

ETHNOGRAPHIC ASSESSMENT OF FISHES USED BY TRADITIONAL HEALTH WORKERS FOR TREATMENT OF REPRODUCTIVE DYSFUNCTION AMONG RESPONDENTS IN SOUTHWEST NIGERIA

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Abstract

*This study examines fishes used by traditional health workers for treatment of reproductive dysfunction among health workers in Southwest Nigeria. Participant observations, case studies, in-depth interviews, archival materials and ethnographic observations were used to generate qualitative and quantitative data on fish species utilized and their sources. Interview schedule was used to obtain data on socio-economic characteristics and sources of fishes from 215 selected traditional health workers through multistage sampling technique. Data were analysed using frequency count, percentages, means and standard deviations and analysis of variance. Findings revealed that 80.0% of the respondents were male, 96.3% married, 52.1% were Muslims, and 48.8% had 11 years of experience in indigenous healing practices. Also, 62.5% had secondary education, 30.2% were engaged in farming with a mean age and household size of 45 years and 12 persons respectively. Commonly used fishes were: *Clarias gariepinus*, *Clarias anguillaris*, *Malapterurus electricus*, *Parachanna striata*, *Tilapia guineensis*, *Monodactylus sebae* and *Phractolaemus ansorgii*. The result from ANOVA shows that there were significant differences in sources of knowledge ($F = 4.007$, $P = 0.019$), years of experience ($F = 4.042$, $P = 0.046$) and number of trainees ($F = 35.022$, $P = 0.000$) across the study are*

Keywords:

**IJAFS 2018 (10), 8:1226:1236
Accepted for publication
September 2018**

INTRODUCTION

Aquaculture is an important component of agriculture providing required protein to ensure healthy living among humans (Adewale, 2011). It is confirmed by literature to be of immense significance in traditional healing across Yoruba speaking people of Southwest Nigeria. Good health is an impetus to the overall development of the rural populace (Ladele and Amosun, 2014). In Southwest Nigeria, the use of herbs has been revived and is regaining its prominence and honour across socio-economic strata of the populace (Ladele and Amosun, 2014). There had been practical utilization of herbs to cure ailments; in fact, the renaissance of medicinal herbs is due to the fact that herbs offer solutions without stumbling blocks for everyday disorders (Sofowora, 1997). Diseases are being treated with concoctions made from herbs and animal derivatives. Sahelia, (2010) reported that traditional healers add herbs to the fish oil in the course of remediation of a disease condition. In Yoruba land, palm oil is referred to as ero (i.e. antidote). Since the major reason for using fish is not just for consumption, the oil in the fish does the healing by mixing it with herbs (Orilogbon and Adewole, 2011). A number of fish species are of immense importance in unorthodox medicine (Sahelia, 2010). *Clarias* spp. “eja aro” is found to be multipurpose as it is used to cure insanity and other mysterious ailments. For instance, “Orunmila” a deity, loves “Eja Aro” *clarias* when sacrificing against enemy,

Fish is used by Ifa priests as an object for idol worship, spiritual rites and also native medicine for healing (Orilogbon and Adewale,2011).

Family stability in rural community hinges on a number of factors of which reproduction is one, in the same vein, Anastasia Gage-Brandon. (1992) established a strong relationship between polygyny and fertility, and that sexual prowess determines the number of wives in rural households. He further submitted that childlessness and sexual dissatisfaction often contribute significantly to family instability in rural communities in Nigeria. Agriculture is always at the receiving end of issues at family level as family provides most of the labour used in agricultural operation.

Ontological and epistemological orientations of ethnography with the ethnographic hosts in research and researcher, to a greater extent helped to unearth the benefits extracted from fishes and put into use in indigenous traditional ways (Orilogbon and Adewale, 2011). Hence, a number of debilitating health situations most especially reproductive dysfunction juxtapose the findings from the field work and literature. This expository helped to establish a nexus in the curative potentials of the fish-based ethnomedicine for the benefits and use for mankind. . It is in view of the above, that the following research questions were addressed, what are the types and parts of fishes used in traditional medicine? And how these fish's species were utilized for the treatment of reproductive dysfunctions among respondents in the study area?

