

Research Article

# A Survey of Traditional Medicine Usage in South-Western Nigeria

**\*Oyelowo O.T<sup>a</sup>, Adejumo A.O<sup>b</sup>, Owoyele B.V<sup>c</sup>**

<sup>a</sup>Department of Physiology, College of Medicine, University of Lagos, Lagos, Nigeria

Departments of <sup>b</sup>Statistics and <sup>c</sup>Physiology, University of Ilorin, Ilorin, Nigeria,

Accepted in Revised form: December 2015

## Abstract

The study examined the uses of traditional medicine and orthodox medicine in South-Western Nigeria focusing on feedbacks from clients of traditional practitioners. The study covered seven states of South-Western Nigeria. These are Osun, Oyo, Ondo, Ekiti, Ogun and Lagos States. Kwara State was included because some areas have Yoruba speaking people. The data needed for the study were collected from respondents directly. The respondents were one thousand in number. The results of the study showed that traditional medical practice is still very much around and respondents knew which ailment to refer to traditional or orthodox medicine practitioners. Diseases such as malaria, pile, diabetes, hypertension, inflammation and pain are the common ailments in the locality surveyed. Respondents also have inadequate knowledge about male contraception and family planning.

**Keyword:** traditional practice, orthodox medicine, South-Western Nigeria, feedback, herb

## \*INTRODUCTION

Plants and/or herbs have been used for different purposes, all over the World and even in Nigeria. Research reveals that 200,000 of the 300,000 plant species so far identified are in the tropical areas of the world, including Africa and it is interesting to note that traditional medicine tops the list of potential users of these plants since about 70% of the population of the developing world use traditional systems of healthcare (Bhat *et al* 1990, Sofowora 1993, Bodeker 1994).

A lot of studies by scientists and researchers on different disease states and effects on different organs of the human body are reported every year in different parts of the world with Nigeria inclusive. For instance, according to Jäger (2005) in the last 25 years, a lot of work has been done on plants used in traditional medicine systems throughout the world although a few of these are highly stimulating, as well as leading to new western drugs. The majority of such studies are likely unimportant thus ending up in archives as theses or in journal articles and often with a concluding statement that the research confirmed the traditional usage as traditional practitioners suspected.

Traditional medicine has some strengths that orthodox medicine lacks, and this includes the holistic view of the patient's situation ranging from psychological, to spiritual and even social aspects which play large roles in an individual's life, and this holistic treatment can to some extent make up for the often weaker aspect, when compared to orthodox medicine (Van der Geest, 1997). This situation thus implies that traditional medicine, which is closely linked with the peoples' cultures, will not vanish if and when western health care becomes available in a community. A study from Kenya

revealed that patients knew which diseases they would go to an orthodox clinic for, and those they would go to the traditional healers for (Van der Geest, 1997). In South Africa, traditional healers flourish in urban areas where orthodox health care is available which suggests that traditional medicine is available (Mander *et al.*, 1997). It is obvious that traditional health practise is not dying out 'when the young migrate to the city and forget their culture', as it is been predicted. Besides this, although traditional healers by their nature do not keep records, most of the knowledge they have is handed on verbally from generation to generation (Giday *et al.*, 2010). There is need therefore not only to capture and archive this herbal based knowledge but also to undertake scientific studies that provide credible evidence in support of the therapeutic efficacies underlying the claims by traditional healers on different plants (Sofowora, 1993). This will also allow for feedback to these traditional healers to improve on the health provision and to increase the confidence of the traditional healers. This is necessary because traditional healers often feel exploited as scientists come and take information on their secrets, and they never receive any compensation in return. Many healers therefore cannot believe that scientists will actually help them. It is thus important to eradicate this misunderstanding so that meaningful cooperation can exist.

There is also the need to concentrate on diseases and public health issues where large numbers of people will benefit from better traditional treatment. In Africa, diarrhoea is the main killer of children under the age of five, followed closely by malaria and other parasitic diseases such as schistosomiasis and leishmannia (Jäger 2005), and public health issues like over population.

