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Knowlegde and Awarenessassessment of International Health Regulations amongst Port Health Officers at Apapa Seaport, Lagos.

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ABSTRACT: Objective: This study aims at assessing the awareness and knowledge of Port Health officers on international health regulation (IHR, 2005) at Apapa seaport in Nigeria.
Methods: Ninety-six (96) questionnaires were settled for, as the sample size for the study through an adapted and validated questionnaire instrument. Data collected were analysedusing Statistical Package for Social Sciences (SPSS) version 20 software.
Result: The result showed that 71.0% of the respondents are aware of international health regulations (IHR, 2005) 32.0% have in-depth knowledge and preparation of its real life application is relatively low.
Conclusion: There is therefore need for the port health officers manning the point of entry to be more conversant with IHR, 2005 and its implementation, its core capacity, training, re-training and practise real life scenarios to prepare them against future occurrence of outbreak cases.
Keywords: International Health Regulations (IHR), Infectious diseases, Country points of entry (PoEs), Core capacity, Public health, Nigeria.

I. INTRODUCTION

1.1 Background to the Study

Historically, ships have played an important role in transmitting infectious diseases around the world. The spread of cholera pandemics in the 19th century was thought to be linked to trade routes and facilitated by merchant shipping. Efforts to control the movement of human disease on ships can be traced back to the Middle Ages, when, in 1377, Venice and Rhodes denied access to ships carrying passengers infected with the plague, giving rise to the term "quarantine" (Cheesbroughet al., 2000). On arrival, travellers were detained in isolation for 40 days before they were allowed to proceed to their final destination (Bartram J, et al., 2009). Overcrowding on ships, filth and lack of personal hygiene were often associated with epidemics of rickettsial typhus fever. Preventive measures, such as quarantine, delousing and maintaining personal cleanliness by use of soap, were gradually adopted, and the incidence of typhus decreased (WHO, 2011). By taking sensible preventive control measures, it is possible to protect passengers, crew and the public at large from disease transmission related to ships. To the extent possible, control strategies should be targeted to minimizing contamination at source. From a public health perspective, the focus should be proactive and preventive measures rather than reactive and curative (WHO, 2007).

According to Katz and Fischer (2010), in the 1800s, the global community recognized the potential spread of diseases (particularly cholera, plague and yellow fever) across international borders. Quarantine was used to prevent the spread of these diseases across international borders and this brought about the implementation of The International Health Regulations (IHR). The International Health Regulations (IHR) (2005) is a legal instrument binding all World Health Organization (WHO) member States. It aims to prevent and control public health emergencies of international concern. Country points of entry (POEs) have been identified as potential areas for effective interventions to prevent the transmission of infectious diseases across borders (Bakari and Frumence, 2013).

According to the IHR (2005) and (Frumenceet al., 2013), countries should be able to detect, assess, and respond to all events that may constitute public health emergencies of international concern (PHEICs) and report them to the WHO (IHR, 2005).

Travel is a potent force in disease emergence and spread, whether it is aircraft moving human-incubated pathogens, or insect vectors, great distances in short times, or ships transporting used tyres containing mosquito eggs. The speed and complexity of modern transport make both

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geographical space and the traditional 'drawbridge' strategy of disease control and quarantine increasingly irrelevant (Haggett, 2000). In this era of trans-boundary disease, there us need for people at the frontline are well involved and informed about international health regulation.

1.2 Aim and Objective of the study

This study aimed at evaluating the awareness and knowledge level of port health officers on international health regulation (IHR, 2005). The port health officers at the key factor at any port of entry into a country and therefore, since, trans-boundary disease is a major challenge in the world. It is however, on the port health officers to keep in check for any form of red alert. In other to achieve this aim, the following specific objectives shall be pursed:

(i) Assessing the awareness of Port Health officers on international health regulation (IHR, 2005) at Apapa seaport in Lagos, Nigeria.
(ii) Examine factors that can affect the awareness of international health regulation.

