KNOWLEDGE, ATTITUDE AND WILLINGNESS OF TRADITIONAL HEALERS TOWARDS DISEASE SURVEILLANCE AND NOTIFICATION OF SELECTED NOTIFIABLE DISEASES IN IBADAN METROPOLIS

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CERTIFICATION

This is to certify that Adepoju Emmanuel Adesola carried out this work under my supervision in the Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, University of Ibadan, Nigeria.

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DEDICATION

This dissertation is dedicated to the Almighty God, who made the project possible from the onset to completion.

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ABSTRACT

Background: Traditional healers remain the first point of contact despite the widespread of orthodox treatment. However, these traditional healers have not been officially assigned any role in disease surveillance and reporting in Nigeria. Incorporating them in surveillance system is expected to improve the reporting of epidemic diseases. Knowledge of the characteristics of the traditional healers would be useful incorporating them into a formal surveillance system, This study was therefore aimed at; assessing the awareness of traditional healers about disease notification and reporting, assessing the attitude of traditional healers towards disease notification and reporting, assess their knowledge about the symptoms and signs of selected notifiable diseases and determine the willingness of traditional healers to report these notifiable diseases.

Methods: A cross-sectional study with one hundred and thirty-seven respondents selected by snowball sampling method with nine in-depth interviews were done. Informed consents were sought from participants before they were interviewed.

Results: Majority of the respondents were married [123, (89.8%)] with more male respondents [99, (72.3%)], herbal therapist [90, (65.7%)] constituted majority of the respondents. Only a quarter of the respondents [40, (29.2%)] have heard about disease reporting. Of the quarter who knew [40, (29.2%)], over half [26 (65.0%)] knew what disease reporting is. Eighty-four percent (115) do not know where to report. Ebola virus disease [41 (42.3%)] and Lassa fever [48 (39.2%)] were the two most identified notifiable diseases by the traditional healers. Only about ten percent [14, (10%)] of the respondents have ever reported any disease and half of them reported Cholera [7, (50%)]. Over half of the respondents [89, (65%)] had good attitude towards reporting notifiable diseases. Furthermore, [76.5% (105)] believed that the traditional healers do have a role in the

practice of bringing the occurrence of these diseases to the attention of the government. Majority of the respondents [123 (89.8%)] were highly willing to report notifiable diseases. 85.4% (117) had poor knowledge of the signs and symptoms of selected notifiable diseases. Diarrhea with blood (Shigellosis) was the most recognized of the notifiable diseases [120 (87.6%)] with more half of them [64 (53.3%)] having good knowledge of the signs and symptoms.

Conclusion: Poor level of awareness, poor knowledge of the disease notification and lack of adequate knowledge of signs and symptoms of notifiable diseases were found among the traditional healers. Most of the respondent showed good attitude to reporting and were willing to work with government workers if they are trained. A good awareness campaign should be put in place with adequate training for the traditional healers and a good reward system to properly motivate them are recommended.

Keywords: Notifiable diseases, traditional healers, disease reporting, awareness

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AIDS	-	Acquired Immunodeficiency Syndrome
CAM	-	Complementary and Alternative Medicine
CDC	-	Centre for Disease Control
DSNO	-	Diseases Surveillance and Notification Officer
EVD	-	Ebola virus disease
FMOH	-	Federal Ministry of Health
HIV	-	Human Immunodeficiency Virus
IDSR	-	Integrated Disease Surveillance and Response
LGA	-	Local Government Area
NCDC	-	Nigeria Centre for Disease Control
SARS	-	Severe Acute Respiratory Syndrome
SMOH	-	State Ministry of Health
TM	-	Traditional Medicine
WHO	-	World Health Organization

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the study

Disease surveillance, notification and reporting have been defined as the continual probe of occurrence of diseases and health associated events to enable intervention for the prevention and control of diseases (CDC, 2009). A good disease Surveillance system allows for early discovery of notifiable diseases and appropriate intervention for ultimate prevention and reduction of mortality and morbidity that usually result after an emergence of an epidemic (Dairo *et al.*,2010). Despite the set-back brought to traditional medicine by adoption of modern medicine, the input of the traditional healers should not be underestimated in restoring health in most developing countries (Amzat and Abdullahi 2008).

Traditional Medicine (TM) or Complementary and Alternative Medicine (CAM) have been regarded as the oldest form of health care system employing various non-orthodox techniques to cater for the health of the community. Traditional medicine includes homeopathy, hydrotherapy, herbal therapy, massage therapy, spiritual therapy, aromatherapy, acupuncturist, bone-setting, chiropractors and a lot of others. According to the World Health Organization (WHO), a traditional healer is "a person who is acknowledge by the community where he or she lives as someone qualified to provide health care by using plant, animal and mineral substances and other methods based on cultural, social and religious practices" (WHO, 2000).

Traditional healers' role has been well established in the health care system of most countries in the Sub-Saharan Africa. They have been given other names in different part of Nigeria, names like *Babalawo, Onisegun Or Adahunse* (by the Yorubas), *Dibia* (by the Igbos) and

Alfa or Boka (by the Hausas) (Adekson, 2003; Otite and Ogionwo 2006). WHO also stated that 80% of the populations of African member states consult Traditional Medicine Practitioners for their health needs (WHO, 2002; Elujoba *et al.*, 2005). Reasons for this high patronage have been documented by other previous researchers (Amzat and Abdulahi 2008; Abdullahi, 2011).

The increase in reemergence of already eliminated diseases and emergence of new infectious diseases are raising public health concerns. Globally, infectious diseases are among the ten leading causes of deaths, Lower respiratory infections remained the most deadly infectious disease, causing 3.0 million deaths worldwide in 2016. The death rate from diarrhoeal diseases decreased by almost 1 million between 2000 and 2016, but still caused 1.4 million deaths in 2016 (WHO Fact Sheet 2019d). More than half of all deaths in low-income countries in 2016 were caused by infectious diseases, by contrast, less than 7% of deaths in high-income countries were due to such causes (WHO Fact Sheet 2019d).

Infectious disease with recent outbreaks in Sub-Saharan Africa such as monkey pox, cholera, measles and viral haemorrhagic fevers (Lassa fever and Ebola Virus Disease) keeps ravaging human population and putting their health and well-being at risk (Kasolo *et al.*, 2013). A functioning disease surveillance system is characterized by two main features; timeliness and completeness which has been a serious challenge to developing countries. More so, Nigeria even though she is doing a lot to keep improving her disease surveillance, notification and reporting capabilities following the havoc caused by the yellow fever outbreak in 1986/87 and cerebrospinal meningitis outbreak in 1986-1989, her surveillance system is still in a deplorable state (Iwu *et al.*, 2016).

The World Health Organization (WHO) in 1998 came up with an approach to reinforce the disease surveillance of her member states by the establishment of Integrated Disease Surveillance

Response Strategy (IDSR), the main goal of the IDSR strategy was to integrate the various surveillance activities at local, state and national levels into one system within the broader National Health System (Koob, 1998). The current Nigerian IDSR system was established in 2001 (Bawa and Umar 2009), and the National Technical guidelines for IDSR was adapted by the Epidemiology Division, Federal Ministry of Health Nigeria in May 2002 from the IDSR technical guidelines developed by WHO (FMOH, 2009). There are 42 diseases that are designated as "notifiable", these diseases are categorized as epidemic prone (Measles, Yellow fever), targets for eradication /elimination (Poliomyelitis, Dracunculiasis), and other diseases of public health importance (Malaria, HIV/AIDS) (Isere *et al.*, 2015).

1.2 Statement of problem

Disease reporting and surveillance suffers the same set of challenges globally, with the major problem being underreporting in most, especially in Sub-Saharan Africa. Individual country adeptness to conduct and manage a disease surveillance system differ ranging from practically none to good (Nsubuga *et al*., 2010). Furthermore, most of the surveillance efforts in low and middle-income countries adopts passive approaches and are limited to humans, when over 60% of the emerging diseases detected between 1940 and 2004 were of zoonotic origin (Jones *et al.*, 2008). In Nigeria, poor disease notification and surveillance had been observed and documented several years back (Nsubuga *et al.*, 2010). This had led to incessant disease outbreaks causing a lot of preventable deaths and disabilities. Typical examples include; Lassa haemorrhagic fever in West Africa with estimated cases of 100,000 to 300,000, with approximately 5,000 deaths yearly (CDC Fact Sheet 2015), recent cholera outbreak in Adamawa, Borno and Yobe States, June 2019. In 2018, NCDC reported a total of 42,466 cholera cases including 830 deaths (WHO Fact Sheet

2019a). Nigeria experienced a large outbreak of Measles with 11,603 suspected cases including 27 deaths reported from all 36 states and the Federal Capital Territory in the beginning of the 2019. There was a significant increase compared with the 4,764 suspected cases reported across the country, during the same period in the previous year. With 8,092 suspected cases including 6,560 children under-five years, Borno is the most affected states (WHO Fact Sheet 2019b). Furthermore, the Nigeria Centre for Disease Control (NCDC) reported a decrease in the number of new Lassa fever cases in Nigeria. Between 18th and 24th February 2019, twenty-three new confirmed cases were reported from eight states compared with up to 80 new cases reported between 21st - 27th January, 2019. In total, 381 confirmed cases and 81 deaths have been reported between 1st January and 24th February 2019 from 21 States across 66 Local Government Areas (WHO Fact Sheet, 2019c).

In Nigeria, Surveillance of some notifiable diseases has been reported to be weak (Fatiregun *et al.*, 2010; Dairo *et al.*, 2018a) the major factors of underreporting are ignorance of the reporting requirements and lack of clarity of reporting responsibilities. Also, cultural beliefs that favor consulting traditional healers for their health needs before consulting a nurse or an allopathic healer and lack of community-based approach makes disease surveillance more difficult (Ndiaye *et al.*, 2003). Therefore, the disease surveillance and notification reports do not capture the true epidemiological pattern of diseases. Oyo State of Nigeria implemented the IDSR strategy about 10 years ago but her surveillance system is still suffering from massive underreporting. In many states of Nigeria that is currently practicing IDSR strategy, which include Oyo State, have no documented work on knowledge, attitude and willingness of her traditional healers towards disease surveillance and notification of notifiable diseases.

1.3 Justification

Previous researches conducted in Nigeria had reported increase in the use of traditional medicine in both urban and rural settings (Abdullahi, 2011; Adefolaju, 2014). Most of these traditional healers are neglected in the surveillance systems which adversely affect response or actions taken by government, by the time a suspected case or confirmed case is getting to the community health officers the epidemic has gained ground. However, involvement of traditional healers and other complementary and alternative medicine practitioners will enhance the timeliness and completeness of disease reporting which are the major features of an effective disease surveillance system in preventing any epidemic and minimize loss of life during an outbreak.

Furthermore, Ibadan which is the capital of Oyo State which had been practicing the new reporting notification strategy been one of the States affected by yellow fever epidemic of 1987-1990 has paucity of data on documented knowledge assessment study of her traditional healers on notifiable diseases. In view of the public health significance of notifiable diseases reporting in prevention and early detection of epidemic, especially in a highly densely populated major city like Ibadan, there is a need for this assessment of the awareness, knowledge and willingness of the traditional healers towards notification of immediate notifiable diseases for evidence-based planning and decision to incorporate complementary and alternative medicine practitioners into her surveillance system.

1.4 Research questions

The study aims to answer the following research questions;

1. What is the level of awareness of the traditional healers about disease notification and reporting?
2. What is the attitude of traditional healers towards disease notification and reporting?
3. What are their knowledge about the symptoms and signs of selected notifiable diseases?
4. How willing are traditional healers to report notifiable diseases?

1.5 General objective

To assess the knowledge of signs and symptoms of selected notifiable diseases and determine the level of awareness, attitude and willingness of traditional healers towards the disease surveillance and notification.

1.6 Specific objectives

1. To assess the awareness of traditional healers about disease notification and reporting.
2. To assess the attitude of traditional healers towards disease notification and reporting.
3. To assess their knowledge about the symptoms and signs of selected notifiable diseases.
4. To determine the willingness of traditional healers to report these notifiable diseases.

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptualization of disease surveillance and immediate notifiable diseases

Health surveillance have been defined "as an ongoing systematic collection, analysis and interpretation of health data essential for planning, implementing and evaluating public health activities, linked with timely dissemination of data" (Bonita, 2006). An ideal disease surveillance system would be one such that every case of communicable disease is notified, also effective disease surveillance allows for early detection of infectious diseases and rapid response to prevent and reduce mortality and morbidity that may result from the epidemics of such infectious diseases (Isere *et al*., 2015).

Notifiable diseases are diseases that must be reported to the appropriate designated health authority in the pertinent jurisdiction when the diagnosis is made with the law backing it up (Parks, 2002). A list of reportable diseases exists in each country and this is reviewed periodically depending on the incidence rate of diseases and the public health importance of such diseases; for example, a certain disease may be added to the list as a new pathogen emerges, or another disease may be deleted as the incidence declines (Ofili *et al.*, 2003).

In Nigeria, the Federal Ministry of Health (FMOH) have selected forty-two (42) communicable and non-communicable diseases and public health related conditions, however eleven (11) diseases have been labeled for immediate notification because of sseveral reaons which include; been epidemic prone, having high fatality rate and some of international concerns. The immediate notifiable diseases are: anthrax, cholera, dengue fever, influenza A/H_5N_1, Measles, Cerebrospinal meningitis, sever acute respiratory syndrome (SARS), viral hemorrhagic fever (Lassa fever/Ebola virus Disease), yellow fever, poliomyelitis and dracunculiasis (FMOH, 2009).

2.2 Historical Background of Traditional Medicine (TM) / Complementary and Alternative Medicine (CAM).

Traditional Medicine "is the sum total of the knowledge skills, and practice based on the theories, beliefs, and experience indigenous to different culture whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness (WHO, 2002)". Sofowora (1984) also emphasized on the knowledge relying exclusively on past experiences and observations to particular generation and transmission by word of mouth or in writing. Traditional Medicine consists of two broad facets: the physical facet (barks, animal parts, leaves, roots, seeds e.t.c) which is tractable to scientific tests and critiques while the spiritual aspect (incantations, sacrificial offerings, rituals e.t.c.) (Amzat and Abdullahi 2008). The term "complementary medicine" or "alternative medicine" are used interchangeably with traditional medicine in most countries, they generally refer to set of health care practices that are not part of that country's ideal tradition and are not integrated into the presiding health care system (WHO, 2002). Furthermore, the term "native medicine" is a pejorative version of what should be called "traditional medicine".

Despite the fact that not knowing when men first practiced healing by herbs in Africa, several theories have been proposed by scholars and traditional medical practitioners alike to explain the acquisition of this knowledge by early man. One of such theory is that knowledge of medicinal plants was gained by accident, although this theory has been challenged by a number of traditional medicine practitioners who insist that information on such plants was conveyed to their ancestors in various ways (Lambo, 1971). Also, early African men were hunters and gatherers, and they have been reported as the original custodians of some effective traditional herbal recipes and it came from observing animals when they are shot by hunter, they run away and chewed leaves from

specific plants and do not die, it is believed that the hunter noted the plant as a possible antidote for relieving pain; also when domestic animals accidentally chew a leaf and died were also noted (Owete, 2015).

2.3 Regulations and control of Traditional Medicine (TM) / Complementary and Alternative Medicine (CAM)

The legal situation and health policies involving Traditional Medicine (TM) / Complementary and Alternative Medicine (CAM) from country to country. Tradition medicine use is not limited to the developing countries alone, reports from WHO in 2002 shows that the percentage of people that use CAM is about 46% in Australia, 49% in France and 70% in Canada (WHO, 2002). Furthermore, in the UK, 40% of all general allopathic practitioners concurrently use some form of CAM referral (WHO, 2002). The World Health Organization came up with a way to describe the degree to which TM/CAM is an officially recognized element of the health care system in countries of the world; they include integrative, inclusive and tolerant system (Sharad *et al*., 2011).

The integrative system is the highest level of acceptance in which TM/CAM is recognized as a part of the health care system and is included into the relevant country's national health policies. Also in the system, the healers and their products are regulated and registered; treatment with TM/CAM is reimbursed under the health insurance scheme. Countries that practice the integrative system include; China, Vietnam and People's Republic of Korea. The inclusive system involves partial recognition of TM/CAM but still reluctant about fully integrating it into the health system. TM/CAM might not be available at all health facilities and health insurance scheme might

not cover treatment and therapies with TM/CAM, countries practicing this system include Nigeria, Canada, UK and Mali (WHO, 2002). Finally, the tolerant system gives orthodox medicine almost all the authority in the natural health care system with some or no leeway at all for TM/CAM. Furthermore, there is no legal framework that denies the existence of the TM/CAM just as there is no provision for it in the health care system, an example of a country practicing this type of tolerant system is the United States (WHO, 2002).

2.3.1 Pitfalls surrounding the use of Traditional Medicine (TM)

Traditional Medicine Practice, in spite of its popularity still face a lot challenges (Erinosho, 1998). One of the pitfalls of the practice is that its popularity is mainly founded on the anecdotal experiences of the patients (Erinosho, 1998). Also, Osborne pointed out the fact that practitioners exaggerate the claims attached to advertisement and its products as well as not having scientific documentation about its effectiveness and efficacy, therefore making it difficult to confirm its authenticity and effectiveness of the therapists (Osborne, 2007). Furthermore, Erinosho also made some strong argument against traditional medicine, they include;

1. Traditional medicine lacks standard dosage and have not been subjected to scientific verification,
2. Traditional Medicine practitioners lacks the skills required for correct diagnosis of serious disorders,
3. They are always unwilling to accept limitations of their knowledge, skills and medicines particularly complicated organic disorders,
4. The Healers lack the equipment required to conduct physical examinations,

5. That even though the educated are convinced that healers have supernatural knowledge and that this knowledge is medically useful, they have been found to be unscrupulous and fraudulent,
6. Witchcraft and evil practices of TM also discredits this from of Medicine. A Medicine is meant to promote good health and remove physical, mental and social imbalance,
7. The non-physical aspects or occultic practices of TM cannot be scientifically verified
8. Since TMP diagnosis is based on symptomology of the disease, imprecise diagnosis given by TMP can lead to further complications. For Instance, a diagnosis of "stomach trouble" could mean indigestion, food poisoning, ulcer, cancer of the stomach among other ailments. Such imprecise diagnosis is because the TMP does know the pathology of certain diseases; as a result they tend to treat symptoms rather than the disease (Erinosho, 1998).

Another fundamental pitfall to TM is the global reported cases of fake healers and their healing practices, though this is not limited to limited to TM practice only. Ebomoyi (2009) pointed out that since the proficient healers could be providing beneficial services to a large population it cannot be far-fetched that quacks would also be among practitioners. The current economic condition, incessant rise in the level of unemployment and retrenchment also increased the number of traditional healers among whom there are also a number of imposters and frauds (Pretorium, 1999).

2.4 Awareness of health care givers about disease surveillance, notification and reporting

Health care givers' awareness of mandatory reportable diseases is germane to early detection of outbreaks and in-turn nipping it in the bud before it causes loss of preventable lives. Completeness and timeliness of disease reporting also depends on the level of awareness of health care givers.

2.4.1 Awareness of diseases surveillance, notification and reporting among Medical doctors

Ofili et al (2003) examined the knowledge of disease notification among doctors in government health facilities in Benin City, Edo State, Nigeria and found out that; 48.5% had a poor overall knowledge of notifiable diseases and the large proportion of the doctors with poor knowledge came from the mental health doctors (100%). However public health doctors had a very good knowledge. Furthermore, Olatunde et al (2013) documented that only 24.4% of the doctors and nurses of a tertiary hospital in Lagos, Nigeria in the study knew about IDSR and 61.7% of these people learnt about IDSR from their colleagues and only 31.7% who were aware of IDSR actually knew what the acronym means.

Aladeniyi *et al* (2015) carried out a study to investigate the effect of education on knowledge of acute flaccid paralysis (Poliomyelitis) which is also on the diseases of immediate notification, among private doctors in Ondo State (Southern part of Nigeria) and documented that; 74% identified poliomyelitis as an IDSR disease for notification and reporting, but many did not know about measles. Also, yellow fever and rabies were well recognized as immediate notifiable diseases among respondents in the study, about 51.2% have never seen an IDSR form, alarmingly only 2.4% knew all the reportable diseases under IDSR; however 73.2% had the knowledge of the appropriate place to report to. Adebimpe and Oluremi (2019) also conducted a study among private

medical doctors in Osun State, Southwestern Nigeria and found out that 80% had good knowledge of disease surveillance and notification but poor practices of DSN were recorded among the respondents.