\*Author for Correspondence: +234-8036733891

E-mail: [pinkkemi@yahoo.com](mailto:pinkkemi@yahoo.com)

It is thus paramount that traditional health practices go beyond academic exercises and be more useful to the society at large. According to Jäger (2005), ‘I would like to appeal to authorities and university researchers especially in countries with traditional medicine traditions to sideline the chase of new drug leads, and rather concentrate on comprehensive toxicity studies of traditional medicinal plants and on clinical trials of single plants or remedies containing mixtures of plants. This will have to build on cooperation between traditional healers’ organisations and authorities/researchers under the understanding that the aim is to benefit traditional healing by improving safety and efficacy’.

Taking all the aforementioned holistically, traditional medicine can now have a new face applicable for this ever advancing World. With this in mind, researchers and scientists should start looking for ways by which capital intensive researches can have more impact on the society. Feedbacks to traditional practitioners who stand as middle men between the town and gown are important. Also feedbacks from clients who patronize the traditional healers are paramount. This study was thus carried out, in the Nigerian setting focusing on feedbacks from clients of traditional practitioners. This is an attempt to make research in traditional medicine have more than just an educational value.

## METHODOLOGY

The study covered seven states of South-Western Nigeria. These are Osun, Oyo, Ondo, Ekiti, Ogun and Lagos States. Kwara State was included because some areas have Yoruba speaking people. The data needed for this study were collected from individual respondents using questionnaires. In all, 1,000 of the returned questionnaires were useful and these were used in the analysis. Data collection was based on the strategy of mutual trust suggested by Sofowora (1993) and Heinrich (2000). Information was compiled through general conversations and using standard questionnaires which followed a modified format recommended by Joly *et al.* (1987) and Sofowora (1993).

For the study to be truly representative of the towns, each of the study locations in the capital cities was divided into four strata: the traditional area, the migrant area, the mixed area (i.e traditional and migrant) and the elite area. The questionnaire for the study was specially designed and prepared to compile information relating to the objectives of the study. In this regard, the questionnaire was constructed using simple questions to elicit information on the background characteristics of sex, age, religion, marital status, number of children, educational qualification, tribe, place of birth, occupation and also knowledge of, attitude towards traditional and orthodox medicine.

Generally, the data collected were analyzed at three levels. The first level involved an examination of the distribution of the respondents according to each of the selected characteristics. Therefore, to know the structure of the population, data summarizing procedures such as frequency distributions and associated statistics were adopted. The second level involved the examination of the patterns of association between the dependent and independent variables. The bivariate analysis that was carried out at this level was able to show the existence of a relationship between the dependent and one or more independent variables, first without control for the influences of other variables, and second, when one or two variables were held constant. Level three of the analysis involved the use of logistic regression

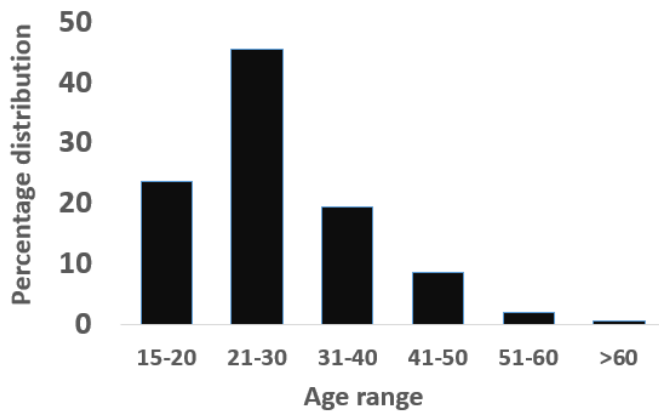
approach to examine the patterns of association between the dependent and independent variables.

