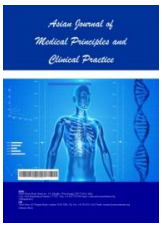

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Prevalence of Usage of Herbal Medicine among Pregnant Women in Asaba, Delta State

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: In the past two decades, the use of herbal medicines has grown considerably worldwide, especially among pregnant women. Herbal medicines are plant-derived materials or preparations that have therapeutic benefits. This study was aimed at determining the proportion, prevalence of use, attitude and knowledge base of pregnant women in Asaba, Nigeria *vis a vis* use of herbal medicines and potential effects of herbal remedies on the fetus.
Methodology: This study was performed at Federal Medical Centre, Asaba, Delta State. A sample size of 400 pregnant women attending clinic at the facility was used for this study. Structured questionnaire was used to collect information to evaluate the attitude of respondents towards use of herbal medicine. The instrument which took about ten minutes to complete contained mostly close-ended questions, including Likert Attitudinal Scale and straight dichotomous questions. Three hundred and ninety three (393) questionnaires were completed, giving a response rate of over 99 percent.
Results: From the data, 266 (66.5%) respondents were in the age range 21-30 years old. Also, 163 (40.8%) had up to secondary level of education. On marital status, 393 (98.3%) were married. The data from the study also showed that 270 (67.5%), had used herbal medicines at one time or

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another within the period of the study, in the crude form that was prepared by respondents or as packaged herbal or dietary/nutritional supplements. This gives the prevalence of use of herbal medicines among pregnant women in Asaba to be 67.5%. Also, 324 (81.0%), were of the opinion that herbal medicines could be effective, 24 (6.1%) did not believe in the efficacy of herbal remedies, while the remaining 52 (12.9%) were not sure of the efficacy. Out of the 307 respondents who had used herbs prior or during the present pregnancy, 55 (18.0%) had experienced some form of untoward effects post administration of herbal medicines. The side effects experienced included vomiting 20 (36.9%), dizziness 13 (23.3%), malaise 7 (13.7%), headache 7 (13.7%), rashes 5 (8.2%) and diarrhea 3 (4.1%). One hundred and sixteen of the total respondents (29.0%) were using herbal medicine at the time of the study and believed that the use of herbal medicines during pregnancy is safe, though with different primary reasons for taking the herbal medicine of choice.

Conclusion: From this study it was seen that the use of herbal medicines by pregnant women in Asaba was seen to be quite high. Many of the patients who participated in this study seem to have confidence in the efficacy of herbal remedies and found them helpful as a cost effective and accessible alternative treatment.

Keywords: Herbal medicine; pregnancy; Asaba; prevalence.

1. INTRODUCTION

Herbal medicines are defined by the World Health Organization as plant-derived material or preparations perceived to have therapeutic benefits, containing raw or processed ingredients from one or more plants [1]. They include herbs, herbal materials, herbal preparations, and finished herbal products that contain parts of plants or other plant materials as active ingredients [2].

In the past two decades, the use of herbal medicines has grown considerably worldwide, especially among pregnant women [3]. A study [4] has reported that more women than men use herbal medicines.

The prevalence of herbal medicine use during pregnancy varies significantly across regions and countries [5]. A recently published systematic review assessing the prevalence of herbal medicine use among 22,404 pregnant or lactating women across Africa found an average prevalence rate of 32%–45% [6]. There were substantial variation in the use of herbal medicines by pregnant women in the African continent, from 2% as reported in a study conducted in the Tigray Region, Northern Ethiopia [7] 2 to 100% according to another study in Machakos District, Eastern Kenya [8].