2.4.2 Awareness of diseases surveillance, notification and reporting among Public health care workers

Bawa and Olumide (2005), reported in their study conducted in the Yobe State (Northern part of Nigeria) among public health care workers that (93.2% non-doctors) only 35.6% were aware of disease surveillance and notification and also poor knowledge of diseases of immediate notification was reported (Bawa and Olumide 2005). Jinadu et al (2018) conducted a cross sectional study carried out in Oyo state among public primary healthcare workers (98.9% non-doctors) and documented a high level of awareness of IDSR (93.2%) but only about 1% knew the use of IDSR form 001A.

2.4.3 Awareness of diseases surveillance, notification and reporting among Disease Surveillance and Notification officers (DSNOs)

Nnebue et al (2012) documented in a study to estimate the awareness and knowledge level of disease surveillance among medical record officers and DSNOs in Anambra State, Nigeria and revealed that; 89.8% were aware of disease surveillance and notification system, only 33.3% knew that form IDSR 001 was use for immediate case based reporting and 17.1% knew the correct use of the IDSR 001 form. Dairo et al (2010) investigated the logistic challenges and prospects of disease surveillance and reporting among DSNOs in two southwestern states in Nigeria and found out that; 90.5% were medical records officers, 76.2% had appropriate training in disease

surveillance and notification, most had received training from the WHO and over 90% knew the process of reporting which was in keep to what Nuebue et al (2012) discovered.

2.4.4 Awareness of diseases surveillance, notification and reporting among Laboratory scientists

Dairo et al (2018b), reported a very low level of awareness of IDSR (8.9%) and 12.6% were aware of the IDSR policies in the country among private laboratory scientists in Lagos, (Southwestern part of Nigeria) which was surprising because they are mostly in charge of the confirmatory laboratory tests for reportable diseases.

The reason for this varying awareness level could be as a result of the training and awareness campaign that some health workers were exposed to as shown by Bawa and Olumide 2005; Dairo et al 2010; Aladeniyi et al., 2015. Half of the respondent (50%) in Olatunde et al (2013) study on surveillance among doctors and nurses in a tertiary hospital in Lagos, Nigeria, who knew about IDSR had taken part in disease notification campaign, 36.7% of respondents took part in preventive campaign.

2.5 Attitude of Health Care Givers towards Disease surveillance, notification and reporting

The right attitude of health care givers towards disease surveillance, notification and reporting is paramount in building and sustaining an effective surveillance system. A cross-sectional survey was conducted by Lafond et al (2014) among public sector physicians in the six geopolitical zones in Nigeria to investigate notifiable disease reporting and identify possible barriers, several reasons for not reporting was documented they include; many believed that reporting will not lead to any government response, been too busy to report, some also believed that they will be violating patient's confidentiality and many also believed it was not their responsibility to report.

Iwu et al (2016) reported in a study conducted among health care workers in both private and public sector in a South Eastern State of Nigeria that, 68.5% felt that disease reporting was necessary, 67.3% of them were of the opinion that it was a cumbersome activity, (71%) many of the respondents were of the opinion that neither National or State Ministries provide adequate support to local disease reporting. Also, majority of the respondents believed that improved disease reporting will be achieved through period training (81.4%) and regular feedback with results. Adebimpe and Oluremi 2019 also conducted a study among private medical doctors in Osun State, Southwestern Nigeria and the doctors gave several reasons for having a lackadaisical attitude to disease notification and reporting which include; cumbersome work flow processes, poor motivation, legal issues and inadequate human resources.

Olatunde et al (2013) also reported that doctors and nurses in a public tertiary hospital in Lagos, Nigeria, 36.7% were of the opinion that it was inconvenient for them, while 51.7% presumed it is costly to the management and time consuming which was in line with what was documented by Iwu et al (2016). Nuebue et al (2014) and Aniwada and Obionu (2016) in their study among public health workers reported poor attitude to disease notification and reporting due to poor feedback from government.

A cross sectional study among private medical laboratory scientists by Dairo et al (2018b) found out that about 58% claimed not to know how to report, 44.7% were of the opinion that inefficiency of the local government area health department to carry them along in surveillance activities and 30% reported lack of feedback *i.e.* reporting may not make a significant difference.

Adokiya et al (2015) carried out a qualitative study in the Northern Ghana among health care workers and revealed that lack of recognition for surveillance activities is a major morale dampener for reporting diseases, one of the informants said that "the hospital does not recognize the disease control unit; this demotivates me from doing analysis on surveillance data".

2.6 Willingness of Health Care Givers to report Notifiable Diseases

Health care workers willingness to notify reportable diseases to the designated authority is essential to completeness and timeliness of reports, which in turn affects response to outbreak investigation and preventing loss of lives. Iwu et al (2016) reported lack of willingness to report (48.8%) as one of the major perceived structural limitations to disease reporting. Willingness of health workers to report diseases completely and timely is also affected by cumbersomeness of diseases reporting procedure and poor staff motivation and support.

Aniwada and Obionu (2016) in a cross sectional study comparing knowledge of disease surveillance and notification among private health care givers and public health care givers, pointed out the lack of motivation was a major factor for non-regular reporting in private health care givers, however public health care givers reported because they believe that their salaries and wages are tied to these reports in Enugu, Nigeria. Adebimpe and Oluremi (2019) also conducted a study among private medical doctors in Osun State, Southwestern Nigeria and documented that 90% were willing to participate with government on disease surveillance and notification

Jinadu et al (2018) documented in a study among primary health care workers in Oyo state, that the health care workers reported disease reporting is time consuming and many of the health care workers (85.9%) were of the opinion that a good reward system, penalty for not reporting notifiable diseases will increase their willingness to report notifiable diseases. Olatunde et al (2013) study on implementation of IDSR among doctors and nurses in a tertiary hospital in Lagos State found out that, 91.5% were of the opinion that IDSR should be operational and 3.4% felt otherwise.

2.7 Knowledge Level of Health Care Givers about Signs and Symptoms of Notifiable Diseases

Assessing health care givers knowledge level of signs and symptoms of selected immediate notifiable diseases is very important, because the manner in which people care for symptoms before, they receive a diagnosis may contribute to the spread of infectious diseases. Furthermore since most traditional healers do not have equipment and facilities to conduct tests before confirming diagnosis, evidence from other authors also revealed that they depend on past experiences involving similar symptoms (Abdullahi, 2011; Aminu and Jegede, 2017; Ekeopara and Ugoha, 2017)

A cross-sectional survey was conducted by Lafond et al (2014) among public sector physicians in the six geopolitical zones in Nigeria to investigate notifiable disease reporting and identify possible barriers, reported that 72% of the physicians in the study could correctly identify the common signs and symptoms of Avian influenza (AI) infection in human, although a very few (25%) identified gastrointestinal symptoms such as diarrhea and vomiting, about 28% wrongly indicated rash as a sign and symptom of AI infection.

Aminu and Jegede (2017) conducted a study among traditional healers in Ibadan, Oyo state and revealed that 91.3% of the traditional healers were familiar and good knowledge of Ebola Virus Disease signs and symptoms. Furthermore, 34.8% of the respondents described the nature of EVD by comparing it with common illnesses like; cholera, measles and malaria. Also about 70% were found to have the knowledge of the correct incubation period.

2.8 Notifiable diseases reporting by Health care givers

Adebimpe and Oluremi (2019) conducted a cross-sectional study among private medical doctors in Osun State, Southwestern Nigeria and documented that just half of the respondents (50%) have ever reported any notifiable disease. A national survey among private doctors in Taiwan documented that 83.5% of the doctors who have ever diagnosed a reportable communicable disease reported it (Tan et al., 2009). In my opinion, the observed difference (33.5%) in the two studies could be as a result of the level of technology available in each country as most countries in the Sub-Saharan Africa still employ paper-based mode of notification and reporting.

A cross-sectional survey was conducted by Lafond et al (2014) among public sector physicians in the six geopolitical zones in Nigeria to investigate notifiable disease reporting documented that 67% of the respondents have ever reported any notifiable disease to the designated authorities.

Iwu et al (2016) reported in a study conducted among health care workers in both private and public sector in a South Eastern State of Nigeria and found out that only 74.8% have never reported any notifiable disease. Surprising in a cross-sectional study by Nadar and Askarian (2009), among both private and public physicians in Iran reported that 88% of the participants indicated never reporting a notifiable disease. Although, the frequency of never reporting is high in the two studies one can presume that a good number of it came from the private sector since their salaries is usually not tied to the reporting (Aniwada and Obionu 2016).

Nnebue et al (2013) revealed in a cross-sectional study among Disease Surveillance and Notification officers (DSNOs) in Anambra State that only 56.7% have ever reported any notifiable

disease. Dairo et al (2018b), reported that only 13.7% of the private laboratory scientists in Lagos, (Southwestern part of Nigeria) have ever reported any notifiable disease and less than half of the respondents that reported, reported to the State Ministry of Health (SMoH) Epidemiological unit, which was shocking because they are mostly in charge of the confirmatory laboratory tests for reportable diseases.

2.9. CHARACTERSITICS OF SELECTED NOTIFIABLE DISEASES

2.9.1. EPIDEMIC PRONE DISEASES

These are diseases that lead to repeated outbreaks with high case fatality rate, they include; measles, cholera, yellow fever, cerebrospinal meningitis, diarrhea with blood (Shigellosis), viral hemorrhagic fevers (such as lassa fever and ebola virus diseases) and highly pathogenic avian influenza (FMOH, 2009). Furthermore, surveillance of these diseases have reported weak in Nigeria (Ofili et al., 2003; Fatiregun et al., 2010; Dairo et al., 2018a).

2.9.1.1 MEASLES

Signs and symptoms

This begins after 7 to 14 days after contamination, high fever (upto 104^{o} F), cough, runny nose (coryza), red-watery eyes (conjunctivitis), 2-3 days after symptom begins after koplik spots, 3-5 days after symptoms (small raised bumps may also appear on top of the flat red spots, the spots may become joined together as they spread from head to the rest of the body (CDC, 2019a).

Complications involved in treatment measles

Ear infections and diarrhea are the common complications in children but serious complications like pneumonia and encephalitis might develop if left untreated and can the child with intellectual diability (CDC, 2019a).

Standard case definition

Any person with fever and maculopapular rash, cough, coryza or conjunctivitis (red eyes) or any person whom a clinician suspects measles. A Measles death is a death occurring within 30 days of onset of rash (CDC, 2019a).

Hospital management of Measles

There is no clearly defined antiviral therapy for measles. The health care system is supportive and helps to relieve symptoms and minimize complication such as bacterial infections. Children with severe measles cases should be treated with vitamin A and this should be administered immediately on diagnosis and repeated the following day (CDC, 2019a).

Local management of Measles

The fresh leaves of *Momordica charantia* (local yoruba name: Ejinrin) are washed and the juice is squeezed, two tablespoons of the juice are to be taken orally thrice daily and also used in bathing morning and evening (Sonibare et al., 2009). Also another recipe for treatment involves; the leaves of *Peperomia pellucida* (local yoruba name: Renren), *Elytraria marginata* (local yoruba name: Eso), *Bambusa vulgaris* (local yoruba name: Oparun), seeds of *Aframomum melegueta* (local yoruba name: Ataare), and the whole plant of *Corchorus olitorius* (local yoruba name: Ewedu) are washed and boiled with a little quantity of potash using plenty quantity of water. This is then allowed to cool and a teacupful of extract is taken thrice daily after meal by the patient. (Sonibare et al., 2009).

2.9.1.2 CHOLERA

Signs and symptoms

It takes between 12 hours and 5 days for a person to show symptoms after ingesting contaminated food or water with *Vibro cholera.* The signs and symptoms of cholera include: profuse watery diarrhea, vomiting, rapid heart rate, loss of skin elasticity, dry mucous membrane, low blood pressure, thirst, muscle cramps and restlessness (WHO Fact Sheet 2019a)

Complications involved in the treatment of Cholera

Persons with severe cholera can develop acute renal failure, severe electrolyte imbalances and coma in the absence of rehydration. If untreated, severe dehydration can rapidly lead to shock and eventually death in hours. (CDC, 2019b)

Standard case definition

Any person 5years of age or more who develop severe dehydration or dies from acute watery diarrhea (CDC, 2019b).

Hospital management of Cholera

There are three basic modes of treatment for hospitalized cholera patients, they include:

1. **Rehydration Therapy:** this simply means prompt restoration of lost fluids and salts through rehydration therapy, so has to increase the electrolytes in the body.
2. **Antibiotic Treatment**: which in-turn reduces fluid requirements and duration of illness; this is mostly used in severe cases of cholera.
3. **Zinc Treatment**: this involves introduction of zinc in mild quantity into the body system and it has been shown to help improve cholera symptoms in children (CDC, 2019b).

Local management of Cholera

Cholera is managed by preparing, a handful of Phyllathus amarus (Local yoruba name: Eyin Olobe) plus a spoonful of lime. Boil the Phyllathus amarus, add a spoonful of lime. Another treatment recipe for cholera is using Alcohol (or Ogogoro, Whisky, Gordon Gin, Brandy, Native Chalk, Lime. Grind the piece of Chalk and mix ½ bottle of gin, with lemon juice (Morenikeji et al., 2011).

2.9.1.3 YELLOW FEVER

Signs and symptoms

Yellow fever is a viral disease that occurs in the tropical and subtropical areas of South America and Africa. Incubation period ranges 3 to 6 days and there is no known treatment or cure for this disease, it can only be prevented through vaccination. The common signs and symptoms include; sudden onset of fever, chills, severe headache, backpain, body aches, nausea and fatigue.

Severe symptoms include: followed after a brief remission that last only few hours or a day, high fever, yellow skin (Jaundice), bleeding, shock and organ failure (CDC, 2019c).

Complications involved in management of Yellow fever Disease

The usual complications involved in management of yellow fever disease include; renal failure, liver failure, jaundice, delirium and coma (CDC, 2019c).

Standard case definition

Any person with sudden onset of high fever, followed by jaundice within 2 weeks of the first symptom (CDC 2019c).

Hospital management of Yellow fever

There is no known medicine or treatment for yellow fever, persons with confirmed cases of yellow fever should be hospitalized for close observation and supportive care. Rest, drinking of fluids should be encouraged, and use pain relievers and medication to reduce fever and relieve aching. However, certain medications should be avoided, such as aspirin or other nonsteroidal anti-inflammatory drugs, for example ibuprofen (Advil, Motrin), or naproxen (Aleve), which may increase the risk of bleeding (CDC, 2019c).

Local management of Yellow fever

The bark of the fence-like tree *Newboulda laevis* (P. beauv) popularly caused "akoko" in yoruba land, is made into a decoction, this decoction is taken orally Yellow fever (Olanipekun and Ajayi 2015). Also the leaves and roots of Siam weed, *Chromolaena odorata (Linn.)* popularly called Akintola in yoruba is boiled together with *Citrus* leaves and the bark of *Mangifera indica* (Mango) are boiled in an earthen pots. This decoction is taken orally and then use to bath, the dosage: a full cup for adult and a half-full cup for children taken orally 3 times daily (Bhat *et al.,* 1985).

2.9.2. DISEASES MARKED FOR ERADICATION AND ELIMIATION

2.9.2.1 ACUTE FLACCID PARALYSIS (AFP)/POLIOMYELITIS

Signs and symptoms

Poliomyelitis is a crippling and potentially deadly infectious disease, must people who get infected with poliovirus (72%) will not have any visible symptoms. About 1 out of every 4 people will have flu-like symptoms. The signs and symptoms for poliomyelitis include; sore throat, fever, tiredness, nausea, headache and stomach pain. These symptoms usually last 2 to 5 days then go away on their own (CDC, 2019g).

Complications involved in the treatment of Poliomyelitis

Severe cases of poliomyelitis comes with complications which include: parathesia (feeling of pins and needles in the legs), meningitis (infection of the covering of the spinal cord and/or brain, about 1 out of 25 with poliovirus infection) and paralysis (arms or legs or both, 1 out of 200 infected peopl**e) (**CDC, 2019g).

Standard case definition

Any child less than 15 years of age with a sudden onset of paralysis or any person of any age a clinician suspects polio (FMOH, 2009).

Hospital management of Poliomyelitis

There is no known treatment for Poliomyelitis. Patients have to be monitored closely during the acute stage of paralytic polio, which can last from two weeks to up to three months, pain relievers are usually administered. After this period, most survivors regain some or all muscle function, and their physical capabilities and mobility can be improved through rehabilitation and physiotherapy (Gensowski *et al.*, 2019).

Local treatment of Poliomyelitis

In Yoruba land there are different herbs which are used in local treatment of poliomyelitis. The leaves of Goat weed *Ageratum conyzoides* (local name in yoruba: Imi-esu) and Henna plant *Lawsonia inermis* (local name in yoruba: laali) is boiled together with the fruit of avocado pear *Persea americana* (local name in yoruba: pia) and an ample quantity of garlic *Allium sativa* (local name in yoruba: Ayu) which is allowed to cool down and taken. Dosage: a full table spoon for adult and half a table spoon for children (Oladunjoye and Kehinde 2011).

2.9.2.2 DRACUNCULIASIS (GUINEA WORM DISEASE)

Signs and symptoms

People do not usually show symptoms until about one year after they become infected. Few days to hours before the worm comes out the skin, the person may develop a fever, swelling, and pain in the area. Subsequently, symptoms like nausea, dizziness, diarrhea and vomiting might occur. The swelling that develops in-turn forms blister which eventually ruptures and exposes the worm, in an attempt to ease the pain or the itchy sensation, the infected person may put the affected part into a water body and in the process release thousands of viable larvae and infect a vulnerable person (CDC, 2019d).

Complications involved in the treatment of Guinea worm

Most times due to the passive nature of the worm, it leads to further complications if the wound is not properly taken care of and gets infected with bacteria. Such complications include; boils (abscess), swelling and redness of the skin (cellulitis), lock and deformity of the joint due to joint infections (sepsis arthritis) and tetanus. It also causes demobilization of the patients during infection and recovery and may cause permanent disability if not taken care of properly and timely (CDC, 2019d).

Standard case definition

Any individual exhibiting a skin lesion with emergence of one or more Guinea worms (FMOH, 2009).

Hospital management of Guinea worm

There is no specific treatment or drug for Guinea worm, there is also no vaccine to prevent Guinea worm. The affected body part may be immersed or soaked in water to encourage the worm to contract and release larvae into the water, emptying the worm of larvae makes removing the worm easier. Then, the worm is gently pulled out. Pulling stops when resistance is met to avoid breaking the worm and making it harder to remove the remaining part. Because the worm can stretch out long as almost a meter in length, full extraction can take several days to weeks. Thereafter antibiotics are applied to the wound to prevent secondary bacterial infections, also pain reliever such as aspirin or ibuprofen, are given to help ease the pain of this process and reduce inflammation (CDC, 2019d).

Local treatment of Guinea worm

A documented treatment for Guinea worm in yoruba land involves the grinding of leaves of silver spinach *Celosia trigyna* (local yoruba name: Sokoyoto) together with three alligator pepper seeds (*Amomum subulatum*). Seven incisions are made on the affected part and the mixture is thoroughly rubbed in (Bhat *et al.,* 1985).

2.9.3. OTHER DISEASES OF PUBLIC HEALTH IMPORTANCE

2.9.3.1 MALARIA

Signs and symptoms

Malaria is a vector-borne (female anopheles mosquito) disease caused by a parasite. The symptoms occur in stages: a cold stage (sensation of cold, chills and shivering), a hot stage (fever, headaches, loss of appetite, general malaise, vomiting; seizures in young children); and finally a sweating stage (sweats, return to normal temperature, tiredness) (CDC, 2019e).

Complications involved in the treatment of Malaria

Malaria infection gets complicated when organs in the body begin to fail or abnormal changes in the patient's blood. These complications include; Cerebral malaria which manifest with abnormal behavior, consciousness impairment, seizures, coma, or other neurologic abnormalities. Also acute respiratory distress syndrome (ARDS), an inflammatory reaction in the lungs which decreases oxygen exchange, that may occur even after the parasite counts have decreased in response to treatment. Hypoglycemia (low blood glucose) may also occur in pregnant women with uncomplicated malaria, or after treatment with quinine. Hemoglobinuria (hemoglobin in the urine) due to continuous hemolysis (CDC, 2019e).