## RESULTS

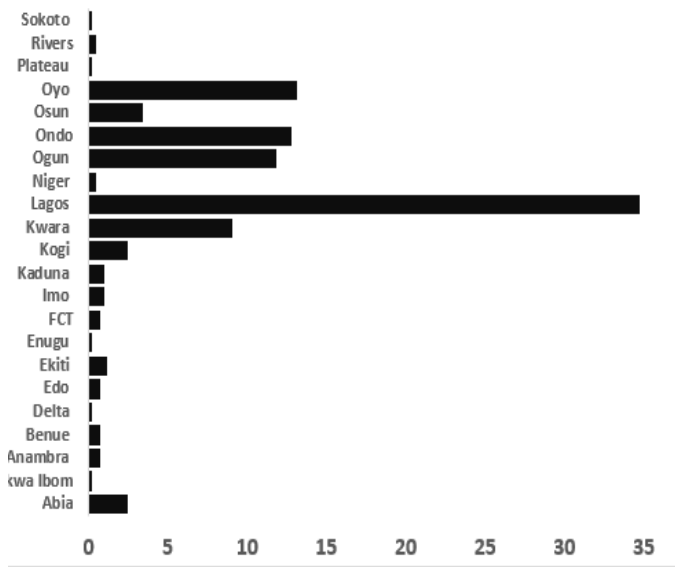
The socio-economic characteristics of the respondents are presented in Table 1. The table shows that the male respondents (50.1%) slightly outnumbered the females (49.9%). About 71.7% of the respondents were Christians, 26.3% were Muslims and only 2.0% professed to be Traditional worshippers. Among the respondents 68.1% were single while 30.1% were married, 0.7% was widowed and 1.0% divorced. The highest qualification by the respondents was first degree; Bachelor of Science, Arts or Education (28.9%). However, the dominant occupation among the respondents, as shown in Table 1 was studentship (56.4%). As shown in Fig. 1, majority of the respondents fell within age range 21-30 (45.7%) followed by 15-30 (23.7%) and 31-40 (19.5%). The prominent tribe was Yoruba (81.9%) and a lot of respondents were from Lagos State (34.7%) followed by Oyo State (13.1%).

**Table 1:**  
Background Characteristics of Respondents (% distribution)

Characteristics	Percentage (%) distribution
<b>Sex</b>	
Male	50.1
Female	49.9
<b>Religion</b>	
Christianity	71.7
Islam	26.3
Traditional	2.0
<b>Marital status</b>	
Single	68.1
Married	30.1
Widowed	0.7
Divorced	1.0
<b>Highest Educational Qualification</b>	
Primary school certificate	8.0
Secondary school certificate	27.1
Diploma certificate	18.8
B.Sc	28.9
Postgraduate diploma	2.5
M.Sc.	10.6
Ph.D	1.5
Others	2.5
<b>Tribe of origin</b>	<b>Percentage (%)</b>
Yoruba	81.9
Hausa	2.7
Igbo	5.9
Efik	0.7
Ibibio	1.0
Edo	2.5
Others	5.2
<b>Occupation</b>	<b>Percentage (%)</b>
Students	56.4
Civil Servant	26.2
Professional	15.4
Artisan	2.1



**Fig. 1**  
Age distribution of respondents



**Fig. 2**  
Distribution of respondents according to state of origin

The responses on Knowledge, uses and duration of herbal practice are shown in Table 2. 61.3% of respondents showed affirmation for herbal use. The ailments that herbs are mostly used for was malaria (44.9%), pile (24.7%), malaria and pile (20.2%), others (4.1%), diabetes (1.9%), contraceptives (1.1%), hypertension (1.1%), pain (1.1%), inflammation (0.7%). Respondents (66.2%) also said there was no disadvantage in herbal usage. Thus ailments that respondents prefer to use herbs to treat are as follows: malaria (47.3%), pile (23.3%), malaria and pile (14.4%), others (6.8%), diabetes (2.7%), pain (2.7%), contraceptives (1.4%), hypertension (0.7%), inflammation (0.7%). The study also captured the number of family members of respondents that use herbs 2(23.3%), 1(19.2%), 3 (17.5%), 4(15.8%), 5(14.2%), 6(5.8%), 7(1.7%), 8(0.8%), 20(0.8%) as well as how respondents got to know about herb usage and the following findings were made, through the family (78.7%), friends (13.7%), hawkers (4.0%), others (3.6%). Figure 3 shows that 32.8% of the respondents have been using herbs for between 1 and 10 years while 43.8% have been using herbs for 11 to 20 years.