Pregnant women use herbal medicines for different purposes, which include pregnancy-related ailments such as nausea and vomiting, improvement of foetal growth, inducing labour, or pregnancy-unrelated ailments, such as cold and flu symptoms and skin problems as well as for nutritional benefits [3]. The popularity of herbal medicines among pregnant women can be mainly attributed to the belief that herbal products, being natural, are safe with fewer adverse events (AEs) compared to conventional drugs [9]. Moreover, pregnant women across Africa view herbal medicines as being more affordable and more easily accessed than conventional drugs [10]. Despite this common perception of safety, herbal medicines may have potent pharmacological actions, and can consequently produce AEs [5]. For instance, a recent systematic review [11] focusing on the safety of herbal medicines and which included 74 studies in a total of 1,067,071 pregnant or postnatal women, found that topical use of almond oil was significantly associated with preterm birth, oral raspberry leaf with caesarean delivery, and heavy licorice consumption (greater than 500 mg/week) with early preterm birth [11]. In addition, the concomitant use of herbal remedies with conventional medicines can lead to potential synergistic effects or drug interactions resulting in increased toxicity and decreased efficacy of the conventional drug [12]. An example of this is the consumption of green tea concomitantly with folic acid yielding a diminished folic acid bioavailability [13]. Furthermore, herbal medicinal products are usually sold as unlicensed food or dietary supplements or as over-the-counter items, which are not regulated with the same scrutiny as conventional drugs, thus increasing the probability of contamination or adulteration with poisonous metals such as lead or mercury, non-declared herbs or conventional medicines [14].

To our knowledge, very few studies have been carried out in Nigeria to evaluate the use of herbal medicines among pregnant women [15]. Some herbal products may be teratogenic in human and animal models [16] data on the extent of womens use of herbal medicines during pregnancy is scanty especially in sub-Sahara Africa, where the legislation for distribution and purchase of herbal medicines is not as stringent as it is for conventional medicines [17].

This study was aimed at determining the proportion, prevalence of use, attitude and knowledge base of pregnant women in Asaba, Nigeria *vis a vis* the use of herbal medicines and potential effects of herbal remedies on the fetus.

2. METHODOLOGY

2.1 Study Area

The study was performed at Federal Medical Centre, Asaba, Delta State. The hospital offers has good obstetric and gynecological services, with a record of approximately 5,000 deliveries per year, and of these, over 70% of the women received at least some antenatal care.

2.2 Subjects and Sample Size Determination

With the assistance of midwives, pregnant women who were attending the antenatal clinic of Federal Medical Centre, Asaba were recruited while waiting for ante-natal check-ups. Women attending antenatal clinic between December 2019 and June 2020 at the Center were eligible for inclusion in the study. Those who were ill at the time of recruitment or who declined to participate were excluded from the study. Verbal informed consents were obtained from women who agreed to participate after the study had been explained to them in English or the local language. In all, the assistance of two interpreters who were hospital midwives were engaged where necessary for the women who could not speak English language.

A sample size of 393 was obtained when an estimated population of 5,000 pregnancies per year from hospital records at 95% Confidence Level and a Precision rate of 0.05 was input into Relief Applications© statistical software package. Allowing for missing data within fields, as well as sub-group analysis, the number was rounded up to 400. This was used as a guide to determine the number of respondents to be targeted within the study period.

2.3 Data Collection

Structured questionnaire was used to collect information for this study. The instrument which took about ten minutes to complete contained mostly close-ended questions, including Likert Attitudinal Scale and straight dichotomous questions. The questionnaires were self-administered by respondents that could read and speak English while the two hospital midwives (to whom the study had been explained) served as interpreters to those who could not speak or write English. The definition of herbal products was explained to the women. Demographic data and responses on the womens knowledge of herbal medicine, use of herbs during pregnancy, reasons for use of herbs, sources of herbs, method of preparation, confidence in efficacy and safety of herb, and knowledge of the effects on the fetus, if any, were obtained. The questionnaire was piloted using a sample of women chosen from the antenatal wards who were not part of the final study. Changes made after pilot test included respondents opinion about co-administering herbs and conventional western medicines.