Standard case definition

For uncomplicated case: Any person with fever or history of fever within 24 hours; without signs of severe disease (vital organ dysfunction) is diagnosed clinically as malaria. For complicated case: Any patient hospitalized with severe febrile disease with accompanying vital organ dysfunction diagnosed clinically (FMOH, 2009).

Hospital management of Malaria

Treatment of malaria depends on several factors including how severe it is, the particular species of malaria parasite causing the infection and the region of the world in which the infection was acquired or travel history. Knowing all these details help determine the probability that the organism is resistant to certain drugs and which antimalarial drugs to use. Prescription for malaria treatment is based on additional factors such as age, weight, and pregnancy status may limit the available options (CDC, 2019e).

Local treatment of Malaria

The bark and leaves of *Mangifera indica* with common name Mango (local yoruba name: Mangoro) is cooked along with the leaves of *Cymbopogon citratus* (lemon grass), some back of *Citrus sp.* and the leaves of *Alchornea cordifolia* (Christmas bush) in earthen pots for 3 - 4 hours. The decoction is used orally and as a bath, dosage; half a cup for children and a full cup for adults (Bhat *et al.,* 1985).

2.9.3.2 TUBERCULOSIS

Signs and symptoms

Tuberculosis (TB) is caused by a bacterium known as *Mycobacterium tuberculosis*. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body such as the kidney, spine, and brain. Symptoms of TB experienced depend on the location in the body the TB bacteria are growing. Common symptoms include; pain in the chest and abdomen, coughing up blood or sputum. Other symptoms of TB disease are; weakness or fatigue, weight loss, no appetite, chills, fever and sweating at night (CDC, 2019f).

Complications involved in the treatment of Tuberculosis

The common complications involved in treatment of tuberculosis include; jaundice (yellowing of skin or eyes), persistent tingling, numbness, or burning sensation of hands or feet, persistent weakness, fatigue, fever, or abdominal tenderness, easy bruising or frequent bleeding, blurred vision or impaired vision (CDC, 2019f).

Standard case definition

Any person with a cough of 3 weeks or more (FMOH, 2009).

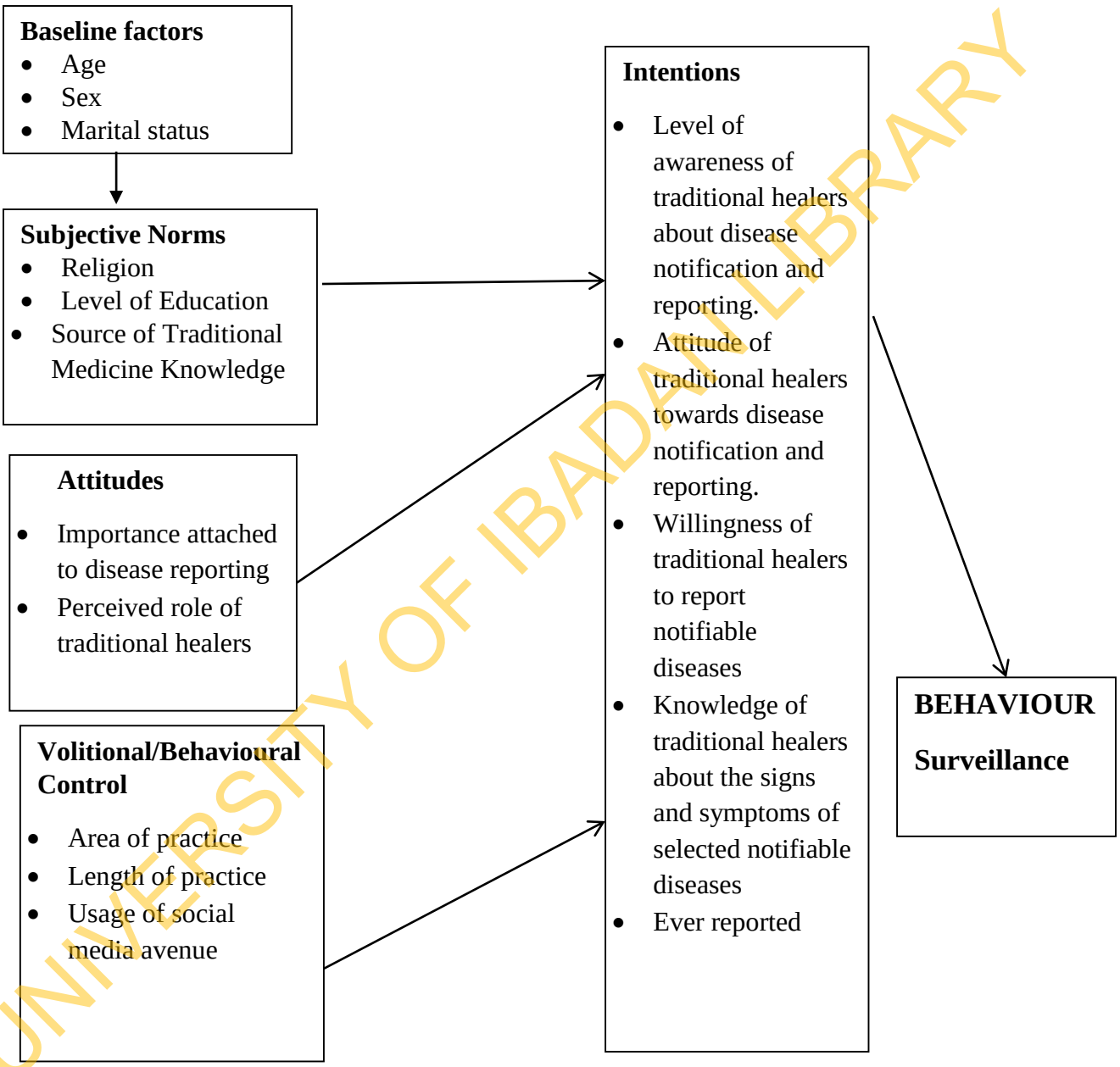
Hospital management Tuberculosis

Tuberculosis disease can be treated by taking several drugs for 6 to 9 months. There are about 10 drugs currently approved by the U.S. Food and Drug Administration (FDA) for treating TB. The first-line anti-TB agents that form the core of treatment regimens are TB disease can be treated by taking several drugs for 6 to 9 months. There are about 10 drugs currently approved by the U.S. Food and Drug Administration (FDA) for treating TB. Out of the approved drugs, the first-line anti-TB agents that form the main course of treatment regimens are: isoniazid (INH), rifampin (RIF), ethambutol (EMB) and pyrazinamide (PZA) (CDC, 2019f).

Local treatment of Tuberculosis

The leaves of Tea bush *Ocimum gratissimum* (local yoruba name: Efinrin) together with fruits of Lime *Citrus aurantifolia* (local yoruba name: Osan wewe) with kola nut *Cola acuminate* (local yoruba name: Obi) which is grinded and boiled together with the leaves of *Cymbopogon citratus* (lemon grass) and allowed to cool down and the infected person takes a full cup 3 to 4 times daily for adult and half a cup for children (Ogbole and Ajaiyeoba 2009).

2.10 CONCEPTUAL FRAMEWORK FOR KNOWLEDGE, ATTITUDE AND WILLINGNESS OF TRADITIONAL HEALERS TOWARDS DISEASE SURVEILLANCE AND NOTIFICATION OF SELECTED IMMEDIATE NOTIFIABLE DISEASES



(Adapted from the Theory of Planned Behaviour by Azjen 1988)

CHAPTER THREE

METHODOLOGY

3.0 STUDY AREA

Ibadan is the largest city in terms of geographical area in the southern part of Nigeria, also the capital of Oyo state with population of 2,559,000 as at 2006 census, Ibadan consists of 11 local governments with 5 in the urban region and 6 in the semi-urban region. Ibadan metropolis consists of five local governments namely; Ibadan North, Ibadan North-West, Ibadan North-East, Ibadan South-West, Ibadan South-East. Ibadan is rich in culture and traditions passed down from generation to generation.

3.1 STUDY DESIGN

A mixed method was used to elicit information from the respondents. **In-depth interviews** were conducted with few participants before **descriptive cross-sectional study** was conducted on all respondents, the study was aimed at assessing the level of awareness, knowledge of signs and symptoms, willingness, and attitude towards notifiable diseases by traditional healers in the Ibadan Metropolis.

3.2 STUDY POPULATION

This study focused on the traditional healers from the five urban local governments in the Ibadan Metropolis. The local governments are;

- Ibadan North
- Ibadan North East
- Ibadan North West
- Ibadan South West
- Ibadan South East

3.3 ELIGIBILITY CRITERIA

3.3.1 INCLUSION CRITERIA: Registered traditional healers that are still actively practicing in their respective LGA

3.3.2 EXCLUSION CRITERIA: Traditional healers who do not treat notifiable diseases or are below 35 years, for example; aromatherapy, acupuncturist, chiropractors amongst others

3.4 SAMPLE SIZE DETERMINATION: the sample size was determined using the formula using the Leslie Kish formula

$$n = \frac{(Z\propto -2)^2 \times p \times q}{d^2}$$

Where, $Z_{\alpha-2}$ = Standard normal deviate at 95% confidence interval, which is 1.96.

P = Proportion of traditional healers who had good knowledge of Ebola virus diseases (EVD) signs and symptoms p = 0.913 ,

q= the complementary probability of p, (1-p), = 0.087

d= precision level of 5%.

(91.3%) of the traditional healers in a similar study were familiar with and had good knowledge of EVD signs and symptoms.(Aminu and Jegede 2017)

$$n = \frac{1.96^2 \times 0.913 \times 0.087}{0.05^2} = 122$$

An adjustment for non-response was done with a response rate of 80% projected, therefore non-response rate of 20%, the estimated sample size is 153 eligible traditional healers.

3.5 SAMPLING TECHNIQUE: The Sampling is a two-stage sampling technique. Two-stage non-probability sampling technique

Stage one: Five (5) local government areas (LGA) in the Ibadan metropolis were purposively selected.

Stage two: Due to nature of the respondents as they difficult to get, a snowball sampling technique was used after locating few traditional healers from the president of the 'Traditional Healers' Association of Nigeria, Ibadan branch.

3.6 PROCEDURE FOR DATA COLLECTION

The president of the 'Traditional Healers Association of Nigeria', Ibadan branch was contacted and he helped in gaining access to the practicing traditional healers during their meeting days. In-depth interview guide was used to collect data from purposively selected participants, this interview was aided with audio recorder after seeking permission from participants and this was also stated in the informed consent form. Also data was collected using an interviewer administered semi-structured questionnaire designed based on the research objectives and reviews from literatures.

Research assistants were recruited to help collect data during the entirety of the study. A one-day interviewer training was conducted for them to understand the scope and purpose of the study, confidentiality of information, respondent's right, informed consent and techniques of interview. Pretest of the questionnaire was also done so as to ascertain the measurability of the questions in Ido local government area in Oyo State. The questionnaire was divided into five sections as follows:

SECTION A: Socio – demographic characteristics

SECTION B: Awareness of the respondent about disease surveillance and reporting

SECTION C: Attitude of traditional healers towards disease surveillance and reporting

SECTION D: Willingness of traditional Healers to report notifiable diseases

SECTION E: Perception of training need of traditional healers on disease notification and reporting.

SECTION F: Knowledge of Signs and Symptoms of selected notifiable diseases

Variables to be considered include:

1. Socio-demographic characteristics which includes; Age, Sex, level of education, marital status amongst others.
2. Knowledge of reportable diseases
3. Knowledge of where to report notifiable diseases to
4. Knowledge of signs and symptoms of these diseases
5. Ever reported before
6. Willingness to report notifiable diseases
7. Awareness
8. Attitude towards reporting.

3.7 VALIDITY OF INSTRUMENT

There was an extensive review of relevant literatures to ensure content and face validity. Construct validity was also ensured by making sure that variables in the conceptual and theoretical frameworks are well represented in the instrument.

3.8 RELIABILITY OF INSTRUMENT

The drafted questionnaire were pretested among 15% of the study population in Ido local government in Oyo State. The retrieved filled pre-tested questionnaire were subjected to Cronbach alpha analysis and a reliability coefficient of 0.7 and above will be considered to be reliable.

3.9 EXPLANATORY VARIABLES: These are factors that either promote or hinder the awareness level, attitudes, knowledge of notifiable disease surveillance and willingness to report these diseases. They include:

1. Age
2. Sex
3. Availability of apprentice
4. Source of traditional medicine Knowledge
5. Level of education
6. Marital status
7. Area of practice
8. Duration of practice
9. Use of social media avenues

3.10 DATA MANAGEMENT AND ANALYSIS

Supervisor and peer edited questionnaires and collected data were safely kept under lock and key. Information obtained from this study was kept in a pass worded computer. Data were analysed using Statistical Package for Social Science (SPSS) version 20 and the results were summarized using percentages, frequencies, means and standard deviation. Thematic analysis was used to

analyse the In-depth Interview, the analysis started with transcription of the audio data followed by translation into English.

Assessment of attitude, willingness and knowledge of signs and symptoms of selected notifiable diseases

A four-point likert scale and a three-point scale were used to measure the attitude of the traditional healers. The total obtainable score was 7points, the cut-off for good attitude was set at five points while the rest were categorized as having poor attitudes. A five-point likert scale with two (2) questions were used to measure the willingness of the traditional healers to report. The total obtainable score was 10 points, the cut-off for high willingness was set at 8 points while the rest were categorized as having poor willingness.

Respondent's knowledge of signs and symptoms of selected notifiable diseases was assessed on three scales. Selected diseases were divided into three categories: Epidemic prone diseases, diseases marked for elimination and eradication and other diseases of public health importance. The signs and symptoms were drafted from the WHO directory and CDC directory. Epidemic prone diseases had 9 diseases with 59 questions to assess the knowledge of signs and symptoms with one mark awarded to each correct answer, the total obtainable score was 59. The cut-off was set at 29 for good knowledge. Diseases marked for eradication and elimination had 5 diseases with 36 questions to assess the knowledge of signs and symptoms with one mark awarded to each correct answer, the total obtainable score was 36. The cut-off was set 18 for good knowledge. Diseases of public health importance had 3 diseases with 22 questions to assess the knowledge of signs and symptoms with one mark awarded to each correct answer, the total obtainable score was 22. The cut-off was set at 11 for good knowledge.

3.11 ETHICAL CONSIDERATION

Ethical approval was obtained from the Oyo State Ethical Review committee of the Ministry of Health, Oyo State, Nigeria, before the commencement of the study. Both written and verbal informed consent forms were provided in English and also copies were translated into Yoruba language and given to all consenting respondents, security and confidentiality of the collected information were guaranteed. Consent was taking before audio recording of the qualitative interview commences. The data collected from this study will only be used for the purpose of research and for general knowledge. Serial numbers rather than names were used on questionnaires in order to ensure participants anonymity.

CHAPTER FOUR

RESULTS

The survey findings are presented as follow:

- The result of the survey on Traditional healers socio-demographic characteristics; Age, Gender, local government area of residence, Religion, Area of Practice and Duration of practice.
- Result of the assessment of awareness and knowledge of the traditional healers about the practice of disease notification and reporting
- The result of the findings on practice of the respondents about disease notification and reporting
- Result of findings on major diseases treated and symptoms encountered by the respondents
- Result of assessment of the attitude of traditional healers' towards disease notification and reporting.
- The results of assessment of willingness to report notifiable diseases and perception of training need of Traditional healers.
- The results of assessment of knowledge of signs and symptoms of selected notifiable diseases
- The result of findings during the In-depth Interview with some selected respondents.

4.0 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE STUDY POPULATION

The total number of respondents interviewed were one hundred and thirty seven (137) out of which 27.0% (37) were from Ibadan Southeast local government. 35.8% (49) of the respondents were between the ages 45-54 years with mean age 53 years (SD = 10). Majority 72.3% (99) of the respondents were males. 89.8% (123) were married while 9.5% (13) were widowed prior to the time of study. 75.2% (103) practiced Islamic religion and 11.7% (16) were traditional worshippers. 48.9% (67) had up to primary education. More than half of the respondents 65.7% (90) practiced Herbal therapy, 8% (11) practiced Spiritual therapy and 1.5% (2) were Bone-setters.

The highest duration of practice recorded from the interviews was 47years and 40.9% (56) had duration of practice of 11 – 20 years. More than half, 52.6% (72) had apprentice as at the time of this study of which 47.2% (34) had more than two apprentices. Almost one third of the respondents 29.2% (40) use social media avenues such as Facebook and Whatsapp also 15.3% (21) of the respondents have other source of income which includes; bricklaying, catering, hunting, trading and Arabic language tutoring.

Table 4.0 Socio-demographic characteristics of the traditional healers

Variables	Frequency (n = 137)	Percentages (%)
Age in years		
35 – 44	29	21.2
45 – 54	49	35.8
55 – 64	44	32.1
65 – 74	10	7.3
> 75 years	5	3.6
Gender		
Male	99	72.3
Female	38	27.7
Marital Status		
Married	123	89.8
Single	1	0.7
Widowed	13	9.5
Religion		
Islam	103	75.2
Christianity	18	13.1
Traditional Worshippers	16	11.7
Level of Education		
No Formal Education	5	3.6
Primary Education	67	48.7
Secondary Education	51	37.2
Tertiary Education	14	10.2
Area of Practice		
General Practice	11	8.0
Herbal Therapy	90	65.7
Bone-Setting	2	1.5
Spiritual Therapy	11	8.0
Herbal Therapy and Spiritual Therapy	22	16.1
Source of Traditional Medicine Knowledge		
Family tradition	73	53.3
Apprenticeship	37	27.0
Family tradition and Apprenticeship	27	19.7
Duration of Practice (in years)		
1 – 10	26	19.0
11-20	56	40.9
> 20`	55	40.1

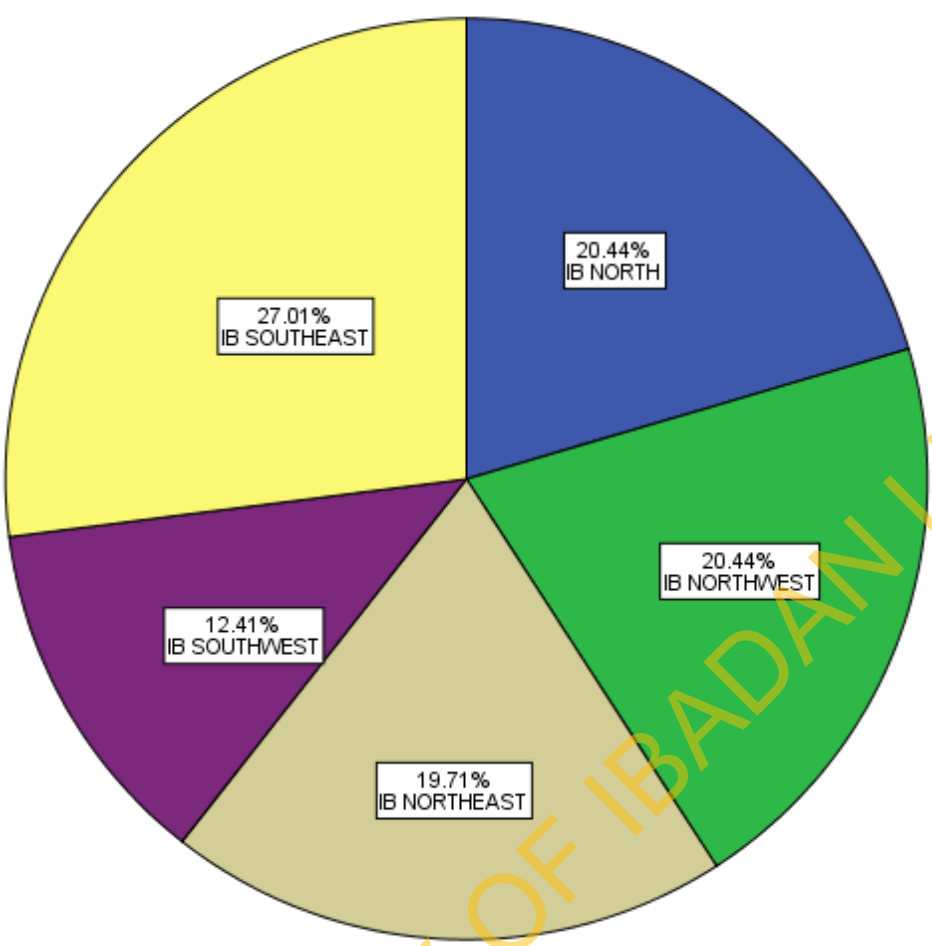


Figure 4.1. Local government area of Respondents

4.1 Awareness of the traditional healers about disease notification and reporting

Table 4.1 shows the awareness of traditional healers about disease notification and reporting**.** Just a little above quarter of the respondents 29.2% (40) have heard about the practice of disease reporting. 50% (20) of the respondents who were aware of this practice heard about it from their associations and meetings of traditional healers and 37.5% (15) heard about it from multi-media avenues (phone, television, radio).

