Assessment of disease reporting among health care workers in a South Eastern State, Nigeria

Anthony C. Iwu¹, Kevin C. Diwe²*, Irene A. Merenu², Chukwuma B. Duru², Kenechi A. Uwakwe²

¹Department of Community Medicine, Imo State University Teaching Hospital, Orlu, Imo State, Nigeria
²Department of Community Medicine, Imo State University Teaching Hospital, Owerri, Imo State, Nigeria

Received: 25 July 2016
Accepted: 31 August 2016

*Correspondence:
Dr. Kevin C. Diwe,
E-mail: kevindiwe@gmail.com

ABSTRACT

Background: A functioning disease surveillance and reporting system has been a serious challenge to developing countries; and as such, effective strategies to strengthen capacity for early disease outbreak detection is required. The main objective was to determine knowledge, attitude, practice and challenges of disease reporting among health care workers and the comparison thereof across the geopolitical zones in a South Eastern State, Nigeria.

Methods: A cross-sectional descriptive design, used stratified simple random sampling technique to select health care workers from three geopolitical zones in a South Eastern State, Nigeria. Data was collected using a pretested semi-structured questionnaire and an observational checklist. Descriptive analyses and statistical inferences were done with p set at 0.05 significant levels.

Results: Majority of respondents indicated that they knew what disease reporting is (89.1%) but only two thirds (66.7%) were aware of disease reporting forms and of those aware, between 11 and 24% did not know or correctly identify the uses of one type of form or the other. Majority were of the opinion that disease reporting was a cumbersome activity (67.3%) with inadequate supply of forms (52.4%). About 74% had not reported a disease before or received training in disease reporting. Furthermore, there were significant differences between the respondents from the different geopolitical zones with respect to knowledge, attitude and practice of disease reporting (p<0.05).

Conclusions: Health care workers are faced with multiple challenges. Therefore to ensure effective disease reporting; strategies that secure political commitments, adequate and equitable funding with regular training should be implemented.

Keywords: KAP, Disease reporting, Health workers, Imo, Nigeria

INTRODUCTION

A functioning disease surveillance, notification and reporting system, involves the continuous scrutiny of disease on an individual, local, national and international level. It depends on, but not limited to health care workers which include doctors, nurses, community health extension workers, medical record officers and laboratory technicians both in the public and private sector; to identify, collate, analyse and promptly disseminate data on the occurrence of diseases and health related events of public health significance for public health action.¹²

Effective disease surveillance, notification and reporting have been a serious challenge to developing countries especially in Africa and more so, in Nigeria, as she has come a long way in trying to strengthen its surveillance, notification and reporting capabilities since the yellow fever out-break in 1986/87. Nigeria went through a phase
with the introduction of Disease Surveillance Notification (DSN) system in 1988, which appeared to be operating in parallel and sometimes completely independent with other surveillance structures established by vertical disease control programs that were well funded by donor agencies; and following this, was the establishment of the Integrated Disease Surveillance Response (IDSР) Strategy that was adopted as a regional strategy by World Health Organization (WHO) in 1998. The purpose of introducing IDSR was to integrate the various surveillance activities into one system within the broader National Health System, to strengthen national capacity for early disease out-break detection by effectively and efficiently utilizing the existing human and financial resources.1,3

The IDSR operates at all levels of the health system by linking communities, health facilities, Local, State and National Government levels. Functionally, it begins with the detection of disease, generation of health information and immediate notification at the level of the health facilities, to the Local Government level (district) where the DSN officers collect and collate the health data from the various health facilities (public and private) within the Local Government Area (LGA); which is then promptly disseminated to the relevant structures at the State and National levels for onward dissemination to WHO.4,5

In 2010, the current status of IDSR was assessed in the African region, which highlighted critical gaps at the district level (LGA) namely; absence of IDSR dedicated district level staff in 30% of countries, lack of epidemic management committees in over 80% of districts, absence of rapid response teams in over 50% of districts, lack of logistic, communication capacities and consistency in the use of IDSR core indicators in monitoring and evaluation.5

In Nigeria, IDSR implementation is still faced with these challenges of disease reporting especially from the level of the health facilities where inadequate health information is generated, as the health care workers especially clinicians appear not to be effectively reporting diseases.6