Hypothesis of the study

H₀₁: There is no significant difference in selected socioeconomic characteristics of traditional health workers across the states in the study area.

METHODOLOGY

Description of the Study Area

The study was carried out in Southwest part of Nigeria which lies between latitude 6⁰ and 9⁰N of the equator and longitude 2⁰ and 7⁰E of the Greenwich meridian occupying an area of 76,851 square kilometers. The region is made up of six states namely: Lagos, Ekiti, Ogun, Ondo, Osun and Oyo states. The total population of the area is 27,581,992 with Lagos state having 9,013,534; Oyo -5,591,589; Ondo 3,441,024; Osun 3,423,535; Ogun 3,728,098 and Ekiti 2,384,212 (World Population Prospects, 2006). It is bounded in the south by Atlantic Ocean, in the west by the Republic of Benin, in the east by Edo and Delta States, and to the north by Kwara and Kogi States (National Bureau of Statistics, 2010). The area is mainly dominated by the Yoruba ethnic group. There were two phases in the research design for this study which were qualitative and quantitative methodological approaches. In qualitative approach, participant observation, interviewing, archival research and case study were used. It involves note taking, pictures and voice recording of every stage of preparation of traditional medicine having fish as their active ingredient. In quantitative methodology, Interview guides were prepared and used at to determine the socio economic characteristics of the ethnographic hosts in the study area.

Multistage sampling procedure was used to select the respondents in the study area. First stage; 50% of the Southwest states were purposively selected- (Ondo, Lagos and Oyo). The chosen states were stratified into riverine and non-riverine areas, giving Ondo and Lagos as riverine states, while Oyo represented non-riverine state. The second stage, Ilaje Local Government; Epe and Badagry Local Governments were purposively selected because of the fact that the subject-matter is fish and that there is an intense fishing activities in Ondo and Lagos states, respectively. At stage three, the respondents were sampled proportionate to size where 25% were obtained from the available sample frame where a total of 215 respondents were used for the study.

Ethnographic hosts used for the research were those that volunteered to avail the researchers the processes and procedures for the preparation of ethno medicine having fishes as active ingredients for treating reproductive dysfunctions and other health challenges.

Socio economic parameters such as: age, marital status, religion, household size, secondary occupation, educational status, nativity and sex of traditional medical practitioners were considered as independent variables. A list of five possible sources of fishes were provided which included: fishermen, fish traders, traditional pharmacists, self-sourcing and fellow traditional practitioners. Respondents were requested to indicate how often they sourced for fishes whenever they were needed in the preparation of fish-based medicine. This was rated in a three- point rating scale of regularly (3), occasionally (2) and never (1). The mean score of each source was computed and used in ranking the sources of fishes used in traditional medicine from the most used to the least used.

The qualitative data derived from the ethnographic engagement with ethnographic hosts where participant observation, in-depth interview were spontaneously adopted and analyzed manually by the researcher. This was done using the thematic and content analysis. Data obtained through ethnographic processes such as observation, participant observation, in-depth interview, pictures and tape recording were subjected to content analysis which is a procedure for the categorization of verbal or behavioural data, for purposes of classification, summarization and tabulation. The analysis involved a more interpretive analysis that is concerned with the response as well as what may have been inferred or implied.

The quantitative data collected were subjected to descriptive statistics such as frequency counts, percentages, means and standard deviation. The mean of the data was obtained by summing all the data values (scores) divided by the total numbers of values data value or scores (N). Also, Analysis of Variance (ANOVA) was used to test for the differences in the socioeconomic characteristics of traditional health workers across the states in the study area.