Results from Table 3 indicate usage of orthodox medicine by the respondents. Use of orthodox medicine took 80% while the rest 20% was for herbal medicine. Respondents also use orthodox medicine to treat these ailments in the following other: malaria (40.9%), malaria and pile (31.8%), pile (14.5%), contraceptives (4.2%), pain (4.2%), others (1.8%),

diabetes (1.5%), hypertension (0.6%), inflammation (0.3%). Respondents were also asked about who prescribes orthodox medicine to them and the following were observed: doctor (57.4%), personally (17.5%), over-the-counter (16.3%), friends (8.8%). Disadvantages observed from orthodox medicine usage gave yes (10.3%), no (67.3%), sometimes (18.2%), I don't know (4.3%) while preference of orthodox medicine to herbal medicine was (62.7%).

**Table 2:**  
Knowledge, uses and duration of herbal practice

Uses	Percentage (%) distribution
<b>Use of Herbs</b>	
Yes	61.3
No	38.7
<b>Ailments the herbs are used for</b>	
Malaria	44.9
Pile	24.7
Contraceptives	1.1
Diabetes	1.1
Hypertension	0.7
Pain	1.1
Inflammation	0.7
Malaria & Pile	20.2
Others	4.1
<b>Observed disadvantages from herbal use</b>	
Yes	12.7
No	66.2
Sometimes	13.8
Do not know	7.3
<b>Ailments that respondents prefer to treat with herbs</b>	
<b>Percentage (%)</b>	
Malaria	47.3
Pile	23.3
Contraceptives	1.4
Diabetes	2.7
Hypertension	0.7
Pain	2.7
Inflammation	0.7
Malaria and Pile	14.4
Others	6.8
<b>Who introduced herbs use to respondents</b>	
<b>Percentage (%)</b>	
Family	78.7
Friends	13.7
Hawkers	4.0
Others	3.6

Table 4 focuses on the usage of herbal and/or orthodox medicine use. Respondents gave the following answers. Herbs should be used alone; (19.8%) strongly agreed, (26.2%) agreed, (21.9%) had no idea, (18.4%) disagreed while (13.6%) strongly disagreed. As regards herbs should be used side by side with orthodox medicine; (19.7%) strongly agreed, (21.1%) agreed, (14.7%) had no idea, (19.5%) disagreed while (25.1%) strongly disagreed. As regards orthodox medicine usage only; (26.7%) strongly agreed, (20.4%) agreed, (19.1%) had no idea, (18.5%) disagreed while (15.3%) strongly disagreed.

**Table 3:**

Usage of orthodox medicine

Uses	Percentage (%)
<b>Do you use Orthodox Medicine</b>	
Yes	80
No	20
<b>Ailments for which orthodox medicine are used</b>	
Malaria	40.9
Pile	14.5
Contraceptive	4.2
Diabetes	1.5
Hypertension	0.6
Pain	4.2
Inflammation	0.3
Malaria and pile together	31.8
Others	1.8
<b>Who prescribes orthodox medicine</b>	
Self	17.5
Over-the- counter	16.3
Physician	57.4
Friends	4.3
<b>Is there any disadvantage with orthodox medicine use?</b>	
Yes	10.3
No	67.3
Sometimes	18.2
Do not know	4.3
<b>Do you prefer orthodox medicine to herbs?</b>	
Yes	62.7
No	37.3

**Table 4:**

Usage of herbal and/or orthodox medicine

Herbs should be used alone	Percentage (%)
Strongly agree	19.8
Agree	26.2
No idea	21.9
Disagree	18.4
Strongly disagree	13.6
<b>Herbs should be used concurrently with orthodox medicine</b>	
Strongly agree	19.7
Agree	21.1
No idea	14.7
Disagree	19.5
Strongly disagree	25.1
<b>Orthodox Medicine should be used alone</b>	
Strongly agree	26.7
Agree	20.4
No idea	19.1
Disagree	18.5
Strongly disagree	15.3

Results from Table 5 show male contraception in relation to herbal usage. 65.3% of the respondents had an idea of male contraception while 50.4% did believe in such practice although 49.6% did not. The reasons given for male contraceptive use included family planning (70.8%), to discourage promiscuity (16.1%), and others (13.1%). A

percentage (34.7%) agreed to the practice of contraceptive use while 65.3% did not. The types of contraceptives used were condom (70.6%), male sterilization (6.7%), withdrawal (11.0%), herbs (4.3%), and traditional contraceptives (7.4%).

