Ethnobotanical assessment of plants used to aid parturition in Abuja, Nigeria

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Abstract

Medicinal plants used to aid parturition in many parts of Nigeria are poorly described, though herbal remedies used to aid parturition in human and animal have long been recognized as one of the oldest form of remedies. The aim of this study was to identify native medicinal plants, their uses, methods of preparation and evaluation of their side effects in Federal Capital Territory (FCT). Data were collected from traditional medical practitioners, herbalists and herb sellers in twelve towns and villages in three local councils of FCT, 41 medicinal plants belonging to twenty one families were identified. The most frequently used families were Asclepiadaceae and Asdepiadaceae. This survey showed that Leptodenia lancifolia and Calotropis procera were among the frequently used plants to manage cases of dystocia, retained placenta and aid parturition in animals. This survey signifies the ethno medicinal value of many plant species found in Federal Capital Territory.

Keywords: Ethnobotanical, Federal Capital Territory, Medicinal plants, Parturition, Survey

Introduction

Parturition is the culmination of pregnancy or gestation period with the expulsion of one or more new born infants from the uterus (Columbia, 2006). A highly complex mechanism is involved in the pregnancy maintenance which includes mother, fetus and placenta. Delivery is composed of inflammatory and endocrine interactive paths that tip the balance in favor of coordinated uterine contractility and cervical dilation (Vannuccini and Silvia 2016). Animals are prone to maximum injuries and infections during parturition. This may affect the life of the fetus and sometimes the productivity of the dam. Dystocia which means difficult birth or inability to expel fetus or fetuses through the birth canal (Linde-Forsberg, 2005; Kim et al., 2017) is characterized by oversized fetuses, abnormal fetal position, uterine torsion and failure of the cervix to dilate (Meyer et al., 2001; Björkman 2018). Increasing cases of dystocia in animals is reported worldwide (Wiesner & Werner, 2017). There was 5% reported cases of dystocia in Holstein-Friesian in Ireland and 18% dystocia rate in Devon rex cat in United Kingdom (Heringstad et al., 2007). Also, 5.7% -10.64% cases of dystocia were reported among the different breeds of goat in West Africa (Osuagwuh et al., 1980). In Nigeria, high cases of dystocia between...
20.7-23.8% sheep and goat were reported in Bauchi, North East, Nigeria, while 15.1% - 61.9% cases of retained placenta in cattle were also documented in the same area (Abdullahi, 1999).

Different approaches to aid parturition have been reported in Federal Capital Territory (FCT). Due to economic reasons and accessibility to health facilities, many of the rural dwellers use herbal remedies (Sofowora, 1982; Rawat and Uniyal, 2004). Many traditional healing herbs and their parts have been shown to have medicinal value which can be used to aid parturition (Dhar et al., 1999; Mandhwani et al., 2017; Wiesner & Werner 2017; Adhikari et al., 2018). Different plants used in traditional medical practice in Nigeria had been documented which shows that variations exist in different areas and the plant used for different purposes (Alfred et al., 2012). It is noteworthy that many herbal remedies used by human were also prescribed for treatment of animals. Based on our literature search on the internet there was no documentation of medicinal plants that are used to aid parturition in domestic animals in the FCT. To the best of our knowledge this is the first documentary evidence of the medicinal plants in the FCT used for veterinary purpose to aid parturition in domestic animals. Knowledge of medicinal plants used in the FCT can be a good source for further scientific studies in search for better drugs with less side effects (Rahmatulla et al., 2010; Jokar et al., 2017).