RESULTS AND DISCUSSION

Socio- economic characteristics of traditional health workers

Data presented in Table 1 shows the mean age of the respondent 46 years. In Lagos state, an appreciable percentage (69.2%) of the respondents was below 50 years, in Ondo state, slightly below average (42.8%) of traditional health workers were below 50 years of age, while in Oyo state, majority (67.1%) had their ages below 50 years. The description infers the active involvement of relatively young people in traditional medicine practices in the Yoruba dominated Southwest Nigeria. This is a positive development as the involvement of vibrant youth will ensure the preservation of the age-long practice and ensure its sustainability. In other words, it prevents the extinction of traditional ingenuity of immense therapeutic significance in the rural community. It is evident that people are not deterred despite the much hype geared towards the discouragement of the practice and use by some elites and practitioners of western medicine degrading the indigenous medicine as an anachronistic profession or practice (Ehinmore and Ogunode, 2013). They therefore put no premium on it. This is connected with some factors such as inadequate scientific proofs, beliefs in ancestors, nemesis, superstitions and other anecdotal evidences (Omachonu, 2009: Erinmore and Ogunode, 2013). Also, the involvement of active ages of the population is a pointer to the fact that people are becoming more aware of the efficacy of the traditional medicine and the fear of its transmission to the younger generation is allayed.

Table 1 reveals that majority (80.0%) of the traditional health workers were male, while 20.0% were female. Ondo state has the highest (82.9%), while Lagos and Oyo had 80.0% and 79.1% respectively. This is evident that the practice is not gender biased, and that female are getting involved in the practice of ethnomedicine unlike what was obtainable in the ancient time where the profession was absolutely reserved for elderly men in the community (Borokinni and Lawal, 2014). Women are mostly dominating traditional birth attendance, and they hardly specialize only on this but in combination with other aspect of healing carried out by the traditional doctors. They have different names such as *Iya Osun*, chief priest of Osun religion *Agbomola* the woman that provides salvation for one in spiritual captivity, *yeye orisa* chief priest of the oracle. The epistemology of traditional healing does not reside only with men. The ingenuity of the practice could be got from varying sources without gender affinity and affiliation. It may be got from mystical sources such as encounter with angels, supernatural contact with spirits, dreams, intuition, revelation, trance and ancestral profession (Borokini and Lawal, 2014).. Women also participate not only in the collection of herbs, but some are intensively involved in the prescription and application of the ingenious epistemology. (Borokini and Lawal, 2014).

Table 1 further shows that three states, it appears that the practice of ethnomedicine is championed by married people that were married as revealed that the majority (96.3%) were responsible male and female. Ondo state has the highest (97.1%) number of married members of traditional health workers. It can also be subsumed that traditional medicinal practice is meant for the mature and responsible class of the society which is in tandem with the submission of Fakoya (2000) that marriage attaches a very high degree of responsibility on individual. In the same vain, Ekong, 2003 also justifies the consideration of ages across culture as a precondition for marriage. It also implies that the practice of ethnomedicine in Southwestern Nigeria is a family affair and every member of the family is involved both in the collection of herbs and animal derivatives and in the processing of traditional concoctions providing healings for their patients. Importantly, traditional medicine is said to be a sacred profession that is completely intolerant to and abhor abominable acts like adultery with the belief that engagement in such acts may have spiritual implication effect on the efficacy of his herbal products (Taye, 2009).

The results revealed that the traditional health workers had mean household size of 8 people. Majority (78.1%) across the three states had household size of not less than 8 people. Oyo has the highest proportion of 83.4% of people per household not less than 8 people. Ondo and Lagos states mustered 74.3% and 70.8% having at least 8 people in their various households respectively. It is inferred that traditional medical practitioners do not attach any importance to the contemporary issue of family planning; also they are mostly polygamists with the resultant effects on increased number of children per family.

Results from the Table 1 further reveals that slightly above average (52.1%) of traditional health workers were adherents of Islamic religion in southwestern Nigeria, while Christians and traditional religions had 33.9% and 14.0% respectively. This implies that their involvement in traditional medicine as a profession did not deter them from practicing either of the prominent religions in Nigeria. This is contrary to the submission of Sofowora, (2008) that most of the traditional doctors are stakeholders in traditional religions such as Osanyin, Sango, Ogun, Oya, Osun and Obatala. It could be deduced that religion has no effect on the practice of traditional medicine.

