The herbal remedies used in treating irregular and painful menstruation are drunk for several days before and during menstruation to reduce the severity of the condition. The method of herbal administration for treating prolapsed uterus is sitting in the medicine in a basin for some hours each day until the patient is healed.

Only few plants especially the bark and roots of *W. ugandensis*, *Zanthoxylum gillettii*, *C. opulifolium* and *Ficus natalensis* were pounded before boiling. Some plant parts such as the leaves of *Rumex abyssinicus* and *C. papaya* were chewed. The plant parts of *Ipomoea batatas* and *Daucus carota* were cooked and eaten as food.

Fourteen plant species (26.9%) double as food and medicinal plants. These food plants are, *C. pepo*, *Ananas comosus*, *Physalis minima*, *Mangifera indica*, *Manihot esculenta*, *Rubia cordifolia*, *Lycopersicon esculentum*, *Cyphostemma adenocaulis*, *I. batatas*, *R. abyssinicus*, *Psidium guajava*, *C. papaya*, *D. carota* and *Zingiber officinale*. Thus, the nutritional status of individuals play a vital role in well-being and fighting diseases. The screened medicinal plants with antimicrobial activities included *Microglossa pyrifolia*, *Vernonia amygdalina* and *W. ugandensis*.

Discussion

Depending on the structure or growth form of the medicinal plant, the plant parts used vary from species to species. Leaves are the most commonly harvested parts among other plant parts due to their easy accessibility and availability annually. For the trees and shrubs the bark and roots are the most utilized. Kokwaro (1993) reported that leaves of herbaceous plants are the most widely used when compared with trees. His findings are also similar to the rare utility of flowers, fruits, latex and inflorescence in western Uganda.

The methods employed in preparation of herbal medicines before being given to the patients were found to be common to most medicinal plants. The most common methods were boiling and squeezing for most of the medicines used in reproductive health care. Boiling and squeezing are believed to be the efficient methods of extracting the active agent from the plant. However, boiling is preferred because of the added advantage of preserving the medicine for relatively longer duration and for destroying harmful organisms on plants when

compared with squeezing. The hygiene of herbal remedies prepared locally is catered for by boiling. Pounding is mainly for the bark, roots and leaves before boiling the medicines.

The long list of medicinal plants used in excessive bleeding could be indicative of the frequency of the ailment, constant utilization and constant search for the cure of these diseases. The long lists of herbal remedies may also mean that the information is widely used, thus widespread in the population. Also, the large variety of plants gives choices or options to choose from and possibilities of easy accessibility in obtaining effective medicine. On the other hand, a few herbal remedies may imply lack of cure or solutions to some ailments prevalent in the communities such as prolapsed uterus or there is some kind of specialization among the traditional healers treating some of these ailments. Where there are a few varieties of medicinal species for a condition, there is a danger that treatment may not be possible because of inaccessibility.

Over 70% of the medicinal plants used in gynaecological morbidity are harvested from natural habitats compared with about 25% that are cultivated. Some plants such as *W. ugandensis* have wide application and multiple uses. The utility of such plants requires sustainable methods of harvesting that may not warrant species destruction and requires further *ex situ* biodiversity conservation strategies (Williams, Davis & Cheyne, 2003).

In some plant species, different plant parts are used as sources of medicine. For instance, from *C. pepo*, four different parts namely the leaves, seeds, fruits and roots are used, implying that the plant can be harvested throughout the year. Other plants such as *W. ugandensis* and *E. abyssinica* three different plant parts are harvested. Such plants can be harvested anytime irrespective of their phenology and can be used in many forms. The conservation strategies can focus on harvesting of less damaging plant parts like the leaves instead of bark and roots. The plant species with one or two plant parts harvested, have their utility limited by seasons and can be easily damaged if the harvested plant parts are roots or stem bark.

Oral administration of plant medicines as tea, beverages or food was the most common method. Most of these methods of administration of herbal medicines are common in traditional medicine dispensing in developing countries. Similar methods of administration were reported elsewhere (Kokwaro, 1993; Sofowora, 2002; Gurib-Fakim, 2003).

The use of incantations and objects in traditional medicine is a part of social, cultural and religious heritage in different countries (WHO, 1976; Makhubu, 1978; WHO, 1991; Kokwaro, 1993; Sofowora, 1993, 2002). Herbal medicine is based on the IK of people and is part of their culture and the socio-environment (IK Notes, 2003) that determines the way herbal medicine is administered especially with myths, spiritualism and incantations. Special attention is needed to document the traditional beliefs in conserving the genetic heritage and this is in accordance with the Convention on biological diversity (Glowka *et al.*, 1994; Williams *et al.*, 2003).

The gynaecological morbidity situation in western Uganda is important as indicated by the various ailments and conditions involved such as painful uterus, excessive bleeding, irregular and painful menstruation. The respondents claimed that modern contraceptives, abortions, over-engagement in sex at an early age, sexually transmitted diseases, early child bearing, overworking and fatigue, sexual activities during menstruation, too many and frequent child-births, poor nutritional status are among the causes of gynaecological morbidity in western Uganda. The high number of conditions and herbal remedies used in the management of gynaecological morbidity may be related to the high prevalence rates.

Some medicinal plants used are foodstuffs. The use of some foodstuffs as plant drugs such as *C. papaya*, shows their intrinsic value in human health care. For instance, *C. papaya*, contains the enzyme papain (Evans, 2002) that is good for digestive disorders and is used in many pharmaceutical preparations (Pamplona-Roger, 2000). The pawpaw fruit is rich in vitamins A and C, which are good for normalizing the functions of the body organs (Pamplona-Rogers, 2000). A plant like *Aloe vera* is a good laxative and plays a big role in menstrual regulation. Aloe products are useful as anti-inflammatory, anticancer, antidiabetic, antimicrobial and antiulcers agents (Evans, 2002). Pamplona-Rogers (2000), reported that the usage of natural medicine can alleviate painful menstruation (dysmenorrhoea), balance the menstrual cycle (irregular menstruation) and reduce haemorrhaging or excessive-bleeding (hypermenorrhoea). Some herbs help in hormonal balance, leucorrhoea (vaginal irrigation), and some herbs act successfully against infections of the vagina and the neck of the uterus. Thus, medicinal plants used in the management of disorders and ailments that cause gynaecological morbidity are capable of producing good results

in women's health and well-being (Pamplona-Rogers, 2000) since some plants like *C. papaya* have nutritional and medicinal values.

The African culture is deeply rooted in the male-headed households. Ntozi (1995) reported that men showed higher preference for boys to girls. The giving birth to girls is perceived as a curse to the clan. The heirs are mainly males, who are supposed to continue the clan lineage and inherit the family property. In the instances of having children of one gender particularly girls, the couples continue childbearing in search of the desired gender. This continued childbearing impacts on the health status of the mother and this promotes the manifestation of some gynaecological ailments such as prolapsed uterus.

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