Materials and Methods

Study area
Abuja is located in the centre of Nigeria and has a land area of 8,000 square kilometers with a population of approximately 2,245,000. (Abuja Demographia, 2012). It is bounded on the North by Kaduna state, on the West by Nigeria, on the East and South-East by Nasarawa state and on the South-West by Kogi state. It falls within latitude 7° 25N and 9° 20° North of the equator and longitude 5° 45’ and 70 39’. Its climate is typically hot during the dry season between November and March and warm/humid during the rainy season from April to October. The cold hamattan season occurs between December and February characterized by dusty cold winds that limit visibility and cause dry skin (World Weather Information, 2012). The study area comprises of twelve towns in three local council areas in Federal Capital Territory. Dobi, Zuba, Giri and Gwagwalada in Gwagwalada area Council. Sheda, Shetsco, Ceceyi, Kuti-Chichi in Kwali Area Council, Mamuba, Damwa, Aduga and Chibiri in Kuje Area Council.

Informed consent
Informed consent was obtained orally from all participants made up of the Traditional Medical Practitioners (TMP), herbalists or herb sellers before inception of the interview.

Administration of questionnaire
Ethno medicinal information on the plants used to aid parturition were obtained by consulting Traditional Medical Practitioners (TMP) and herb sellers. The use of semi-structured questionnaire and oral interview were adopted to obtain the relevant ethno medicinal data. The questionnaires were administered by trained interviewers and in some cases, monetary incentives were given to unwilling respondents. It was divided into 3 sections: Section (A) dealt with demographic information such as: age, sex, religion, marital status, educational background, practice specification, tribe and working experience. Section (B) was on professional experience in the management of conditions associated with parturition. Questions like frequency of treatment, treatment other than herb, source of knowledge of herbal treatment, duration of treatment, availability of plant/plant parts, accompanied side effect(s) and accompanied verbal instruction. Section (C) dealt with opinion on plants and recipes used for parturition/childbirth.

Collection and authentication of plant samples
Fresh plant samples were collected from the traditional medical practitioners (TMPs), herbalists or herb sellers. Herbal remedies were authenticated by comparison with appropriate voucher specimens at the herbaria in Department of Botany, University of Abuja and Federal University of Technology Minna.

Results
In this survey, a total of 60 questionnaires i.e 20 per local council, but a total of 50 responds were received through the use of semi-structured questionnaires administered by trained interviewers within the three LGA’s covered by this survey (namely Gwagwalada, Kwali and Kuje). These respondents were mainly TMPs (26%), herbalists (14%) and herb sellers (60%).
Sixty six percent of the herb sellers were men. The data generated from this survey gave an insight into the age, sex, religion, mode of treatment, duration of treatment and sources of knowledge of the TMP/ herb sellers and herbalists. Majority of these respondents fell within age range 35-80 years. Respondents were mainly Muslims from the Hausa ethnic group in Nigeria.

Most plants identified have no side-effects according to the respondents. Sixty six percent of the respondents confirmed regular supply of their herbal remedies. It was discovered that the knowledge of herbal treatment was mainly by training while duration of treatment varied between 6 to 48 h. Eighty percent of the respondents claimed they use verbal instructions in administering herbal recipes to their clients. This is believed to enhance the understanding of the dosage and methods of application of the remedies. Majority of the recipes documented were for oral administration while a few were for external use.

In this ethno botanical survey, Forty-one plants were identified to be used in aiding parturition in Federal Capital Territory, belonging to 37 genera in 27 families. The plants frequently used to aid parturition in different Area Councils of FCT are as follows, Grewia mollis in Kuje Area Council, Hybanthus enneaspermus, G. mollis in Gwagwalada Area Council and H. enneaspermus in Kwali Area Council. Table 1 showed the demographic survey of respondents while Table 2 documented the professional experiences of the respondents in management of conditions associated with parturition.

List of some recipes used is in Table 3. Tables 4, 5 and 6 listed plants used to aid parturition in Kuje, Gwagwalada and Kwali Area Council. The families of plant species is listed in Table 7, while the plant species commonly mentioned by the respondents in the management of conditions associated with parturition in the FCT is documented in Tables 8 and 9.

