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Traditional/Alternative Medicine: An Investigation into Identification, Knowledge and Consumption Practices of Herbal Medicine among Students with Hearing Impairment in Ibadan, South-Western Nigeria

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Abstract
The use of traditional medicine as alternative or complimentary therapy is gaining prominence in primary health care worldwide. This is because of the efficacy in the management of mild, chronic seemingly incurable ailments/diseases. Though the publicity is on the increase from country to country in the world, however, one cannot conclude that the information has reached all classes of people. This study therefore investigated identification, knowledge and consumption practice of herbal medicine among the hearing-impaired. The study adopted survey research design. A total of 50 students with hearing impairment were selected from different locations in Ibadan, Oyo State, Nigeria. Traditional medicinal inventory was used to collect data with reliabilities of 0.72, 0.80 and 0.67 respectively based on perception, knowledge and consumption practices. Two research questions were answered and two hypotheses tested. Result revealed wrong perception and low knowledge of traditional/alternative therapy. Also, there was no significant difference in the identification and consumption practice and no significant influence of religion on consumption practice among the respondents. Based on the results, it is recommended that proper education should be given to students with hearing impairment about traditional medicine.

Keywords: Alternative medicine, Students, Hearing-impaired, Cultural belief, Nigeria

1. Introduction

Traditional medicine has remained the most affordable and easily accessible source of treatment in primary health care system of poor communities where alternative therapy is the major means of medical treatment in such communities (Yingar & Yewhalaw, 2007). The potency of such alternative medicine in African traditional communities cannot be over-emphasised. Over the centuries, the indigenous people of the world have developed sophisticated social systems and their traditional healers, through oral tradition and empirical means, have acquired and compiled knowledge regarding the use of medicinal plants which has been disseminated from generation to generation (Abel & Busia, 2005). This has helped the continued survival of traditional/alternative therapy.

In the recent time, herbal medicine has received worldwide acclaim since medicinal plants continue to play crucial role in health care delivery system in urban, semi-urban and rural communities. According to Azaizeh et al (2003) reported that about 80% of the world population depend on traditional medicine for their health care. This corroborated the findings of scholars that medicinal plants have helped in the management of mild, chronic or seemingly incurable ailments/diseases, and several ethnobotanical studies have been conducted to document traditional medical practices, plants used, method of preparation as well as the mode of administration (Erinoso & Aworinde, 2012; Olajuyigbe & Afolayan, 2012; Soladoye et al, 2010; Ayeloja & Bello, 2006; Bhat et al, 1990).

According to Principe (1991), in the developed countries, about 25% of the medical drugs are based on plants

and their derivatives. In Nigeria, ethnomedical scholars in the past and even now have made contributions to the development of the traditional medical system (Idu et al., 2009). This has led to recent awareness and clamour to start adopting this alternative medicinal therapy to complement the conventional treatment that have been widely reported to have serious adverse effect despite its positive effects on human health.

Although at different regimina or dosages, herbal preparations have been used for and by all age groups and sexes. The extent of acceptance and use of herbal concoction may depend on the individuals state of mind, level of awareness, medical challenges and religious beliefs.

However, among people of the same religion, sex or otherwise, challenges in one or more domains of life may also be a critical factor. While previous research focus has documented the use of herbal or traditional medicine by non-special needs subjects, report of use by special needs especially among individuals with hearing impairment be it within the school age or above are scarce in Nigeria. WHO (2011) reported that about 360 million people around the world live with disabling hearing loss out of which 32 million are children between age 0-15 years. Though, there has not been valid document reporting the exact number of people with hearing impairment in Africa and especially in Nigeria, it is wise to reason that the larger percentage will come from Africa because of poverty index, illiteracy and lack of basic medical care coupled with unhygienic state of our communities.

While people without disabilities are well informed about the latest in their environment, people with disabilities especially, the hearing impaired suffers double jeopardy because of their condition. Information rarely or inaccurately gets to them. This is because our society has not imbibed inclusion strategy or culture.

This study therefore was aimed at investigating the identification, knowledge and consumption practices of herbal medicine among students with hearing impairment in secondary school in Ibadan Southwestern Nigeria with the aim of forming basis for counselling and advocacy.