Table 4.1. Awareness of traditional healers about disease notification and reporting.

Variables	Frequency (N = 137)	Percentages (%)
AWARENESS		
Ever heard of reporting	(n = 137)	
Yes	40	29.2
No	97	70.8
Source of information about reporting	(n = 40)	
Associations and Meetings of traditional healers	20	50.0
Social media avenues (phone, television, radio)	15	37.5
Professional colleagues	5	12.5

4.1.1 KNOWLEDGE OF THE RESPONDENTS ABOUT THE PRACTICE OF DISEASE NOTIFICATION AND REPORTING

Table 4.1.1 Shows the explanations given by the respondents include**;** practice of informing government about disease that spread 65.0% (26), primarily reporting sexually transmitted diseases 25.0% (10) and reporting diseases that we cannot treat 10% (4).

When the respondents who claimed to have heard about the practice 29.2% (40), were asked why they should report these diseases to the government health agencies they gave different responses which include; to stop the spread of the disease 50.0% (20), to raise awareness about the disease to the government 22.5% (9) and to acquire more knowledge about the disease from the government 17.5% (7).

Furthermore, when all the respondents were asked to mention ten (10) diseases that must be reported, only 70.8% (97) responded., The following are the top diseases mentioned; almost half 42.3% (41) mentioned Ebola virus disease, 40.2% (39) mentioned Typhoid fever, 39.2% (38) mentioned Lassa fever, 34.0% (33) mentioned AIDS and 28.8% (28) mentioned Cholera.

Also, when all the respondents were asked if they know where they must go to report any of these diseases, 25.5% (35) claimed to know where to report these diseases; 37.1% (13) mentioned Government Hospital and 62.9% (22) mentioned Ministry of Health. It can be observed that 83.9% (115) of the respondents do not know the appropriate government health authority to report to.

Table 4.1.1 Knowledge of the respondents about the practice of disease notification and reporting

Variables	Frequency (N = 137)	Percentages (%)
Meaning of Disease Reporting	(n= 40)	
Practice of informing government about disease that spread	26	65.0
Primarily reporting sexually transmitted diseases	10	25.0
Reporting untreatable diseases	4	10.0
Reason for reporting	(n = 40)	
To stop the spread of diseases	20	50.0
To raise awareness for government about the occurrence of such diseases	9	22.5
To acquire more knowledge about the diseases from the government.	7	17.5
For the protection of the Traditional healers against legal actions	2	5.0
For better treatment from the government	2	5.0
Knowledge of where to report to	(n = 40)	
Yes	35	87.5
No	5	12.5
Where to report to	(n = 35)	
Ministry of Health	22	62.9
Government Hospital	13	37.1
Diseases that must be reported	(n = 97)	
Ebola	41	42.3
Typhoid Fever	39	40.2
Lassa Hemorrhagic Fever	38	39.2
Human Immunodeficiency Virus	33	34
Cholera	38	38.8

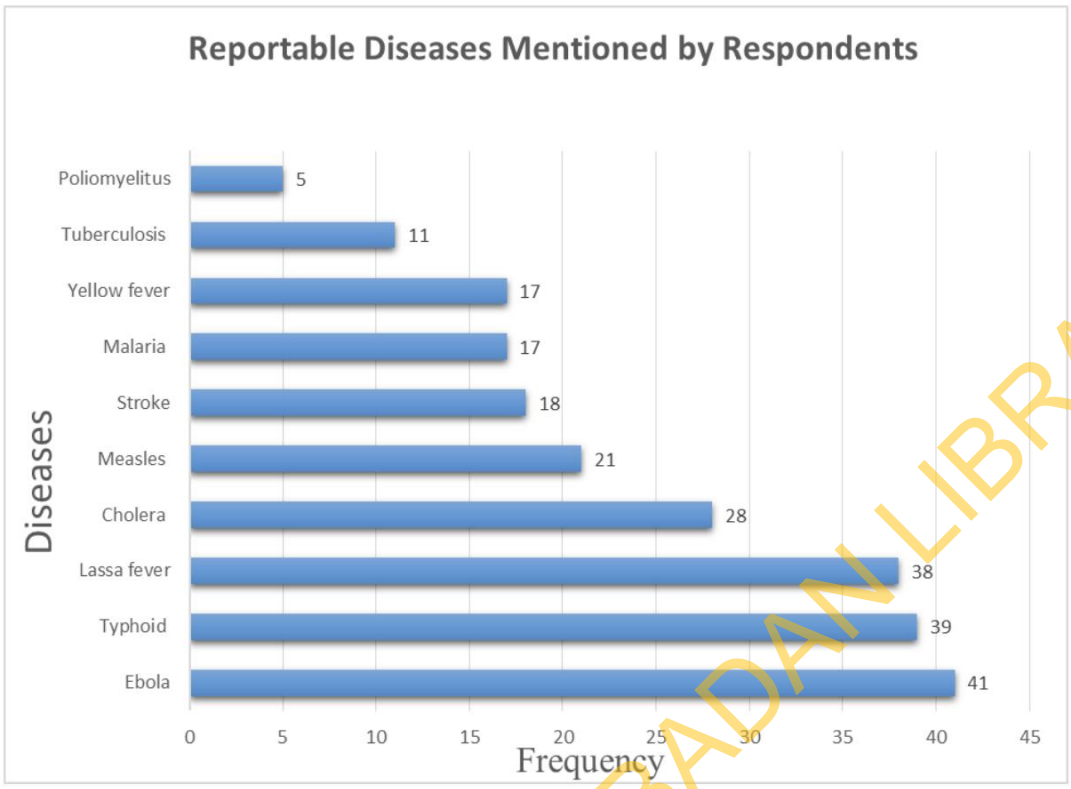


Figure 4.2. Reportable diseases mentioned by Respondents

4.1.2 PRACTICE OF THE RESPONDENTS ABOUT DISEASE NOTIFICATION AND REPORTING

Table 4.1.2 Shows practice of the respondents about disease notification and reporting, 10.2% (14) of the respondents have ever reported any notifiable disease, almost all the respondents 92.3% (13) reported verbally to the Ministry of health. Half of the respondents 50.0% (7) reported Cholera, 28.6% (4) reported Lassa hemorrhagic fever and 7.1% (1) reported measles. When the respondents were asked what they do to clients that they cannot treat, 25.5% (35) said they refer to other traditional healers while 74.5% (102) refers to the hospital.

Table 4.1.2 Practice of the respondents about disease notification and reporting

Variables	Frequency (N = 137)	Percentages (%)
Ever reported a notifiable disease	(n= 137)	
Yes	14	10.2
No	123	89.8
Where the reporting was done	(n = 14)	
Ministry of Health	14	100
Notifiable diseases reported	(n = 14)	
Cholera	7	50.05
Lassa hemorrhagic fever	4	28.6
Measles	1	7.1
Tuberculosis	2	14.3
Mode of reporting	(n = 14)	
Verbally	13	92.3
Telephone	1	7.1
Referral preference of respondents	(n = 137)	
Referring to other traditional healers	35	25.5
Referring to the Hospital	102	74.5

4.1.3 DISEASES TREATED AND SYMPTOMS ENCOUNTERED BY RESPONDENTS

Table 4.1.3 shows the top ten (10) diseases often treated by the respondents include: 48.9% (67) treat malaria, 43.1 % (59) treat hypertension, 35.8 % (49) treat diabetes, 32.8% (45) treat typhoid, 29.9% (41) treat stroke, 29.2% (40) treat measles, 13.1% (18) treat yellow fever, 9.5% (13) treat ulcer, 7.3% (10) treat fibroid and 3.6% (5) treat cholera.

Symptoms of diseases encountered by the respondents include; 13.9% (19) treat fever, 11.7% (16) treat headache, 9.5% (13) treat cough, 5.8% (8) treat abdominal pain and 5.8% (8) treat Rashes.

Table 4.1.3 Diseases treated and symptoms encountered by respondents

Variables	Frequency (N = 137)	Percentages (%)
Diseases often treated by the respondents	(n = 137)	
Malaria	67	48.9
Hypertension	59	43.1
Diabetes	49	35.8
Typhoid	45	32.8
Stroke	41	29.9
Measles	40	29.2
Yellow fever	18	13.1
Ulcer	13	9.5
Fibroid	10	7.3
Cholera	5	3.6
Symptoms of diseases encountered by the respondents	(n = 137)	
Hemorrhoid	43	31.4
Cough	13	9.5
Headache	16	11.7
Stomach pain	8	5.8
Rashes	8	5.8

Multiple Responses

4.2 ATTITUDE OF TRADITIONAL HEALERS TOWARD DISEASE REPORTING

Table 4.2 Shows attitude of Traditional healers' towards disease notification and reporting. The importance of reporting was asked from the respondents; 27.7% (38) considered it not important, over half of the respondents 69.3% (95) considered it important. Furthermore, 23.4% (32) believed that the traditional healers do not have any role in the practice of bringing the occurrence of these diseases to the attention of the government.

When the respondents were asked what should be the role of traditional healers in disease notification and reporting, 76.6% (105) responded and they were of different opinions which include; bringing the occurrence of diseases to the government 33.3% (35), serving as link between government and community 9.5% (10) and 55.2% (58) of the respondents don't know. 89 (65%) had good attitude towards reporting notifiable diseases.

Table 4.2 Attitude of traditional healers' towards disease notification and reporting.

Variables	Frequency (N = 137)	Percentages (%)
Importance of reporting	(n= 137)	
I don't care	4	2.9
Not important	38	27.7
Important	60	43.8
Very important	35	25.5
Perceived role of traditional healers in disease reporting	(n = 137)	
No role	32	23.4
Some role	105	76.6
Suggested role of traditional healers in disease reporting	(n = 105)	
Bringing occurrences of diseases to the government	35	33.3
Serving as link between the government and community	10	9.5
Referring patients to the hospital	2	1.9
Don't know	58	55.2
Overall Attitude		
Good Attitude	89	65
Poor Attitude	48	35

4.3 WILLINGNESS OF TRADITIONAL HEALERS TO REPORT NOTIFIABLE DISEASES AND TO ATTEND TRAINING ON DISEASE NOTIFICATION

Table 4.3 shows the percentage distribution of the traditional healers 92% (126), who were willing to assist government workers in reporting these diseases if they come in contact with any of them and 95.4% (128) were willing to attend training on disease notification and reporting. 123 (89.8%) were highly willing to report notifiable diseases.

Table 4.3 Willingness of traditional healers to report notifiable diseases and to attend training on disease notification

Variables	Frequency (N = 137)	Percentages (%)
Willingness to assist government workers in reporting notifiable diseases		
Very unwilling	1	0.7
Unwilling	2	1.5
Not sure	8	5.8
Willing	88	64.2
Very willing	38	27.2
Willingness to attend training on notification of these diseases	(n= 137)	
Very unwilling	1	0.7
Unwilling	3	2.2
Not sure	5	3.6
Willing	104	75.9
Very willing	24	27.7
Overall willingness to report notifiable diseases		
High willingness	123	89.8
Poor willingness	14	10.2

4.3.1. PERCEPTION OF TRAINING NEED OF TRADITIONAL HEALERS ON NOTIFIABLE DISEASES

Figure 4.3 depicts outcome of training need assessment of the respondents. 95.6% (131) of the respondents were of the opinion that they need to be trained on disease notification and reporting but only 91.2% (125) were willing to attend training on disease notification and reporting.

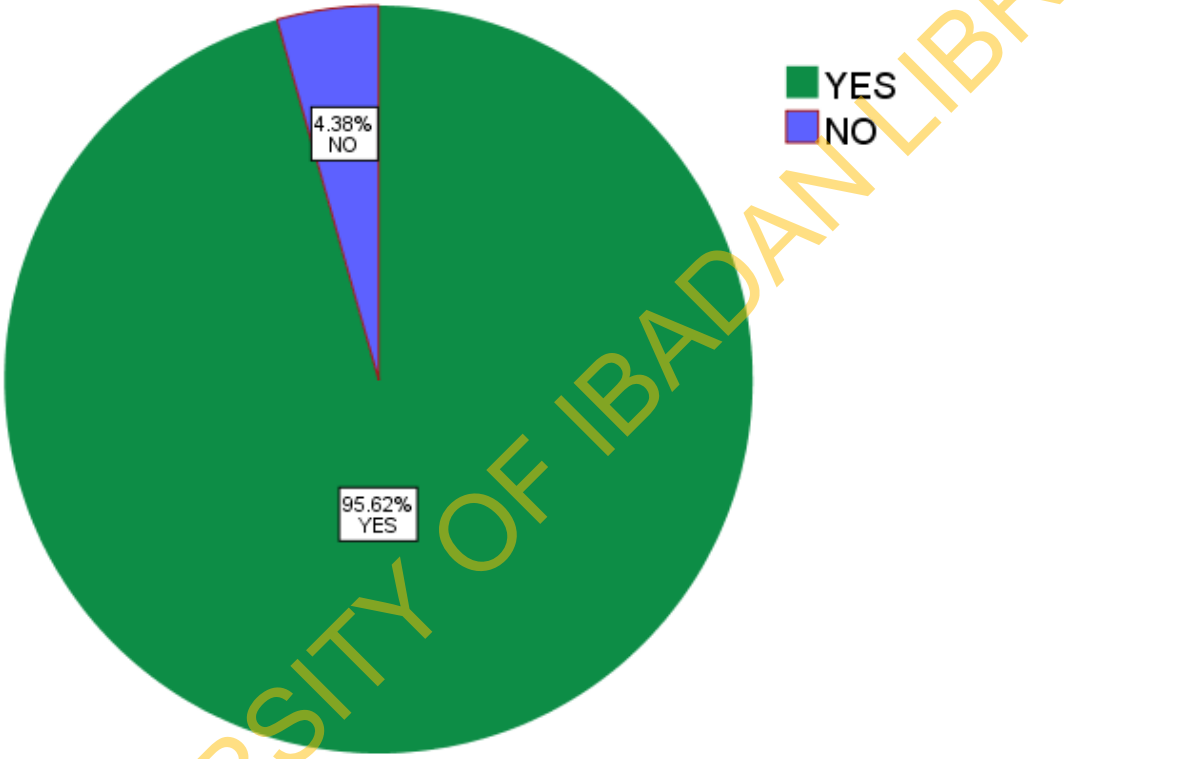


Figure 4.3 Perceived training need of respondents

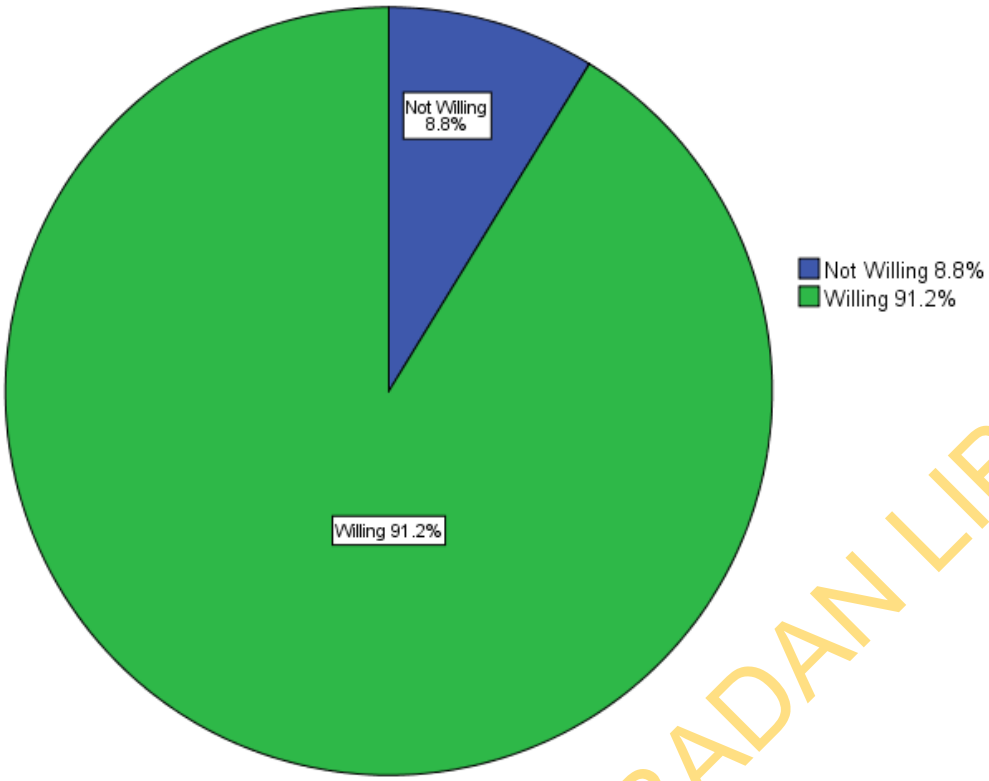


Figure 4.4 Willingness to attend Training on Disease Surveillance and notification

4.4 KNOWLEDGE OF SIGNS AND SYMPTOMS OF SELECTED NOTIFIABLE DISEASES

Table `4.4.1 shows percentage distributions of identified signs and symptoms of selected epidemic prone diseases and the overall assessment.

Cholera

Almost all the respondents (98.5%, 134) indicated to knowing the signs and symptoms of Cholera. The. It was noteworthy that 97.7% (131) and 85% (114) of the respondents mentioned profuse watery diarrhea and vomiting as symptoms of Cholera respectively.

Measles

98.5% (135) of the respondents reported to know the signs and symptoms of measles. However, rashes and bumps were the most identified 91.8% (18) as a signs of measles.

Dengue Fever

Almost two-third 64.9% (89) of the respondents indicated knowing the signs and symptoms of dengue fever. Aches and Pain was the most mentioned symptoms of dengue fever 87.6% (78).

Cerebrospinal meningitis

Just a little above half (59.9%, 82) reported to know the signs and symptoms of Cerebrospinal meningitis. However it was worth mentioning that 93.9% (77) of the respondents correctly mentioned stiff neck as a symptom of cerebrospinal meningitis

Diarrhea with blood (Shigellosis)

About 85.4% (117) responded with knowing the signs and symptoms of Shigellosis. Almost all the respondents mentioned all the signs and symptoms associated with Shigellosis.

Lassa fever

Less than half of the respondents (45.9%, 63) reported to know the signs and symptoms of Lassa fever and 71.4% (45) of the respondents who reported to know the signs and symptoms mentioned malaise and weakness as a symptom of Lassa fever.

Avian Influenza

Just a little above one-quarter 27% (23) reported knowing the signs and symptoms of avian influenza. Cough, muscle pain and fever were the most mentioned signs and symptoms of avian influenza with 43.4% (10), 56.5% (13) and 65.2% (15) respectively.

Ebola virus disease

Less than half of the respondents 41.6% (57) reported to know the signs and symptoms of Ebola virus disease. It is worth mentioning that 85.9% (49) mentioned hemorrhaging in the gum, ear and eyes as one of the signs and symptoms of Ebola virus disease.

Yellow fever

Almost all the respondents (98.5%, 135) reported to know the signs and symptoms of Yellow fever. However it 76.2%, (103) reported to know the signs and symptoms of yellow fever. Yellowish colored urine, fever and yellow skin coloration were the most correctly mentioned signs and symptoms with 71.8% (97), 77.7% (105) and 79.2% (107) respectively.

Overall Knowledge

Majority of the respondents have poor knowledge 130 (94.9) of the signs and symptoms of epidemic prone diseases.