Among the listed plants, G. mollis, Leptadenia lancifolia, Calotropis procera, H. enneaspermus and Abelmoschus esculentus were frequently used to aid parturition in the Federal Capital Territory. This survey further showed that L. lancifolia and C. procera were found to be used in all the local councils in FCT to aid parturition.

| Parameters                          | %    |
|------------------------------------|------|
| Frequency of treatment             |      |
| Regular                            | 78   |
| Irregular                          | 22   |
| Other treatment other than herbs   |      |
| Animal parts                       | 22   |
| Divination/oracle/incantation      | 0    |
| None                               | 78   |
| Source of knowledge of herbal      |      |
| treatment                          |      |
| Ancestral                          | 50   |
| Training                           | 40   |
| Training/ancestral                 | 10   |
| Duration of treatment              |      |
| 1-3 h                              | 34   |
| 3-6 h                              | 12   |
| 6 h and above                      | 54   |
| Plants availability                |      |
| Forest alone                       | 20   |
| Garden                             | 66   |
| Not always available               | 14   |
| Accompanied side effect(s)         |      |
| None                               | 88   |
| Bleeding                           | 10   |
| Others                             | 2    |
| Accompanied verbal instruction     |      |
| Yes                                | 80   |
| No                                 | 10   |
| None                               | 10   |

Table 3: List of some recipes

| Salt and lime orange | Water | Concoction |
|----------------------|-------|------------|
| Catfish and locust   | Water | Decoction  |
| beans                |       |            |
| Guinea corn powder   | Water | Decoction  |
| beans                |       |            |
| Salt and locust      | Concoction |      |
Table 4. List of the commonly mentioned plants used in the management of conditions associated with parturition in Kuje Area council, FCT

| Family            | Botanical name         | Common name          | Local name       | Part(s) used | Frequency |
|-------------------|------------------------|----------------------|------------------|--------------|-----------|
| Malvaceae         | Grewia mollis          | -                    | Dargaza (H)      | Roots        | 10        |
| Sterculaceae      | Sterculia setigera     | Gum tree             | Kukuki (H)       | Leaves       | 5         |
| Fabaceae          | Pilostigma thonningii  | Monkey bread         | Kalgo (H)        | Leaves       | 3         |
| Malvaceae         | Abelmoschus esculentus | Okro                 | Kubewa (H)       | Leaves       | 7         |
| Asclepiadaceae    | Calotropis procera     | Sodom apple          | Tumfafiya (H)    | Leaves       | 10        |
| Poaceae           | Sorghum bicolor        | Guinea corn          | Karan dafi (H)   | Leaves       | 1         |
| Asclepiadaceae    | Leptotenia lancifolia  | Schmach              | Yadiya (H)       | Leaves       | 9         |
| Bignoniaceae      | Stereospermum kunthianum | -                | -                | Leaves       | 5         |
| Sterculaceae      | Sterculia setigera     | Gum tree             | Kukuki (H)       | Leaves       | 5         |
| Malvaceae         | Abelmoschus esculentus | Okro                 | Kubewa (H)       | Leaves       | 7         |
| Asclepiadaceae    | Calotropis procera     | Sodom apple          | Tumfafiya (H)    | Leaves       | 10        |
| Poaceae           | Sorghum bicolor        | Guinea corn          | Karan dafi (H)   | Leaves       | 1         |
| Asclepiadaceae    | Leptotenia lancifolia  | Schmach              | Yadiya (H)       | Leaves       | 9         |
| Bignoniaceae      | Stereospermum kunthianum | -                | -                | Leaves       | 5         |
| Malvaceae         | Celosia argentea       | Celosia              | Celo (H)         | Leaves       | 3         |
| Moringaceae       | Moringa oleifera       | Drumstick            | Zogale (H)       | Leaves       | 1         |
| Annonaceae        | Asimina triloba        | Pawpaw leaf          | -                | Leaves       | 1         |
| Sapindaceae       | Bighia sapida          | Akee fruit           | -                | Leaves       | 7         |
| Asteraceae        | Microglossa pyrifolia  | -                    | -                | Leaves       | 1         |
| Euphorbiaceae     | Euphorbia hirta        | Asthma plant         | -                | Whole plant  | 5         |
| Caesalpinioideae  | Isoberlina doka        | Doka                 | Farar doka (H)   | Seeds        | 1         |
| Malvaceae         | Sida corymbosa         | Broom-weed           | Karkarshin kwado (H) | Leaves | 1 |
| Anacardiaceae     | Spondias mombi         | Hog-plum             | Isada (H)        | Leaves       | 2         |
| Fabaceae          | Tamrindus indica       | Tamarind             | Tsamia (H)       | Seeds        | 5         |
| Lamiaceae         | Ocimum tenuiflorum     | Holy-basil           | -                | Bulb         | 10        |
| Combretaceae      | Guiera senegalensis    | Moshi medicine       | Sabara (H)       | Leaves       | 5         |
| Euphorbiaceae     | Euphorbia lateriflora  | -                    | Oji (H)          | Seeds        | 1         |
| Lamiaceae         | Hyptis suaveolens      | Pig nut              | -                | Leaves       | 1         |
| Caesalpinioideae  | Cassia sanguinea       | -                    | Lomfu (H)        | Leaves       | 1         |