Table 1 shows that 62.8% of the traditional medical practitioners had formal education not below secondary school across the three states considered. The results also showed that Ondo state had the highest proportion of traditional medical practitioners who had secondary education followed by Lagos and Oyo in the order of

60.0%, 55.4% and 49.3% respectively. This implies that the traditional medical experts were fairly educated, and this in no small measure, must have been contributing significantly in their application of basic hygiene principles in the preparation of concoctions used in the treatment of patients undergoing traditional therapeutic process of healing. This is against the submissions of Akunyili, (2009), Borokinin and Lawal, (2013) that most of the traditional health workers were illiterate, and in the process compromising hygiene and health conditions of their patients. This was corroborated in the words of one of the ethnographic hosts. *"I had wanted to take up the job of my father who was a very strong traditional healer immediately after his demise; I could not, no thanks to the demand of office. Immediately I meritoriously retired from service, I took up the profession which has proven to be satisfactory and financially rewarding."* The above lends credence to the fact that the profession is not dominated by stack illiterates.

On years of experience, the table 1 shows that 35.8% of the traditional medical practitioners had been involved in traditional medical practices for between 11 and 15 years. Some (26,5%) had the experience of practice of between 6-10 years, while 17.2% and 13.0% had been in the profession for 16-20 and 21 years and above respectively across the three states investigated. The above implies that the influx of the relatively young people into the indigenous medical practice is responsible for the relatively short period of engagement.

The results from the Table 4 revealed that majority (80.7%) of the traditional medical practitioners had trainees across the three states. Also, slightly above average (51.1%) of the herbalist did not have less than 6 trainees. Also, 63.5%, 50.9% and 11.4% of the herbalists from Oyo, Lagos and Ondo respectively had not less than 6 trainees. This kind of indigenous educational opportunity provides a sustainable means of preserving cultural heritage and traditional ingenuity of ensuring the wellbeing of people especially in rural communities.

Other income generating engagement:

The results from the Table 1 show the findings on the income generating activities by the respondents apart from traditional medicine practices. Farming was the most (30.2%) engaged of other income generating activities embraced by the traditional health practitioners; it is trailed by trading because 25.1% of the respondents took to trading as other income generating engagement, some engaged in marketing of herbal products while others engaged in trading of unrelated commodities as revealed during the study. Also, 22.3% of the respondents did engage in artisanship and craftwork. This implies that traditional health workers in the southwestern Nigeria engaged in different kinds of income generating activities to support and improve the wellbeing. In Oyo state, 42.9% of the traditional health workers had farming as their livelihood activities, 28.7% engaged in trading, 18.3% took to craft work and artisanship, while 8.7% were civil servants. For Ondo state, 45.7% engaged in fishing as their livelihood activity, 20.0% took to farming to guarantee food security, while artisanship/craft and trading had 14.3% apiece