Table 4.4.1 Knowledge of signs and symptoms of selected Epidemic prone diseases

Signs and Symptoms	Frequency (N = 137)	Percentages (%)
1. Cholera	Yes (n = 134)	
Profuse watery diarrhea	131	97.7
Vomiting	114	85.0
Muscle cramps	10	7.46
Restlessness	29	21.6
Thirst	20	14.9
Dry Skin	11	8.20
2. Measles	Yes (n = 135)	
High fever	124	90.3
Coughing	15	11.1
Runny nose	5	3.70
Rashes and bumps	124	91.8
3. Dengue fever	(n = 89)	
Reporting Dengue fever	58	65.1
Rashes	8	8.98
Aches and pain	78	87.6
Nausea	9	10.1
Hemorrhaging in gums, eyes and nose	22	24.7
Muscle pain	60	67.4
Abdominal pain	55	61.7
Feeling tired and restless	41	46.0
Vomiting	3	3.37
4. Cerebrospinal meningitis	Yes (n = 82)	
High fever	56	68.2
Headache	30	36.5
Vomiting	2	2.43
Photophobia	9	10.9
Stiff neck	77	93.9
5. Diarrhea with blood (Shigellosis)	(n = 117)	
High fever	80	68.3
Severe Stomach pain or tenderness	58	49.5
Diarrhea (sometimes with mucus or blood)	90	76.9
Feeling the need to pass stool even when the bowels are empty	85	72.6
Feeling dehydrated	17	14.5

Signs and Symptoms	Frequency (N = 137)	Percentages (%)
6. Lassa Fever	Yes (n = 63)	
Malaise and weakness	45	71.4
Headache	31	49.2
Vomiting	9	14.2
Shock	3	4.76
Hemorrhaging in gums, eyes and nose	45	71.4
Facial swelling	7	11.1
Hearing loss	2	3.17
7. Avian influenza	(n = 23)	
Conjunctivitis	8	34.7
Fever	15	65.2
Cough	10	43.4
Sore throat	3	13.0
Muscle pain	13	56.5
Abdominal pain	6	26.0
Diarrhea	2	8.69
Nausea	3	13.0
Severe respiratory illness	2	8.69
Vomiting	0	0
8. Ebola virus Disease	(n = 57)	
High fever	37	64.9
Muscle pain	11	19.2
Weakness	19	33.3
Hemorrhaging in gums, eyes and nose	49	85.9
Headache	24	42.1
Abdominal pain	6	10.5
Diarrhea	0	0
9. Yellow Fever	Yes (n = 135)	
Fever	105	77.7
Severe headache	67	49.6
Yellow skin	107	79.2
Yellow urine	97	71.8
Nausea	17	12.5
Body ache	31	22.9
Overall epidemic prone diseases knowledge	Yes (n = 137)	
Good knowledge	7	5.1
Poor knowledge	130	94.9

Table `4.4.2 shows percentage distributions of identified signs and symptoms of selected diseases marked for eradication and elimination and also their opinion about reporting the disease.

Poliomyelitis

Almost two thirds 74.4% (102) of the respondents reported to know the signs and symptoms of Poliomyelitis. 77.4% (79) of the respondents who reported to know the signs and symptoms of Poliomyelitis were also of opinion that it should be reported. Majority of the respondents mentioned Paralysis 91.1% (93) as a sign of poliomyelitis.

Leprosy

About 61.3% (84) of all the respondents reported knowing the signs and symptoms of leprosy and they were all of the opinion it should be reported. 83.3% (70) mentioned shortening of toes and fingers due to reabsorption as part of the signs and symptoms of leprosy.

Dracunculiasis (guinea worm)

Almost three-quarters 72.9% (100) reported knowing the signs and symptoms of Dracunculiasis. However, it is noteworthy that 69% (69) correctly mentioned Redness and swelling of the affected area and 84% (84) correctly mentioned boils as part of the signs and symptoms of Dracunculiasis. 75% (75) felt it should be reported.

Neonatal tetanus

Majority of the respondents 70.8% (97) reported knowing the signs and symptoms of neonatal tetanus, 82.4% (80) were of the opinion it should be reported. It is noteworthy that 83.5% (81) mentioned seizures and 80.4% (78) mentioned Jaw cramping.

Lymphatic Filariasis

Almost two-third of the respondents 62.0% (85) reported knowing the signs and symptoms of lymphatic filariasis. 55.2% (47) mentioned it to be a reportable disease. 74.1% (63) of the respondents mentioned swelling of the affected area and 83.5% (71) mentioned hardening and thickening of the skin as signs and symptoms of lymphatic filariasis.

Overall Knowledge

Diseases marked for eradication and elimination (Poliomyelitus, Leprosy, Dracunculiasis, Neonatal tetanus and lymphatic filariasis) was the category with the highest number of respondents 17 (12.4%) having good knowledge of the signs and symptoms associated with the diseases.

Table 4.4.2 Knowledge of signs and symptoms of selected diseases marked for Eradication and Elimination.

Signs and Symptoms	Frequency (N = 137)	Percentages (%)
10. Poliomyelitis	Yes (n = 102)	
Fever	55	53.9
Stomach pain	4	3.92
Tiredness	18	17.6
Sore throat	3	2.94
Paresthesia	70	68.6
Paralysis	93	91.1
11. Leprosy	(n = 84)	
Loss of eyebrows	12	14.2
Growths (nodules) on the skin	46	54.7
Thick, stiff or dry skin	14	16.6
Painless ulcers on the soles of feet	20	23.8
Painless swelling or lumps on the face or earlobes	54	64.2
Burning sensation in the skin	24	28.5
Shortening of toes and fingers due to reabsorption	70	83.3
Nose disfigurement	12	14.2
Redness and pain around the affected area	12	14.2
Numbness of affected areas of the skin	8	9.52
12. Dracunculiasis (Guinea worm)	(n = 100)	
Itchy Rashes	82	82
Dizziness	9	9
Nausea	5	5
Vomiting	3	3
Redness and swelling of the skin	69	69
Boils	84	84
Joint infections that locks and deform the joints	12	12

Signs and Symptoms	Frequency (N = 137)	Percentages (%)
13. Neonatal tetanus	(n = 97)	
High fever	65	67.0
Muscle contraction and spasms	64	65.9
Weakness	45	46.3
Seizures	81	83.5
Jaw cramping	78	80.4
Headache	31	31.9
Sweating profusely	4	4.12
Fast heart rate	0	0
14. Lymphatic Filariasis	(n = 85)	
Affected Areas include; legs, arms, breasts and genitalia	83	97.6
Hardening and thickening of the skin	71	83.5
Swelling of the affected area	63	74.1
Headache and body aches	33	38.8
General discomfort	2	2.35
Overall Knowledge		
Good knowledge	17	12.4
Poor knowledge	120	87.6

Table `4.4.3 shows percentage distributions of identified signs and symptoms of selected diseases of public health importance and also their opinion about reporting the disease.

Malaria

Almost all the respondents 93.4% (128) reported knowing the signs and symptoms of malaria. Shaking chills 82% (105), headache 89.8% (115) and fever 95.3 (122) were the most identified symptoms of Malaria

Acquired Immunodeficiency Syndrome (AIDS)

Almost two-third 61.3% (84) of the respondents reported knowing the signs and symptoms of AIDS and were of the opinion that it should be reported. The most identified symptoms was weight loss 91.6% (77).

Onchocerciasis (River blindness)

Just a little above quarter 27% (37) knew one or more of the signs and symptoms of onchocerciasis. Severe itching 94.5% (35) and visual impairment 78.3% (29) were the most mentioned signs and symptoms of onchocerciasis.

Overall knowledge

Other diseases of public health importance (Malaria, AIDS, Onchocerciasis) was the category with poorest percentage of the respondents 5(3.6%) with good knowledge of the signs and symptoms of the diseases.

Table 4.4.3 Knowledge of signs and symptoms of selected diseases of Public Health Importance.

Signs and Symptoms	Frequency (N = 137)	Percentages (%)
15. Malaria	(n = 128)	
Fever	122	95.3
Shaking chills	105	82.0
Headache	115	89.8
Muscles aches	72	56.2
Nausea and vomiting	49	38.2
Diarrhea	9	7.03
Mental confusion	2	1.56
Seizures	2	1.56
16. Acquired Immunodeficiency Syndrome	(n = 84)	
Fever	33	39.2
Chills	11	13.0
Rashes	5	5.95
Night sweats	7	8.33
Sore throat	0	0
Swollen lymph nodes	7	8.33
Weight loss	77	91.6
Weakness	39	46.4
17. Onchocerciasis (River blindness)	(n = 37)	
Severe itching	35	94.5
Disfiguring skin conditions	5	13.5
Visual impairment	29	78.3
Development of eye lesions	20	54.0
Nodules under the skin form	2	5.40
Changes in color of the skin that result in a “leopard skin” appearance	0	0
Overall Knowledge		
Good knowledge	5	3.6
Poor knowledge	132	96.4

Table 4.4.4 shows the knowledge of signs and symptoms of selected notifiable diseases. Diarrhea with blood (Shigellosis) was the most recognized disease on the knowledge of symptoms of the notifiable diseases 120 (87.6%) with more half of them having good knowledge 64 (53.3%), this was followed by Cholera 42 (31.3%), Cerebrospinal meningitis 21 (25.6%), Lymphatic filarisis 35 (40.7%) and Yellow fever 42 (31.1%). Some diseases with low proportion of respondents with good knowledge of signs and symptoms include; Lassa fever 2 (3.2%), Ebola virus disease 2 (3.4%), Dengue fever 1 (1.11%). There are some diseases with none of respondent having good knowledge of the signs and symptoms, they include; avian influenza, Dracunculiasis, Neonatal tetanus and AIDS.

Table 4.4.4 Knowledge of signs and symptoms of selected notifiable diseases and opinion about reporting it.

DISEASES	Frequency of identification of at least one sign or symptoms N =137	knowledge of signs and symptoms		Number of respondents who feel the diseases should be reported
		YES	NO	
Cholera	134 (97.8%)	42 (31.3 %)	92 (68.7%)	122 (91.1%)
Measles	135 (98.5%)	14 (10.4%)	121 (89.6%)	111 (82.2%)
Poliomyelitis	103 (75.2%)	9 (8.73%)	94 (91.3%)	79 (76.6%)
Cerebrospinal meningitis	82 (59.9)	21 (25.6%)	61 (74.4%)	76 (92.7%)
Yellow fever	135 (98.5%)	42 (31.1%)	93 (68.8%)	103(76.3%)
Lassa fever	63 (45.9%)	2 (3.2%)	61 (96.8)	109
Ebola Virus Disease	59 (43.1%)	2(3.4%)	57 (96.6)	105
Avian Influenza	23 (16.8%)	0	23 (100%)	23 (100%)
Dengue fever	90 (65.7%)	1 (1.11%)	89 (98.9%)	58 (64.4%)
Diarrhea with blood (Shigellosis)	120 (87.6%)	64 (53.3%)	56 (46.7%)	91 (66.4%)
Dracunculiasis (Guinea worm)	100 (72.9%)	0	100 (100%)	75 (75%)
Leprosy	85 (62.0%)	1 (1.18%)	84 (98.8%)	85 (100%)
Neonatal tetanus	98 (71.5%)	0	98 (100%)	80 (94.1%)
Lymphatic filariasis	86 (62.7%)	35 (40.7%)	51 (59.3%)	85 (98.8%)
Malaria	132 (96.4)	1 (0.75%)	131(99.25%)	54 (40.9)
AIDS	87 (63.5%)	0	87 (100%)	111
Onchocerciasis (River blindness)	38 (27.7%)	1 (2.63%)	37(97.37%)	32 84.2%)

4.5 Findings from the in-depth interviews

Theme 1: Reasons for Practising as a Traditional healer.

The main reason for practising as a Traditional healer was due to family tradition. This reason was probably due to being born into a family of Traditional healers, or for female being married into one. For some others, the choice was informed by experience of receiving effective care from a Traditional healer.
As briefly said by one of the respondents

> *"Iṣẹ́ baba mi ni iṣẹ́ yii, abí mi sínú ìsègùn ìbílè yii ni" (A.A) which translates to*
>
> *"This is my father's profession, I was born into this traditional healing" (A.A)*
>
> *"Mo jogún iṣẹ́ yii lati ọwọ́ baba mi , mo tu wá fẹ́ onisegun ibile, o tu mi ki iṣẹ́ yii ko wu mi si. (J.A)"* Which translates to
>
> *"I inherited this profession from my father, I also married a traditional healer which made me developed more interest in this profession" (J.A)*

Another discussant narrated his motivation

> *"I was very ill with Guinea worm (Sobiya) about 17 years ago, I was taken to the hospital but they wanted to amputate my leg and I refused. I was taken to a traditional healer and I got better and I am still walking with my leg, this was what motivated me to learn traditional healing"* (A.D)

Theme 2: Awareness of reporting of notifiable diseases

The respondents claimed to have heard about the practice of informing the health authorities about some diseases that they see in their clients but they do not know what the practice is about but the respondent with the closest response revealed it was about telling the health authorities about diseases like Ebola, Lassa fever and AIDS. As explained by one of the respondents

> *"àwon aisan kan to ń se won ni awon orílèdè to jìnà si wa ti n sele ni ìlú wa, a dẹ gbọ́dọ̀ sọ fun ijoba nipa won, awon aisan bi Ebola, lassa and awon arun kogbogun"* (F.A) which translates to
>
> *"some diseases that infects them in far countries are also now affecting us here now, and we ought to let the government know about them, diseases like Ebola, Lassa Fever and AIDS"* (F.A)

Theme 3: Practice of reporting notifiable diseases

All the participants said they have never reported and they do not know how to tell the government about some diseases they come across and they are worried about the repercussions that might come from reporting to the government.

"A o mon bi a se maa sọ fun ijoba nipa awon aisan wonyi ati wipe o le lyiwọ, ijoba soro gbagbo" (A.D) which translates to

"We don't know how to tell government about these diseases and also it can backfire on us, the governmet are difficult to believe" (A.D).

Consequently, efforts should be made to train the traditional healers on disease notification, assessment should be done with adequately monitoring to see that they adhering to what they were trained on.

Theme 4: Diseases treated by the traditional healers

Many of the traditional healers mentioned the diseases treat, they include: typhoid fever, mental disorder, yellow fever, diabetes, cancer, syphilis, malaria, stroke, fibroid, ulcer, epilepsy, measles and hypertension. They claim to treat all sort of ailments even the ones called uncurable by orthodox physicians. As said by one of the respondents

"ko si aisan ti a o le tọju yàtọ̀ si awon aisan igbalode bi lassa, ebola ati kokoro AIDS" (S.O) which translates to

"There is no diseases we cannot treat unless it is one of these modern diseases like lassa, ebola and AIDS" (S.O)

Although many of the traditional healers might be able to treat some of the diseases they mentioned but they also seem not to be able to accept their limitation in skills.

Theme 5: Knowledge of notifiable diseases of traditional healers

The traditional healers that participated in these interviews had poor knowledge of notifiable diseases. Fibroid, yellow fever, Lassa fever, Ebola, HIV, Epilepsy, typhoid fever**,** ulcer, guinea worm and mental disorder were the diseases mentioned by the respondents to be reported.

As succinctly put by the one of the respondents

"awon aisan to maa ran ni kia kia bi ebola loye ka ma so fun ijoba pelu awon to ba ni arun opolo" (J.A)

which translates to

"diseases that can spread are the ones we should let the government know and also with people that have mental disorder" (J.A)

Few of the respondents added that, in their opinion, only diseases that could transmit from one person to another are the diseases that should be reportable even though they mentioned a lot of non-communicable diseases.

Theme 6: Knowledge of where to report notifiable diseases.

Majority of the traditional healers mentioned state ministry of health while few mentioned government hospitals as where to go to report these diseases to, as said by one of the respondents

> *"I gba to ti je pe ijoba lo ni ki a maa so fun won nipa awon aisan yii, ministry of health tabi hospital ijoba naa la ma lo ti so fun won."* (F.A)

which translates to

> *"Since it is the government that ask us to be reporting these diseases, we will go and inform them at the ministry of health or a government hospital"* **(**F.A)

Knowledge of the appropriate health authority to report notifiable diseases is very crucial to disease reporting, this should be strongly dwell on during any training on disease notification for traditional healers.

Theme 7: Willing to reporting diseases

All the participants were willing to start reporting notifiable diseases to the appropriate authority if they are trained on how to report, where to do reporting and are assured there would not be any fall back on them. In the words of one of the respondent he said that

> *"o wu mi lati maa fi awon aisan yii to ijoba leti , sugbon a nilo idanileko lati ọdọ won ati idaniloju pe ko ni pada bu wa lowo, ijoba sòro gbagbo"* (O.O)

which translates to

> *" I am interested in reporting these dieases to the government but we need training from the government and also assurance that it won't boomerang , government is difficult to believe"* (O.O)

Although all the participants were eager to be involved in disease notification many expressed their need for traiing and also their need to thread carefully with anything involving the government. This could be as the mistrust of the government based on previous dealings involving the government. They also all wanted reassurance that they would not regret getting involved in disease notification.

Theme 8: Harms of leaving notifiable diseases unreported.

Many of the participants were able to realize the ultimate goal of disease surveillance, which is to save lives by reducing spread and curtailing any outbreak. And this can only be done if diseases are reported early.

As explained by one of the respondents

"Awon aisan yii le pa opolopo eniyan ati pe ijoba o ni mon ikan to n sile laarin ilu". (A.A) which translates to

"these diseases can kill a lot of people and also that government will not know what is happening in the community" (A.A)

The participants were of different opinions to why these diseases should be reported; some believed so has to reduce spread of the diseases and loss of lives, some believed the government will not be aware of what is happening in the community if these diseases are not reported.

Theme 9: Willigness to attend training on disease notification

All the respondents said they will be willing to work with disease surveillance and notification officers in their local government area and also if there was a training they will be willing to attend. In the words of one the respondents he said

"Anfani nla lo ma je lati baa won eleto ilera ijoba sise papo ati wipe ti won ba ni idanileko ma waye mo maa wa" (S.A) which translates to

"It will be a great opportunity to work with health authorities and also if they say there is a training we will attend." (S.A)

Theme 10: Knowledge of signs and symptoms of selected notifiable diseases.

A. Cholera

All the respondents mentioned frequent stooling and vomiting as signs of cholera and also pointed out that it is caused by dirty environment. As said by one of the respondents

"Ayika ti o ba doti loo maa n fa arun onigbameji, o si maa n mu igbe gburu dani ati eebi lemo lemo ati wipe won ki le jeun" (A.A).

which translates to

"Cholera is caused be dirty environment and it comes with diarrhea and frequent vomiting and lack of appetite" (A.A)

B. Measles

Many of the respondents mentioned skin rashes and itching as the major identifying signs for measles. Surprisingly said by one of the respondents that if measles is left untreated in children it can develop into poliomyelitis.

