SOCIO-ECONOMIC IMPACT OF THE DEMAND FOR HERBAL MEDICINES IN SOUTH-WESTERN REGION OF NIGERIA

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ABSTRACT
This study examined the socio economic impact of the demand for herbal medicines in South-Western region of Nigeria. Three states were randomly selected out of the six states in the South-West, Nigeria. These are Ekiti, Ondo, and Osun states. Two local governments were randomly selected from each state and three communities selected from each of the local governments. Convenience sampling method was used to arrive at our sample size of 1,224 with 204 respondents randomly selected from each local government area (LGA). Data gathered were analyzed using descriptive statistics while bivariate and multivariate logistic regressions were carried out to establish the relationship between the semi-structured questionnaires with E-views 12 package. Key findings revealed that 815 respondents representing 74% agreed that doctors' industrial action was one of the reasons for the demand for herbal medicine. The adjusted odd ratio (AOR) of 1.51* (8.25-11.43) at 95% confidence intervals from the logit regression revealed that doctors' strike has a significant effect on demand for herbal medicine. The impact of cost on demand for herbal medicine was affirmed by 693 respondents and was statistically significant with AOR 2.38* (1.02-5.59). Effectiveness/potency of herbal medicines was alluded to by 71% of the respondents having AOR 2.22*(6.07-9.72). It was also evidenced in the study that poverty is a determinant of demand for herbal medicine as only 28% of respondents whose income are above N50,000 demands herbal medicines and 63% of respondents affirmed that they could not afford the cost of orthodox healthcare with AOR 2.38* (1.02-5.59). Availability of herbal medicine has effect on increasing demand for it as 64% of the respondents confirmed availability and accessibility of it having AOR 1.00* (2.22-2.91). The study concluded that Socio-economic factors such as doctors' strike actions, low education, low income, distance to health facilities and the attitude of health workers contribute to high demand for Herbal Medicine in the South-West States of Nigeria.

Keywords: Demand, Herbal medicine, Illness, Utilization, Healthcare.

1. INTRODUCTION
Demand is the desire and ability to acquire a good or service. It is the quantity of good, or product or service that consumers are willing and able to buy at a given price over a particular period of time (Black, Hashimzade & Myles, 2012), while traditional herbal medicines are naturally occurring, plant-derived substances with minimal or no industrial processing that have been used to treat illness with local or regional practices (WHO, World Health Organization, 2010). Hence, the demand for herbal medicines is the quantity of herbal medicine product (HM) that consumers are willing and able to buy at a given price over a specific period of time. World Health Organization has defined Herbal medicines as using herbal materials, herbal preparation, and finished herbal products that contain active ingredients, part of plant or another plant material or

combination of both to prevent or treat disease of humans (**WHO, 2014). Presently, herbal medicines are prepared as over the counter drugs and have been prepared in different pharmaceutical dosage forms such as syrups, capsules and extract** (Duraz **& Khan 2011**)