Key: F: Fulani; H: Hausa and Y: Yoruba

Table 5. List of the commonly mentioned plants used in the management of conditions associated with parturition in Gwagwalada Area council, FCT

| Family            | Botanical name         | Common name          | Local name       | Part(s) used | Frequency |
|-------------------|------------------------|----------------------|------------------|--------------|-----------|
| Tiliaceae         | Grewia mollis          | -                    | Dargaza (H)      | Roots        | 10        |
| Sterculaceae      | Sterculia setigera     | Gum tree             | Kukuki (H)       | Leaves       | 5         |
| Fabaceae          | Pilostigma thonningii  | Monkey bread         | Kalgo (H)        | Leaves       | 3         |
| Malvaceae         | Abelmoschus esculentus | Okro                 | Kubewa (H)       | Leaves       | 7         |
| Asclepiadaceae    | Calotropis procera     | Sodom apple          | Tumfafiya (H)    | Leaves       | 10        |
| Rubiaceae         | Nauclea latifolia      | African peach        | Epo-egbesi (Y)   | Leaves       | 2         |
| Asclepiadaceae    | Leptotenia lancifolia  | Schmach              | Yadiya (H)       | Leaves       | 15        |
| Verbenaceae       | Duranta repens         | Yellow garden        | -                | Leaves       | 7         |
| Moringaceae       | Moringa oleifera       | Drumstick            | Gawara (F)       | Leaves       | 5         |
| Annonaceae        | Asimina triloba        | Common pawpaw        | -                | Leaves       | 7         |
| Labiatae          | Ocimum gratissimum     | Clove basil          | Daidoya (H)      | Leaves       | 5         |
| Euphorbiaceae     | Euphorbia hirta        | Asthma plant         | -                | Whole plant  | 10        |
| Apocynaceae       | Saba comorensis        | Rubber vine          | Orombo (Y)       | Leaves       | 15        |
| Asteraceae        | Vernonia amygdalina    | Bitter-leaf          | Ewuro (Y)        | leaves       | 4         |
| Asteraceae        | Bidens pilosa          | Spanish needle       | -                | Leaves       | 1         |
| Violaceae         | Hybanthus ennepermuers | Spade flower         | Abinwere (Y)     | leaves       | 10        |
| Malvaceae         | Hibiscus sabdariffia   | Hibiscus             | Zoboroto (H)     | Leaves       | 4         |
| Cyperaceae        | Scleria depressa       | Sword-grass          | -                | Leaves       | 1         |
| Rutaceae          | Limonia acidissima     | Wood apple           | -                | Root         | 5         |
| Commelinaceae     | Commelina africana     | Comelina             | Balaasaana (H)   | Leaves       | 1         |
| Lamiaceae         | Ocimum basilicum       | Sweet basil          | Efirin (Y)       | Leaves       | 7         |