Over time, disease out breaks in Nigeria have been attributed to health care workers especially clinicians either reporting late or not reporting at all, and this may partly be due to low awareness of their roles in the prevention and control of disease outbreaks through disease surveillance and notification activities; and ignorance of both the reporting guidelines and list of notifiable diseases and also, the lack of feedback information regarding notification.6,8

These challenges appear to hinder any progress that may have been achieved in closing those IDSR critical gaps identified in 2010, because without disease information generated from the health facilities, there will be no data to collate, analyse, interpret or disseminate. As a consequence, under reporting of disease increases the risk of disease outbreaks and prevents timely public health intervention, resulting in increased morbidity, disability and mortality.9

Clinicians remain indispensable to effective disease reporting because they can suspect and cluster likely diseases based on clinical judgement from symptoms and signs of patients. Also other health care workers are similarly as important, not only in providing support in disease suspicion and laboratory confirmation but also in the collection, collation, analysis, interpretation and timely dissemination of health data.10

This study aims at identifying gaps in disease reporting among health care workers within a resource limited setting in order to develop programs that improve their knowledge, attitude and practices; and also, enhance their capabilities for early disease detection and response that will consequently reduce the risks and burden of disease.

METHODS

Study area

The survey was conducted in the three geopolitical zones that comprise Imo State, South East of Nigeria. Imo State is located within longitude 5°0 29’06” E and latitude 7°0 02’06” N occupying an area between the lower river Niger and the upper and middle Imo River. According to the 2006 census, the State occupies an area of 5289.49 square kilometres with a total population of 3.93 million (2.03 million males and 1.9 million females). The three geopolitical zones in Imo State are Imo West, Imo East and Imo North with 12, 9 and 6 Local Government Areas (LGAs) respectively. The land sizes and populations of Imo West, East and North were 2,316, 1,919 and 948 square kilometres; and 1.65, 1.48 and 0.80 million people respectively.11,12

Study population

The study population comprised health care workers, which included physicians, nurses, community health extension workers, medical record officers and laboratory technicians from the public and private sectors.

Study design and sampling technique

The study was a cross sectional descriptive design that used stratified simple random sampling technique to select 449 health care workers. Imo State is stratified according to the existing 3 geopolitical zones and from each zone, one Local Government Area (LGA) was selected by random sampling using ballot, namely; Orlu LGA from Imo West geopolitical zone, Origwe LGA from Imo North geopolitical zone and Owerri West LGA from Imo East geopolitical zone. From each of the LGAs, 449 health care workers were selected. In each LGA, 224 health care workers were stratified by sampling and proportionate to the number of health care workers in the study areas using the following formula:

\[ n = \frac{N \times Z^2 \times p(1-p)}{d^2} \]

Where:
- \( n \) = Sample size
- \( N \) = Population
- \( Z \) = Z value (1.96 for 95% confidence level)
- \( p \) = Proportion of health care workers reporting (estimated at 0.50)
- \( d \) = Margin of error (0.05)

The sample size was determined for a 5% population variance at 95% confidence level.

The study was approved by the Ethics and Research Committee of the University of Science and Technology, Owerri, Nigeria.
and Private health care centres) were identified and enrolled to participate after consent as follows; Orlu LGA, 180 participants from 28 health institutions, Owerri West LGA, 126 participants from 22 health institutions, and Okigwe LGA, 143 participants from 40 health institutions.

**Data collection and analysis**

Data was collected from four hundred and forty one pretested semi structured self-administered questionnaires with an observational checklist. The questionnaire comprises 5 sections, section one; sociodemographic characteristics, section two; knowledge of disease reporting, section three; attitude towards disease reporting, section four; practice of disease reporting and section five; challenges of disease reporting. On physical inspection, the observational checklist was used to verify resources available for disease reporting at each Health Institution.

Medical students were recruited for the distribution and collection of the questionnaires. Data was cleaned and validated manually, and analysed using SPSS v22. Descriptive statistics (frequency tables and summary indices) were generated. Chi Square test was used to test significant differences between geopolitical zones with the p value set at 0.05 significant level.

**Ethical considerations:** Ethical approval was obtained from the Ethics Committee of Imo State University Teaching Hospital Orlu and verbal consents were given by the respondents.

**RESULTS**

Four hundred and forty nine questionnaires were administered and four hundred and forty one were completed and returned with a response rate of 98.2%.

