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UTILIZATION OF MALARIA CURING HERBS AMONG ARABLE CROP FARMERS IN IKOLE EKITI LGA, EKITI STATE, NIGERIA

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ABSTRACT

This study examined the utilization of malaria curing herbs amongst arable crop farmers in Ikole Ekiti LGA, Ekiti State. It described the socioeconomic characteristics of arable crop farmers; identified the malaria curing herbs utilized by arable crop farmers; ascertained the level of awareness; determined the level of utilization of the herbs; and to ascertained their perception towards the herbs. Data was collected using a structured interview schedule and was analyzed using frequencies, percentages, mean and standard deviation. The Pearson Product Momentum Correlation and Chi-square test statistics was used to test the postulated hypothesis. Findings revealed that the mean age of the farmers was 42.25 + 17.137 years, mean household size was 4.96 ± 3.163, mean annual income was ₦300,580±393,296, mean years of experience was 17.5 ± 16.245, majority (66%) were males and married (72%). Also, majority (92%) of the respondents practice contemporary religion and this may hinder the use of traditional medicine due to the belief that some of its aspects are diabolical in terms of sorcery and incantation. A positive and significant association was found between utilization of malaria curing herb and some selected socio-economic characteristics such as age (r = 0.260), sex (r = 0.084), marital status (r = 0.976) and household size (r = 0.883). a positive and significant correlation was found between perception of arable crop farmers and utilization (r = 0.017). In conclusion, herbal treatments for malaria are widely used by arable crop farmers and are perceived positively by them as effective, accessible, they have beneficial effect among others. There is also a need for massively sensitization of the people on the dangers of the indiscriminate use of herbal remedies and strengthen regulatory oversight on the operations of the herbal medicine practitioners by concerned agencies.

Keywords: Malaria, herbs, arable farmers, utilization and perception

Introduction

Malaria is a disease caused by protozoan parasites of the genus Plasmodium transmitted by infected female Anopheles mosquitoes. Earlier on, four species, namely P. falciparum, P. malariae, P. ovale, and P. vivax were known

to cause infection in humans (WHO, 2015). P. falciparum is the most virulent of the four and is responsible for about 80% of all malaria cases and about 90% of the deaths from malaria. (Fentahun et al., 2017) In adults, its common symptoms are headaches, weakness, fever, aches and pains, high body temperature (chills and rigors) and bitterness of the mouth (and loss of appetite) while in children, in addition to the above-mentioned symptoms, it may also manifest in more than normal sleeping, nausea and vomiting. Malaria is one of the most severe public health problems worldwide. It is a leading cause of death and disease in many developing countries, where young children and pregnant women are the groups most affected (Zemene et al., 2020).

Recent initiatives are now advocating the use of malaria control that involved the use of medicinal plants, otherwise referred to as 'ethnomedicine', a wide range of healthcare systems, practices, beliefs, structure and therapeutic techniques that arose from cultural development. Ethnomedicine does not follow the modern structure or 'western medicine' instead; its practices are based on the unique culture of people (Chukwuma et. al., 2019). It involves the use of plants and ingredients to treat the sick, and also focus on preventive techniques, such as the use of massage therapy, exercise, spices, herbs, and food to heal diseases. Traditional medicine has been the focus for wider coverage of primary health care delivery in Africa and the rest of the world. Traditional medicine refers to the sum total of knowledge or practices whether explicable or inexplicable used in diagnosing, preventing or eliminating a physical, mental or social disease, which may rely exclusively on past experience or observation handed practice generation to generation, verbally or in writing. It comprises therapeutic practices in existence for hundreds of years before the development of modern scientific medicine and is still in use today without much documented evidence of adverse effects (Supiandi et al., 2019).