Table 1: Distribution of respondents by socioeconomic characteristics

Variables	Categories	Lagos (n=65) Freq. (%)	Ondo (n=35) Freq.(%)	Oyo (n=115) Freq.(%)	Pooled (n=215) Freq. (%)
Age (Years)	31 - 40	6(9.2)	4(11.4)	12(9.7)	22(10.2)
	41 – 50	39(60.0)	21(60.0)	66(57.4)	126(58.6)
	51 – 60	10(15.4)	9(25.7)	34(29.6)	53(24.7) mean=46
	61 - 70	8(12,3)	1(2.9)	2(1.7)	11(5.1)
	71- and above	2(3.1)	none	1(0.8)	3(1.4)
	Mean	46 years	45 years	45 years	45 years
Sex	Male	52(80.0)	29(82.9)	91(79.1)	172(80.0)
	Female	13(20.0)	6(17.1)	24(20.9)	43(20.0)
Marital status	Single	None	None	None	
	Married	62(95.4)	34(97.1)	111(96.5)	207(96.3)
	Widowed	3(4.6)	1(2.9)	4(3.5)	8(3.7)
Religion	Christianity	21(32.3)	12(34.3)	40(34.8)	73(33.9)
	Islam	37(56.9)	18(51.4)	57(49.6)	112(52.1)
	Traditional	7(10.8)	5(14.3)	18(15.6)	30(14.0)
Educational status	No formal Education	6(9.2)	2(5.7)	13(11.3)	21(9.8)
	Adult education	3(4.6)	None	16(13.9)	19(8.8)
	Primary Education	12(18.5)	8(22.9)	20(17.4)	40(18.6)
	Secondary Education	36(55.4)	21(60.0)	49(42.6)	106(49.3)
	Tertiary education	8(12.3)	4(11.4)	17(14.8)	29(13.5)
Household size	3-7	19(29.2)	9(25.7)	19(16.5)	47(21.9)
	8-12	29(44.6)	21(60.0)	84(73.0)	134(62.3) mean=8
	13 and above	17(26.2)	5(14.3)	12(10.4)	34(15.8)
Years of Experience in traditional medicine	1-5	4(6.2)	3(8.6)	9(7.8)	16(7.4)
	6-10	8(12.3)	7(20.0)	42(36.5)	57(26.5)
	11-15	26(40.0)	19(54.3)	32(27.8)	77(35.8) mean=12
	16-20	13(20.0)	2(5.7)	22(19.1)	37(17.2)
	20 and above	14(21.5)	4(11.4)	10(8.7)	28(13.0)
Number of trainees	None	8(12.3)	26(74.3)	7(6.1)	41(19.3)
	1-5	24(36.9)	5(14.3)	35(30.4)	64(29.8) mean=8
	6-10	12(18.5)	2(5.7)	51(44.3)	65(30.2)
	11-15	17(26.2)	2(5.7)	21(18.3)	40(18.6)
	16 and above	4(6.2)	none	1((0.9)	5(2.3)
Other income generating activities	farming	9(13.9)	7(20.0)	49(42.6)	65(30.2)
	trading	16(24.6)	5(14.3)	33(28.7)	54(25.1)
	civil service	10(15.4)	2(5.7)	10(8.7)	22(10.2)
	Fishing	8(12.3)	16(45.7)	2(1.7)	26(12.1)
	Artisans/crafts	22(33.8)	5(14.3)	21(18.3)	48(22.3)

Source: Field survey, 2017

Freq. =frequency, % = percentages:

Sources of fishes used in traditional medicine

Table 2 presents the sources of fishes used in traditional medicine by the respondents. It reveals that traditional pharmacists, fish traders, self-sourcing, fishermen and gift from fellow traditional doctors have weighted mean 1.29, 1.44, 2.21, 2.40 and 2.41 respectively as the various sources of fishes used in traditional medicine. The results further shows that in Lagos and Ondo states, fish traders had weighted mean of 1.18 and 1.00 respectively and were ranked first in each of the two states. Traditional pharmacists in Oyo state had weighted mean of 1.12 ranked first among the various sources. This implies that fish trading is a major livelihood activity in riverine states. Therefore traditional medical practitioners have unrestricted access to numerous fish traders who have been seeing different kinds of fishes and are well familiar with their names and their peculiar characteristics in the fishing community. In Oyo state which is non-fishing area, fishing is not a prominent and

fashionable income generating activity except in dams across the state, this is responsible for the influx of their sourcing majorly with Traditional Pharmacists (*lekuleja*). Traditional pharmacists play pivotal roles in the development of traditional medicine; they are the sources of ingredients and materials combined in the preparation of traditional medicine. It is obvious that traditional pharmacists often play substantial roles in the development of traditional medicine among the traditional medicine practitioners in southwestern Nigeria as they relentlessly provide ingredients and other materials for the preparations of traditional concoctions for those who know their uses.