**Sociodemographic characteristics of respondents**

Most of the respondents (85.9%) were between the ages of 20 and 49 years with a majority (35.6%) in the 40-49 age bracket. The respondents were mostly female (75.5%) with either a secondary or tertiary level of education (90.7%). While a majority of the respondents were nurses and community health extension workers (61.7%), only 16.3% were doctors (Table 1).

**Knowledge of disease reporting among respondents**

A majority of the respondents indicated that they knew what disease reporting is (89.1%), and its importance in disease prevention and control (93.9%), about 15% and 42% of those who knew, said that disease reporting is the report of unhealthy lifestyle and sexually transmitted disease respectively.

Only about two thirds of the respondents (66.7%) were aware of disease reporting forms and of those aware, between 11and 24% of them did not know or correctly identify the uses of one type of form or the other (Table 2).

**Table 1: Sociodemographic characteristics of respondents.**

| Variable         | Category | Frequency (%) |
|------------------|----------|---------------|
| Age (years)      | 20-29    | 106 (24.0)    |
|                  | 30-39    | 116 (26.3)    |
|                  | 40-49    | 157 (35.6)    |
|                  | >50      | 62 (14.1)     |
| Gender           | Male     | 108 (24.5)    |
|                  | Female   | 333 (75.5)    |
| Education        | Primary  | 41 (9.3)      |
|                  | Secondary| 116 (26.3)    |
|                  | Tertiary | 284 (64.4)    |
| Health care worker | Doctors | 72 (16.3)    |
|                  | Nurses   | 116 (26.3)    |
|                  | CHEWS    | 93 (21.1)     |
|                  | Auxiliary nurses | 63 (14.3) |
|                  | Health attendants | 31 (7.0) |
|                  | Medical record officers | 33 (7.5) |
|                  | Laboratory technicians | 33 (7.5) |

**Knowledge of disease reporting among respondents**

A majority of the respondents indicated that they knew what disease reporting is (89.1%), and its importance in disease prevention and control (93.9%), about 15% and 42% of those who knew, said that disease reporting is the report of unhealthy lifestyle and sexually transmitted disease respectively.

**Attitude of disease reporting among respondents**

A majority of respondents (68.5%) felt that disease reporting was necessary; 67.3% of them were of the opinion that it was a cumbersome activity. A majority of the respondents were of the opinion that neither the National or State ministries adequately support local disease reporting (71%) nor provide prompt feedback when diseases are reported (63.3%). Similarly, a majority of the respondents felt that there was a lack of adequate coordination and communication between Local, State and National levels (73.2%) especially at the State (68.9%) and Local (55.1%) levels which needed improvement. Furthermore, a majority of the respondents were of the opinion that improvement in disease reporting will be achieved through periodic training (81.4%), regular feedback with results (68.5%) and adequate funding (59%) (Table 3).
**Disease reporting practice of respondents**

A majority of the respondents had not reported a disease before (74.8%), though more than half of the respondents (54.6%) indicated that their institution did not also report disease. Even with those institutions that reported disease, only 9% always reported with telephone as the primary method of reporting (59.5%). A majority of the respondents had not received training in disease reporting (74.4%) but of those that received training, a majority indicated that the State Government provided such training (67.3%) (Table 4).

**Association of knowledge, attitude, practice between geopolitical zones**

There were statistically significant differences between the respondents from the different geopolitical zones in terms of knowing what disease reporting is (p=0.000), awareness of disease reporting forms (p=0.000), the opinion that disease reporting is necessary (p=0.000), opinion that National and State ministries adequately support local disease reporting system (p=0.000), actual disease reporting at institution (p=0.000), frequency of disease reporting at institution (p=0.021) and the primary communication method of disease reporting (p=0.001). There was no statistical significant difference between the geopolitical zones in terms of respondents receiving training on disease reporting (p=0.088) (Table 5).

**Challenges of disease reporting practice of respondents**

A majority of the respondents perceived that the lack of training (82.8%), lack of equipment (67.6%) and inadequate supply of forms (52.4%) were the existing limitations that prevented the practice of disease reporting, while close to half of the respondents attributed it to the lack of feedback (49.7%), poor staff motivation (47.2%) and weak supervision (46.5%). But for a majority of respondents, their personal reasons for not reporting diseases were due to the lack of appropriate reporting materials (62.6%) and the complex nature of the reporting procedure (59.9%); though, close to half of the respondents gave other reasons such as lack of willingness to report (48.8%) and lack of a list of reportable diseases (48.3%) (Table 6).