Table 6 discusses pain and inflammation in relation to herbal usage. Respondents (76.3%) agreed that they have had boil or swellings on their body parts before and the method of treatment was by orthodox (58.7%), traditional/ herbal (21.2%) and both 19.9%. 40.5% of the respondents say they use decoctions while 59.5% say they do not. The respondents also mentioned the parts of the plant that were used; leaves (53.6%), stem (27.4%), roots (10.7%), seeds (8.3%). Respondents or their friends knew other uses (45.5%) of those plants used for treatment of pain and inflammation-while a larger percentage (54.5%) did not know.

**Table 5:**

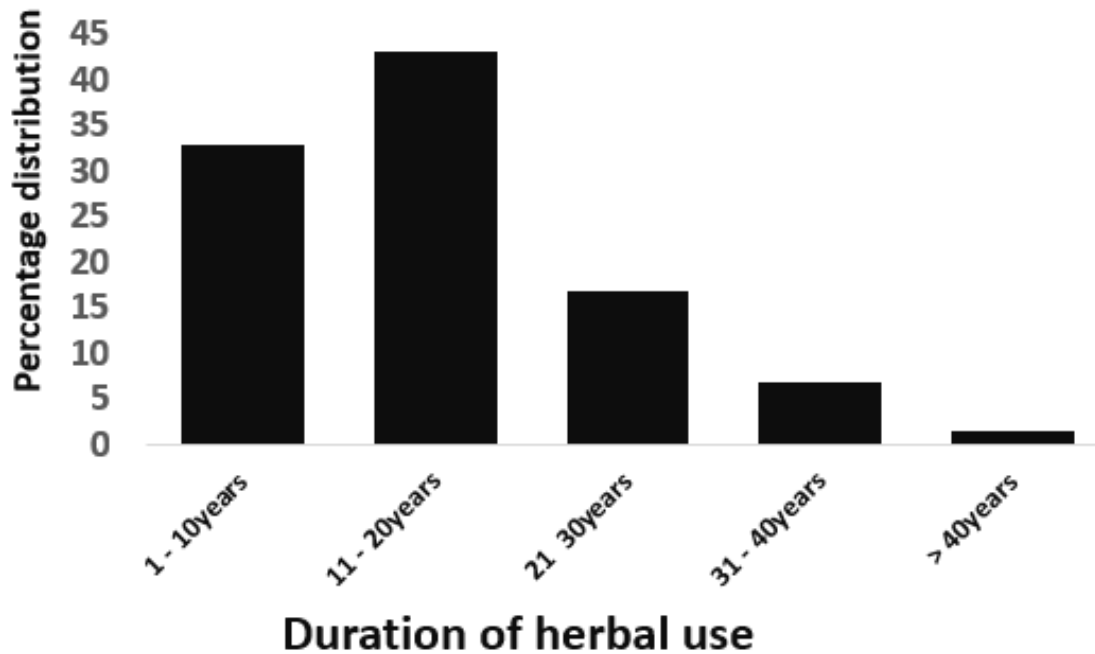
Male contraception versus herbal usage

<b>Knowledge about Male Contraceptives Percentage</b>	
Yes	65.3
No	34.7
<b>Believe in such practices</b>	
Yes	50.4
No	49.6
<b>If yes, state reasons</b>	
Family planning	70.8
To discourage promiscuity	16.1
Others	13.1
<b>Usage of male contraceptives</b>	
Yes	34.7
No	65.3
<b>Types used</b>	
Condom	70.6
Male sterilization	6.7
Withdrawal	11.0
Herbs	4.3
Traditional contraceptives	7.4

**Table 6:**

Pain and inflammation in relation to herbal usage

Uses	Percentage (%)
Yes	76.3
No	23.7
<b>Method of Treatment</b>	
Orthodox	58.7
Traditional	21.2
Both	19.9
<b>Is it a decoction?</b>	
Yes	40.5
No	59.5
<b>Single plant used and part of plant used</b>	
Leaves	53.6
Stem	27.4
Roots	10.7
Seeds	8.3
<b>Do the plants usually have other uses?</b>	
Yes	45.5
No	54.5

**Fig. 3**

Number of years since respondents have been using herbal medicine. Each bar represents the percentage distribution of the responses.