ii. FRAME WORK AND LITERATURE REVIEW

2.1 The concept of International Health Regulations (IHR,2005)

According to Katz and Fischer (2010), in the 1800s, the global community recognized the potential spread of diseases (particularly cholera, plague and yellow fever) across international borders. Quarantine was used to prevent the spread of these diseases across international borders and this brought about the implementation of The International Health Regulations (IHR). The International Health Regulations (IHR) (2005) is a legal instrument binding all World Health Organization (WHO) member States. It aims to prevent and control public health emergencies of international concern. Country points of entry (POEs) have been identified as potential areas for effective interventions to prevent the transmission of infectious diseases across borders (Bakari and Frumence, 2013). The agreement postulates that member states will strengthen core capacities detailed in the IHR (2005), including those specified for the points of entry (POEs). The international health regulation (IHR 2005) aim is to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide. (Kasoloet al., 2010) The purpose and scope of the IHR (2005) is to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade. According to the IHR (2005) and Frumenceet al., (2013), countries should be able to detect, assess, and respond to all events that may constitute public health emergencies of international concern (PHEICs) and report them to the WHO (IHR, 2005).

2.2. Literature review

Travel is a potent force in disease emergence and spread, whether it is aircraft moving human-incubated pathogens, or insect vectors, great distances in short times, or ships transporting used tyres containing mosquito eggs. The speed and complexity of modern transport make both geographical space and the traditional 'drawbridge' strategy of disease control and quarantine increasingly irrelevant (Haggett, 2000).

II. MATERIALS AND METHODS

3.1 Study area

The study area is Lagos state is arguably the most economically important state of the country, the nation's largest urban area.

Lagos state lies on latitude 6^0 35'N and longitude $3^0$45'E (Figure 3.1). Lagos state occupies an area cover of about 3,577km^2 with population of 9,113,605 according to 2006 census with 20 local governments and Apapa is amongst the local governments which happen to be our area of study.

It is a major financial centre and would be the fifth largest economy in Africa and Lagos sea port or port complex is located in Apapa Lagos, the south west part of Nigeria. The port was established in 1913. The port is the largest and busiest out of all seaports in Nigeria. Apapa port is the only seaport that involves different modes of transportation (Rail, Ship, truck). The port operates a 24 hours' service.

The port operates a 24 hours' service. The port has 2 logistics bases, 8 jetties, well equipped and capable of handling oversize of cargo. Apapa port is 4meters deep water berths back in 1921 and now is 14.5meters.

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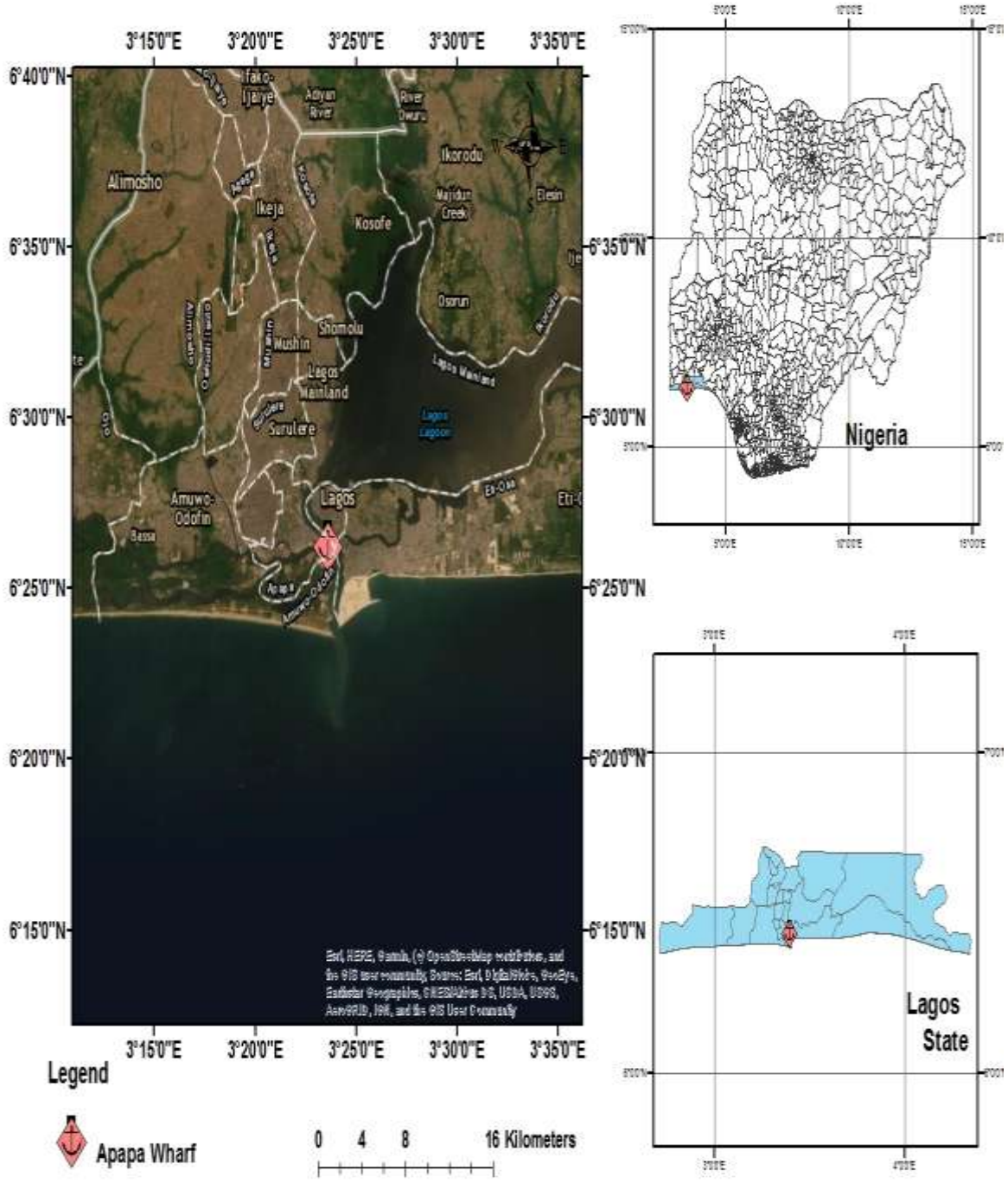