### Table 2: Disease reporting knowledge of respondents.

| Variable | Category | Frequency (%) |
|----------|----------|---------------|
| Do you know what is disease reporting (n=441) | Yes | 393 (89.1) |
| *What is disease reporting (n=393) | Primarily reporting infectious diseases | 335 (85.2) |
| | Primarily reporting unhealthy lifestyle | 60 (15.3) |
| | Reporting diseases and other health events | 306 (77.9) |
| | Primarily reporting sexual transmitted disease | 166 (42.2) |
| *Importance of disease reporting (n=393) | Changes in trend of disease occurrence | 237 (60.3) |
| | Disease prevention and control | 369 (93.9) |
| | For statistics and planning | 219 (55.7) |
| | Detect and notify disease outbreak | 264 (67.2) |
| | For record purposes | 198 (50.4) |
| | For research purposes | 197 (50.1) |
| | Initiate and monitor intervention | 260 (66.2) |
| | Alert authorities | 239 (60.8) |
| | Health education and advocacy | 138 (35.1) |
| Aware of the disease reporting forms (n=441) | Yes | 294 (66.7) |
| | No | 147 (33.3) |
| *Type of IDSR form you know (n=294) | IDSR 001 | 248 (84.4) |
| | IDSR 002 | 238 (81.0) |
| | IDSR 003 | 224 (76.2) |
| *Uses of IDSR 001 (n=248) | Immediate reporting | 205 (82.7) |
| | Weekly reporting | 80 (32.3) |
| | Monthly reporting | 71 (28.6) |
| *Uses of IDSR 002 (n=238) | Immediate reporting | 61 (25.6) |
| | Weekly reporting | 211 (88.7) |
| | Monthly reporting | 73 (30.7) |
| *Uses of IDSR 003 (n=224) | Immediate reporting | 75 (33.5) |
| | Weekly reporting | 85 (37.9) |
| | Monthly reporting | 197 (87.9) |

*Multiple responses.*
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Table 3: Disease reporting attitude of respondents.

| Variable                                                      | Category                                      | Frequency (%) |
|---------------------------------------------------------------|-----------------------------------------------|---------------|
| Do you feel disease reporting is necessary                    | Yes                                           | 302 (68.5)    |
|                                                               | No                                            | 139 (31.5)    |
| What is your opinion about disease reporting                  | Waste time and interfere with clinic work      | 170 (38.5)    |
|                                                               | Violates patients privacy                      | 115 (26.1)    |
|                                                               | It is cumbersome                              | 297 (67.3)    |
|                                                               | Does not limit disease transmission           | 143 (32.4)    |
| Do you feel that National and State ministries adequately    | Yes                                           | 53 (12.0)     |
| support local disease reporting system                        | No                                            | 313 (71.0)    |
|                                                               | No opinion                                    | 75 (17.0)     |
| Do you feel that National and State ministries provide        | Yes                                           | 43 (9.8)      |
| prompt feedback when diseases are reported                    | No                                            | 279 (63.3)    |
|                                                               | No opinion                                    | 119 (27.0)    |
| Do you feel that there is adequate coordination and          | Yes                                           | 42 (9.5)      |
| communication between Local, State and National levels       | No                                            | 323 (73.2)    |
|                                                               | No opinion                                    | 76 (17.2)     |
| What level do you feel coordination and communication should | Local level                                   | 243 (55.1)    |
| be improved                                                   | State level                                   | 304 (68.9)    |
|                                                               | National level                                | 129 (29.3)    |
| What aspect of disease reporting do you feel should be        | Periodic training                             | 359 (81.4)    |
| improved                                                      | Feedback with results                         | 302 (68.5)    |
|                                                               | Funding                                       | 260 (59.0)    |
|                                                               | Financial compensation                        | 124 (28.1)    |
|                                                               | Public recognition                            | 101 (22.9)    |

*Multiple responses.