One of the respondents carefully put that

"ara gbigbona ni aisan tita fi ma n beere, leyin naa ara sisu pelu yiiyun ti a ko ba tete toju re o ma n pada di aisan roparose" (J.A)

which translates to

"measles starts with fever and then rashes develop, if it is not treated early it can cause paralysis" (J.A)

C. Poliomyelitis

Many of the respondents mentioned that it affects mostly children and the muscles of the legs and arm are usually the ones affected. As said by one of the respondents

"inu ategun ni aisan romolapa romolese ti ma n wa, isan ni o de maa n baja" (A. A) which translates to

" Poliomyelitis comes from the bones and it destroys the muscle" (A.A)

D. Cerebrospinal meningitis

All the respondents were able to mention stiff neck as the major sign for cerebrospinal meningitis. Other signs mentioned was strong fever and weakness in the neck. As succinctly said by one of the respondents

" ko ki n saa ba sele ni ile yoruba, aarin awon hausa lo ti ma sele, orun won kii se yii, a ni ogun re" (O.O) which translates to

"it does not usually happen among the yoruba, it happens among the hausa, the neck becomes immovable , we have the cure." (O.O)

E. Yellow fever

Many of the respondents mentioned yellowish urine and yellow eye balls as signs of yellow fever. One of them also mentioned yellow skin, high temperature and body ache as signs of yellow fever. As said by one of the respondents in his own words

" iba nla ni iba ponju ponto, eyin oju loma n koko n pon, leyin ni ito ati ori ekanna naa a maa pon pelu efori to lagbara" (F.A)

which translates to

" Yellow fever is a very great fever, the eye balls starts getting yellow, then the urine and the fingertips starts having yellow coloration, with a severe headache" (F.A)

F. Lassa fever

Almost all the respondents mentioned that lassa fever comes from rat or leftover of food items eaten by rats, one also said it comes from wall gecko. As briefly said by one of the respondents

"Aisan buruku ni aisan lassa fever, se ni eje ma n jadi loju won, awon ijoba ni ka maa fowo kan won, ki a so fun won ki won maa lo si hospital ijoba". (S.A)

which translates to

"lassa fever is a terrible disease, blood comes out from their eyes, the government said we shouldn't touch them, we should refer them to a government hospital" (S.A)

G. Ebola virus disease

The most recognized sign mentioned by the respondents is the hemorrhaging from nose, ear and eyes. One of the respondents succinctly said that

" E ni to ba je ajeku eku lo maa n mu, awon to ba wo aso funfun lati odo ijoba nikan lo le sun mon won" (A.A)

which translates into

"people who eats left over of rodents get infected, it is only people who wears the white overall cloth from government can come close to them" (A.A)

H. Avian influenza

Many of the respondents do you not know the signs of avian influenza but they were able to mention that it comes from poultry birds, however one of the respondents said that

"arun lukuluku je aisan awon eranko abiye, ko ki n sa ba mu awa eniyan tele ni igba atijo sugbon a ti gbo pe o n mu awon eniyan nii sin yii" (S.A)

which translates into

"avian influenza is a poultry disease, it hardly affects we human being before in the olden days but we've had that it is affecting humans too now" (S.A)

I. Diarrhea with blood (Shigellosis)

Almost all the respondents had different opinion about the cause of diarrhea with blood. Some of the opinions include: chicken pox causing it, another said it comes from pile while another said it comes from eating dirty food or drinking dirty water. The major sign mentioned by the respondent is frequent stooling which sometimes comes with mucus or blood. As clearly said by one by them

"inu rirun ni o ma fi n beere, leyin na ni igbe gburu pelu ikun tabi eje" (F.A)

which translates to

"it starts with stomach upset followed by frequent diarrhea which is sometimes accompanied with mucus or blood" (F.A)

J. Dracunculiasis (Guinea worm)

Many of the respondents mentioned that it comes from dirty water and itches them profusely with a thread-like worm coming out of the affected area and it mostly affect people in the villages or riverine area. As explicitly said by one of the respondents.

"Aisan sobiya je aisan awon to ba gbe ninu idoti tabi ibi omi ba posi, inu omi ni kokoro sobiya maa n gbe to ba de ti raye wo inu ese a lo dagba ninu ese yen ni, to ba ti fe jadi , a ma yun eni yen titi to ma fi di egbo" (A.A)

which translates into

"Dracunculiasis is a disease for people living in a dirty environment or a riverine area, the worm lives into water but if it gets into the leg, it keeps growing when it is about to come out it starts itching the person till it becomes sore." (A.A)

K. Leprosy

Many of the respondents called it a dreaded diseases that it comes with reforming and reshaping the patient. They also mentioned the finger nails and toe nails falling off little by little. As concisely said by one of the respondents

" aisan buruku ni aisan eete, o ma n tun ni daa ni, oju ma yato ,ekanna owo ati ese ma re je" (S.A)

which translates into

"Leprosy is a very deadly disease, it transforms the individual affected, the toe nails and the finger nails starts to remove" (S.A)

L. Neonatal Tetanus.

Many of the respondents mentioned that the major signs are jaw cramping, seizures, fever and muscle contraction and expansion. As briefly put by one of the respondents that it happens to dirty neonate mothers who do not take care of their babies' umbilical cord

" omo jojolo ni arun ipa maa n mu, paapaa julo awon omo ti iya won ba doti, ibi iwo omo lo ti ma n wole si won lara, se ni eegun omo na a ma le pelu giri lemo lemo" (J.A)

which translates into

" infants are the ones affected with neonatal disease, especially the ones that their mothers are dirty, the parasite enters through the umblicial cord, the bones of the child gets suddenly strong and convulsion becomes frequent" (J.A)

M. Lymphatic Filariasis (Elephantiasis)

Many of the respondent do not know the signs of elephantiasis and also believed it is a spiritual affliction but they mentioned that the affected area becomes excessively big. If the affected area is the leg, the patient won't be able to wear any footwear. In the words of one of the respondents, he briefly said

" aisan ese jabutu ki saa ba soju lasan, o ni nkan ta ma fi pe gbogbo nkan to ba wa ninu ese naa jade" (S.A)

which translates into

" Elephantiasis is usually not physical, we have what we will use to call out everything that makes it swollen out" (S.A)

N. Malaria

When the respondents were asked about the signs of malaria, all the respondents mentioned that malaria is caused by mosquitoes and it is accompanied by headache, high temperature, fever, weakness, loss of appetite and sometimes vomiting. As said by one of the respondents

" Iba to ma wa lati ara efon ki se iba kan to lagbara, awon apeere bi efori, ara gbigbona, ki ounje ma wu ni je la maa fi n mon" (A.A)

which translates into

"this fever comes mosquito it is not a strong fever, the symptoms we use to identify it include; headache, fever, loss of appetite" (A.A)

O. AIDS

Many of them respondents recognized it as a disease without cure but some claimed to have cure for it. They all mentioned loss of weight as a sign for AIDS. One of the respondents who claimed there is nothing like AIDS said

" ko si nkan to n je arun kogbogun, ako iba ti kokoro fa lasan ni, Iba yi lo ma je ki won ya igbe lemolemo, ounje ko de ni duro lara won, idi ti won fe gbe ti won ru ni yen, agbo e si wa". (F.A) which translates into

"There is nothing like a disease that doesn't have cure, it is only a chronic fever cause by a parasite, this fever comes with frequent diarrhea, food doesn't stay in their stomach which is the reason why they keep losing weight, there is a herbal remedy for it." (F.A)

P. Onchocerciasis (River Blindness)

When the respondents were asked about the signs of Onchocerciasis , many of the respondents do not know the signs of Onchocerciasis. However they mentioned it happen to people that swim in dirty water. As concisely said by one of the respondents

"Oju ma n yun won lemo lemo, Oju yen a wa wu, ti won o ba tete toju e, o ma n fa e foju pata pata" (O.O)

which translates into

" Frequent irritation and itchy of their eyes, the eyes get swollen, if not treated early it causes permanent blindness" (O.O)

CHAPTER FIVE

5.0 DISCUSSION

Previous studies on notifiable diseases reporting have always centered on orthodox health care givers (Doctors, Nurses, Community Health workers e.t.c.) (Olatunde *et al*., 2013; Jinadu *et al* .,2018 ; Adebimpe and Oluremi, 2019). Just few studies have examined the complementary and alternative medicine practitioner in respect to disease surveillance and reporting.

A remarkably high response rate (89.5%) was recorded among the traditional healers studied. This was surprisingly similar to findings in other literature (Nnebue *et al.*,2013; Iwu *et al.*, 2016) that recorded 89.7% and 98.2% respectively. This could be a result of the adequate briefing of respondents on the objectives and benefits of the study and they were assured of their confidentiality. Additionally the president of the 'Traditional Healers Association of Nigeria', Ibadan branch helped in gaining access to the practicing traditional healers during their meetings which also contributed to the high response rate.

5.1 Socio-demographic characteristics of the studied traditional healers.

A substantial number (35.8%) of the respondents were between the ages 45-54 years with mean age 53 years. Majority of the respondents were married (89.8%) with more male respondents (72.3%), these could because the profession is a male dominated one. A sizable number (27%) of the respondents were from Ibadan SouthEast LGA.

5.2 Level of awareness of disease surveillance among the traditional healers.

There was a low level of awareness of disease surveillance among the traditional healers studied 29.2% (40) with higher percentage among Ibadan SouthEast LGA (30%), this was in line with a study by Dairo et al (2018b) among private laboratory scientist in Lagos, Southwest, Nigeria

which recorded 8.9% (17). Interestingly this was lower than those observed among health care workers in the available reviewed local literature. (35.6%) by Bawa and Olumide, 2005 in Yobe Study, Northern Nigeria. Adebimpe and Oluremi (2019) also recorded 80% among private medical doctors in Osun State, Southwestern Nigeria, Nnebue et al (2012) documented 89.8% among medical record officers and DSNOs in Anambra State, Nigeria (Nnebue et al., 2012). Jinadu *et al.,* (2018) 93.2% among primary healthcare workers in Oyo state (Jinadu *et al.,* 2018). This large disparity could be as a result of wide difference in educational level with most of the traditional healers having just secondary school education.

5.3 Knowledge of the practice of disease notification and reporting

The depth of knowledge of the practice of disease notification and reporting recorded among the traditional healers was low. This finding was also similar to that of Nnebue et al (2012) in a study among health workers in Anambra state, even though they recorded high level of awareness of disease surveillance and notification. For instance about 25% explained the practice as reporting primarily reporting sexually transmitted disease, 10% explained it as reporting diseases that cannot treat (Table 4.1.1). On the contrary, Iwu et al, (2016) recorded a good knowledge of the practice with 89.1% knowing what the practice is and the importance. Poor knowledge of where to report these diseases was recorded with 55% (22) of respondents who were aware of disease surveillance and reporting knew the right authority to report to.

5.4 Reporting Practices

Majority of the traditional healers studied (89.8%) had never reported any notifiable disease prior to this study. A similar report (74.8%) was documented by Iwu et al, (2016) among health care workers in the Southeastern part of Nigeia, this was expected as none of the traditional healers had

a formal training on disease surveillance and notification as well as lack of penalty for not reporting. Nnebue et al (2013) recorded about 43.3% of the DSNOs never reporting any notifiable disease, which is equally very alarmingly low since they were specially trained on disease surveillance and reporting. 92.3% reported verbally to the state ministry of health. Half of the respondents 50.0% (7) reported Cholera, 28.6% (4) reported Lassa hemorrhagic fever and 7.1% (1) reported measles.

When the respondents were asked what they do to clients that they cannot treat, 25.5% (35) said they refer to other traditional healers while 74.5% (102) refers to the hospital.

5.5 Attitude of traditional healers toward notifiable diseases

Majority of the respondents 69.3% (95) felt that disease surveillance and notification is important. This pattern is similarly documented by Iwu et al, (2016) where 68.5% of the health workers studied felt that disease reporting is also necessary and Olatunde et al (2013) who documented 98.5% of the doctors are nurses in a tertiary institution who also felt it was necessary. This was not in line with what was documented by Nuebue et al (2014) and Aniwada and Obionu (2016) in her study among public health workers who reported poor attitude to disease notification and reporting due to poor feedback and motivation by the government. Furthermore 76.6% (105) of the respondents perceived that the traditional healers have some roles to play in disease surveillance and notification, such roles mentioned include; bringing occurrence of some diseases to the government 33.3% (35) and 9.5% (10) serving as link between government and the community since they were closer to the people. Shockingly, more than half of the respondents 55.2% (58) who felt that the traditional healers had a role in disease surveillance, did not know the role when further asked to name the role.

5.6 Willingness of traditional healers to report notifiable diseases and to attend training on disease notification

The Majority of traditional healers 92% (126) were willing to assist government workers in reporting these diseases if they come in contact with any of them. This was not in line with what Iwu et al (2016) reported in a study among health workers in which lack of willingness to report completely and timely (48.8%) was one of the major perceived structural limitations to disease reporting, this could be as a result of poor motivation, lack of supervision and the cumbersome reporting procedure. The findings in this study was also similar with Adebimpe and Oluremi (2019) which documented that 90% of the respondents were willing to participate with government on disease surveillance and notification among private medical doctors in Osun State, Southwestern Nigeria. Tan et al (2009) documented that a good reward system will increase willingness of health workers (89.4%) to report notifiable diseases.

Training has been reported to positively influence the disease notification practices of health workers as reported in an interventional study conducted in Yobe, Northern Nigeria in which percentage completeness of reporting of notifiable diseases increased from 2.3 - 52.0% and percentage of timely reports increased from 0.0 - 42.9% post training (Bawa and Olumide, 2005). Consequentially, the need for periodic training cannot overemphasized and majority of the traditional healers 95.4% (128) studied were willing to attend training on disease notification and reporting.

5.7 Knowledge of signs and symptoms of selected notifiable diseases

Many of the traditional healers in this study could not mention all the signs and symptoms associated with most selected notifiable diseases. The prominent signs and symptoms were the most mentioned. For instance, hemorrhaging in gums, eyes and nose were the most mentioned signs of the viral hemorrhagic fevers studied (Lassa fever and Ebola virus disease), stiff neck and weight loss was the most mentioned among the signs and symptoms of cerebrospinal meningitis and AIDS respectively. It was really surprising that most traditional healers in this study, whose major means of disease diagnosis is based on symptomology of the disease do not have good knowledge of the signs and symptoms of these diseases. Diarrhea with blood (Shigellosis), Cholera, Cerebrospinal meningitis, Lymphatic filarisis and Yellow fever were diseases which the traditional healers studied were most knowledgeable about their signs and symptoms. Avian influenza was one of the diseases in which none of the respondents who have heard about it had good knowledge of the signs and symptoms unlike what Lafond et al (2014) documented among public sector physicians, with 72% having good knowledge of signs and symptoms of Avian influenza in human, this wide disparity could be the large gap in the educational level of these two health care givers.

5.8 Conclusion

Timely reporting of notifiable disease is a crucial public health practice for early detection and prevention of epidemic in the community. A lot of setback is known globally, one of such is underreporting, causes of which had not be properly documented. This study was conducted to examine the knowledge of signs and symptoms and determine the level of awareness, willingness and attitude of traditional healers towards the notification of selected notifiable diseases among traditional healers in the five metropolitan LGA of Ibadan, Ibadan North, Ibadan NorthEast, Ibadan

NorthWest, Ibadan SouthEast and Ibadan SouthWest purposively selected from the 33 local government area of Oyo state.

Results showed that respondents' have low level of awareness of disease notification and reporting, poor knowledge of the practice. Majority of the respondents have never reported any disease but they showed good attitude to reporting and will be willing to work with health workers to report notifiable diseases as well as attend training about the practice. Poor knowledge of signs and symptoms of selected notifiable diseases was also recorded among the traditional healers.

5.9 Recommendations

The following measures are therefore, suggested towards a sustainable improvement on notifiable diseases reporting involving the traditional healers in Oyo State of Nigeria: Regular sustainable training and retraining including workshops, seminars etc. on notification and surveillance process in the language understood (Yoruba) by traditional healers. This must be mandatory for registered traditional healers in all local government areas. Emphasis must be made on the key role of traditional healers, objectives and benefits of the notifiable diseases reporting and the consequences of neglect, delay or failure to report diseases. Supervision and monitoring of traditional healers in regards to disease notification and reporting. A good reward system should be put in place to motivate traditional healers' willingness to report, however this should be well structured to avoid exploitation.

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APPENDIX ONE

QUESTIONNAIRE

My name is ADEPOJU, Emmanuel Adesola, a postgraduate student of the Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria. I am carrying out a research work on "**Knowledge, Attitude and Willingness of Traditional healers towards disease surveillance and notification of selected notifiable diseases in Ibadan Metropolis".** This study will help in the assessment of the awareness, knowledge and willingness of the traditional healers towards notification of immediate notifiable diseases. I seek truthful response to the questions. The interview will take about 30 minutes, at most, of your time

Your cooperation is highly appreciated and recognized.

Thanks.

SECTION A

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Serial number ☐ **Local Government Area** (a) North ( ) (b) Northwest ( ) (c) Northeast ( ) (d) Southwest ( ) (e) Southeast ( )

Date of Interview ☐

1. **Age (as at last birthday)** _____
2. **Gender** (a) Male ( ) (b) Female ( )
3. **Marital Status** (a) Married ( ) (b) Single ( ) (c) Divorced ( ) (d) Others ( )
4. **Level of Education** (a) No formal education ( ) (b) Primary school ( ) (c) Secondary school ( ) (d) Tertiary Education ( )
5. **Area of Practice** (a) General practice ( ) (b) Herbal Therapy ( ) (c) Bone-setting ( ) (d) Spiritual therapy ( ) (e) Others ( )
6. **Which of the following social media avenues do you use** (a) Whatsapp ( ) (b) Facebook ( )(c) Email ( ) (d) None ( )
7. **Source of Traditional Medicine Knowledge** (a) Family tradition ( ) (b) Apprenticeship ( )
8. **How long have you been practising** _____
9. **What type of other occupation do you engage in? Please State if any?**

10. **Religion** (a) Christianity ( ) (b) Islam ( ) (c) Traditional ( )
11. **Number of apprentice as at the time of the study** _____
12. **Household size. By household size, I mean how many persons are you responsible for providing daily upkeep for?** _____

SECTION B

AWARENESS, KNOWLEDGE AND PRACTICE OF THE RESPONDENT ABOUT DISEASE NOTIFICATION AND REPORTING

S/N	AWARENESS OF DISEASE NOTIFICATION AND REPORTING		
14.	Have you ever heard about the practice of informing the health authorities about some diseases that you see in your clients?	**Yes**	**No**
15.	**(If the answer in Question 14 is No, please skip**) How do you get to know that you should report these diseases?(a) Professional colleagues ( ) (b) Associations and meetings of traditional healers ( ) (c) Social Media (phone, television, radio) ( ) (d) Fliers and posters ( ) (e) Others ( )		
	KNOWLEDGE OF DISEASE NOTIFICATION AND REPORTING		
16.	**(If the answer in Question 14 is No, please skip)** Please explain what you know about the practice?		
17.	What are the reasons why these diseases must be reported to government health agencies?		
18.	Mention ten (10) of these dieases that must be reported		
19.	Do you know which place you must go to, to report these diseases to? (a) Yes ( ) (b) No ( )		
20.	**(If the answer in Question 19 is No, please skip)** Please state where to report them?		
	PRACTICE OF THE DISEASES NOTIFICATION AND REPORTING		
21.	Have you ever reported any disease of these aforementioned? (a) Yes ( ) (b) No ( )		
22a.	How did you make the report? (a) Letter ( ) (b) Verbally ( ) (c) Telephone ( )		
22b.	Please where you reported these diseases to?		
23	What are the diseases reported?		
24.	What are the diseases that you often treat?		
25.	What do you do to clients that you cannot treat?		

Section C

ATTITUDE OF TRADITIONAL HEALERS TOWARDS NOTIFIABLE DISEASES

I would like to know the way you feel about reporting of theses diseases. These are not YES/NO questions. Please respond with the option that best applies to you.

26. How much importance do you as a person attach to reporting these diseases to government health agencies? (a) Very important ( ) (b) Important ( ) (c) Not important ( ) (d) I don't care ( )

27. In your opinion, what level of role does a traditional healer have in the practice of bringing the occurences of these diseases to the attention of the government? (a) Very high role ( ) (b) Some role ( ) (c) No role ( )

28. In your opinion, what should be the role of the traditional healer in disease notification and reporting?

Section D

WILLINGNESS OF TRADITIONAL HEALERS TO REPORT NOTIFIABLE DISEASES

29. To what extent are you willing to cooperate with government workers in reporting theses diseases if you come in contact with any of them? (a) Very willing ( ) (b) Willing ( ) (c) Not sure ( ) (d) Unwilling ( ) (e) Very unwilling ( )

30. To what extent are you willing to attend training on notification of these diseases? (a) Very willing ( ) (b) Willing ( ) (c) Not sure ( ) (d) Unwilling ( ) (e) Very unwilling ( )

Section E

PERCEPTION OF TRAINING NEED OF TRADITIONAL HEALERS ON NOTIFIABLE DISEASES

31. Do you feel you should be trained on disease notification and reporting? (a) Yes ( ) (b) No ( )

SECTION F

KNOWLEDGE OF SIGNS AND SYMPTOMS OF SELECTED NOTIFIABLE DISEASES

Concerning the following diseases, I will like to know what you can use to identify them in a client (Interviewer should not ready options or suggest answers to the respondent)

S/N	Knowledge of signs and symptoms		
32.	**Cholera (Àrùn onigbámẹ́jì)**		
	Which of the following is/are symptom (s) of Cholera		
	Signs and Symptoms (Àpẹẹrẹ ati àmì-àìsàn)	**Yes**	
	1. Profuse watery diarrhea (Ìgbẹ gbuuru)		
	2. Vomiting (eebi)		
	3. Muscle cramps (paja-paja isan)		
	4. Restlessness (ka ara ma bale)		
	5. Thirst (oungbe)		
	6. Dry skin (awo gbegbe)		
33.	**Measles (**Kitipi, èeyi, itita) Which of the following is/are symptom (s) of Measles		
	Signs and Symptoms	**Yes**	
	1. High fever (Iba nla)		
	2. Coughing (wiwu iko)		
	3. Runny nose (Coryza) (ki imu ma somi)		
	4. Rashes and bumps (Eela)		

34.	**Poliomyelitis (**Àìsàn ọpárọsẹ)		
	Which of the following is/are symptom (s) of Poliomyelitis		
	Signs and Symptoms	**Yes**	
	1. Fever (Iba)		
	2. Stomach pain (irora inu)		
	3. Tiredness (rire ni)		
	4. Sorethroat (ogbe ofun)		
	5. Parathesia (feeling of pins and needles in the legs) (ki ese ma ku tiatia)		
	6. Paralysis of the arm or leg or both (ropa rose)		
35.	**Cerebrospinal Meningitis (**Ibà yinrun yinrun) Which of the following is/are symptom (s) of Cerebrospinal Meningitis		
	Signs and Symptoms	**Yes**	
	1. High fever (Iba nla)		
	2. Headache (ori fifo)		
	3. Vomiting (eebi)		
	4. Photophobia (ki oju ma sa fu ina)		
	5. Stiff neck (Orun lile)		

36. **Yellow Fever (**Ibà ponju ponto)

Which of the following is/are symptom (s) of Yellow Fever?