Table 2. Sources of fishes utilized in traditional medicine

Sources of fishes	Lagos state					Ondo state					Oyo state				
	RE %	OC %	NV %	Mean n	Rank	RE %	OC %	NV %	Mean n	Rank	RE %	OC %	NV %	Mean n	Rank
1. Fishermen	18.5	69.2	12.3	1.94	3 rd	17.1	28.6	54.1	2.37	5 th	5.2	0.9	93.9	2.89	5 th
2. Fish traders	84.6	12.3	3.1	1.18	1 st	100.0	0.0	0.0	1.00	1 st	22.6	38.3	39.1	2.16	2 nd
3. Traditional pharmacists	53.8	40.0	6.2	1.52	2 nd	77.1	22.9	0.0	1.23	2 nd	87.8	12.2	0.0	1.12	1 st
4 Self sourcing	18.5	53.8	27.7	2.09	4 th	34.3	31.4	34.3	2.00	3 rd	7.0	30.4	62.8	2.55	4 th
5 Gift from fellow traditionalist	4.6	46.2	47.7	2.89	5 th	8.6	62.9	28.6	2.20	4 th	13.9	56.5	29.6	2.16	2 nd

Source: Field Survey, 2017

RE=Regularly, OC= Occasionally, NV= Never, % percentage

Identification of different fish species utilized for the treatment of reproductive dysfunctions in the study area Catfish (*Clarias anguillaris*) (Eja Abori)

From the ethnographic engagement, majority of the ethnographic hosts emphasized the significance of *Clarias anguillaris* in ethnomedicine. Typical responses of the discussants are given below:

- *the fish is of immense uses given to us by god to provide antidote to a number of infirmity traceable to witches and wizards*
- *It is important in most of rituals to guarantee peaceful and successful living. Booming of businesses and prevention of delay delivery is at the mercy of the use of *Clarias anguillaris**
- *It paves way that might be practically impossible for others, it does not work alone but in conjugation with some herbs and empowered with incantations*
- *The fish is often used by Ifa oracles to appease god in preferring solutions to preternatural challenges*
- *Mostly used for the pregnant women to ensure peaceful delivery. I have used it on several occasions to free pregnant women from spiritual bondages associated with delivery, says "my father taught me the use of eja abori to cure insanity. I have healed about four people having insanity traceable to attack by people they offended with the use of fish and other materials. The caveat emptor is that the traditional doctor should not collect money from the family of the psychiatric patient after healing, otherwise one of the traditional doctor's family members will become insane in no distant time"*

From the above verbatim submissions that were translated, all of the ethnographic hosts lent credence to the fact that this species of fish is used in diverse of purposes. (Sowumi, 2007) affirmed that that *Clarias* was the choice fish both in terms of occurrence of usage in recipes and the number of medical conditions for which different preparations containing this fish can provide relief.

(*Malapterurus electricus*) Electric catfish (Eja Ojiji)

From the ethnographic sojourn, the experts in traditional medicine have these to say with regards to the usefulness of electric fish:

- *“Electric fish is multipurpose and its power resides in its electric power. With or without incantations, there are several ways it could be combined”*.
- *“My grandfather taught me various ways through which it could be put to use. It had been used to cure ailments like stroke and for enhancing mental alertness”*
- *“Electric fish alone cannot give the desired result but in combination with herbs and some incantations”*
- *“Electric fish is combined with herbs to seek favour of elders in life endeavour with incisions around various region of the body”*
- *“Mental acuity is guaranteed with the use of electric fish”*
- *“Treatment of sexual dysfunction in man is guaranteed with electric fish”*
- *A medical doctor invited me to help him when he was having issues while taking delivery, I prepared a concoction for him and the newborn baby came out five minutes after administered the concoction having electric fish as the major ingredient”*
- *“I offered permanent treatment for stroke with ease with the use of electric fish only if the sick person can withstand the shock in response to the electric discharge by the fish in a bowl of water. It is guaranteed, life would be restored and the dead nerves would be activated in no distant time”*

All the interviewees lent credence to the fact that electric fish is a good source of traditional medicine as submitted verbatim above. Some attached the prowess of electric fish especially with the efficacy of the concoctions having it as the active ingredient to its unique ability to discharge electric current.