Table 4: Disease reporting practice of respondents.

| Variable                                                      | Category                                      | Frequency (%) |
|---------------------------------------------------------------|-----------------------------------------------|---------------|
| Is disease reporting done at your institution (n=441)          | Yes                                           | 200 (45.4)    |
|                                                               | No                                            | 241 (54.6)    |
| How often is disease reported (n=200)                         | Sometimes                                     | 98 (49.0)     |
|                                                               | Always                                        | 18 (9.0)      |
|                                                               | Rarely                                        | 84 (42.0)     |
| Primary method of reporting (n=200)                           | Postal box                                    | 20 (10.0)     |
|                                                               | Telephone                                     | 119 (59.5)    |
|                                                               | Email                                         | 28 (14.0)     |
|                                                               | Car/van                                       | 33 (16.5)     |
| Have you reported a disease before (n=441)                    | Yes                                           | 111 (25.2)    |
|                                                               | No                                            | 330 (74.8)    |
| Received training on disease reporting (n=441)                | Yes                                           | 113 (25.6)    |
|                                                               | No                                            | 328 (74.4)    |
| Which level provided training (n=113)                         | Local Government                              | 25 (22.1)     |
|                                                               | state Government                              | 76 (67.3)     |
|                                                               | National Government                           | 12 (10.6)     |

Observational check list of health institutions

On inspection of the Health Institutions only less than half to about one third of them (34-44%) had any of the disease reporting forms. In terms of equipment, less than one third of the Health Institutions had a computer (24.4%), printer (12.2%) or health map (31.1%) though in terms of logistic support and transportation a majority of the Institutions had telephone (90%) and car/van (52.2%) respectively (Table 7).
Table 5: Association of knowledge, attitude and practice between geopolitical zones.

| Variable | Imo West (%) | Imo North (%) | Imo East (%) | Total (%) | Statistic χ², df, p-value |
|----------|--------------|---------------|--------------|-----------|--------------------------|
| **Knowledge** | | | | | |
| Do you know what is disease reporting | | | | | |
| Yes | 150 (84.7) | 143 (100) | 100 (82.6) | 393 (89.1) | 26.17 df=2 p=0.000* |
| No | 27 (15.3) | 0 (0) | 21 (17.4) | 48 (10.9) | |
| Total | 177 (100) | 143 (100) | 121 (100) | 441 (100) | |
| Aware of the disease reporting forms | | | | | |
| Yes | 114 (64.4) | 74 (51.7) | 106 (87.6) | 294 (66.7) | 38.60 df=2 p=0.000* |
| No | 63 (35.6) | 69 (48.3) | 15 (12.4) | 147 (33.3) | |
| Total | 177 (100) | 143 (100) | 121 (100) | 441 (100) | |
| **Attitude** | | | | | |
| Do you feel disease reporting is necessary | | | | | |
| Yes | 67 (37.9) | 138 (96.5) | 97 (80.2) | 302 (68.5) | 136.60 df=2 p=0.000* |
| No | 110 (62.1) | 5 (3.5) | 24 (19.8) | 139 (31.5) | |
| Total | 177 (100) | 143 (100) | 121 (100) | 441 (100) | |
| Do you feel that National and State ministries adequately support local disease reporting system | | | | | |
| Yes | 15 (8.5) | 19 (13.3) | 19 (15.7) | 53 (12.0) | 32.81 df=4 p=0.000* |
| No | 138 (78.0) | 81 (56.6) | 94 (77.7) | 313 (71.0) | |
| No opinion | 24 (13.5) | 43 (30.1) | 8 (6.6) | 75 (17.0) | |
| Total | 177 (100) | 143 (100) | 121 (100) | 441 (100) | |
| **Practice** | | | | | |
| Is disease reporting done at your institution | | | | | |
| Yes | 59 (33.3) | 74 (51.7) | 67 (55.4) | 200 (45.4) | 17.58 df=2 p=0.000* |
| No | 118 (66.7) | 69 (48.3) | 54 (44.6) | 241 (54.6) | |
| Total | 177 (100) | 143 (100) | 121 (100) | 441 (100) | |
| How often is disease reported | | | | | |
| Sometimes | 35 (59.3) | 40 (54.1) | 23 (34.3) | 98 (49.0) | 11.60 df=4 p=0.021* |
| Always | 7 (11.9) | 5 (6.8) | 6 (9.0) | 18 (9.0) | |
| Rarely | 17 (28.8) | 29 (39.2) | 38 (56.7) | 84 (42.0) | |
| Total | 59 (100) | 4 (100) | 67 (100) | 200 (100) | |
| Method of reporting | | | | | |
| Postal box | 11 (18.6) | 3 (4.1) | 6 (9.0) | 20 (10.0) | 23.09 df=6 p=0.001*; |
| Telephone | 34 (57.6) | 49 (66.2) | 36 (53.7) | 119 (59.5) | |
| Email | 8 (13.6) | 15 (20.3) | 5 (7.5) | 28 (14.0) | |
| Car/van | 6 (10.2) | 7 (9.5) | 20 (29.9) | 33 (16.5) | |
| Total | 59 (100) | 74 (100) | 67 (100) | 200 (100) | |
| Received training on disease reporting | | | | | |
| Yes | 50 (28.2) | 41 (28.7) | 22 (18.2) | 113 (25.6) | 4.85 df=2 p=0.088 |
| No | 127 (71.8) | 102 (71.3) | 99 (81.8) | 328 (74.4) | |
| Total | 177 (100) | 143 (100) | 121 (100) | 441 (100) | |