Key: F: Fulani; H: Hausa and Y: Yoruba


**Table 6.** List of the commonly mentioned plants used in the management of conditions associated with parturition in Kwali Area council, FCT

| Family          | Botanical name            | Common name          | Local name  | Part(s) used | Frequency |
|-----------------|---------------------------|----------------------|-------------|--------------|-----------|
| Tiliaceae       | Grewia mollis             | -                    | Dargaza (H) | Roots        | 14        |
| Sterculiaceae   | Sterculia setigera        | Gum tree             | Kukuki (H) | Leaves       | 7         |
| Fabaceae        | Pilostigma thonningii     | Monkey bread         | Kalgo (H)   | Leaves       | 2         |
| Malvaceae       | Abelmoschus esculentus    | Okro                 | Kubewa (H)  | Leaves       | 7         |
| Asclepiadaceae  | Calotropis procera        | Sodom apple           | Tumfafiya (H) | Leaves     | 7         |
| Asclepiadaceae  | Leptodenia lancifolia     | Schmach              | Yadiya (H)  | Leaves       | 5         |
| Tilieae          | Corchorus olitorius       | Jute                 | Ayoyo (Y)   | Leaves       | 5         |
| Moringaceae     | Morina oleifera           | Drumstick tree       | -           | Leaves       | 4         |
| Annonaceae      | Asimina triloba           | Common Pawpaw        | -           | Leaves       | 4         |
| Labiaceae       | Ocimum gratissimum        | Clove basil           | Daidoya (H) | Leaves       | 5         |
| Cucubitaee      | Momordica charantia       | Bitter lemon         | Dadadag (H) | Leaves       | 1         |
| Apocynaceae     | Strophanthus sarmentosus  | Spider tresses        | -           | Leaves       | 5         |
| Euphorbiaceae   | Euphorbia balsamifera     | Balsam spurge        | Aguwa (H)   | Leaves       | 10        |
| Anacardiaceae   | Sclerocarya birrea        | Tree of life          | Ludu (H)    | Bark         | 4         |
| Violacea        | Hybanthus enneaspermus    | Spade flower          | Abinwere (Y) | leaves     | 8         |
| Amplidaceae     | Cissus populnea           | Food gum              | Dafara (H)  | Stem         | 6         |
| Cynomorici ace   | Cynomorium songaricum     | -                    | -           | Leaves       | 2         |
| Lamieae         | Ocimum basilicum          | Sweet basil           | Efirin (Y)  | Leaves       | 6         |

Key: F: Fulani; H: Hausa and Y: Yoruba

**Discussion**

In this study, 41 medicinal plants used to aid parturition were reported. The most frequently used species (Table 8) are G. mollis (n=34), L. lancifolia (n=29) and C. procera (n=27). These plants are used for treatment of different ailments and are found everywhere in the surveyed areas. The plant species belong to Malvaceae, Asclepiadaceae and Apocynaceae families respectively. Our findings are in agreement with the general rule, most people in the rural villages use the plants that are in their surrounding for food and medicinal purposes (Johns et al., 1990; Raihan et al., 2010). Our results further showed that the following plants are used by the respondents across the three local area councils, G. mollis, Sterculia setigera, Pilistigma thonningii, Abelmoschus esculentus, Asimina triloba. Moringa olfera, C. procera and L. lancifolia. Other plants that have been frequently used in management of cases dealing with parturition which are not recorded here include Commelina africana, Duranta repens, Hyptis suaveolens, Ocimum gratissimum, Saba comorensis, Sclerocarya birrea, Sida corymbosa and Vernonia amygdalina (Singh et al., 1984, Zumsteg et al., 2007, Alfred et al., 2012).