Figure 3.1: Map of PoE in Nigeria Showing Apapa Seaport in Lagos

3.2 Location

The port has undergone so many development and modernization over the years so as to handle cargo more effectively. Currently Lagos port complex has five private terminals and personnel that have both local and international experience in port operation. Administratively, the point of entries i.e. Apapa Seaport Lagos is managed by Nigeria Ports Authority (NPA) which is Parastatals under the Ministry of Transport and Aviation. However, the Port health services at the three (3) POEs are mandated to the Port Health

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Services under the Directorate of Public Health Services of the Federal Ministry of Health (FMoH), The Port Health Service is headed by the Director too. The Directorate of Public Health has 4 sections headed by Assistant Directors Namely: Health Education and Promotion, Reproductive and Child Health, Epidemiology and Disease Surveillance, and Environmental Health Services. Port Health Services Unit belongs to the Environmental Health Services Section.

3.2 Study population

The study population involved two groups of respondents:key informant interview (KII). For management group from Federal Ministry of Health (FMOH)) office and POEs Managers and the implementation group constituted field workers (PHO) at port using interviewer administered questionnaire.

3.3 Sampling Procedures and Sample Size

Purposive sampling procedure was used so as to focus on the most favourable insight into an issue. KII was used to provide specific information needed for the study. Eight (8) senior management staff of federal ministry of health (FMoH) was selected at random for in-depth interviewed. These include four (3) the Director of Preventive Health Services, three (2) Assistant Directors under the Preventive Health Services (Environmental Health Services, Health Education and Promotion, and Epidemiology and Disease Surveillance), The Heads of Port Health Services at Apapa Sea port both ENL office and Bakassi office respectively two (2) Director of Port Health Services and her Assistant, two (2) IHR National Focal Person and desk officer in Emergency Preparedness and Response section. Other principal staffs at PoEs was included as respondents for structured paper based questionnaires with frontline port health workers, working in shifts so as to provide 24 hour services

3.4.1. INCLUSION CRITERIA

The study focused on port health officers/and vessel coming to berth at Apapa Sea port and was recruited as they fulfilled the following inclusion criteria:

1. Port health officer working in Apapa Seaport with sufficient cognitive ability to answer the study questions
2. Port health officer who have been working for at least one year
3. Vessel/Ship on Apapa Seaport

3.4.2. EXCLUSION CRITERIA

1. Port health officers who are not working in Apapa Seaport
2. Port health officers less than one year at present work station in Apapa Seaport
3. Internship students and IT student or SIWES students.

3.6 RESEARCH INSTRUMENT

A purpose-designed interviewer administered semi-structured questionnaire.