	Signs and Symptoms	**Yes**
1.	Fever (iba)	
2.	Severe headache (efori to le)	
3.	Yellow skin (àwò pupa)	
4.	Yellowish urine (ito pupa)	
5.	Nausea (inu riru)	
6.	Body ache (ara riro)	

37. **Lassa fever (Iba Lassa)**

Which of the following is/are symptom (s) of lassa fever?

	Signs and Symptoms	**Yes**
1.	Malaise and weakness (rire at ailokun ninu)	
2.	Headache (efori)	
3.	Vomiting (eebi)	
4.	Shock (giri)	
5.	Hemorrhaging in gums,eyes and nose (ki oju, eyin, emu ma seje)	
6.	Facial swelling (ki oju o ma wu)	
7.	Hearing loss (aile gboran daadaa)	

38. **Ebola Virus Disease (Iba Ebola)**

Which of the following is/are symptom (s) of Ebola virus Disease		
	Signs and Symptoms	**Yes**
1.	High fever (Iba nla)	
2.	Muscle pain (Itan riro)	
3.	Weakness (rire lemo lemo)	
4.	Hemorrhaging in gums,eyes and nose (ki oju, eyin, emu ma seje)	
5.	Headache (Efori)	
6.	Abdominal pain (ki inu ma duni)	
7.	Diarrhea (Ìgbẹ gbuuru)	

39. **Avian Influenza (Arun lukuluku)**

Which of the following is/are symptom (s) of Avian Influenza

	Signs and Symptoms	Yes
1.	Conjunctivitis (oju pipon)	
2.	Fever (Iba)	
3.	Cough (Iko)	
4.	Sore throat (ogbe ofun)	
5.	Muscle pain (Itan riro)	
6.	Abdominal pain (ki inu ma duni)	
7.	Diarrhea (Ìgbẹ gbuuru)	
8.	Nausea (inu riru)	
9.	Severe respiratory illness	

40. **Dengue Fever (Iba inu Eegun)**

Which of the following is/are symptom (s) of Dengue Fever

	Signs and Symptoms	Yes
1.	Rashes	
2.	Aches and pains (eyes pain, muscle, joint or bone pain)	
3.	Nausea	
4.	Hemorrhaging in gums,eyes and nose	
5.	Muscle pain (Itan riro)	
6.	Abdominal pain (ki inu ma duni)	
7.	Feeling tired, restless, or irritable	
8.	Vomiting blood or blood in the stool	

41. **Diarrhea with Blood (Shigellosis)**

Which of the following is/are symptom (s) of Shigellosis

	Signs and Symptoms	Yes
1.	High fever (Iba nla)	
2.	Severe Stomach pain or tenderness	
3.	Diarrhea (sometimes with blood)	
4.	Feeling the need to pass stool even when the bowels are empty	
5.	Feeling Dehydrated	

42. **Dracunculiasis (Guinea worm)**

Which of the following is/are symptom (s) of Dracunculiasis

	Signs and Symptoms	Yes
1.	Itchy Rashes	
2.	Dizziness	
3.	Nausea	
4.	Vomiting	
5.	Redness and swelling of the skin	
6.	Boils	
7.	Joint infections that locks and deform the joimts	

43 **Leprosy**

Which of the following is/are symptom (s) of Leprosy

	Signs and Symptoms	Yes
1.	Loss of eyebrows or eyelashes	
2.	Growths (nodules) on the skin	
3.	Thick, stiff or dry skin	
4.	Painless ulcers on the soles of feet	
5.	Painless swelling or lumps on the face or earlobes	
6.	Burning sensation in the skin	
7.	Shortening of toes and fingers due to reabsorption	
8.	Nose disfigurement	
9.	Redness and pain around the affected area	
10.	Numbness of affected areas of the skin	

44. **Neonatal Tetanus**

Which of the following is/are symptom (s) of Neonatal Tetanus

	Signs and Symptoms	Yes
1.	High fever (Iba nla)	
2.	Muscle contaction and spasms	
3.	Weakness (rire lemo lemo)	
4.	Seizures	
5.	Jaw cramping	
6.	Headache	
7.	Sweating profusely	
8.	Fast Heart rate	

45. **Lymphatic Filariasis**

Which of the following is/are symptom (s) of Lymphatic Filariasis

	Signs and Symptoms	Yes
1.	Affected Areas include; legs, arms, breasts and genitalia	
2.	Hardening and thickening of the skin	
3.	Swelling of the affected area	
4.	General discomfort	
5.	Headache (Efori) and body aches	

46. **Malaria**

Which of the following is/are symptom (s) of Malaria

	Signs and Symptoms	Yes
1.	Fever	
2.	Shaking chills	
3.	Headache	
4.	Muscle aches	
5.	Nausea and vomiting	
6.	Diarrhea	
7.	Mental confusion	
8.	Seizures	

47. **Acquired immunodeficiency Syndrome (AIDS)**

Which of the following is/are symptom (s) of Acquired immunodeficiency Syndrome (AIDS)

	Signs and Symptoms	Yes
1.	Fever	
2.	Chills	
3.	Rashes	
4.	Night sweats	
5.	Sorethroat	
6.	Swollen lymph nodes	
7.	Weight Loss	
8.	Weakness	

48. **Onchocerciasis (River blindness)**

Which of the following is/are symptom (s) of Onchocerciasis

	Signs and Symptoms	Yes
1.	Severe itching	
2.	Disfiguring skin conditions	
3.	Visual impairment	
4.	Development of eye lesions	
5.	Nodules under the skin form	
6.	Changes in color of the skin that result in a “leopard skin” appearances	

APPENDIX TWO

IN-DEPTH INTERVIEW GUIDE

SECTION A

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Serial number ☐ **Local Government Area** (a) North ( ) (b) Northwest ( ) (c) Northeast ( ) (d) Southwest ( ) (e) Southeast ( )

Date of Interview ☐

1. **Age (as at last birthday)** _____
2. **Gender** (a) Male ( ) (b) Female ( )
3. **Marital Status** (a) Married ( ) (b) Single ( ) (c) Divorced ( ) (d) Others ( )
4. **Level of Education** (a) No formal education ( ) (b) Primary school ( ) (c) Secondary school ( ) (d) Tertiary Education ( )
5. **Area of Practice** (a) General practice ( ) (b) Herbal Therapy ( ) (c) Bone-setting ( ) (d) Spiritual therapy ( ) (e) Others ( )
6. **Which of the following social media avenues do you use** (a) Whatsapp ( ) (b) Facebook ( )(c) Email ( ) (d) None ( )
7. **Source of Traditional Medicine Knowledge** (a) Family tradition ( ) (b) Apprenticeship ( )
8. **How long have you been practising** _____
9. **What type of other occupation do you engage in? Please State if any?**

10. **Religion** (a) Christianity ( ) (b) Islam ( ) (c) Traditional ( )
11. **Number of apprentice as at the time of the study** _____
12. **Household size. By household size, I mean how many persons are you responsible for providing daily upkeep for?** _____

SECTION B

1. What inform your choice of Traditional healing as a profession?

2. Have you ever heard about the practice of informing the health authorities about some diseases that you see in your clients? What does it mean?

3. And have you ever reported any disease? If Yes please state them?

4. Which diseases do you see in your practice?

5. Which of these diseases should be reported to the health authorities?

6. Where should these diseases be reported?

7. Are you willing to reporting these diseases to the state government?

8. What are the harms that these diseases pose if left unreported?

9. What factors do you think will hinder you from reporting

10. Will you be willing to work with the disease surveillance and notification officers in your LGA , and if there was training will you be willing to attend?

11. What are the symptoms of the following notifiable diseases?
    (A). Cholera

    (B). Measles

(C). Poliomyelitis

(D). Cerebrospinal Meningitis

(E). Lassa fever

(F). Ebola Virus Disease

(G). Yellow Fever

(H). Avian Influenza

(1) Dengue Fever

(J) Dracunculiasis (Guinea worm disease)

(K) Leprosy

(L) Neonatal Tetanus

(M) Lymphatic filariasis (Elephantiasis)

(N) Malaria

(O) Acquired Immunodeficiency Syndrome (AIDS)

(P) Onchocerciasis

APPENDIX THREE

INFORMED CONSENT

Good day Sir/Ma, my name is ADEPOJU, Emmanuel Adesola. I am a Postgraduate student of the Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, University of Ibadan. The aim of this study is to investigate on the "**Knowledge, Attitude and Willingness of Traditional healers towards disease surveillance and notification of selected notifiable diseases in Ibadan Metropolis ".** This study will yield information that may be used in developing health intervention programs especially those related to involvement of Traditional healers in the surveillance system. There is no right or wrong answer to the questions asked or the statements made, what is desired of you is your truthful and honest responses. Please note that the completion of this questionnaire is entirely voluntary and also the conversation might be recorded. All information gathered as a result of your participation in this study will be treated with utmost confidentiality and will be used strictly for research purposes only. The interview will take about 30 minutes, at most, of your time.

Thank you for your anticipated cooperation.

I have read and understand the consent form and voluntarily agree/disagree to participate in the study by ticking [√] in the appropriate box below:

1. Agree [ ] 2. Disagree [ ]

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Signature Date

APPENDIX FOUR

FỌỌMU ÌYỌ̀NDA

Si Ólùdáhùn,

Orúkọ mi ni ogbeni ADEPOJU Emmanuel Adesola, akẹ̀ẹ̀kọ́ àgbà ní Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, Unifásitì ilu Ibàdàn. Mo n ṣe ìwádìí lórii "**ìmòn, ihuwasi ati fifẹ awon onisegun ibile igboro ilu ibadan lati se ifojusode ati ifitonileti awon asayan aisan to nilo ífitónilétÍ ni kankan"** Ìwádìí yìí á ràn mí lọ́wọ́ láti tan ìmọ́lẹ̀ si isegun ibile ati awon eto iranwo nipa ilera paapaa julo awon eyi ti yoo fun awon onisegun ibile ni anfaani lati wa ninu eto ifojusode fun awon aisan to nilo ìfitónilétí. Ko si idahun ti ko tona rara si awon ibeere tabi gbolohun ti a ko sile. Ohun ti a nilo lati odo yin ni idahun otito ati idahun to o ye ní èrò yìn. Ẹ níi lọ́kàn pé pipari iwe ibeere yìí je atinuwa. Gbogbo alaye ti a ba gba sile nipase kikopa ninu iwadi yii ni a o se ni mosinumosikun ati wipe a o lo fun iwadi nikan soso.

E se pupo.

Mo ti ka foomu ifohunsokan yii, ó sì yemi ati wipe o je ti atinuwa, mo si gba/n ko gba lati kopa ninu iwadi yii nipa mimaki [√] apoti ti o ye ni isale yii:

1. Mo gba [ ] 2. N ko gba [ ]

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Itowobowe Ojo

APPENDIX FIVE

ÌWÉ-ÌBÉÈRÈ

ÌMÒN, ÌHÙWÀSÍ ATI FÍFẸ́ AWON ONISEGUN IBILE IGBORO ILU IBADAN LATI SE IFOJUSODE ATI IFITONILETI AWON ÀSÀYÀN ÀISÀN TO NILO ÍFITÓNILÉTÍ NI KÁNKÁN.

Orúkọ mi ni ogbeni ADEPOJU Emmanuel Adesola, akẹ́ẹ̀kọ́ àgbà ní Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, Unifásitì ilu Ibàdàn. Mo n ṣe ìwádìí lórii "**ìmòn, ihuwasi ati fife awon onisegun ibile igboro ilu Ibàdàn lati se ifojusode ati ifitonileti awon asayan aisan to nilo ífitónilétÍ ni kankan"** Ìwádìí yìí á ràn mí lọ́wọ́ láti tan ìmọ́lè sí isegun ibile ati awon eto iranwo nipa ilera paapaa julo awon eyi ti yoo fun awon onisegun ibile ni anfaani lati wa ninu eto ifojusode fun awon aisan to nilo ìfitónilétí.. Mo fẹ́ kí ẹ ṣọ ìdáhùn tòótọ́ sí àwọn ìbéèrè wọ̀nyí. N kò ní gbà ju ìṣẹ́jù ọgbọ̀n lọ lọ́wọ́ yín.

Ìfọ̀wọ́sowọ́pọ̀ yín ni ó jẹmí lógún, mo sì dúpẹ́ púpọ̀ lọ́wọ́ yín.

Ẹ ṣeun

ÌPÍN A

ALAYE NIPA AWON OLUDAHUN

Nọ́mbà Ìdánimọ̀ ☐ **Ijoba ibile** (a) Gusu ( ) (b) Gusu iwo oorun Ibadan ( ) (d) Gusu ila oorun ( ) (e) Ariwa iwo oorun ( ) (ẹ) Ariwa ila oorun ( )

Ọjọ́ ìfọ̀rọ̀wánilẹ́nuwò ☐

1. **Ojo ori yin (ni odun) ni ojo ibi ti o se keyin** _____
2. **Okunrin tabi Obinrin** (a) Okunrin ( ) (b) Obinrin ( )
3. **Ipo Ìgbéyàwó** (a) Àpọ́n ni mi ( ) (b) Moti gbeyawo ( ) (d) Mo ti ko oko/aya ( ) € Àwọn mìíràn.
4. **Ìwé kíkà:** (a) N ò ka Rárá ( ) (b) ìwé méfà ( ) d) Ilé-ẹ̀kọ́ Sẹ́kọ́ndírì ( ) € Ilé-ẹ̀kọ́ gíga ( )
5. **Ona Ìse sí:** (a) Gbogbo ni se ( ) (b) Lilo ewe ( ) (d) Egun tito ( ) (e) ìtọ́jú àìlera nípa ẹ̀mí ( ) (ẹ) Àwọn mìíràn.
6. **Eewo ninu awon ona ibanidore ayelujara wonyi le n lo** (a) Whatsapp ( ) (b) Facebook ( ) (d) Email ( )
7. **Orísun ìmọ̀n ìsègùn ìbílè** (a) isẹse idile ( ) (b) Mo kọ̀ọ ni ( )
8. **Ọdún melo leti lo lẹ́nu isẹ́ yi** _____

9. **Ibùgbé ati oun ìní inú-ilé.**

(a) **Sé èyin le ni ilè ti** (a) Bẹẹni ( ) (b) Bẹẹkọ, Mo ń yaa gbe ni ( ) (d) Bẹẹkọ, mo joogun re ni ()

10. **N jẹ ẹní isẹ́ miran yàtọ̀ si isẹ́ isegun ibile?** Ẹ jowo ẹ sọ

11. **Èsìn:** a) Onígbàgbó b) Mùsùlùmí d) Ẹlẹ́sìn Àbáláyé e) Kòsí nkankan

12. **Àwọn ọmo ẹ̀kọ́sẹ́ melo lẹni lọ́wọ́lọ́wọ́** _____

13. **Bawo ni idile yin se tobi to.** Ni idile yin awon melo le n gbo bukata lo ri won lojojumo _____

IPIN B

ṢÍSE ÀKÍYÈSÍ ÀWỌN OLUDAHUN NIPA ÀSÀYÀN ÀISÀN TO NILO ÍFITÓNILÉTÍ

S/N	IBEERE NIPA ÀKÍYÈSÍ	Bẹẹni	Bẹẹkọ
14.	**Se ẹ ti gbọ ni pa ṣise ifilo fun awọn oṣiṣe eleto ilera ti ijọba nipa awọn aisan kankan ti ẹ ba ba pade lara awọn onibaara yin?**		
15.	**(Ti idahun yin si ibeere kerinla ba jẹ bẹẹko, ẹ fo ibeere yii.) Ẹ jọwọ ẹ ṣalaye ohun ti ẹ mọ nipa ìṣe yii**		
16.	**Ki ni awọn idi ti a fi gbọdọ ta ijoba lolobo lori awon aisan wọnyi?**		
17.	**Ẹ daruko aisan mẹwaa ti a gbọdọ pe akiyesi ijọba si?**		
18.	**N jé ẹ mon ibi ti ẹ ma ti fi àwọn aisan yii to ijoba leti ?**(a) beeni ( ) (b) beeko ( )		
19.	**(Ti idahun yin si ibeere kejidinlogun ba jẹ bẹẹko e fo ibeere yii) E jọwọ ẹ daruko ibi ti o yẹ ki a lọ fun ifilo yii?**		
20.	**N jẹ ẹ ti ṣe ifilo ọkan kan ninu awọn aisan ti ẹ daruko saaju yii?** (a) bẹẹni ( ) (b) bẹẹko ( )		
21.	**Bawo lẹ ṣe se ifilo yii?** (a) Nipa lẹta ( ) (b) Mo fẹnu sọ ọ ( ) (d) Mo pe ago wọn ( )		
22.	**Bawo lẹ se gbọ nipa àwọn àisàn to nilo ífitónilétí** (a) lenu awon akẹgbẹ yin ( ) (b) ninu ẹgbẹ́ ati ipade ( )(d) lori Tẹlefisọnu tabi Ẹrọ ibaranisọro ( )(e) ìwé pinpin ati àlèmónpátáko ( ) (ẹ) Eyi to kù ( )		
23.	**Iru awọn aisan wo ni ẹ maa n saba wo?**		
24.	**Kini ẹ maa n ṣe ti ẹ ba ni onibaara ti apa yin ko ka aisan ti o n ṣe e?**		

ÌPÍN D

ÌHÙWÀSÍ AWON OLUDAHUN SI AWON ÀISÀN TO NI LO ÍFITÓNILÉTÍ

Mo maa nifẹẹ si lati mọ bi ṣiṣe ifilo awọn aisan yii ṣe ri loju yin. Awon ibeere yii kii ṣe ibeere bẹẹni abi bẹẹko. Ẹ jọwọ ẹ dahun pelu e yi to wa ni ibamu pelu ero yin.