The leaves are the most commonly used plant parts but the stems, bulbs and seeds are also used for preparation of remedies. All treatments are concoctions and decoctions in 75% and 25% cases respectively (Table 3). The plant parts are usually extracted in water by maceration which is the practice with many traditional medicine (Idensi et al., 2016). Some recipes used in herbal preparations includes salt, lime, locust beans, Guinea corn powder and in few cases animal parts like catfish may be added.

**Table 7:** List of families of plants frequently use in aid parturition in FCT

| S/n | Family          | Frequency |
|-----|-----------------|-----------|
| 1.  | Fabaceae        | 13        |
| 2.  | Amplitidae      | 6         |
| 3.  | Lamiaceae       | 24        |
| 4.  | Comertaceae     | 5         |
| 5.  | Rutaceae        | 5         |
| 6.  | Euphorbiaceae   | 26        |
| 7.  | Asclepiadaceae  | 56        |
| 8.  | Caesalpiniodaceae | 1    |
| 9.  | Cynomoriciaceae | 2         |
| 10. | Commelinae      | 1         |
| 11. | Apocynaceae     | 20        |
| 12. | Verbenaceae     | 7         |
| 13. | Malvaceae       | 26        |
| 14. | Caesalpinioiaceae | 1     |
| 15. | Labiaceae       | 10        |
| 16. | Anacardiaceae   | 6         |
| 17. | Cyperaceae      | 1         |
| 18. | Tiliaceae       | 39        |
| 19. | Stercuieae      | 17        |
| 20. | Poaceae         | 1         |
| 21. | Bignoniaceae    | 5         |
| 22. | Annonaceae      | 12        |
| 23. | Violaceae       | 18        |
| 24. | Moringaceae     | 10        |
| 25. | Rubiaceae       | 2         |
| 26. | Asteraceae      | 6         |
| 27. | Sapindaceae     | 7         |
| 28. | Cucubitaee      | 1         |

Total 328
Table 8: List of the commonly mentioned plants used in the management of conditions associated with parturition in the FCT