3.7 PRE-TEST AND DATA VALIDATION

It was first given an in-house pre-test for content validity in the Department of Environmental Health Science, School of Allied Health and Environmental studies, Kwara State University and amendments were made accordingly. The second pre-test of the questionnaire were carried out at Tincan island Seaport having similar characteristics with the study area.It help to identify problems with the validity of the instruments. Findings from the pre-test instruments were used to make amendments on the research tools.

3.8 DATA COLLECTION AND ANALYSIS

All data collected were checked manually for errors and analyzed statistically using SPSS 20.0 statistical package. The analysis include chi square test of association between variables and results were presented in frequency, tables and percentages. A p-value of < 0.05 was considered statistically significant.

The data collected using qualitative research method results in large amount of richly comprehensive data that is contextually loaded. In this study, the thematic analysis was used to analyses the collected data. Specifically, the analysis adopted an inductive approach to analyze data, which is a process of coding the data without necessarily fitting it into a pre-existing coding frame, or the researcher's analytic preconceptions. In inductive approach the themes identified are not imposed by the researcher rather they emerge and strongly linked to the data themselves. The processes include the familiarizing with the transcribed data, coding the data, searching for themes, reviewing the themes, defining and providing names, and producing the entire report. A theme represents some level of patterned of response or meaning within the data, thus capturing important information in relation to the research question (table 1). WHO scoring system were used to determine implementation status of each of the core capacities, which reflects the capacity to

institutionalize and sustain interventions. The scale of rating or description by WHO is;

1. **No Capacity**: Attributes of capacity not in place and the Color Code is: Red
2. Limited Capacity: Attributes of capacity in development stage (some are achieved and some are undergoing; however, the implementation has started). Color Code: Yellow
3. Developed Capacity: Also attributes of a capacity are in place; however, there is the issue of sustainability and measured by lack of inclusion in the operational plan in National Health Sector Planning (NHSP) and/or secure funding. Color Code: Yellow
4. Demonstrated Capacity: Attributes are in place, sustainable for a few more years and can be measured by the inclusion of attributes or IHR (2005) core capacities in the national health sector plan. Color Code: Green
5. Sustainable Capacity: Also attributes are functional, sustainable and the country is supporting other countries in its implementation. This is the highest level of the achievement of implementation of IHR (2005) core capacities. Color Code: Green

1. Without achievement of all attributes at prior capacity levels, a country cannot progress to the adjacent levels (for instance, in order to reach demonstrated capacity, one has to meet all the attributes of developing and demonstrated capacity).
2. All responses should be supported by documentable evidence.

3.9 GLOBAL POSITIONING SYSTEM (GPS)

A global positioning system was used to get the coordinates of the Apapa seaport and data obtained was used to produce a digital map through the Arc view GIS software.

3.10 ETHICAL CONSIDERATIONS

Inform consent for participation was sought from participants and also from captain of the vessel / ship for sample collection. Verbal and written consent were obtained from every respondent after explaining the purpose of the study and assured on the confidentiality of information obtained from them. Ethical clearance was obtained from KWASU-Institutional Research Board and Publication Committee. This ethical clearance was used to obtain permission from the Federal Ministry of Health Abuja and to contact officials under the ministry and the heads of Port Health Services at Lagos, Apapa Sea Port. Information collected was kept confidential and correspondent names and vessel/ ship identity were not asked in the questionnaires.

III. RESULTS

Table 4.1:Demographic information of respondents (N=96)

Demographic Variables	Percentage (%)
Section/Department/Unit	
Environmental	31.25
Medical Lab. Science	15.62
Nurse	28.12
Comm. Health	11.46
Scientific officer	4.17
Others	9.38
Total	100
Age	
21-30	11.45
31-40	18.76
41-50	41.66
51 and above	28.13
Total	100
Gender	
Male	67.3
Female	32.7
Total	100
Marital Status	
Married	77.08
Single	22.92

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Total	100
Educational Level	
Primary	4.17
Secondary	5.21
OND/NCE	54.17
B.sc/B.Ed./HND	33.33
MSc/MBA	3.12
Total	100
Work Experience	
Less than a Year	3.12
1-4 years	15.63
5-8 years	10.42
9-12 years	27.1
Above 12 years	43.7
Total	100