The demand for herbs for treatment of illnesses has been on the increase and gained strong recognition for health care needs (Ogunsola & Egbewale 2018). Reports have shown that 80% of African population depends on traditional medicines with medicinal plants predominantly, and the worldwide annual market for these products approaches US$60 billion (WHO, 2010). The use of herbal medicine (HM) has been on the increase in many developing and industrial countries. Traditional herbs provided both preventive and curative health care services, especially in the areas of malaria, infertility, and small pox diseases (Jegede, Opata & Jegede 2019). The high use may be due to the accessibility, affordability, availability, and acceptability and inherent trust in the practice by majority of the population especially in developing countries (Duru, Uwakwe, Chinomnoso, Mbachi, Diwe, Agunwa, Iwu and Marenu, 2016). Most people who are involved in cultural herbs trade are women with low entrepreneurial orientation and skills (Jegede et al.2019). Many other factors have also been discovered to have encouraged the utilization of HM. In developing countries, it is thought that the use of HM is due to the efficiency and economic availability of the method. In addition, religious belief is also thought to have effect on the utilization of herbs for health care services. The common use of herbal medicine for health care in the developed countries is thought to be related to the fact that it is easier to access the information about the side effects of chemical drugs (World Health Organization, WHO, 2005). Oladeji (2016) examined the products that are natural plants to treat diseases and found that natural plants can cure many diseases. The study however showed that the knowledge of herbal medicines for treating diseases are restricted to those practicing herbalists with the belief that herbal plants when revealed to other people will lose their potency. Many other factors affect the demand for herbal medicine. Safety, cost, effectiveness, availability, educational head, average monthly income, age, sex, are socio economic factors affect the reasons for using traditional medicine (Unifoh and Udezi, 2013). Demand for herbal medicine has increased due to a number of factors such as poor or non-effectiveness of synthetic drugs which are either fake and adulterated or expired (Adeyanju,2002). In North-Tanzania, study revealed that chronic diseases were most regular reasons for traditional medicine use (Stanife, Patel, Karia, Maro, Shimbi,2015)

The hard economic realities and the widening economic parity between the high and the low-income countries have made later solely dependent on the former for almost all their health needs (Bukar, Dayon, & Uguru, 2016). The importance of medicinal plants to the economy of low-income countries remains strategic because medicines are key to maintaining a healthy population that drives and sustains the economy (Ekeanyanwu, 2011). Many traditional herbal practitioners depend on herbal medicine to make a living. It was said that herbal medicine is capable of contributing about $500 million to the Nigeria's annual revenue if properly harnessed, managed, and funded (Etatuvie, 2016). This statement was made by the Director General of National Biotechnology Development Agency during a two-day workshop organized by the agency for traditional medicine practitioners, manufacturers, small and medium scale herbal medicine, producers, interested members of the public and the stake holders in traditional medicine in Abuja.

However, the use of herbs has mostly been condemned by modern medical practitioners. They argued that herbal standardization, regulation, dosage, is of great concern in the consumption and use of herbal medicines in Nigeria (Ekeanyanwu, 2011). Also, because herbal medicine

applications vary in parallel to the culture, it is not easy to standardize an analysis of herbal medicine, because its efficiency and quality are prone to many factors (World Health Organization, WHO, 2005). Another challenge in the development of medicinal plant in the developing countries is the lack of information on the social, biochemical, and economic benefits that could be derived from the industrial utilization of medicinal plants. In addition, there are little incentives for standardization of products, little information on the marketing potential and trading possibilities of these medicinal plants. This result is under use or less exploitation in the real potential of these plants (Oladeji, 2016). Optimization of health relative to their activities and making choices to employ resources in a way that will improve health status and service delivery within the limited resources available is an important aspect of health economics. Most nations, rich or poor face the problem of the rising health care cost and confront two basic questions of how to finance this rising burden and how to contain the pressures for health expenditure (Guinness & Wiseman, 2011).

It is assumed that the individuals allocate their limited budget to try and maximize their utility and that when individuals do this they are using their resources efficiently. A demand curve illustrates this phenomenon; it is a description of the planned quantity added at each price when utility is maximized. When we translate this thinking to health care, problems arise; this is because unlike most other goods, health care as well as demand for herbal medicine is a derived demand (Guinness and Wiseman, 2011). The reason is that few people enjoy the experience of health care or consumption of herbal medicine. Its value comes from the positive effect one hopes it has on health and, in turn the satisfaction we derive from the activities we can do when we are healthy. Such activities include working and leisure activities (Guinness & Wiseman, 2011). Demand for herbal medicine therefore occurs as a result of health care needs which can be characterized as the level of the actual consumption of an individual in case of facing illness or injury. This consumption could differ in accordance with the demand factors such as income, cost of care, education, social norms, traditions, religion, availability and the quality and appropriateness of the services provided, etcetera.