Arable farming is a type of crop production that entails the production of wide range of annual food crops. This means that the crops life cycle from germination to seed production is complete within one year (Ibidapo et al., 2018). Arable crops include; beans, soybean, cotton, yam, maize, cocoyam, cassava, rice, among others. Farming is a risky business. As with other types of farming, arable farming is subjected to uncertainties of weather condition, prices, pests and diseases infestation, hired labour availability, machinery and equipment malfunctioning and government policy (Usman et al., 2017). These have negative effects on food prices, availability and farm profitability. Arable farming produces a wide range of annual crops. Arable farming dates back to the very first agricultural communities. As well as giving us many of our staple foods, it is also responsible for producing oils and fodder for animals. (Etuk et al., 2018)

Many rural people distrust Western medicine, preferring to use traditional methods as an alternative or unconventional modality of treatment involving the unorthodox use of herbs, as well as such as the consultation process of healers, mediums, shamans, sorcerers and various local deities (Olorunnisola et al., 2016). Therefore, this study described the socioeconomic characteristics of arable crop farmers; identified the malaria curing herbs utilized by arable crop farmers; ascertained their level of awareness of the malaria curing herbs; determined the level of utilization of the malaria curing herbs; investigated the perceived efficacy of the herbs and evaluated their perception towards malaria curing herbs.

Hypotheses of the Study

H01: There is no significant relationship between the socio-economic characteristics of arable crops farmers and their utilization of malaria curing herbs.

H02: There is no significant relationship between perception of arable crop farmers towards malaria curing herb and their utilization

Materials and Methods

The study was conducted in Ikole a Local Government Area of Ekiti State, Nigeria. The study area is noted for the production of arable crops such as maize, cassava, melon, vegetables, plantain, yam and rice. Ekiti state comprises of sixteen (16) local government areas with Ade-Ekiti as the State capital. It is bounded to the North by Kwara, to the northeast by Kogi States, to the south and southeast by Ondo-State and to the west by Osun State.

The targeted population of this study includes all arable crop farmers in Ikole local government area of Ekiti state, Nigeria. A two-stage sampling technique was used. The first stage involves a random selection of six rural communities namely; Ilotin, Asin, Ikoyi, Usin, Iwodi and Ootunja. The second stage involves a random selection of twenty (20) arable crop farmers from the rural communities making one hundred and twenty respondents. This research made use of primary source of data using a structured interview schedule. Analytical tools such as descriptive and inferential statistics were used in this study; these which include frequency distribution, percentage, mean and standard deviation, correlation coefficient and chi square was used to analyze the hypotheses.

Results and Discussion

Characteristics of the Arable Crop Farmers

The mean age and standard deviation of the respondents was 42.25 ± 17.137 years. 36% of the respondents were within 15-30 age group which according to the United Nations are those within the age group which implies increasing absence of young people in rural communities because of farm drudgery, absence of social infrastructure (such as health centres), poor farm incomes and the general low life expectancy in rural areas (Kayode et al., 2020) The findings of this study indicates that majority (66%) were males while 34per cent were females. This indicates that the utilization of medicine is not gender sensitive as health is the foundation of all other aspects of life and the ultimate aim of any medical service is to reduce mortality and morbidity of people regardless of their sex also in line with the report Chukwuma et al., (2019). Majority (70%) were married, and they need to provide for the needs of their household which includes health care. According to Tumin and Zheng (2018), marriage confers responsibility therefore health case within the family setting is expected to be better as it provides opportunity for members to be their brothers' keepers because non-married individuals may not be sufficiently sensitive to their health needs. The table further reveals that 26% of the respondents were Muslims, 64% Christians, 8% traditionalists while minority engage themselves in other religion 2%. This implies that majority of the respondents (92%) practice orthodox religion. This implies that this may not hinder the use of traditional medicine even with the belief that some of its aspects are diabolical in terms of sorcery and incantation.