Source: Field Survey, 2019

Result in Table 4.1 reveals that environmental health officer carries highest proportion of the respondents. About 31.25% of the port heath officers, followed by the nurses which are 28.12%, then the medical officers about 15.62%, community health about 11.46%, others about 9.38% and scientific officer is 4.17%. Among the age brackets, result presented reveals that 11.45% were between ages 21-30 years, 18.76% were between 31-40 years, 41.66% were between 41-50 years, while 28.13% were 51 and above years. From the result presented so far, it can be deduced that majority of the respondents were between age group 41-50 years (41.66%). The gender distributions, 65(67.30%) of the respondents in the sample were males while 31(32.70%) are females, showing male predominance in the population. Result reveals that most of the sampled were male (67.30%). The distribution of their marital status were as follows: 74(77.08%) were married and 22(22.92%) were single. Based on the result, larger percentage of the respondents were married (77.08%) as at the time of the study. In the respondents' level of education, result reveals that fifty-two (52) respondents representing 54.17% were of OND/NCE, 4.17%, 5.21%, 33.33%, 3.12%, were of the Primary, Secondary, B.sc/B.Ed./HND and MSc/MBA respectively. From the result, it can be deduced that majority of the respondents had OND/NCE college of health technology education (54.17%).Among the work experience, result presented reveals that 3.12% had work experience of Less than a Year, 15.63% with 1-4 years, 10.42% with 5-8 years, 27.10% with 9-12 years, 43.70% with more than 12 years. From the result presented so far, it can be deduced that majority of the respondents have work duration practice of more than 12 years (43.70%).

4.2 Answering of Objective Questions

Objective 1: Assess the awareness and knowledge of Port Health officers on international health regulation (IHR, 2005) at Apapa seaport in Nigeria.

Variables	**Percentage (%)**
Are you aware of IHR (2015) document?	
Yes	30.2
No	15.6
I don't know	54.2
Total	100
Do you have a copy of it?	
Yes	43.7
No	41.6
I don't know	14.5
Total	100
Have National stakeholder responsible for implementation of IHR (2005) been	

identified?	
Yes	36.5
No	63.5
Total	100
Have the roles and responsibilities of relevant authorities and stakeholders in regards of IHR (2005) implementation been defined?	
Yes	2.08
No	75
I don't know	22.9
Total	100
Do you know about IHR (2005) core capacity requirement?	
Yes	85.4
No	14.6
Total	100
If yes, has an assessment of relevant legislation, regulations, Administrative requirements and other government instrument for IHR 2005 implementation been carried out?	
Yes	66.6
No	33.4
Total	100
If Yes, as a review of national policies to facilitate IHR (2005) technical core capacities been carried out?	
Yes	12.5
No	87.5
Total	100
Do you have any further comments based on the IHR (2005)?	
Yes	10.4
No	52
I don't know	37.5
Total	100
Have you ever had any experience of an emergency, either directly or indirectly?	
Yes	82.2
No	18.7
Total	100
Did your state experience a disaster regularly?	
Yes	9.3
No	90.7
Total	100

Are you aware of IHR (2015) document?	
Yes	30.2
No	69.8
Total	100
Does the plan describe the duties of health sectors?	
Yes	43.7
No	41.6
I don't know	14.5
Total	100
Does the plan able to proffer adequate control measure in controlling emergencies?	
Yes	36.5
No	63.5
Total	100
Is there any regulatory body and policy (laws) on emergency preparedness and response?	
Yes	2.08
No	75
I don't know	22.9
Total	100
Is the regulatory body and policy effective?	
Yes	14.4
No	85.6
Total	100
Does this policy describe disciplinary preparedness and responses for health sector at both provincial and national level?	
Yes	66.6
No	33.4
Total	100
Do you have any further comments on the country's emergency response and preparedness?	
Yes	12.5
No	87.5
Total	100
Is the PoEs in Nigeria prepared for any Public health threat/Public health emergency?	
Yes	10.4
No	52

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I don't know	37.5
Total	100
Is there an emergency/contingency plan in the PoE?	
Yes	82.2
No	18.7
Total	100
If yes, is the emergency plan developed by formal health sector planning committee?	
Yes	12.5
No	87.5
Total	100