In Nigeria, modern health services have failed to meet the needs of the teaming population especially rural areas. The state of health in the country points to the very poor living habits of the populace. Poverty, joblessness and ignorance have all exacerbated the health condition of the average Nigerian, making it hard for them to enjoy satisfactory health care. The immediate repercussion has been the resort to traditional medicine (Opatola & Kolawole, 2014). Herbal medicines manufacturing firms have been springing up in the last two decades or thereabout. Advertisements on herbal methods of treatment have also been on the increase in various news media such as television channels, radio stations, newspapers, flyers, posters and even social media. Some practitioners use the public address system while others employed personal selling strategy to reach their customers. Finished herbal medicines include any extracts, liquid and powder preparations, capsules and caplets, external or tropical preparations. It is noteworthy that there is hardly any community that does not have modern healthcare facility in South-Western states of Nigeria. The modern health facilities available can be classified into primary, secondary, and tertiary health facilities and a whole lot of private hospitals. Under the primary health facility are basic and comprehensive health centers while the secondary health facility consists of the general and specialist hospitals. The tertiary healthcare includes the university teaching hospitals. In spite of the presence of these health institutions, members of the population have continued to patronize traditional herbal practitioners for their health needs. It is therefore pertinent and

expedient to explore possible reasons that are making people buy these herbal products.

The broad objective of the study is to investigate the determinants of the demand for herbal medicine in Western states of Nigeria. The specific objectives are to examine the effect of doctor's strike on demand for herbal medicine; investigate the effect of waiting time in the hospitals on demand for herbal medicine; explore the impact of cost on demand for herbal medicine; survey the impact of effectiveness/potency of (HM) on its demand; and examine the impact of availability and distance on the demand for herbal medicine.

The results of this study will help in documenting the factors that affect demand for herbal medicine. Policy makers could adopt findings from the study in formulation of policies that will help to address increasing demand for herbal medicine in Nigeria. The study will make available an issue-based model which can be used in developing integrated approach in solving some of the herbal medicine problems

2. THEORETICAL FRAMEWORK

The theory of planned behavior (TPB) is used for this study. This theory is a social cognitive model that explains behavioural intentions as a substitute of actual behaviour (Ajzen, 1991). According to the theory, the most important factor that predicts whether an individual will perform a particular behavior or will take a particular action is the behavioural intention concerning the performance of the behavior (Rochele, Shardlow, & Hung, 2015). There are three factors according to the theory which determine an individual intention to perform any given health behavior. One of these is the attitude (perception of positive and negative consequences of performing the action). For example, and individual will take an herbal medicine if he perceives that taking it will enhance his state of wellness. The second factor is subjective norms (perceptions of the approval of significant others of performing the behavior). For example, individuals' consumption or utilization of herbal medicine can be influenced by the approval or disapproval of people close or important to them. The third factor is perceived behavioural control (perceptions about how much control a person feels he has to perform the behavior. The TBS has been used to predict a variety of health behaviours (Conner, Kirk, Cade, & Barrette, 2001 and Hobbs, Dixon, Johnston, & Howie, 2013). Therefore, the validity of TBS is well established.

3. METHODOLOGY

Multistage sampling procedure was used to select participants who are 21 years and above including males and females. First, three States have been selected from the Western region using simple balloting technique to represent the region and these are Ondo, Ekiti and Osun states. Second, two local governments have been randomly selected from each state. Owo and Akure North local government Areas (LGAs) have been selected from Ondo State, Ikere and Oye LGAs selected from Ekiti state while Ife South and Oriade LGAs have been randomly selected from Osun state. Third, participants are drawn from three communities in each of the local governments. Adopting purposive sampling method to ensure that at least a community with modern hospital is selected from each of the local government, we have Owo, Uso and Isuada from Owo LGA (Local Government Area), Ogbese, Oba-Ile and Ita-Ogbolu from Akure South LGA representing Ondo state. Ekiti state is represented by Ikere-Ekiti, Aba-Igbira and Ogbonjana from Ikere LGA, Oye-Ekiti, Itapa and Itaji from Oye LGA. Ifetedo, Aare and Olode from Ife South LGA, Owena, Ijebu-Ijesa and Erinmo from Oriade LGA representing Osun state. In all, respondents were drawn from

18 towns/villages in the three states.