A greater proportion (80%) of the respondents had formal education which may affect people's choice of medicine and their attitude towards it as education influences a change in attitude, skills, or knowledge therefore the belief of the western world that traditional medicine is primitive and unscientific may

transcend to people with western or formal education, Shehu et al., (2017. Many (63%) of the respondents had a household size of <5 while the average household size was approximately 5 members indicating a fairly large size which implies that an average family head has a lot of dependents. The implication of this is that rural dwellers may opt for cheaper means of meeting their health needs and that of their family members because according to Tetteh et al., (2020), the bulk of people living in rural areas have low economic status and the cost of modern medicine is usually beyond their means. Consequently, people often have to depend upon traditional medical care which is within their locality and economic reach (Tetteh et al., 2020).

The result shows that 42% were non part time, where 30% were artisan, 8% were civil servants, while 21% were traders. It also reveals that the respondents in the utilization of malaria curing herbs, where 51% had less than 10 years' experience, 33% were experienced between the range of 15-30 years of age while 16% more than 35 years experienced. This result is in line with findings of Shehu et al., (2017) majority of the respondent (57%) in the study area are part time farmer while (43%) are full time farmers. This implies that most of the respondents have other occupation they do aside farming.

Identification of the Malaria Curing Herbs Utilized by Arable Crop Farmers

Table 2 indicate that 97% of the respondents could identify pawpaw leaf as malaria curing herb therefore it was ranked number 1, 95% could identify lime and was ranked number 2, 92% of the respondents could Identify mango back leaf, scent leaf and bitter leaf respectively and was ranked number 3. 90% could identified cashew leaves and was ranked number 6, 89% could identify lemon grass and was ranked number 7, 88% of them could identify garlic and cotton leaf respectively and was ranked numbers 6, 87% of could identify neem leaf and grape leaf respectively and was ranked number 10, 87% could identify sun flower and was ranked number 12, 64% could identify mahogany back and was ranked number 13, 60% could identify pattern wood or ahun and it was ranked number 14, 53% could identify Siam weed and was ranked number 15, 52% could identify charcoal tree and was ranked number 16, 29% could identify Indian tursole leaves and was ranked number 17, 28% could identify African arrow root flour and was ranked number 18, 20% could identify African yellow wood and it was ranked number 19 while 18% could identify dragon blood tree and was ranked number 20.

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Table 1: Socio-economics characteristics of respondents

Variable	Frequency (n = 120)	Percent (%)	Mean ± STD
Age (Year)			
≤30	43	36	42.25 ± 17.137
31-60	60	50	
≥61	17	14	
Total	**120**	**100**	
Sex			
Female	41	34	
Male	79	66	
Total	**120**	**100**	
Religion			
Christian	77	64	
Muslim	31	26	
Traditional	10	8	
Others	2	2	
Total	**120**	**100**	
Marital status			
Single	28	23	
Married	84	70	
Divorced	5	4	
Separated	1	1	
Widow	2	2	
Total	**120**	**100**	
Educational Level			
Primary Educ.	13	11	
Secondary Educ.	40	33	
Tertiary Educ.	56	46	
Adult Education	3	3	
Did not attend school at all	8	7	
Total	**120**	**100**	

Field Survey, 2024

This result shows that malaria is the most common disease treated with traditional medicine by the rural dwellers and reflects the findings of WHO (2020), that Nigeria is one of the six highest malaria burdened countries in Africa which account for an estimated 47% of malaria cases globally and also Chung et al., (2021) which states that 60% of young children in some African countries suffering from high fever, presumably caused by malaria, are treated at home with herbal remedies which are the most common type of traditional medicine. The high incidence of malaria in the community may also be indicative of the fact

that majority of the respondent are farmers because irrigation and the proximity of villages to fields and water sources are some characteristics of agricultural production systems that can create conditions that favor parasitic vectors and facilitate the disease's transmission.