Tilapia : *Tilapia guineensis* (Eja Epiya)

Tilapia is one of the hundred species of cichlid fish from the tilapine cichlid tribe. Tilapia is mainly freshwater fish inhabiting shallow streams, ponds, rivers and lakes and hardly found in brackish water.

Tilapia is used in Yoruba traditional medicine in curing cancer of the breast, and for controlling chicken pox

***Phractolaemus ansorgii* (Eja Ogidigbo)**

This species of fish is ethnomedically used to prepare concoction against poison. The fish remains the major ingredient in providing immunity against antics of enemies finding means of exterminating one's life. However, there are other animal derivatives included in ensuring the efficacy of the concoction.

***Monodactylus sebae* African moony (Eja Apagha)**

Monodactylus sebae, the African moony, is a [species](#) of [moonyfish](#) native to fresh, [brackish](#) and marine waters from West Africa. It is a diamond shaped fish with a larger anal fin. It is abundant in Lagoons and coaster areas. It also used in remedy reproductive dysfunction

***Clarias gariepinus* (Eja Aro)**

- *“it is always very difficult to differentiate *Clarias anguilaris* from *Clarias gariepinus*, size and colour often aid classification of the species of clarias. It is always given to pregnant women to ease delivery.*
- *It also aids mental alertness (ori ni eja fi n la ibu) it is the head of fish that helps it navigating the deep of the sea.*
- *“the fish is multipurpose for those who know its uses”*
- *“ traditionally, it is used in social events like naming ceremony and marriages”*

Table 3: Fishes and their health uses

Fishes	Diseases/illnesses they treat or control
<i>Clarias gariepinus</i> (Eja aro)	Fertilization enhancer. Safe delivery, stillbirth control, preterm birth prevention, maigraine, measles, erectile dysfunction
<i>Clarias anguillaries</i> (Eja Abori)	Insanity, overdue pregnancy
<i>Malapterurus electricus</i> Electric catfish (Eja Ojiji)	Stillbirth, stroke, hypertension, mental alertness, fetal movement, erectile dysfunction
<i>Monodactylus sebae</i> . (Eja Apagha)	Erectile dysfunction
<i>Tilapia. guineensis</i> (Eja Ipiya)	Breast cancer
<i>Phractolaemus ansorgii</i> . (Eja ogidigbo)	Erectile dysfunction, anti-poison
<i>Parachanna striata</i> . Snakehead fish (Eja Okodo)	Measles

Source: Ethnographic survey, 2017

Reports of focus group discussions (FGDs)

The participants were arranged in a relaxed atmosphere. They were asked to freely express their opinion about the uses of fish in traditional medicine. The summary of the discussions were presented as follows:

Lagos state: All the participants (100.0%) agreed that fish has been used from ancient time in treating ailments, rituals and ceremony. They all agreed (100.0%) that fish are very useful in treating reproductive dysfunctions. Majority (75.0%) were of the opinion that fish is used in treating reproductive dysfunctions. For its utilization in treating erectile dysfunction, slightly above average (55.0%) had used *Malapterurus electricus* for the treatment of erectile dysfunction. With regards to the use of fish to forestall difficulty in delivery, all (100.0%) the participants attested to the usefulness of *Clarias anguilaris* and *Clarias gariepinus* as very important aquatic animals used in the preparation of concoction to be offered to the pregnant woman starting from the seventh month of the pregnancy. For the treatment of breast cancer, only (25.0%) had the knowledge of the use of *Tilapia guineensis* in combination with other ingredients. In the same vein, others (75.0%) were familiar with the use of *Clarias anguilaris* for the purpose of treating breast related growths. For the prevention of sperm discharge after sexual intercourse, only (10.0%) of the participants had the knowledge of the use of fish for the purpose of sperm retention to enhance fertilization. For overdue pregnancy, the participants opined that any fish could be used depends upon what one was directed to use by *Ifa* priest, in trance or experience over time. In sourcing fish for medicinal uses, majority (85.0%) of the participants sourced for fish from fishermen, while the rest used to patronize traditional pharmacists for that purpose.