## DISCUSSION

The use of traditional/ herbal remedies remains very relevant. The majority of respondents fell within the age range of 21-30 years, followed by the 15-20 years age range revealing that the youth are fully engaged in the traditional medicinal uses of herbs despite the fact that they are educated as revealed by the highest qualification of the respondents which was a University's first degree as well as the fact that they live in the cities or towns. This observation is in agreement with the findings of Mander *et al.* (1997), who talks about the situation in South Africa where traditional healers flourish in urban areas especially in localities where western health care involving orthodox medicine is available.

Traditional medicinal practice is not also religion bound as only 2% of the respondents professed traditional religious practice. The prominent tribe was Yoruba 81.9% which is not too surprising since the study was carried out in the South-western part of Nigeria and a lot of the respondents were from Lagos state followed by Oyo state. The dominant occupation among the respondents was studentship. This would be due to the economic situation of the nation. A number of graduates leave the higher institutions and are left jobless. This may also be the reason why 68.1% of the respondents are single.

Herbal practice among respondents showed a 61.3% affirmation. This is consistent with the findings of Jäger (2005) who reported that traditional medicine is closely linked with the people's cultures and it is not going to disappear if and when western health care becomes available in a community because people will always want to have association with what links them with their cultures. Respondents said they have been using herbs for as long as 20years. This reveals that a number of respondents might have been using herbs as early as when they were children which might be due to administration of these herbs to the children by their respective parents. These observations also showed that herbal use might run from generation to generation not

only with herb sellers (Omobuwajo *et al* 2008) but also with herbal users since 78% of respondents said they knew about herbal usage through their family members. In the recent past however this may have changed. Children born these days are not encouraged by their parents to take herbs. This was observed in this study as fewer people in the family systems used herbs and most respondents operated the nuclear family system.

The ailments that herbs were mostly used for was malaria (80%) which is the main killer disease in Africa (Jäger 2005, Kazembe *et al* 2012). When comparing orthodox medicine with herbal treatments, respondents in this study also knew which diseases they would seek orthodox medicine for and those they would treat with the traditional methods. This is in accordance with a study from Kenya (Van der Geest 1997). Respondents preferred to treat malaria (only), pile, diabetes, hypertension and inflammation with traditional methods while malaria and pile together, pain, male contraception are reserved for treatment with orthodox methods.

Respondents also preferred the orthodox medical doctor prescribing orthodox medicine for them when they have to use the orthodox method. There seemed to be no disadvantages observed from orthodox medicine use by the respondents and 62.7% say they prefer orthodox medicine to traditional medicine. About twenty six percent (26.2%) of the respondents also strongly agreed that herbs should be used alone while 25.1% strongly disagreed that herbs should be used concurrently with orthodox medicine. However, 26.7% strongly agreed that orthodox medicine should be used only. These percentages fall in the same range suggesting that respondents are in support of simultaneous use of herbal and orthodox medicine.

The average number of children born by respondents was two although some respondents had up to seven children. This might be because of the economic situation of the country. This could also result in the awareness of family planning methods and the concept of contraception. About sixty-five