Table 2. Malaria curing herbs utilized by arable crop farmers

Malaria Curing Herbs	No	Yes	Rank
Pawpaw leaf, fruit	3	97	1st
Lime	5	95	2nd
mango back, leaf	8	92	3rd
scent leaf	8	92	3rd
Bitter leaf	8	92	3rd
cashew leaves	10	90	6th
lemon grass	11	89	7th
Garlic	12	88	8th
cotton leaf	12	88	8th
Neem leaf	13	87	10th
grape fruit	13	87	10th
sun flower	24	76	12th
Mahogany Bark	36	64	13th
pattern wood or ahun	40	60	14th
Siam weed	47	53	15th
charcoal tree	48	52	16th
Indian tur /nsole leaves	71	29	17th
African arrow root flour	72	28	18th
African yellow wood	80	20	19th
dragons blood tree	82	18	20th

Source: Field Survey, 2024

Awareness of malaria curing herb

Table 3 shows the awareness of the respondent malaria curing herb where 97% were aware of mango back or leaf as malaria curing herb and was ranked number 1, 96% were aware of pawpaw leaf and fruit and was ranked numbers 2, 93% were aware of scent leaf, bitter leaf lemon grass and lime respectively and was ranked number 3, 89% were aware of grape fruit and cashew respectively and was ranked number 7, 88% were aware of Siam weed and was ranked number 9, 87% were aware of garlic and cotton leaf respectively and was ranked number 10, 86% was aware of neem leaf and was ranked number 12, 81% were aware of sun flower and was ranked number 13, 66% were aware of mahogany back and was ranked number 14, 62% were aware of pattern wood or ahun and was ranked number 15, 55% were aware of dragon blood tree and was ranked number 16, 52% were aware of charcoal tree and was ranked number 17, 26% were aware of Indian tursole and was ranked number 18, 26% were aware of African arrow

root flower and was ranked number 19, while 17% were aware of African yellow wood and was ranked number 20. Chung et al., (2021) stated that for many millions of people, often living in rural areas of developing countries, herbal medicines, traditional treatments, and traditional practitioners are the main and sometimes the only source of health care. This is also in line with the work of Adeyeye et al., (2019) carried out in the study area that most oil palm processors and non-processors in the community either resort to the use of traditional medicine or drug hawkers when they are ill rather than visit health centres. 65% of the respondents believed that diabolical content is not an important factor which suggests that rural dwellers are unlike their urban counterparts who believe that traditional medicine is diabolical.

Level of Utilization of Malaria Curing Herbs

Table 4 indicate the level of utilization of malaria curing herbs using the grand mean of 3.5 where those that utilized with the mean of 3.5 and beyond was termed as highly utilized while those that utilized with the mean of 3.49 and less was termed as less utilized. Therefore, Neem leaf, pawpaw leaf, mango back or leaf, garlic, cotton leaf, scent leaf, cashew leaf, bitter leaf, lemon grass and lime respectively was discovered highly utilized in the study area while sunflower, pattern leaf or ahun, Indian tursole leaf, African arrow leaf, grape leaf, African yellow wood, Siam weed, dragon blood tree, mahogany tree and charcoal was discovered less utilization in the study area. Malaria was one of the most common ailments in the area, its treatment with orthodox medicine was reduced as compared to traditional medicine. This may be due to the fact that orthodox medicine is becoming ineffective in the treatment of the disease because malaria parasites are becoming increasingly resistant to chloroquine-the cheapest and most common malarial drug in Nigeria (Logiel et al., 2021). However, results obtained by Mahmoud et al., (2020), revealed that Asteraceae has the greatest number of plants species used in the treatment of malaria in Northern Nigeria. Among there corded species in this study, some species were frequently quoted by the respondents including. From the description of these plants, it is evident that these plants have been reported to have ethnomedicinal usage in the treatment of malaria as well as the treatment of other symptoms related to malaria infection. Frequent utilization of the herbs in the present and previous study carried out was due to the scientific evidence of secondary metabolites production in the plants and are solely responsible for antimalarial action as noted by Abdulrahman et al., (2018). Despite the frequent utilization of trees, it has a serious effect on global warming by the reduction in the uptake of Carbon-Dioxide and reduction in the production of oxygen (Awang et al., 2018, Mahmoud et al., 2019).