*Significant

**DISCUSSION**

This study determined the knowledge, attitude, practice and challenges of health care workers; and the comparison thereof across the geopolitical zones in Imo, a South Eastern State in Nigeria. In the present study, the health care workers were predominantly female and within the ages of 20-49 years and the majority were nurses and community health extension workers (CHEWs) with either a secondary or tertiary level of education. This distribution of predominant females aged between 20-49 years with a secondary or tertiary level of education and the majority of the study participants being nurses and community health extension workers was similarly observed in a previous study in the South East of Nigeria by Nnebue et al.13 At the primary health care level, due to the difficulty in recruiting and retaining doctors in the rural areas, CHEWs are encouraged as substitute healthcare workers under the supervision of doctors in the provision of primary care in communities and as such, play important roles in disease reporting.14
Table 6: Challenges of disease reporting practice by respondents.

| Variable                                    | Category                              | Frequency (%) |
|---------------------------------------------|---------------------------------------|---------------|
| **Perceived structural limitations** (n=441) | Lack of training                      | 365 (82.8)    |
|                                             | Lack of transportation                | 174 (39.5)    |
|                                             | Poor staff motivation                 | 208 (47.2)    |
|                                             | Inadequate supply of forms            | 231 (52.4)    |
|                                             | Lack of logistic support              | 192 (43.5)    |
|                                             | Weak supervision                      | 205 (46.5)    |
|                                             | Lack of feed back                     | 219 (49.7)    |
|                                             | Bad roads                             | 178 (40.4)    |
|                                             | Pressure of work                      | 60 (13.6)     |
|                                             | Lack of equipment                     | 298 (67.6)    |
|                                             | Lack of willingness to report         | 215 (48.8)    |
| **Personal reasons that prevents reporting** (n=441) | Complex reporting procedure          | 264 (59.9)    |
|                                             | Lack of a list of reportable diseases | 213 (48.3)    |
|                                             | Protection of patients’ confidentiality| 66 (15.0)     |
|                                             | No penalty for not reporting          | 96 (21.8)     |
|                                             | Lack of knowledge of reporting guidelines| 111 (25.2)   |
|                                             | Lack of awareness of reportable disease| 122 (27.7)   |
|                                             | Not my assigned task                  | 41 (9.3)      |
|                                             | Lack of appropriate reporting materials| 276 (62.6)   |

*Multiple responses

Table 7: Observational check list of health institutions.

| Item                               | Type   | Health Institutions (n=90) |
|------------------------------------|--------|---------------------------|
| Disease reporting forms            | IDSР 001 | 40 (44.4)            |
|                                    | IDSР 002 | 36 (40.0)            |
|                                    | IDSР 003 | 31 (34.4)            |
| Equipment                          | Computer | 22 (24.4)             |
|                                    | Printer   | 11 (12.2)             |
|                                    | Calculator | 84 (93.3)        |
|                                    | Generator | 78 (86.7)            |
|                                    | Health map | 28 (31.1)            |
| Logistic support                   | Electricity | 84 (93.3)             |
|                                    | Telephone   | 81 (90.0)             |
|                                    | Email       | 17 (18.9)             |
|                                    | Post box    | 51 (56.7)             |
| Transportation                     | Motorcycle | 39 (43.3)             |
|                                    | Bicycle     | 26 (28.9)             |
|                                    | Car/Van     | 47 (52.2)             |

Though it was observed in the present study that a majority of the health care workers said they knew what disease reporting is, and its importance in disease prevention and control, it was surprising that about 15 to 42% of them indicated that unhealthy lifestyle and sexually transmitted diseases were what are primarily reported; and more so, about 32% of the respondents felt that disease reporting was not necessary. This further questions the quality of training, as it is expected that due to their training as health care workers, they should all know exactly what disease reporting is and its importance; and therefore, appreciate its necessity in disease prevention and control.