| Family          | Botanical name         | Common name (English) | Local name     | Part(s) used | Frequency |
|-----------------|------------------------|-----------------------|----------------|--------------|-----------|
| Fabaceae        | *Tamrindus indica*     | Tamarind              | Tsamiya (H)    | Seeds        | 5         |
| Amplidaceae     | *Cissus populnea*      | Holy-basil            | Dafara (H)     | Stem         | 6         |
| Lamiaceae       | *Ocimum tenuiflorum*   |                       |                | Bulb         | 10        |
| Combretaceae    | *Guiera senegalensis*  | Oshi                  | Sabara (H)     | Leaves       | 5         |
| Caesalpininaceae| *Cassia sanguinea*     |                       | Runfu (H)      | Leaves       | 1         |
| Euphorbiaceae   | *Euphorbia lateriflora*| -                     | Oji (H)        | Leaves       | 1         |
| Asclepiadaceae  | *Leptotes lancifolia*  | Schmauch              | Yadiya (H)     | Leaves       | 29        |
| Verbenaceae     | *Duranta repens*       | Yellow garden          | -              | Leaves       | 7         |
| Lamiaceae       | *Ocimum basilicum*     | Sweet basil           | Efirin (Y)     | Leaves       | 13        |
| Cynomorionaceae | *Cynomorium songaricum*|                      |                | Leaves       | 2         |
| Asdepiadaceae   | *Calotropis procera*   | Sodom apple            | Tumfafiya (H)  | Leaves       | 27        |
| Euphorbiaceae   | *Euphorbia hirta*      | Garden spurge          |                | Whole plant  | 15        |
| Apocynaceae     | *Saba comorensis*      | Rubber vine            | Orombo (Y)     | Leaves       | 15        |
| Lamiaceae       | *Hyptis suaveolens*    | Pignut                | -              | Leaves       | 1         |
| Caesalpiniodaceae| *Isoberlina doka*      | Doka                  | Farar dooka (H)| Seed         | 1         |
| Anacardiaceae   | *Sclerocarya birrea*   | Tree of life           | Ludu (H)       | Bark         | 4         |
| Malvaceae       | *Hibiscus sabdariffa*  | Roselle               | Zoborodo (H)   | Leaves       | 4         |
| Malvaceae       | *Sida corymbos*        | Broom-weed            | Miar tsanya (H)| Leaves       | 1         |
| Rutaceae        | *Limonia acidissima*   | Wood apple             | Hannu (H)      | Root         | 5         |
| Commelinae      | *Commelina africana*   | Comelina              | Balasasaanaa (H)| Leaves       | 1         |
| Labiatae        | *Ocimum gratissimum*   | Clove basil            | Daidoya (H)    | Leaves       | 10        |
| Anacardiaceae   | *Spondias mombi*       | Hog-plum              | Isada (H)      | Leaves       | 2         |
| Tiliaceae       | *Grewia mollis*        | -                     | Dargaza (H)    | Roots        | 34        |
| Sterculaceae    | *Sterculia setigera*   | Gum tree               | Kukuki (H)     | Leaves       | 17        |
| Fabaceae        | *Pilostigma thonningii*| Monkey bread           | Kalgo (H)      | Leaves       | 8         |
| Malvaceae       | *Abelmoschus esculentus*| Okro                  | Kubewa (H)     | Leaves       | 21        |
| Cyperaceae      | *Scleria depression*   | Sword-grass           | -              | Leaves       | 1         |
| Poaceae         | *Sorghum bicolor*      | Guinea corn            | Karan dafi (H)| Leaves       | 1         |
| Tiliaceae       | *Gorchorus olitorius*  | Jute                  | Rama (H)       | Leaves       | 5         |
| Moringaceae     | *Moringa oleifera*     | Drumstick             | Zogale (H)     | Leaves       | 10        |
| Annonaceae      | *Asimina trifolia*     | Pawpaw leaf            | -              | Leaves       | 12        |
| Cucubitaceae    | *Momordica charantia*  | Bitter lemon           | Ejirin (Y)     | Leaves       | 1         |
| Apocynaceae     | *Strophanthus samentosus*|              |                | Leaves       | 5         |
| Euphorbiaceae   | *Euphorbia balsamifera*| Balsam purge          | -              | Leaves       | 10        |
| Violaceae       | *Hybanthus enneaspernum*| Spade flower          | Abinwere (Y)   | leaves       | 18        |
| Bignonaceae     | *Sterospermum kunthianum*|            |                | Leaves       | 5         |
| Rubiaceae       | *Nauclea latifolia*    | African peach          | -              | Leaves       | 2         |
| Asteraceae      | *Vernonia*             | Amygdalina            | Ewuro (Y)      | Leaves       | 4         |
| Sapindaceae     | *Blighia sapida*       | Akee fruit             | -              | Leaves       | 7         |
| Asteraceae      | *Bidens pilosa*        | Spanish needle         | -              | Leaves       | 1         |
| Asteraceae      | *Macroglissa pyrifolia*| -                     | -              | Leaves       | 1         |

Key: F: Fulani; H: Hausa and Y: Yoruba
Table 9: List of the commonly mentioned plants used in the management of conditions associated with parturition in the FCT with comparison to different local council areas