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Table 3: Awareness of malaria curing herbs

Variable	Not-Aware	Aware	Rank
Mango back, leaf	3	97	1st
Pawpaw leaf, fruit	4	96	2nd
scent leaf	7	93	3rd
Bitter leaf	7	93	3rd
Lemon grass	7	93	3rd
Lime	7	93	3rd
Grape fruit	11	89	7th
Cashew leaves	11	89	7th
Siam weed	12	88	9th
Garlic	13	87	10th
Cotton leaf	13	87	10th
Neem leaf	14	86	12th
Sun flower	19	81	13th
Mahogany Bark	34	66	14th
pattern wood or Ahun	38	62	15th
Dragons blood tree	45	55	16th
Charcoal tree	48	52	17th
Indian turnsole leaves	74	26	18th
African arrow root flour	74	26	18th
African yellow wood	83	17	20th

Source: Field survey, 2024

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Table 4: Level of utilization of malaria curing herbs

	Utilization	Not Utilize		Partially Utilize		Utilized		Moderately Utilize		Highly Utilize		Mean	Decision
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**		
1	Neem leaf, back	8	7	13	11	14	12	17	14	68	57	4.03	highly utilized
2	Pawpaw leaf, fruit	2	2	7	6	16	13	43	36	52	43	4.13	highly utilized
3	Mango back, leaf	6	5	8	7	25	21	31	26	50	42	3.93	highly utilized
4	Garlic	9	8	5	4	38	32	26	22	42	35	3.73	highly utilized
5	Cotton leaf	15	13	11	9	19	16	30	25	45	38	3.66	highly utilized
6	Scent leaf	8	7	1	1	16	13	35	29	60	50	4.15	highly utilized
7	Cashew leaf	2	2	6	5	15	13	26	22	71	69	4.32	highly utilized
8	Bitter leaf	3	3	6	5	11	9	28	23	72	60	4.33	highly utilized
9	Lemon grass	9	8	5	4	20	17	29	24	57	48	4.0	highly utilized
10	Lime	7	6	7	6	24	20	27	23	55	46	3.97	highly utilized
11	Sunflower	21	18	16	13	13	11	29	24	41	34	3.44	less utilize
12	pattern leaf or Ahun	30	25	15	13	18	25	14	12	43	36	3.21	less utilize
13	Indian turnsole leaf	80	67	10	8	13	11	3	3	14	12	1.84	less utilize
14	African arrow root flower	83	69	10	8	9	8	8	7	10	8	1.77	less utilize
15	Grape fruit	12	10	12	10	38	32	27	23	31	26	3.44	less utilize
16	African yellow wood	87	73	10	8	10	8	4	3	9	8	1.65	less utilize
17	Siam weed	37	31	14	12	27	23	20	17	22	18	2.8	less utilize
18	Dragon blood	78	65	9	8	16	13	9	8	8	7	1.83	less utilize
19	Mahogany tree	38	32	10	8	23	19	13	11	36	30	2.99	less utilize
20	**Charcoal tree**	**42**	**35**	**16**	**13**	**16**	**13**	**11**	**9**	**35**	**29**	**2.84**	**less utilize**

Source: Field Survey, 2024

Perception to Malaria Curing Herb

The perception to malaria curing herb is analyzed in Table 5. Using the grand mean of 3.0, where those respondents that perceived with mean of 3.0 and above tends to agree while others with mean of less than 3.0 tends to disagree. Therefore, the respondents in the study area agreed that herbs are effective, accessible, they have beneficial effect, it does not have side effect, it does not have specific dosage, it is affordable, it is curing malaria, and it is causing relieve while they disagreed that malaria curing herb has side effect, they are not effective, it is used in combination with medicinal drug, they are costly, malaria curing herbs were promoted by traditional belief, it has pleasant taste, and they also disagreed that herbs do not cure malaria. This corroborates the findings of James et al., (2018) on the knowledge and practices of malaria treatment measures among pregnant women in Abeokuta which revealed that 68% of pregnant women utilized herbs for treating symptoms associated with malaria due to its effectiveness and suitability and not due to financial constraint or lack of access to health facility. It was also observed that there is a huge amount of ignorance concerning the reasons for the continued use of herbal remedies. It was also believed strongly that herbal remedies cure malaria faster than conventional medicines. This explains the reasons why many respondents agreed to combining both herbal and orthodox medicines in any malaria episode Utilization of health care services is better understood within the cultural context of the people concerned (Nigussie et al., 2022). Cultural norms, which have to do with the belief systems of the people have always guided the health seeking behaviour of people. This is because people have always found cures for their various ailments from their natural local environment.