2.4 Data Analysis

The data from this study were analyzed using SPSS version 22. Descriptive statistics and Fishers exact tests were used at 95% confidence level to evaluate the data obtained. Percent frequencies were also used for analysis of data. Level of significance was set at $p < 0.05$.

3. RESULTS

3.1 Demographics

Three hundred and ninety three (393) questionnaires were completed, giving a response rate of over 99 percent. Of this number of respondents, 266 (66.5%) were in the age range 21-30 years old with about half, 163 (40.8%) having up to secondary level of education. Also, 393 (98.3%) of the respondents were married. The demographic data are given in details in Table 1.

Table 1. Demographic variables

Demographic variable		Frequency (Percentage)
Age (Years)	≤20	53 (13.2%)
	21-30	266 (66.5%)
	31-40	74 (18.5%)
	41-50	3 (0.83%)
Level of education	No formal education	67 (16.8%)
	Primary	42 (10.5%)
	Secondary	163 (40.8%)
	Tertiary	117 (29.3%)
	Postgraduate	3 (0.83%)
Marital status	Single	3 (0.83%)
	Married	393 (98.3%)
	Separated	3 (0.83%)

Table 2. Reasons for use of herbal medicines in pregnancy

Reasons for use of herbal medicine	Frequency	Percentage
Not harmful in pregnancy	25	21.1%
More effective than conventional medicine	26	22.4%
When conventional medicine fails	23	19.7%
Cultural norm	15	12.5%
More accessible treatment than conventional medicine	13	11.2%
Cheaper than conventional medicine	7	5.9%
Complements conventional medicine	6	5.3%
Others	2	2.1%

3.2 Use of Herbal Medicines

The results showed that 270 (67.5%) of the respondents had used herbal medicines at one point or another, either in the crude form that was prepared by respondents or as packaged herbal or dietary/nutritional supplements. One hundred and three, 103 (26.7%) of the respondents had never used herbal medicines, while 20 (5.0%) were not sure if they had used herbal medicines.

Three hundred and twenty four, 304 (81.0%), were of the opinion that herbal medicines could be effective, 24 (6.1%) did not belief in the efficacy of herbal remedies, while the remaining 52 (12.9%) were not sure of the efficacy. The data also show that 226 (56.6%) of the respondents did not support combining herbal medicines with allopathic drugs in any form, 55 (13.7%) believed it is safe to do so while 120 (30.0%) were not sure. Also, 188 (47.0%) of the respondents did not believe that there could be interaction between herbal remedies and allopathic drugs when concomitantly administered, while 33 (8.2%) believed co-administration may result in interaction. One hundred and thirty three 133 (33.4%) respondents believed herbal medicines possess no side or adverse effects, 122 (30.4%) were of the opinion that adverse/side effects of some herbal medicines could be dangerous, 119 (29.7%) were not sure, and 26 (6.4%) gave no response.

Out of the 307 respondents who had used herbs prior or during the present pregnancy, 55 (18.0%) had experienced some form of untoward effects post-administration of herbal medicines. The side effects experienced included vomiting [20 (36.9%)], dizziness [13 (23.3%)], malaise [7 (13.7%)], headache [7 (13.7%)], rashes [5 (8.2%)] and diarrhea [3 (4.1%)].

For those who prepared the remedies at home, they preferred to use potable water as the preferred vehicle (180; 45.7%). Non-alcoholic carbonated drinks were preferred by 18 (4.5%), infusions of *Camellia sinenesis* (tea) in water by 17 (4.2%), milk 15 (3.7%), alcoholic beverages 3 (0.83%), and lime fruit juice 2 (0.5%) as the vehicles of choice. The herbal medicines were obtained mainly from the local herb sellers in the market by 79 (19.8%) while 67 (16.7%) sourced herbs from the wild and 37 (9.3%) bought their herbs from traditional herbalists. Roadside hawkers accounted for 21 (5.2%), herb shops 18 (4.5%), and pharmacies were 3 (0.83%).