For the purpose of achieving the objectives of the study, a convenient sampling procedure was engaged to determine the sample size. In the midst of others, we also considered geographical nearness, population size, accessibility and affordability in terms of cost and at least the presence of a primary health facility in arriving at this technique (Warner, 1965). Therefore, 204 respondents were sampled in each LGA, bringing the total sample size for the study to 1,224. A total number of 204 questionnaires per LGA were distributed in three towns/villages in each of the selected LGA. Mapping and numbering of houses where respondents existed were carried out. Pilot survey was conducted, specifically at Ogbese in Akure North LGA. Semi-structured questionnaires were administered. Descriptive statistics, bivariate and multivariate regression were utilized for data analysis. The study location is South-Western region of Nigeria, one of the six geopolitical zones in the country. The region has six states, namely Lagos, Ogun, Oyo, Ondo, Osun and Ekiti states. The study was conducted in three out of the six states in the region and these states are Ondo, Ekiti and Osun states.

Design outlay for the study area/location

S/N	State	Local Government selected	Total number of Towns per Local Government	Towns selected per Local Government	Total
(1)	Ondo State	Owo	Owo, Uso, Isuada	3	
		Akure North	Ogbese, Oba-Ile, Ita-Ogbolu	3	6
(2)	Ekiti State	Ikere	Ikere-Ekiti, Aba-Igbira, Ogbonjana	3	
		Oye	Oye-Ekiti, Itapa, Itaji	3	6
(3)	Osun State	Ife South	Ifetedo, Aare, Olode		
		Oriade	Owena, Ijebu-Ijesa, Erinmo	3	6
Total	3	6	18	18	18

Source: Author's compilation, 2023

Ethical Considerations

We got ethical approval from the Ethical Review Committee of the Federal Medical Centre, Owo, Ondo state (FMC/OW/OD No. 1911). The purpose of the study was explained to the respondents. We equally sought their consents before commencement of the study and the confidentiality of information provided guaranteed. Participants who are not literate were assisted by research assistants thorough interview, and where possible in their local languages

Data Analysis and Results Presentation

1,224 questionnaires were distributed for responses, 1,209 were collected while 15 were not returned. The demographic characteristics of the 1,209 respondents were summarized in graphical form while bivariate and multivariate logistic regressions were carried out to establish the

relationship between the semi-structured questionnaires with E-views 12 package. Figure 1(a-e) showed the demographic characteristics of the respondents. Out of the 1,209 respondents, 805 are males while 404 are females. This means that more men were captured in the study than women. Older people above the age of 65 years represent only 8% while the majority of the respondents fall between ages 21 -65 years. prevalent in the use of herbal medicines. 519 respondents are Muslims while 506 are Christians, the study was carried out in mixed faith communities. 59% of the respondents are Primary School Leavers and 26% are School Certificate holders. The levels of education of respondents covers from Primary to Tertiary education. 406 of the respondents are unskilled labourers, 367 are farmers, 211 are artisans and others are civil servants, business executives and traders.