percent (65.3%) of respondents also had an idea of male contraception although 49.6% did not believe in such practice. The reasons for male contraceptive use were for family planning, to discourage promiscuity and other reasons that were not stated although 65.3% were not involved in such practice. A high percentage of the respondents (70.6%) used condoms, none of the respondents attempted hormonal contraception, 6.7% attempted vasectomy. Only 4.3% used herbal methods and 7.4% used traditional contraceptives even though respondents failed to mention the different traditional contraceptives they used and how they got to know about the method, any taboos against such usage and advantages or disadvantages of such methods. This may be because there is still little or no awareness as regards male contraception. A lot of men still shy away from the practice as some think it is belittling for a man. It is now known that the role of men in fertility and family planning in sub-Saharan Africa is becoming increasingly important in the context of raising contraceptive prevalence and reducing the level of fertility. Fertility studies in the recent past, however, have been dominated by findings almost exclusively from women (Mbizvo and Basset, 1995; Bankole, 1995; Ottenbarg, 1995). Adewuyi and Ogunjuyigbe (2003), in a study revealed that male partners may be able to play a considerable role in the reduction of excess fertility among couples in Nigeria. Men in Yoruba speaking parts of Nigeria have considerable knowledge of family planning which was in agreement with our study. It is no longer news that the relatively high fertility levels in most of sub-Saharan Africa call for a closer examination and solution as well as the mechanisms of fertility decision making among couples in different family settings. Since the husband is very important in family decision-making, it is very essential that the male should be adequately informed on population issues (Adewuyi and Ogunjuyigbe 2003). This is necessary in order to increase his understanding and acceptance of male contraception. This may be related to his desire to control the use and choice of the contraceptive or to assure himself that the objective of avoiding an unwanted pregnancy is achieved. There is also the need for health education programmes to bring to the consciousness of men the impact of small family size, designing of effective information, education and communication strategies to reach men in every part of the federation on the need to actively participate in the use of contraceptives. Emphasis should be placed on the dynamics of child bearing and on parental aspirations for the children. Reference to the economic conditions and demands of modern society, and indeed, the hardships a father faces in the process of bringing up his children is very likely to appeal to males, and should be effectively used in increasing population awareness including family size regulation through the acceptance and adoption of family planning in the country (Adewuyi and Ogunjuyigbe 2003).

The awareness on male contraceptive, people's believe in its use and actual usage are individually influenced by respondents' gender, age, marital status, education, occupation and tribe. For each association with any of male contraceptive, believe, and actual usage with any of the factors stated, the p-value was below 0.05 ( $p < 0.05$ ), which implied that there existed association between each pair. The type of contraceptive used was also influenced by the respondents' age, religion and occupation.

Respondents agreed that they have had swollen bodies or boils at one point in time or the other and 58.7% preferred to use the orthodox method to treat such. This is not in agreement with a study from South Africa where the majority of the respondents preferred the use of medicinal plants for the treatment of skin disorders (De Wet *et al* 2013). A percentage of the respondents (19.9%) claimed to use both traditional and western medicine in combination. This tendency also occurs in other cultures like in China and India where traditional and western medicine occurs side by side in a complementary way (Hon *et al* 2004, Kou and Chen 2012). The former is being used to treat self-terminating or chronic conditions and the latter to treat more serious and acute conditions. This may also be the situation in Nigeria but the awareness of plants with anti-inflammatory and analgesic properties are not well known. This is evident in this study as 40.5% of respondents used decoctions and respondents could identify part of the plants used. About fifty four percent (53.6%) of respondents said the leaves were the part of the plants used. In most other ethnobotanical studies where plants are used to treat various skin disorders, the leaves are also the preferable plant part used (Saikia *et al* 2006, Martinez and Barboza 2010, Adetutu *et al* 2011, De Wet *et al* 2013, Mabona *et al* 2013).

In conclusion, the study has been able to highlight the fact that traditional practice is still very much around and there is a need for further research into medicinal plants used for the treatment of diseases such as malaria, pile, diabetes, hypertension, inflammation and pain related disorders. These diseases take their toll in Africa. There is also the need for more awareness on male contraception as well as the fact that the women need their husbands to assist with such practice to improve family planning systems