Source: Field Survey, 2019

According to the research carried out. Out of the 96 respondents, only 30.2% were aware of the documents called IHR, 15.6% said no while 54.2% doesn't know. Only 43.7% have a copy of IHR document, 41.6% said no while 14.5% have no idea. About the national stakeholder responsibilities only 36.5% of the respondents said they are taken responsibilities while 63.5% doesn't know. The stakeholder in regards to IHR implementations has defined by IHR (2005), 2.08% said yes, 75.0% said no while 22.9% doesn't know. The respondents having knowledge about the core capacities of IHR (2005), 85.5% said yea while 14.6% said no. The respondents that answered yes were further questioned about the assessment of relevant legislation and administrative requirement of IHR (2005)implementation and if it has been carried out, 66.6% said yes while 33.4% said no.

A review of National policies to facilitate IHR,2005 technical core capacities been carried out 12.5% said yes while 87.5% said no. Any further comments based on IHR,2005 10.4% said yes while 52.0% said no while 37.5% said I don't know. Ever experience an emergency directly or indirectly, 82.2% said yes while 18.7% said no. Did your state ever experience any disaster 9.3% said yes while 90.7% said no. Asked if the respondents were aware of a document called IHR,2005 30.2% said yes while 69.8% said no. Does plan of the other stakeholders describes the duties of health sectors 43.7% said yes, 41.6% said no while 14.5% said I don't know. Does the plan proffer adequate control measure in controlling emergencies 36.5% yea while 63.5% no. Is there any regulation body and policy (laws) on emergency preparedness and response 2.08% yes, 75.0% said no while 22.9% doesn't know, is the regulatory body effective 14.4% said yes while 85.6% said no.

Does this policy describe disciplinary preparedness and response for health sector at both provincial and national level; 66.6% said yes while 33.4% said no. Further comments on the country's emergency response and preparedness; 12.5% said yea while 87.5% said no.

The PoEs in Nigeria for any public health threats emergency; 10.4% said yes, 52.0% said no while 37.5% said I don't know. Is there any emergency/contingency plan in the PoEs; 82.2% said while 18.7% said no. If yes, is the emergency plan developed by formal health sector planning committee, 12.5% of the respondents said yes while 87.5% said no.

4.3 Discussion

According to the findings of this research it was deduced that most of the port health officers (PHOs) doesn't have fully knowledge of the IHR,2005 and for those that are aware of IHR, 2005 they can't fully carry out their responsibilities because of the lack of fully implementation of IHR at all point of entries in Nigeria. Even over the course of the public health outbreak at happened at the MuritalaMuhammedInternationaalAiport in Lagos, Nigeria. There should have been proper implementation of IHR,2005 in a major PoEs if not all the PoEs in the country.

The Point of entry(ies) is not fully equipped for any emergencies and also not all port health officers are fully aware of what IHR implies. During the course of this research, it was deducted that the port health officers don't only consist of one unit of the heath sector but various unit. It showed that only few respondents are aware of IHR,2005 or its implementation. The research showed that environmental health scientists are the unit of port health that knows about IHR,2005

because it involved in their curriculum in school and other respondents that are aware of it, knows through training, seminars, news or internet.

Nigeria has experienced public health threat at some point and itwasn't contained on time because of the lack of expertise in the area at the PoEs. This research was carried out after the outbreak and still yet IHR,2005 fully implementation hasn't been fully commenced. The PHOs that are supposed to be at the PoEs have little or no knowledge of IHR,2005 and how are they expected to carry out the responsibilities on them as a unit that can prevent the spread of public health threat.

According to the research done in Julius Nyerere International Airport (JNIA) Tanzania in 2013, it showed that JNIA is yet to develop adequate core capacities required for implementation of IHR,2005. Since, it's a major PoE in Tanzania, it should ensure that public health polices, legislations, guidelines and practise at the PoEs are harmonized to improve International travel and trade.

IV. CONCLUSION

Over the years trans-boundary disease has been a challenge to the world and trade and therefore, this study was geared to know the knowledge and awareness of port health officers on international health regulation. At the most popular and well used sea port in the country. This study concludes that the knowledge and awareness of international health regulation amongst port health officer at the Apapa seaport is low. However, it's different with the environmental health officers (EHOs) which is a sections amongst the port health officers. The EHOs has indepth knowledge of (IHR, 2005) because of their educational background and as well as severally seminars and trainings.

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