Results of tests of hypotheses

Table 6 shows the relationship between the socioeconomic characteristics of arable crop farmers and their utilization of malaria curing herb where the occupation of the respondents was found to be significant with p- value of 0.042 which is less than 0.05 at 4% level of significance. Therefore, we can accept the null hypothesis and conclude that there is no significant relationship between the occupation of arable crop farmers and their utilization of malaria curing herb. This is also in alignment with the work of Aina et al., (2020) that only 51% of Nigerians take herbal medicines as their first drug choice irrespective of their religion, occupation or any of their socioeconomic characteristics.

Table 5: Arable crop farmers perception to malaria curing herbs.

S/N	Perception statement	Mean	Rank
1	Malaria curing herbs are effective	4.8	1st
2	Malaria curing herbs are accessible	4.7	2nd
3	Malaria curing herbs have beneficial effect	4.2	3rd
4	Malaria curing herbs does not have side effect	3.3	4th
5	Malaria curing herbs did not have specified dosage	3.2	5th
6	Malaria curing herbs are affordable	4.3	6th
7	Malaria curing herbs cure malaria	4.8	7th
9	Malaria curing herbs have side effect	2.9	9th
10	Malaria curing herbs are not effective	2	10th
11	Malaria curing herbs are used in combination with medicinal drugs	3	11th
12	Malaria curing herbs are costly	2.2	12th
13	Malaria curing herbs are promoted by traditional beliefs	2.8	13th
14	Malaria curing herbs have pleasant taste	2.5	14th
15	Malaria curing herbs do not cure malaria	1.8	15th

Source: Field Survey, 2024

Table 6: Relationship between the socioeconomic characteristics of arable crop farmers and their

Socio-economics characteristics	**chi square**	**standard error**	**coefficient**
Sex	53.980[a]	0.084	0.084
Age	89.820[a]	0.092	0.260
Religion	102.330[a]	0.085	0.913
Marital Status	130.276[a]	0.083	0.976
level of Education	178.272[a]	0.084	0.211
household size	67.077[a]	0.088	0.883
primary Occupation	57.828[a]	0.090	0.042*

*=4% significant level

The Table 7 shows the relationship between the perception of arable crop farmers towards malaria curing herbs and their utilization of same. The result shows that there is a significant relationship between the perception of arable crop farmers towards malaria curing herbs and their utilization of same. Therefore, we can reject the null hypothesis which state that there is no significant relationship between the perception of arable crop farmers towards malaria curing herbs and their utilization of same and conclude that there is significant relationship between the perception of arable crop farmers towards malaria curing herbs and their utilization of same (Tetteh et al., 2020).

Table 7: Perception of arable crop farmers to utilization of malaria curing herbs

Sum of perception and utilization	**Value**	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	1252.359[a]	1148	0.017**
Average perception and utilization			
Pearson Chi-Square	176.403[a]	123	0.001*

*=0.1%, **=1% significant level

Conclusion and Recommendation

This study shows that herbal treatments for malaria are widely utilized by arable crop farmers and are perceived positively by them as effective, accessible, and beneficial. There is also a strong need for the government to strengthen its regulatory oversight on the operations of the herbal medicine practitioners so as to standardize their operations, eliminate quacks and engender trust and patronage from the citizens.

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