Results of the analyses are presented in Table 1. From the Table, a total number of 1,107 respondents affirmed the use of Herbal Medicines as alternative to orthodox medicine. 815 respondents representing 74% agreed that doctors' industrial action was one of the reasons for the demanding herbal medicine. The adjusted odd ratio (AOR) of 1.51* (8.25-11.43) at 95% confidence intervals from the logit regression revealed that doctors' strike has a significant effect on demand for herbal medicine. Majority of the respondents did not confirm that waiting time in the hospitals determine demand for herbal medicine. Only 42% of the respondents complained that long hours at health centres necessitated their demand for herbal medicine with AOR 2.01 (6.19-9.44). The impact of cost on demand for herbal medicine was affirmed by 693 respondents and was statistically significant with AOR 2.38* (1.02-5.59). Effectiveness/potency of herbal medicines was alluded to by 71% of the respondents having AOR 2.22*(6.07-9.72). It was also evidenced in the study that poverty is a determinant of demand for herbal medicine as only 28% of respondents whose income are above N50,000 demands herbal medicines and 63% of respondents affirmed that they could not afford the cost of healthcare with AOR 2.38* (1.02-5.59). Availability of herbal medicine has effect on increasing demand for it as 64% of the respondents confirmed availability and accessibility of it having AOR 1.00* (2.22-2.91).
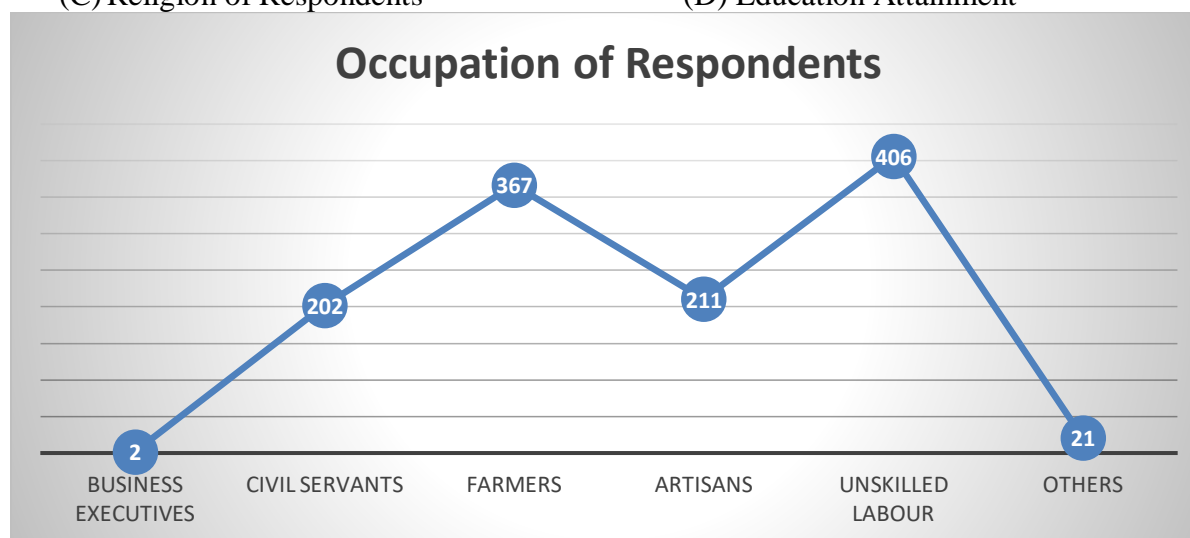
Figure 1: Demographic Characteristics of Respondents