## REFERENCES

- Adetutu, A., A.M Witson, and O .Corcoran. 2011. Ethnopharmacological survey and in vitro evaluation of wound-healing plants used in South-western Nigeria. *J Ethnopharmacol.* 137:50–56.
- Adewuyi, A., and P. Ogunjuyigbe . 2003. The Role of Men in Family Planning: An Examination of Men's Knowledge and Attitude to Contraceptive Use among the Yorubas. *African Population Studies. Union for African Population Studies.* Vol. 18, Num. 1, pp. 35-49.
- Bankole, A.1995. "Desired Fertility and Fertility Behaviour among the Yoruba of Nigeria: A Study of Couples' Preferences and Subsequent Fertility" *Population Studies.* 49:317-328.
- Bhat, R.B, E.O.Etejere ,and V.T.Oladipo. 1990. Ethno botanical studies from Central Nigeria. *Econ. Bot.* 44 (3) 382-390.
- Bodeker, G. 1994. Traditional Health Knowledge and Public Policy. *Nat. Res.*30 (2)5.
- De Wet, H., S.Nciki, and S.F. van Vuuren. 2013. Medicinal plants used for the treatment of various skin disorders by a rural community in northern Maputaland, South Africa. *J. Ethnobiol. Ethnomed.*9:51.
- Giday, M., Z. Asfaw, and Z.Woldu. 2010. Medicinal plants of the Meinit ethnic group of Ethiopia: an ethnobotanical study. *J.Ethnopharmacol.*124, 513–521.
- Heinrich, M. 2000. Ethnobotany and its role in drug development. *Phytothe Res.*14, 479–488.
- Hon, E.K.L, K.Lee,H.M. Tse, L.N Lam, K.C. Tam, K.M.Chu, V. Lee, C. Lau, and T.F.Leung.2004. A survey of attitudes

- to traditional Chinese medicine in Hong Kong pharmacy students. *Complement Ther Med.* 12:51–56.
- Jäger, A.K. 2005. Is traditional medicine better off 25 years later? *J Ethnopharmacol.* 100:3–4.
- Joly, J.G., S.Guerra, R.Séptimo, P.N.Solís, M.Correa, M.P.Gupta, S. Levy, and F. Sandberg. 1987. Ethnomedical inventory of medicinal plants used by the Guaymí Indians in Western Panama, part I. *J. Ethnopharmacol.* 20, 145–171.
- Kazembe, T., E. Munyarari and I. Charumbira. 2012. Use of Traditional Herbal Medicines to Cure Malaria. *Bull. Environ. Pharmacol. Life Sci.* vol 1 issue 4 63-85.
- Kou, M.J, and J.X.Chen. 2012. Integrated traditional and western medicine for treatment of depression based on syndrome differentiation: a metaanalysis of randomized controlled trials based on the Hamilton depression scale. *J.Trad.Comp.Med.* 32:1–5.
- Mabona, U., and S.F. Van Vuuren. 2013. Southern African medicinal plants used to treat skin diseases. *South Afr J. Bot.* 87:175–193.
- Mander, J., N.W. Quinn and M. Mander. 1997. Trade in Wildlife Medicinals in South Africa. Investigational Report Number 157. *Inst. Nat. Res.* Pietermaritzburg, South Africa.
- Martínez, G.J, and G.E. Barboza .2010. Natural pharmacopoeia used in traditional Toba medicine for the treatment of parasitosis and skin disorders (Central Chaco, Argentina). *J Ethnopharmacol.* 132:86–100.
- Mbizvo, M.T, and M.T. Basset. 1996. Reproductive Health and AIDS Prevention in sub-Saharan Africa: The Case for Increased Male Participation. Health Policy and Planning. Oxford University Press, London. 11 (1):84-92.
- Omobuwajo, O.R. G.O., Alade, and A. Sowemimo. 2008. Indigenous knowledge and practices of women herb sellers Southwestern Nigeria. *Ind. J. Trad. Knowledge.* Vol 7(3), pp 505-510.
- Ottensbarg, S. 1995. Male Fertility through Survey. Demographic and Health Survey Experience. Cambridge University Press, London. 37-50 pp.
- Saikia, A.P,V.K. Ryakala, P. Sharma, P. Goswami, and U.Bora. 2006. Ethnobotany of medicinal plants used by Assamese people for various skin ailments and cosmetics. *J Ethnopharmacol.* 106:149–157.
- Sofowora, A. 1993. Medicinal Plants and Traditional Medicine in Africa, 2<sup>nd</sup> ed., Spectrum Books Limited, Ibadan, Nigeria, 249-258 pp.
- Van der Geest, S. 1997. Is there a role for traditional medicine in basic health services in Africa? A plea for a community perspective. *Trop. Med. Int. Health.* 2: 903–911.