| S/n | Botanical name       | Kuje | Gwagwalada | Kwali | Frequency |
|-----|----------------------|------|------------|-------|-----------|
| 1   | Isoberlinia doka     | 1    | -          | -     | 1         |
| 2   | Ocimum gratissimum   | -    | 5          | 5     | 10        |
| 3   | Scleracarya birrei   | -    | -          | 4     | 4         |
| 4   | Sida corymbosa       | -    | -          | 1     | 1         |
| 5   | Spodiadions mombi    | 2    | -          | -     | 2         |
| 6   | Scleria depressa     | -    | 1          | -     | 1         |
| 7   | Grewia mollis        | 10   | 10         | 14    | 34        |
| 8   | Sterculia setigera   | 5    | 5          | 7     | 17        |
| 9   | Pilistigma thonningii| 3    | 3          | 2     | 8         |
| 10  | Abelmosschus escuientus| 7  | 7          | 7     | 21        |
| 11  | Sorghum bicolor      | 1    | -          | -     | 1         |
| 12  | Stereospermum kunthianum| 5  | -          | -     | 5         |
| 13  | Asimina triloba      | 1    | 7          | 4     | 12        |
| 14  | Hybanthus enneapermus| 10  | 8          | 18    | 36        |
| 15  | Moringa olefera      | 1    | 5          | 4     | 10        |
| 16  | Nauclea latifolia    | -    | 2          | -     | 2         |
| 17  | Vernonia amygdalina  | -    | 4          | -     | 4         |
| 18  | strophanthus samentosus| -  | -          | 5     | 5         |
| 19  | Euphorbia balsamifera| -  | -          | 10    | 10        |
| 20  | Blighia sapida       | 7    | -          | -     | 7         |
| 21  | bidens spilosa       | -    | 1          | -     | 1         |
| 22  | Microglossa pyriflora| 1    | -          | -     | 1         |
| 23  | Gorchorus olitiorus  | 5    | -          | 5     | 5         |
| 24  | Momordia charantia   | -    | -          | 1     | 1         |
| 25  | Hibiscus sabdariffa  | -    | 4          | -     | 4         |
| 26  | Hyptis suaveolens    | 1    | -          | -     | 1         |
| 27  | Duranta repens       | -    | 7          | -     | 7         |
| 28  | Sada comorensis      | -    | 15         | -     | 15        |
| 29  | calotropis procera   | 10   | 10         | 7     | 27        |
| 30  | Commelina Africana   | -    | 1          | -     | 1         |
| 31  | Cynomorium songaricu| -    | -          | 2     | 2         |
| 32  | Ocimum sarcificum    | -    | 7          | 6     | 13        |
| 33  | Euphorbia lateriflora| 1   | -          | -     | 1         |
| 34  | Cassia singueana     | 1    | -          | -     | 1         |
| 35  | Leptadenia lancifolia| 9    | 15         | 5     | 29        |
| 36  | Euphorbia hirta      | 5    | 10         | -     | 15        |
| 37  | Limonia acidissima   | -    | 5          | -     | 5         |
| 38  | guiera senegalensis  | -    | 5          | -     | 5         |
| 39  | Ocimum tenuiflorum   | 10   | -          | -     | 10        |
| 40  | Cissus populnea      | -    | -          | 6     | 6         |
| 41  | Tamrindus indica     | 5    | -          | -     | 5         |
|     | TOTAL                | 86   | 139        | 103   | 328       |

Due to the short shelve life of most herbal remedies (Idensi et al., 2016), in other to have freshly prepared remedies, it requires regular visit to TMPs, herb sellers or herbalists as was highlighted in our results (Table 2). There were 78% regular visit for treatment by clients which indicates the availability of the plants in the environment.

Analysis of the demographic data (Table 1) confirmed that majority of the respondent were married, males and Muslims, this supported their belief that men should fend for the family. This is incorporated in the traditional belief system of the people living in the surveyed areas. The literacy level of the studied population is high which gives hope of them adapting to new innovation techniques.
However, the low percent (6%) graduate population shows that many graduates are not interested in this vocation maybe due to the source of knowledge which is mainly through ancestral training or it is not bringing in so much monetary benefit. Between 1 and 10 years of working experience was recorded indicating moderate to good knowledge of the use of herbal remedies. Majority of the respondents were oblivious of any side effect, this may be due to the short duration of treatments which may last for just few hours but bleeding and increased blood pressure were being reported by the users of remedies.

In conclusion, the survey allowed us to list and document 41 medicinal plants used to aid parturition in FCT. Plants that have variety of medicinal use and are commonly found around the FCT were used in the management of cases of parturition in animals and humans.

Conflicts of Interest
The authors declare no conflicts of interest.

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