One hundred and sixteen [116 (29.0%)] of the total respondents were using herbal medicine at the time of the study and believed that the use of herbal medicines during pregnancy is safe, though with different primary reasons for taking the herbal medicine of choice as stated in Table 2.

4. DISCUSSION

This study was carried out to assess the perception and usage of herbal medicines among pregnant women. In developing countries, laws regulating sales and distribution of herbal medicines are poor while access to herbal medicines is largely unrestricted.

Data from this study show that the prevalence of usage of herbal medicines among pregnant women in this study was 67.5%. This high prevalence could be attributed to the general acceptance and perception of herbal remedies among pregnant women as safe for use for both pre-natal and post-natal health as well as in pregnancy [9]. Similarly, most of the respondents in this study were within the age bracket of 21 and 40 years. With regards to education, 163 (40.8%) had secondary education and 117 (29.3%) has at least tertiary education. Most respondents in the present study did not believe herbal remedies should be combined with conventional allopathic medicines. This was quite unexpected since a substantial number of respondents believed herbal medicines are safe. It has been reported that high educational exposure contributes to the knowledge of the side effects of combined therapy of herbal and orthodox drugs [4].

Herbal medicines used by pregnant women were self-prepared mostly by mixing different parts of plants, while some took prepared and prepackaged herbal medicinal products. One of the major reasons cited by pregnant women for taking herbal remedies included higher efficacy of herbal medicines when compared with conventional medicines, safety in pregnancy (because they are natural products), beliefs concerning cultural heritage of herbal medicines and the relatively high cost of allopathic/conventional medicines. Pregnant women have been reported to use herbal medicines to improve lactation, improve course of pregnancy and also to facilitate labour [18].

More than two-thirds of respondents who had used herbal medicines at one time or the other in the present study had confidence in the efficacy of herbal medicines. About forty-three percent of this group was also using herbs at the time of the study, many of whom strongly believed in safety of herbal medicines use in pregnancy. They were however unaware of the teratogenic potentials of herbs. This finding was in support of data from a previous study which indicated that about 10% of pregnant women reported the use of herbal medicinal products in a city in Nigeria [15].

Potable water was the preferred liquid by most respondents for the preparation of herbal medicines of choice which is expected since water has been considered an inert liquid that will ensure adequate extraction of water soluble constituents from plant materials. Only few respondents got herbal medicines of choice from chemist/pharmacy shops while the majority obtained their choice herbal remedies from the wild. Conventional healthcare providers, especially pharmacists and physicians, in Nigeria had been found to have poor knowledge of the pharmacology, efficacy, safety profile and drug interaction potentials of most herbal medicines available in the country [17]. This might explain why healthcare professionals would not want to recommend or sell such products to their patients. Herbal medications may cause teratogenic effects to the fetus as many conventional allopathic medicines [19]. Herbal medicines taken by most respondents were reported to be free of side effects. The experienced side effects included vomiting as the major side effect while dizziness, malaise, rashes, headache and diarrhea were also reported. Some of these side effects might be pregnancy-related.

Due to the pharmacologically active components in herbal medicines, there is possibility of potential harm to the fetus or potential interactions between herbal remedies and conventional pharmaceutical preparations. Caution should therefore be exercised with the use of herbal medicines especially during pregnancy.

5. CONCLUSION

From this study it was seen that the use of herbal medicines by pregnant women in Asaba was seen to be quite high. Many of the patients who participated in this study seem to have confidence in the efficacy of herbal remedies and found them helpful as a cost effective and accessible alternative treatment. Therefore,

Health care providers, especially those that are involved in ante-natal, pre-natal and postpartum care should be aware of evidence regarding potential benefits or harm of herbal medicinal agents when used by pregnant women, since many of these herbal remedies are self - prescribed based on the womens own information or belief.

CONSENT

Informed consents were obtained from women who agreed to participate after the study had been explained to them in English or the local language.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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