(a)   Sexes of Respondents   (b) Ages of Respondents
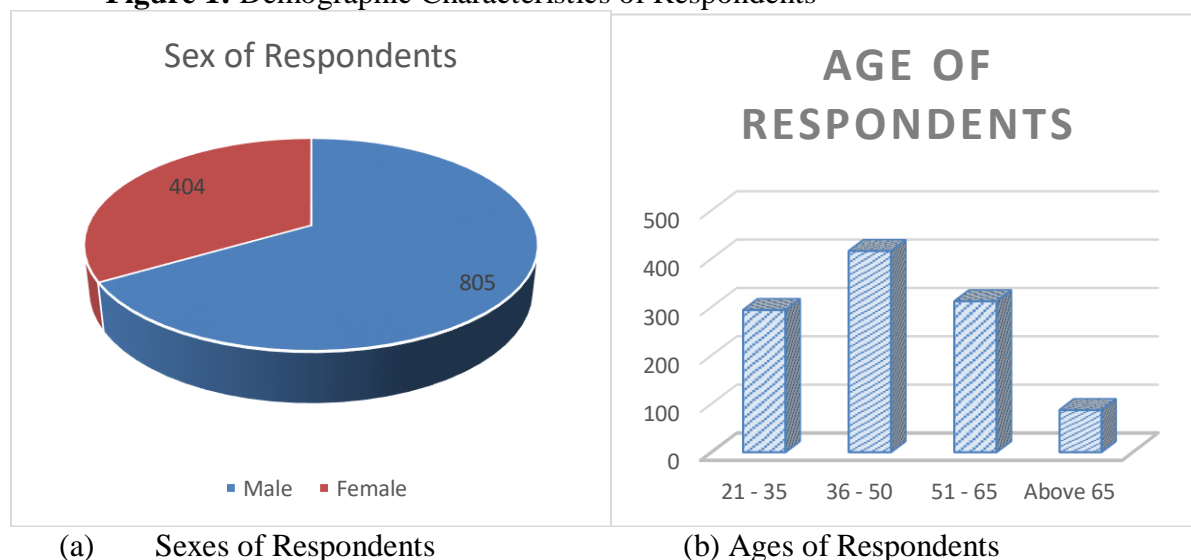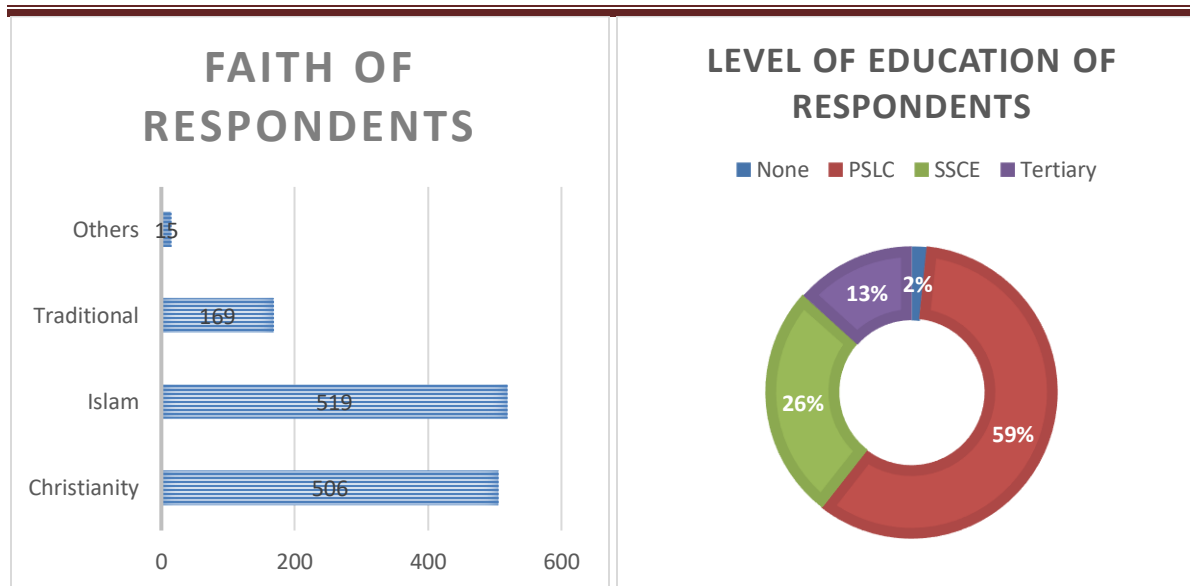
(C) Religion of Respondents

(D) Education Attainment

(E) Occupation of Respondents

Table 1. Determinants of Demand for Herbal Medicine

E-views 12 Output						
Variables		Number	Yes	%	COR (95% CI)	AOR (95% CI)
Total		1209	1107	92%		
Access to Herbal Medicines	No		393	36%	2.67 (2.03-5.22)	1.00* (2.22-2.91)
	Yes		714	64%	7.84* (1.15-2.96)	3.04* (1.60-5.80)
Doctors'	No		292	26%	4.77** (3.01-	2.09* (2.00 -3.11)