25. **Bawo ni ifilo fun ijoba nipa awọn aisan yii ṣe mu n yin lọkan to?** (a) o ṣe pataki gan si mu ( ) (b) o ṣe pataki ( ) (d) ko ṣe pataki ( ) (e) ko kan mi ( )

26. **Ni ero yin, bawo ni ẹ lero pe ipa ti ẹ n ko lori ṣiṣe ifilo fun ijoba nipa awon aisan yii ṣe kan yin si?** (a) ipa pataki ( ) (b) ipa diẹdiẹ ( ) (d) ko nipa ( )

27. **Ni ero yin, kini o ye ko je ipa ti awon onisegun ibile yoo ma ko ninu fifi awon aisan yii to ijoba leti**

ÌPÍN E

FÍFẸ́ LATI SE ÌFOJÚSÒDE ATI ÌFITÓNILÉTÍ ÀISÀN TO NILO ÍFITÓNILÉTÍ AWON ONISEGUN IBILE

28. **Bawo ni ẹ ṣe nifẹẹ si fifọwọsowọpọ pelu awọn oṣiṣe ijoba lati le ṣe ifilọ awọn aisan yi to ti ẹ ba ba won pade?** (a) Mo nifẹẹ sii gan ( ) (b) Mo nifẹẹ si. ( ) ko dami loju (ẹ) ko wu mi ( ) (ẹ) ko wu mi rara ( )

29. **Bawo ni ẹ ṣe nifẹẹ si lilo idanilẹkọ lori bi a ti ṣe ifilo awon aisan yii?** (a) Mo nifẹẹ sii gan ( ) (b) Mo nifẹẹ si. ( ) ko dami loju (ẹ) ko wu mi ( ) (ẹ) ko wu mi rara ( )

30. **Ti àyè ba ṣi sílẹ̀ lati bá òsìsẹ́ ìlera ìjoba ibile yin sisẹ́ lori awon àisàn yii to ijoba leti, Bawo ni ẹ ṣe maa nifẹẹ si lati ba won sisẹ̀ pọ si?** (a) Mo nifẹẹ sii gan ( ) (b) Mo nifẹẹ si. ( ) ko dami loju (ẹ) ko wu mi ( ) (ẹ) ko wu mi rara ( )

ÌPÍN Ẹ

ERO AWON ONISEGUN IBILE LORI INI LATI GBA IDANILEKO LORI AWON AISAN TO NILO ÍFITÓNILÉTÍ

31. **N jẹ ẹ lérò wipe ẹ nílò idanilẹ̀kọ́ lori bi a ti n se ifilo awon àisàn wonyi?** (a) bẹẹni ( ) (b) bẹẹko ( )

ÌPÍN F

IMON NIPA ÀPẸẸRẸ ATI ÀMÌ AWON ÀSÀYÀN ÀISÀN TO NILO ÍFITÓNILÉTÍ NI KÁN KÁN

S/N	IMON NIPA ÀPẸẸRẸ ATI ÀMÌ-ÀÌSÀN	
32.	**Àrùn onigbáméjì (Cholera)**	
	Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Àrùn onigbáméjì	

	Àpẹẹrẹ ati àmì-àìsàn	**Bẹẹni**
1.	Ìgbẹ gbuuru (Profuse watery diarrhea)	
2.	Eebi (Vomiting)	
3.	Paja-paja isan (Muscle cramps)	
4.	Àìnísinmi (Restlessness)	
5.	Oungbe (Thirst)	
6.	Awo gbegbe (Dry skin)	

33.	**Kitipi, èeyi, tita (Measles)**	
	Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Kitipi, èeyi, tita	

	Àpẹẹrẹ ati àmì-àìsàn	**Bẹẹni**
1.	Iba nla (High fever)	
2.	Iko (Coughing)	
3.	Ki imu ma somi , (Coryza or Runny nose)	
4.	Eela (Rashes and bumps)	

34.	**Àìsàn ọpárọsẹ (Poliomyelitis)**	
	Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Àìsàn ọpárọsẹ	

	Àpẹẹrẹ ati àmì-àìsàn	**Bẹẹni**
1.	Iba (Fever)	
2.	Inu rírun (Stomach pain)	
3.	Rire ni (Tiredness)	
4.	Ogbe ofun (Sorethroat)	
5.	Ki ese ma ku tiatia (Parathesia - feeling of pins and needles in the legs)	
6.	Ropa rose (Paralysis of the arm or leg or both)	

35.	**yinrun yinrun (Cerebrospinal Meningitis)**	
	Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Ibà yinrun yinrun	

	Àpẹẹrẹ ati àmì-àìsàn	**Bẹẹni**
1.	Iba nla (High fever)	
2.	Ori fifo (Headache)	
3.	Eebi (Vomiting)	
4.	Eela (Rashes and bumps)	
5.	Ki oju ma sa fu ina (Photophobia)	
7.	Orun lile (Stiff Neck)	

36.	**Ibà ponju ponto (Yellow Fever)**	

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Ibà ponju ponto		**Bẹẹni**
Àpẹẹrẹ ati àmì-àìsàn		
1.	Iba (Fever)	
2.	Efori to le (Severe headache)	
3.	Àwò pupa (Yellow Skin)	
4.	Ito pupa (Yellow urine)	
5.	Inu riru (Nausea)	
6.	Ara riro (Body ache)	

37.	**Iba Lassa (Lassa fever)**	

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Iba Lassa		
Àpẹẹrẹ ati àmì-àìsàn		**Beeni**
1.	Rire ati ailokun ninu (Malaise and weakness)	
2.	Efori (Headache)	
3.	Eebi (Vomiting)	
4.	Giri (Shock)	
5.	Ki oju, eyin, imu ma seje (Hemorrhaging in gums,eyes and nose)	
6.	Ki oju o ma wu (Facial swelling)	
7.	Aile gboran daadaa (Hearing loss)	

38.	**Iba Ebola (Ebola Virus Disease)**	

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Iba Ebola		
Àpẹẹrẹ ati àmì-àìsàn		**Beeni**
1.	Iba nla (High fever)	
2.	Itan riro (Muscle pain)	
3.	Rire lemo lemo (Weakness)	
4.	Ki oju, eyin, imu ma seje (Hemorrhaging in gums,eyes and nose)	
5.	Ki oju ma sa fu ina (Photophobia)	
6.	Efori (Headache)	
7.	Ki inu ma duni (Abdominal pain)	

39.	**Arun lukuluku (Avian Influenza)**	

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Arun lukuluku		
Àpẹẹrẹ ati àmì-àìsàn		**Beeni**
1.	Conjunctivitis (oju pipon)	
2.	Fever (Iba)	
3.	Cough (Iko)	
4.	Sore throat (ogbe ofun)	
5.	Muscle pain (Itan riro)	
6.	Abdominal pain (ki inu ma duni)	
7.	Diarrhea (Ìgbẹ gbuuru)	
8.	Nausea (inu riru)	
9.	Severe respiratory illness	
10.	Vomiting (Eebi)	

40.	**Iba inu Eegun (Dengue Fever)**	

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Iba inu Eegun		
Àpẹẹrẹ ati àmì-àìsàn		**Beeni**
1.	Rashes (Eela)	
2.	Aches and pains (eyes pain, muscle, joint or bone pain)	
3.	Nausea (inu riru)	
4.	Hemorrhaging in gums,eyes and nose (Ki oju, eyin, imu ma seje)	
5.	Muscle pain (Itan riro)	
6.	Abdominal pain (ki inu ma duni)	
7.	Feeling tired, restless, or irritable	
8.	Vomiting blood or blood in the stool	

41.	**Igbegbuuru ti o ni ẹjẹ ((Diarrhea with Blood "Shigellosis")**	

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Igbegbuuru ti o ni ẹjẹ ninu		
Àpẹẹrẹ ati àmì-àìsàn		**Beeni**
1.	High fever (Iba nla)	
2.	Severe Stomach pain or tenderness	
3.	Diarrhea (sometimes with blood)	
4.	Feeling the need to pass stool even when the bowels are empty	
5.	Feeling Dehydrated	

42. **Arun Ẹẹtẹ (Leprosy)**

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Arun Ẹẹtẹ		
Àpẹẹrẹ ati àmì-àìsàn		**Beeni**
1.	Loss of eyebrows or eyelashes	
2.	Growths (nodules) on the skin	
3.	Thick, stiff or dry skin	
4.	Painless ulcers on the soles of feet	
5.	Painless swelling or lumps on the face or earlobes	
6.	Burning sensation in the skin	
7.	Shortening of toes and fingers due to reabsorption	
8.	Nose disfigurement	
9.	Redness and pain around the affected area	
10.	Numbness of affected areas of the skin	

43. **Arun Sobiya (Guinea worm)**

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-Àpẹẹrẹ ati àmì-àìsàn		**Beeni**
1.	yiyun ara (Itchy Rashes)	
2.	Dizziness	
3.	Nausea (inu riru)	
4.	Vomiting (Eebi)	
5.	Redness and swelling of the skin	
6.	Boils (Eewo)	
7.	Joint infections that locks and deform the joimts	

44. **Arun Ipa awon omo jojolo (Neonatal Tetanus)**

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Arun Ipa awon omo jojolo

Àpẹẹrẹ ati àmì-àìsàn		**Beeni**
1.	High fever (Iba nla)	
2.	Muscle contaction and spasms	
3.	Weakness (rire lemo lemo)	
4.	Seizures (giri)	
5.	Jaw cramping	
6.	Headache	
7.	Sweating profusely	
8.	Fast Heart rate	

45. **Arun Ẹse Jabutẹ (Lymphatic Filariasis "Elephantiasis")**

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Arun Ẹse Jabutẹ

	Àpẹẹrẹ ati àmì-àìsàn	**Beeni**
1.	Affected Areas include; legs, arms, breasts and genitalia	
2.	Hardening and thickening of the skin	
3.	Swelling of the affected area	
4.	General discomfort	
5.	Headache (Efori) and body aches	

46. **Iba (Malaria)**

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Iba

	Àpẹẹrẹ ati àmì-àìsàn	**Beeni**
1.	Fever	
2.	Shaking chills	
3.	Headache	
4.	Muscle aches	
5.	Nausea and vomiting	
6.	Diarrhea	
7.	Mental confusion	
8.	Seizures	

47. **Arun Kogboogun (Acquired immunodeficiency Syndrome "AIDS")**

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn Arun Kogboogun		**Beeni**
Àpẹẹrẹ ati àmì-àìsàn		
1.	Fever	
2.	Chills	
3.	Rashes	
4.	Night sweats	
5.	Sorethroat	
6.	Swollen lymph nodes	
7.	Weight Loss	
8.	Weakness	

48. **Arun Onchoceriasis tabi ifoju inu-odo (Onchocerciasis "River blindness")**

Èwo ninu awon wonyi ni o jẹ àpẹẹrẹ ati àmì-àìsàn ifoju inu-odo		
Àpẹẹrẹ ati àmì-àìsàn		**Beeni**
1.	Severe itching	
2.	Disfiguring skin conditions	
3.	Visual impairment	
4.	Development of eye lesions	
5.	Nodules under the skin form	
6.	Changes in color of the skin that result in a "leopard skin" appearances	

APPENDIX SIX

ATỌKA IWADII IJINLE

ÌPÍN A

ALAYE NIPA AWON OLUDAHUN

Nọmbà Ìdánimọ̀ ☐ **Ijoba ibile** (a) Gusu ( ) (b) Gusu iwo oorun Ibadan ( ) (d) Gusu ila oorun ( ) (e) Ariwa iwo oorun ( ) (ẹ) Ariwa ila oorun ( )

Ọjọ́ ìfọ̀rọ̀wánilẹ́nuwò ☐

1. **Ojo ori yin (ni odun) ni ojo ibi ti o se keyin** _____

2. **Okunrin tabi Obinrin** (a) Okunrin ( ) (b) Obinrin ( )

3. **Ipo Ìgbéyàwó** (a) Àpọ́n ni mi ( ) (b) Moti gbeyawo ( ) (d) Mo ti ko oko/aya ( ) € Àwọn mìíràn.

4. **Ìwé kíkà:** (a) N ò ka Rárá ( ) (b) ìwé mẹ́fà ( ) d) Ilé-ẹ̀kọ́ Sẹ́kọ́ndírì ( ) € Ilé-ẹ̀kọ́ gíga ( )

5. **Ona Ìse sí:** (a) Gbogbo ni se ( ) (b) Lilo ewe ( ) (d) Egun tito ( ) (e) ìtọ́jú àìlera nípa ẹ̀mí ( ) (ẹ) Àwọn mìíràn.

6. **Eewo ninu awon ona ibanidore ayelujara wonyi le n lo** (a) Whatsapp ( ) (b) Facebook ( ) (d) Email ( )

7. **Orísun ìmọ̀n ìsègùn ìbílè** (a) isese idile ( ) (b) Mo kọ̀ọ ni ( )

8. **Ọdún melo leti lo lẹ́nu iṣẹ́ yi** _____

9. **N jẹ ẹ́ní iṣẹ́ miran yàtọ̀ si iṣẹ́ isegun ibile?** Ẹ jowo ẹ so

10. **Ẹ̀sìn:** a) Onígbàgbó b) Mùsùlùmí d) Ẹlẹ́sìn Àbáláyé e) Kòsí nkankan

11. **Àwọn ọmo ẹ̀kọ́ṣẹ́ melo lẹni lọ́wọ́lọ́wọ́** _____

12. **Bawo ni idile yin se tobi to.** Ni idile yin awon melo le n gbo bukata lo ri won lojojumo _____

ÌPÍN B

1. Kini o mu yin wo inu iṣẹ isegun ibile yii?

2. Se ẹ ti gbọ ni pa ṣise ifilo fun awọn oṣiṣe eleto ilera ti ijọba nipa awọn aisan kankan ti ẹ ba ba pade lara awọn onibaara yin? Ẹ jọwọ ẹ ṣalaye ohun ti ẹ mọ nipa ìṣe yii

3. N jẹ ẹ ti fi aisan kan kàn to ijoba leti ri? to ba jẹ bẹ, ẹ daruko won?

4. Awọn àisàn wo lẹ maa n tọju ?

5. Èwo ninu awon àisàn yi ni o yẹ lati fi to awon elétò ìlera to jẹ ti ìjoba létí

6. Ibo lo yẹ ki e ti lọ fi tó wọn leti

7. Se ẹ fẹ lati maa se ìfitónilétí awon àisàn wonyi ti ẹ ba se a la ba pade won?

8. Kini awon ewu to rọ mon aí fi awon aisan yii to ijoba leti?

9. Kini awon ń kan to le di yin lọ́wọ́ lati maa se ìfitónilétí

10. Ti àyè ba ṣi sílẹ lati bá òsìsẹ́ ìlera ìjoba ibile yin sisẹ́ lori awon àisàn yii to ijoba leti,? Se ẹ fẹ lati ba won sisẹ̀ ati wipe ti ìdánilẹ́kọ̀ ba wa, se ẹ o wa?

11. Kini awon àpẹẹrẹ àisàn awon àisàn to nilo ífitónilétí ni kán kán wonyi?

(A). Àrùn onigbáméjì (Cholera)

(B). Kitipi, èeyi, tita (Measles)

(C). Àisàn ropáróṣẹ (Poliomyelitis)

(D). Yinrun yinrun (Cerebrospinal Meningitis)

(E). Iba Lassa (Lassa fever)

(F). Iba Ebola (Ebola Virus Disease)

(G). Ibà ponju ponto (Yellow Fever)

(H). Arun lukuluku (Avian Influenza)

(J) Iba inu Eegun (Dengue Fever)

(K) Arun Plague (Plague)

(L) Severe Acute Respiratory Syndrome (SARS)

(M) Sobiya (Dracunculiasis "Guinea worm disease")

(N) Arun Ẹẹtẹ **(**Leprosy)

(O) Arun Ipa awon omo jojolo (Neonatal Tetanus)

(P) Arun **Ẹse** Jabutẹ **(**Lymphatic filariasis "Elephantiasis")

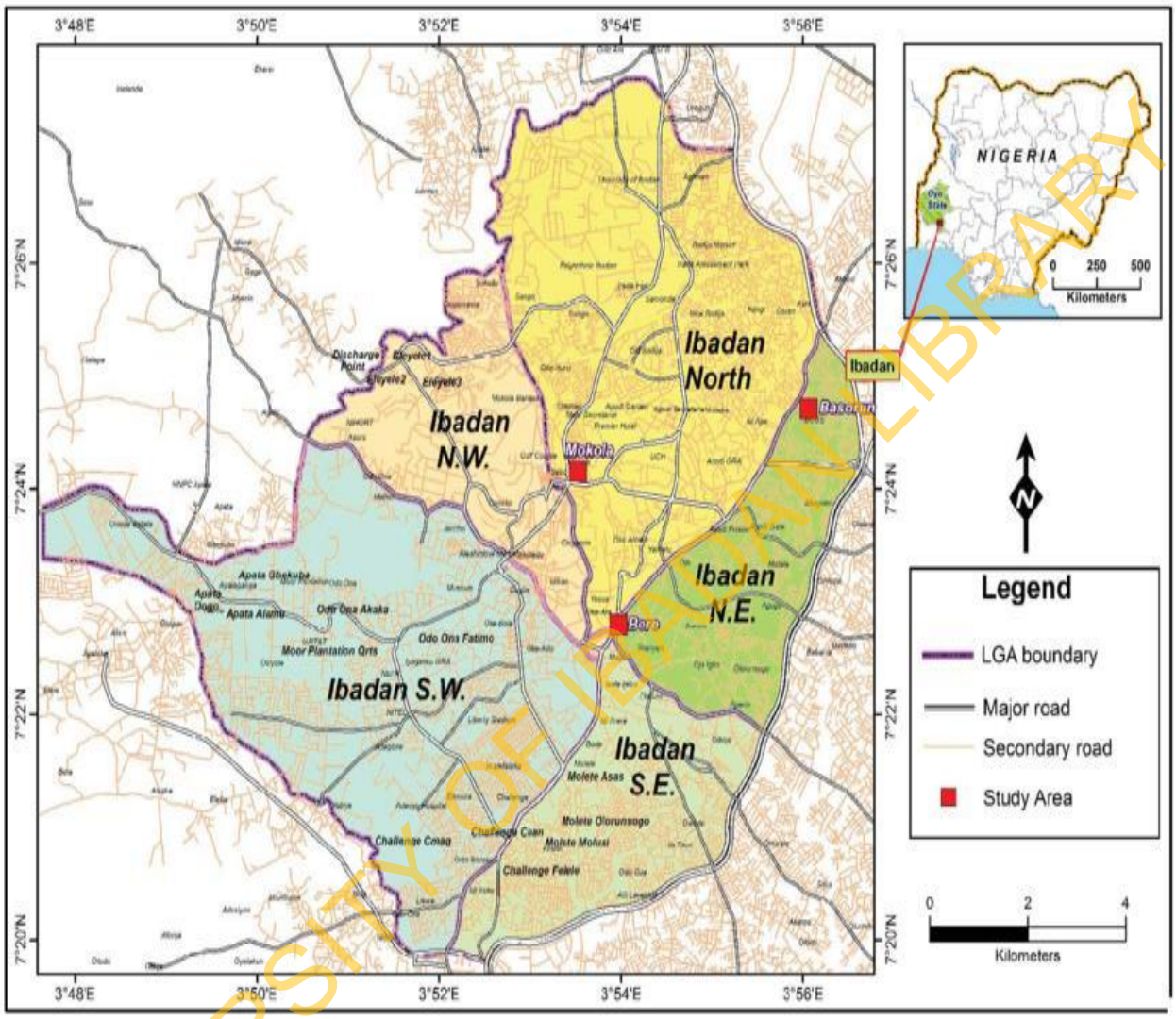
(Q) Iba (Malaria)

(R) Arun Kogboogun **(**Acquired Immunodeficiency Syndrome "AIDS")

(S) Arun Onchoceriasis tabi ifoju inu-odo (Onchocerciasis

APPENDIX SEVEN

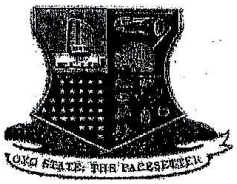
Map showing the five local government areas in Ibadan Metropolis



Source: DOI:10.13140/RG.2.1.3815.3683

APPENDIX EIGHT

TELEGRAMS..... TELEPHONE.....



MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No. .....
All communications should be addressed to
the Honorable Commissioner quoting
Our Ref. No. AD 13/479/1558

3rd December, 2019

The Principal Investigator,
Department of Epidemiology and Medical Statistics,
Faculty of Public Health,
College of Medicine,
University of Ibadan,
Ibadan, Nigeria.

Attention: Adepoju Emmanuel

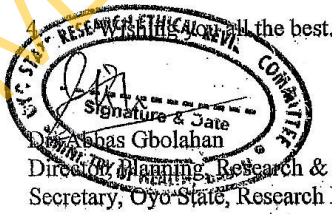
ETHICS APPROVAL FOR THE IMPLEMENTATION
OF YOUR RESEARCH PROPOSAL IN OYO STATE

This is to acknowledge that your Research Proposal titled: "Knowledge, Attitude and Willingness of Traditional Healers towards Disease Surveillance and Notification of Selected Immediate Notifiable Diseases in Ibadan Metropolis." has been reviewed by the Oyo State Ethics Review Committee.

2. The committee has noted your compliance. In the light of this, I am pleased to convey to you the full approval by the committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations, in line with this, the Committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of findings as this will help in policy making in the health sector.

4. We wish you all the best.



Dr. Abas Gbolahan
Director, Planning, Research & Statistics
Secretary, Oyo State, Research Ethics Review Committee