2. Research Questions and Hypotheses

Research Question 1: How do students with hearing impairment perceive herbal medicinal plants?
Research Question 2: What is the level of knowledge of students with hearing impairment about alternative medicine?
Hypothesis 1: There is no significant difference in identification practice of herbal medicine between male and female students with hearing impairment.
Hypothesis 2: There is no significant influence of religion on consumption practice among students with hearing impairment.

3. Materials and Methods

3.1 Plant Materials

Medicinal plants used in the management of common ailments such as malaria, diabetes, ulcer, cholera, cough, asthma, typhoid, pile, headache and worm infection were collected fresh for display before the participants for the purpose of identification. The plants were identified by botanists who specialised in plant taxonomy. They were Dr D.O. Aworinde and Mrs. S.M. Erinoso.

Collection of samples of the plants used was done early in the morning and were preserved to maintain their freshness before the actual display before the participants.

4. Research Design

The study employed survey research design of ex-post facto because the study only investigated existing variables.

4.1 Population

The population for the study were students with hearing impairment in senior secondary schools in Ibadan, Oyo State.

4.2 Sample
A total of 50 students with hearing impairment were purposively selected from senior secondary school three (SSS3) in Methodist High School, Bodija, Ijokodo High School and HLA, Agodi in Ibadan, Nigeria. They were purposively selected based on their availability and expectation that they were matured and knowledgeable enough to participate in such research.

4.3 Instruments
Traditional medicine/alternative therapy inventory was designed to collect data. The instrument was designed by group of researchers that carried out this study. This was divided into four sections, namely: Sections A, B, C and D. Section A was on the demography of the respondents, while B was based on the perception of some plant for food, medicine or for both designed in four scales. Section B was designed in form of test to be able to determine their knowledge of medicinal plants while C was designed to gather information about consumption pattern and practices among students with hearing impairments. The reliabilities of the instrument in Section B, C and D were 0.72, 0.80, and 0.67 respectively using cronbach alpha.

4.4 Data Collection
The samples of medicinal plants gathered were initially displayed to aid the participants common knowledge of some these plants found in their community. Thereafter, the researchers distributed the instruments among the participants with further explanation wherever occasion called for such because of their peculiarity. The responses were later collected and properly checked to ensure accurate response to the items in the questionnaire.

4.5 Data Analysis
The data collected were collated, coded and analysed using simple percentage, frequency count and mean to answer research questions. Hypotheses were tested using t-test and Pearson Product Moment Correlation.

5. Result
The analysis of the biographical data showed that majority .of the respondents (60.0%) were females. Only 40.0% of them were males. On their ages, 56.0% of the respondents were between 16 and 20 years. 40.0% were between 10 and 15 years old, while only 4.0% were between 20 and 25 years. The analysis of their religion showed that 48.0% were Christians, 50.0% were Muslims while 2.0% do not belong to the two religions. Analysis of their ethnicity showed that 14.0% were Hausas, 12.0% were Igbos, 72.0% were Yorubas while 2.0% belonged to the group of others who do not belong to any of the three tribes. On their Nationality, 94.0% were Nigerians while 6.0% were non Nigerians.

Research Question One: How do people with hearing impairment perceive herbal medicinal plants?
Table 1:Perceptions of the hearing Impaired about Herbal Medicinal Plants

Item	Good as food	Good as medicine	Good for both	Not good for both
Bitter leaf pawpaw, guava leaf, scent leaf, almond tree leaf	29(58,0)	19(38.0)	1(2.0)	1(2.0)
Cat's eyes leaf. Bitter kola leaf	21(42.0)	15(30.0)	1(2.0)	1(2.0)
Sugarcane stem bark, watermelon, unripe plantain	34(68.0)	11(22.0)	4(8.0)	1(2.0)
Garlic bulb, ginger rhizome, scent leaf, pawpaw leaf	22(44.0)	16(32.0)	7(14.0)	4(8.0)
Waterleaf. Ethiopian pepper	31(62.0)	6(12.0)	5(10.0)	8(16.0)
Locust bean seed, scent leaf	22 (44.0)	15(30.0)	7(14.0)	6(12.0)
Garlic bulb, bitter cola seed, ginger rhizome, pawpaw seed, pineapple fruit	14(28.0)	25 (50.0)	9(18.0)	2(4.0)
Lemon grass leaf, cat's eye leaf, mango leaf	14(28.0)	22 (44.0)	8(16.0)	6(12.0)
Lemon grass leaf, moringa leaf, neem leaf, bitter leaf	17(34.0)	23(46.0)	5(10.0)	5(10.0)
Lime fruit juice	26(52.0)	21(42.0)	3(6.0)	0(0.0)
Sorghum leaf, bitter leaf	11(22.0)	29(58.0)	4(8.0)	6(12.0)
Scent leaf, bitter leaf, alligator pepper seed	24(48.0)	13(26.0)	5(10.0)	6(12.0)