Ondo State: All the participants (100.0%) agreed that fish has been so beneficial in the treatment of a number of reproductive difficulties. The participants also attested (100.0%) to the use of fish for rituals, ceremony and in combination with herbs to take care of illnesses. Majority (75.0%) were of the opinion that fish is used in treating reproductive dysfunctions. For its utilization in treating erectile dysfunction, all (100.0%) the participants had used different types of fish for the treatment of erectile dysfunction.

In remedying difficulty in delivery, all (100.0%) the participants attested to the usefulness of *Clarias anguilaris* and *Clarias gariepinus* as very important aquatic animals used in the preparation of concoction to be offered to the pregnant woman starting from the seventh month of the pregnancy. For the treatment of breast cancer, none of the participants had used fish for the purpose of treating breast related issues. For the prevention of sperm discharge after sexual intercourse, average (50.0%) of the participants had the knowledge of the use of fish for the purpose of sperm retention to enhance fertilization. For overdue pregnancy, the participants opined

that any fish could be used depends upon what one was directed to use by *Ifa* priest, in trance or experience over time.

Oyo State: The participants attested to the usefulness of fish in traditional medicine. All the participants (100.0%) submitted fish is commonly used in combination with herbs for pregnancy related issues and to guarantee peaceful delivery. All (100.0%) affirmed that *Malapterurus electricus* is very essential in treating erectile dysfunction, and that other fish species could be used depends on the knowledge of their combination with other herbs and experience of the use.. The participants also attested (100.0%) to the use of fish for rituals, ceremony and in combination with herbs to take care of other health related issues aside reproductive dysfunction.

In remedying difficulty in delivery, all (100.0%) the participants attested to the usefulness of *Clarias anguilaris* and *Clarias gariepinus* as very important aquatic animals used in the preparation of concoction to be offered to the pregnant woman starting from the seventh month of the pregnancy. For the treatment of breast cancer, none of the participants had used fish for the purpose of treating breast related issues. For the prevention of sperm discharge after sexual intercourse, average (75.0%) of the participants had the knowledge of the use of fish for the purpose of sperm retention to enhance fertilization. For overdue pregnancy, the participants opined that any fish could be used depends upon what one was directed to use by *Ifa* priest, in trance or experience over time. Majority (85.0%) of the participants sourced for fish from traditional pharmacists for use in traditional medicine. Also, majority (90.0%) got the knowledge of traditional medicine from their ancestors or as a family profession.

Test of Hypotheses

The hypotheses for the study were stated and results were hereby presented below. It is to be noted that all the hypotheses were stated in null form.

Hypothesis 1

There is no significant difference in selected socio economic characteristics of traditional health workers across the states in the study area

The result of Analysis of Variance in Table 4 shows that there was a significant difference in source of knowledge of traditional health workers across the states in the study area because $f= 4.007$ and $p= 0.019$ which is less than 0.05 level of significance. This implies that sources of knowledge of the indigenous medical practice were not similar across the states in the study area. Hence, the null hypothesis that there is no significant difference is rejected. This could be as a result of the fact that some traditional health workers got the knowledge as ancestral occupation which eventually becomes family business, while some gained the knowledge of the practice through training as apprentices under a master who is assumed to be well knowledgeable in traditional medicine. This finding is in line with Lawal and Borokini, (2014) who submitted that the knowledge of the practice of traditional knowledge could be gained from ancestral inclination, could be revealed in the dream or vision, by trance, through learning and through supernatural contact with spirit or occultism. However, that the practice of traditional medicine has gained appreciable recognition from the government, there has been an influx of people into the practice thereby becoming a lucrative business.

Table 4 ; Summary of Analysis of Variance showing differences in sources of knowledge of traditional medicine by traditional health workers across the states in the study area

Variable	Sources of variation	Sum of squares	Df	Mean squares	F- value	p-value	Decision
Source of knowledge	Between Groups	1.805	2	0.902	4.042	0.019	S
	Within groups	47.330	212	0.223			
	Total	49.135	214				

Source: Field survey, 2017.

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