As a consequence, it is not unexpected that the present study observed that about one third of the respondents were unaware of disease reporting forms and between 11and 24% of them did not know or correctly identify the uses of one type of form or the other. This observation was further highlighted on inspection of the health institutions, where it was reported that only less than half to about one third of them (34-44%) had any of the disease reporting forms. This was contrary to what was observed in a study in Plateau, Northern Nigeria by Lar et al, who reported the presence of disease reporting forms in 89% of health facilities and in Tanzania by Nsubuga et al, who also reported that 73% of the health facilities had disease reporting forms.15,16
The role, priorities and probably commitments of the National and State Governments with respect to funding, organisation and maintenance of the disease reporting structures could also be contributing to the level of lack of respondents’ awareness of reporting forms and knowledge of its uses, resulting in an ineffective and inefficient reporting process. This is supported by the observation in the present study, where a majority of respondents felt that there was a lack of adequate coordination and communication between Local, State and National levels; and that the National and State ministries did not adequately support local disease reporting. This was further collaborated by the majority of the respondents who mentioned limitations such as, lack of training opportunities, lack of equipment, inadequate supply of disease reporting forms and lack of prompt feedback. All these observations coupled with the lack of willingness to report diseases, the existing complex reporting procedures and lack of a list of reportable diseases indicated by the majority of the respondents as personal reasons that prevent reporting, may explain to a large extent why a majority of the respondents in the present study had neither themselves nor their institutions reported a disease.

Thus, the existing inadequacies of the health care workers in disease reporting probably associated with the quality of their primary training, highlights the need for additional and periodic training in disease reporting, as only 26% of the respondents in the present study had received training in that area. This level of training was observed in a similar study done by Nnebue et al, who reported that only 32% of the health care workers had been trained. Similarly, interventional studies done in Nigeria and also in Ethiopia, reported by their Ministry of health, showed that training improved disease reporting either by improving knowledge, improving health workers appreciation of the value of reliable data, improving awareness and use of IDSR indicators or the completeness and timeliness of reporting.14-20

In the present study, it was observed that there were significant differences between the three geopolitical zones that comprise Imo State in terms of knowledge, attitude and practice of disease reporting by the respondents; though, the issue of lack of training on disease reporting was the same across the zones and therefore not significantly different. This could be due to a combination of varying degrees of political commitments and disease reporting challenges which ranges from the political leadership of the State who places resource distribution emphasis based on the geographical zone he or she hails from, leading to inequitable distribution of equipment, disease reporting instruments, logistic support, good road network; to the lack of competency of the health care worker resulting in poor knowledge and low awareness of reportable disease; and also, to the lack of willingness to report diseases completely and on time due to cumbersome disease reporting procedure, poor staff motivation and support.

Furthermore, it is believed that these political and disease reporting challenges form the basis why a majority of the respondents in this study were of the opinion that coordination, communication and support should be improved at the Local Government and State levels; as this will translate to improvement in disease reporting through periodic training, regular prompt feedback with results and adequate funding.

CONCLUSION

The health care workers are faced with multiple challenges including personal limitations across the different geopolitical zones which create gaps and therefore prevent effective and uniform disease reporting. So, in order to close these gaps, focus should be on developing strategies that secure political commitments, adequate and equitable funding for the disease reporting process including regular staff remuneration and also, strategies that involve regular training programs.

ACKNOWLEDGEMENTS

Authors would like to thank the participants that agreed to be part of this research and also the research assistants; Chikwe P, Ezeibeke B, Eze E, Akamere I, Ndiiokwere M and Okorie U who helped in the data collection.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Iwu AC, Diwe KC, Merenu IA, Duru CB, Uwakwe KA. Assessment of disease reporting among health care workers in a South Eastern State, Nigeria. Int J Community Med Public Health 2016;3:2766-74.