- Percentages in parenthesis

Table 1 above shows the responses of the hearing impaired on their perceptions about herbal plants provided. Majority of them (more than 40.0% in each case) agreed that the plants listed as items 1,2,3.4,5,6, 10 and 12 are good for food: while majority of them (more than 50.0% in each case) agreed that the plants listed as items 7,8.9 and 11 are good as medicine. Conclusively, in the opinion of the respondents they agreed that the following plants are good as food:

i. Bitter leaf, pawpaw, guava leaf, scent leaf, almond tree leaf

ii. Cat's eyes leaf, Bitter kola leaf

iii. Sugarcane stem bark, watermelon, unripe plantain

iv. Garlic bulb, ginger rhizome, scent leaf, pawpaw leaf

v. Waterleaf, Ethiopian pepper

vi. Locust bean seed, scent leaf

vii. Lime fruit juice

viii. Scent leaf, bitter leaf, alligator pepper seed

On the other hand, they agreed that the following plants are good as medicine

i. Garlic bulb, bitter cola seed, ginger rhizome, pawpaw seed, pineapple fruit

ii. Lemon grass leaf, cat's eye leaf, mango leaf

iii. Lemon grass leaf, moringa leaf, neem leaf, bitter leaf

iv. Sorghum leaf, bitter leaf

Research Question Two: What is the level of knowledge of students with hearing impairment about alternative medicine?

Table 2: Level of knowledge of students about alternative medicine

No of Participants	Mean	Standard Deviation	Maximum	Minimum	Range
50	2.18	1.240	4	0	4

Table 2 above shows the level of knowledge of students with hearing impairment about alternative medicine. Knowledge was measured with an achievement test with maximum score of 10. A mean of 2.18 out of a maximum score of 10, coupled with a maximum score of 4 showed that the level of knowledge of students on alternative medicine is very low.

Hypothesis One: There is no significant difference in identification and consumption practice of herbal medicine between male and female students with hearing impairment

Table 3: T-test Analysis of identification of herbal medicine

Gender	**N**	**Mean**	**S.D.**	**T**	**Df**	**p-value**	**Remark**
Male	20	30.05	3.940	0.725	48	0.472	N.S.
Female	30	29.30	3.334				

N.S. Not significant

Table 3 presents the t-test comparison of the scores of male and female students with hearing impairment identification of herbal medicine. The t-test comparison showed that the mean difference in identification of herbal medicine between male and female students with hearing impairment is not statistically significant (T-calculated = 0.725, df = 48, P > 0.05). We therefore accept the null hypothesis. It therefore follows that from the

sample of the study, the mean identification of male students (Mean = 30.05, Standard Deviation 3.940) is higher than that of their female counterparts (Mean - 29.30, Standard Deviation = 3.334). But since the difference is not statistically significant, we cannot generalise the result.

Table 4: T-test Analysis of consumption practice of herbal medicine

Gender	N	Mean	S.D.	T	Df	p-value	Remark
Male	20	28.40	3.202	1.599	48	0.116	N.S.
Female	30	26.93	3.162				

N.S - Not significant

Table 4 presents the t-test comparison of the scores of male and female students with hearing impairment consumption practice of herbal medicine. The t-test comparison showed that the mean difference in consumption practice of herbal medicine between male and female students with hearing impairment is not statistically significant (T-calculated -= 1.599, df = 48, P > 0.05). We therefore accept the null hypothesis. It therefore follows that from the sample of the study. The mean consumption practice of male students (Mean = 28.40. Standard Deviation = 3.202) is higher than that of their female counterparts (Mean = 26.93. Standard Deviation = 3.162). But since the difference is not statistically significant, we cannot generalise the result.

Hypothesis Two: There is no significant influence of religion on consumption practice among students with hearing impairment.