Strike					5.26)	
	Yes		815	74%	3.19* (1.84-2.07)	1.51* (8.25-11.43)
Herbal Medicines are effective	No		317	29%	2.99 (3.17-8.72)	1.37 (6.27-9.13)
	Yes		790	71%	5.42** (8.41-8.10)	2.22*(6.07-9.72)
Waiting Time at Health Centres	Long		463	42%	3.88 (7.57 -9.25)	2.84 (4.97-6.66)
	Short		644	58%	1.08* (5.14-7.55)	2.01 (6.19-9.44)
Distance to Health Centre	<1KM		324	29%	7.85** (1.84-33.5)	6.14* (1.35-27.94)
	>1KM		783	71%	2.57** (1.56-4.23)	7.75** (3.29-12.37)
Cost of Healthcare	Affordable		414	37%	2.04* (1.23-3.39)	1.35 (.09-3.00)
	Not Affordable		693	63%	1.90** (1.17-3.10)	2.38* (1.02-5.59)
Monthly Income (NGN)	<N50,000		797	72%	1.00 (0.66-1.32)	5.11* (2.38-3.00)
	N50,000 and above		310	28%	2.94** (1.33-3.09)	3.91** (12.11-23.72)

*Statistically significant at p<0.05, ** Statistically significant at p<0.01

  AOR means Adjusted Odd Ratio

  95% Confidence Intervals (CI)

4. DISCUSSIONS OF RESULTS

This study revealed that doctor's strike increased demand for herbal medicine. This might be significantly so because of the availability of several outlets of traditional herbalists to meet the needs of the people in the South-West region of the Country. It is imperatives for governments in the region to ensure that doctors' service are not cut off at any time to entice and encourage herb users to visit hospitals for better health service. Nigeria Medical Association (NMA) must be aware that when their members down tool, they encourage the people to seek alternative healthcare from herbalists who are not in most cases certified to operate in the field. It was evidently clear that the waiting time in hospitals discourages prospective patients from visiting hospitals and rather patronize herbalists. The attitudes health workers need to be more friendly to encourage patients' visit to hospitals. Time wasting and unnecessary embarrassment of patients push them out to traditional herbalists. Investigations also showed that the cost of orthodox medicines is one of the factors that increase demand for herbal medicine. Cost of medication encourages participants to opt for herbal medicine since it is affordable to poor patients who can neither afford the cost of

treatment nor the travelling expense to get conventional medical care (Osamor and Owumi, 2010). Study revealed that average income earners have high tendency to patronize herbal medicine than the people in upper class of income earner (Duru, et.al,2016). Since more people are within the bracket of low to average income earners, policy towards subsidizing of healthcare or the widening of health insurance scheme would benefit the people and have a lasting effect on slowing down demand of herbal medicine. Most of the respondents acclaimed the effectiveness/potency of herbal medicine. In most cases, self-prescriptions without particular dosages of herbal medicines are what the people do and this as revealed from the study showed that the immediate health issue would be taken care of but might cause some other life-threatening ailments which the people might not trace to their intake of herbal medicine. Distance to hospitals and other health facilities was said to be one of the factors that contribute to demand for herbal medicine. Governments should make policies that would encourage the establishment of healthcare centres near the people especially in the rural areas. The more educated the people are the more they understand the limitations of herbal medicines. The study revealed that people with little or no formal education patronize herbal medicine than the educated ones in the South-West region of Nigeria.

5. CONCLUSION

Socio-economic factors such as doctors' strike actions, low education, low income, distance to health facilities and the attitude of health workers contribute to high demand for Herbal Medicine in the South-West States of Nigeria. Necessary policies such as expanded coverage of National Health Insurance Scheme, allegiance of doctors to the oath of service, and proper incentives to doctors would go a long way to arrest the intake of this seemingly sweet enemy of the people.

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