Table 5: The relationship between Religion and Consumption Practice (N = 50)

		Religion	Consumption Practice
Religion	PPMC	1.000	-0.035
	P-value		0.805
Consumption Practice	PPMC	-0.035	1.000
	P-Value	0.805	

Pearson product moment correlation (PPMC) coefficient was calculated for the relationship between religion and consumption practice among students with hearing impairment. A weak negative correlation that was not significant at 0.05 level of probability (r = -0.035, p > 0.05). Therefore religion had a weak negative relationship which is not significant with consumption practice of herbal medicine among students with hearing impairment. The non significant relationship implies that the influence is not generalisable.

6. Discussion

The result of research question 1 revealed that students with hearing impairment perceived that many of the items of specimens of traditional medicinal plants used for the research were ordinary food. This demonstrated that majority of the respondents did not know that the specimens are good as medicine and food. The outcome is suggestive that there is poor awareness of this traditional/alternative therapy among the hearing impaired. This is contrary to what happens in the western world as both people with and without disabilities are well informed of the latest in their environment. For instance, Stein (2004) noted that in developed countries such as United States, majority of people (55%) combine alternative treatment with conventional medicine. The outcome of research question 1 was contrary to WHO submission that about 80% of the world people depend on traditional medicine for primary health care needs as reported by (Azaizeh, et al., 2003).

Research question 2 revealed that the participants used (students with hearing impairment) have low knowledge of the alternative medicine. Obviously, students with hearing impairment are familiar with those medicinal plants common in their environment however, the knowledge that they can serve as medicine to cure some common ailment was very poor. Of concern to people with hearing impairment in Nigeria is the poor knowledge of some benefiting information. Though this group of people had been active consumer of these local plants at whatever rate and measurement which sometimes would have been detrimental to their health or improve their health status but lack of knowledge of their uses is not good when it comes to using traditional medicine as complementary to orthodox. For instance, Seidman and Babu (2003) reported that there is growing shift to alternative forms of therapy as many patients are showing dissatisfaction with conventional medical care because of serious side effects of many orthodox medications. Polarito (2012) also reported a number of nutrient supplement derived from medicinal plants are being studied and applied to mitigate cellular and molecular

damage that leads to hearing loss. Hence, having the knowledge of the usefulness of some medicinal plants could be advantageous for individuals with and without disabilities.

The result of hypothesis 1 revealed no significant difference in the identification and consumption practices of herbal medicine among male and female students with hearing impairment that participated in the study. This is so because two groups are affected with similar condition. They are virtually cut away from the language rich environment which make vital information of what happens around them elusive. This lack of information affects all domains of their lives. The impact of this lack of information is of the major reasons why children with hearing impairment were disproportionately described as underachiever as described Oyler, et al (1987) and cited by Kippler, et al -(2013).

The result of hypothesis 2 revealed that there is no significant influence of religion on consumption practice among students with hearing impairment. The Pearson product moment correlation revealed weak relationship which is indication that whatever religion the participant practice, it has not demonstrated any serious influence on them. Therefore, the major influence is education and information which will help them to know the benefit of these medicinal plants which ordinarily they consume as common food.

7. Conclusion

The growing trend in health care delivery is the use of traditional medicine as alternative or complementary interactive approach to treat variety of health related challenges. In rural and sub-urban area, traditional medicine has remained the most affordable and accessible source of treatments which makes the survey of knowledge, perception and consumption practices among people with hearing impairment necessary. The outcome of the study revealed that this group of people demonstrated negative perception and poor knowledge toward this complementary approach to conventional medicine. This therefore should serve as an eye opener to all stakeholders in the field of education and caregivers of people with hearing difficulty that there is still a lot to be done in order to make society develop holistically in all areas of our lives.

8. Recommendations

In view of the outcome of this study, it is therefore recommended that:

- awareness should be created among students with hearing impairment on the new trend of healthcare delivery which employs traditional medicine derived from plants common in our communities;
- proper education should be given to students with hearing impairment about traditional medicine which is now alternative or complementary in approach for treating some common ailment and life threatening diseases;
- traditional medicine and medicinal plants study should be introduced into the curriculum right from primary school to acquaint school age children with identification and usage of these plants; and
- more advocacy should be done by government, non-governmental organisations and individuals to make society realise the plight of people with disabilities generally.

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