



ASSESSING FACTORS AFFECTING THE COMPLETENESS OF DATA COVERAGE ON HIV POSITIVE PREGNANT WOMEN IN SARDAUNA, TARABA STATE



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Abstract: Obtaining complete data coverage on HIV status of pregnant women is vital in controlling and monitoring HIV incidence in women of reproductive age. This study is aimed at assessing the factors affecting completeness of data coverage on HIV positive pregnant women in Sarauna local government of Taraba State. A descriptive cross sectional study using quantitative methods was used. Structured questionnaire was administered to 100 respondents selected by convenient sampling, where data on challenging factors in achieving completeness of data coverage of HIV infected pregnant women in the study area was obtained. Mean rating was used to rank the factors using a three point type Likert scale. Among the factors militating against data coverage, it was discovered that location of health facilities, stigmatization, and poor data management practices are the leading factors, it is therefore recommended that health centres should be located in rural areas and computerized management information system should be put in place for effective data management.

Keywords: Completeness, data coverage, HIV positive pregnant women

Introduction

Data Coverage in the context of HIV in pregnant women refers to the number of HIV positive pregnant women diagnosed with HIV in a year. Obtaining complete data coverage of HIV in pregnant women is vital as HIV in pregnancy can have serious consequences on mother, foetus and new born child, yet the harmful consequences are preventable (Desai *et al.*, 2007). The adverse outcomes of HIV in pregnancy can be reduced substantially by interventions that are cost effective and are available (Hill *et al.*, 2013). Access to, and use of these interventions by infected pregnant women is extremely low indicating a failure in the public health system (Hill *et al.*, 2013). Although HIV testing is almost universal in public health facilities and records of positive cases can be obtained from health facilities, the data is not completely reliable as the anti-natal prevalence survey does not include pregnant women who attend private health facilities or women who deliver at public health facilities without having made a booking (Hall and Johnson, 2014). Completeness of data coverage is very difficult for hidden or elusive populations, the point was stressed by Jibasen (2011) who said the 2006 census in Nigeria was one of the most organised and expensive, yet complete coverage was not achieved as many people were not counted, hence if complete coverage was not possible for a normal census, then it is much more impossible for elusive populations.

Yamusa (2017) applied Capture-recapture to a population of HIV infected pregnant women from 2013 - 2015 in Gembu, Taraba state, Nigeria. The work shows that, data coverage completeness of HIV positive pregnant women in three health facilities studied in the area is less than 50%. Hence, the need to assess the factors affecting data coverage in Gembu, Taraba state.

In order to make valid assessments of data coverage of such elusive populations in an area, it is necessary to make inferences from survey responses that serve as indicators of items that are relevant to the subject in the study area. Various methods and scaling procedures have been proposed for examining these psychological concepts (Vaske *et al.*, 2016). Likert introduced the summating scale approach in 1932 which begins with a group of items that are believed to be relevant to the subject. The Likert technique is referred to as summated rating scale because the responses received from

each item are summed (or averaged) to obtain respondents total score on the scale (Vaske *et al.*, 2016).

Material and Methods

Population of the study area

This research employed descriptive cross sectional study whereby information was gathered from HIV diagnosed women who access pre-natal services from the three major health facilities which caters for the needs of HIV/AIDS patients in Sarauna local government, all of which are located in Gembu town. The three health facilities are: Gembu Centre of HIV/AIDS Advocacy in Nigeria (GECHAAN), Mambilla Baptist Hospital (MBH), General Hospital Gembu and General Hospital WarWar, Sarauna local government formerly known as Gembu is located in the north central part of Taraba State and is on a plateau. There are numerous towns on the plateau with populations ranging from 2,000 to 20,000 people except for Gembu, which is a sprawling ancient Mambilla city with a much higher population. Other important towns on the plateau are Kakara (which is the home to the only tea production company in West Africa, the Highland Tea), Mbamnga, Warwar, Yerrmaru, Nguroje, Mayo Ndaga, Maisamari, and Hainare. There are, besides the Mambilla towns and villages, Kaka-Yamba settlements in the southwest along the Cameroonian border.

Sample size

The sample size was determined from the total population size (N) of 612 registered HIV positive pregnant women obtained by Yamusa (2017) using capture recapture in the three health facilities. A simplified formula by Yamane (1967) was used to calculate the sample size of 86 with assumptions of $\pm 10\%$ precision (e), 95% confidence interval, and degree of variability $P = 0.5$;

$$n = \frac{N}{1 + N(e)^2}$$

Fourteen (14) additional persons were added to the calculated sample size of 86 as a checklist for errors, omissions and non-response bringing the total sample size used in this study to 100.

Data collection

Data on challenging factors in achieving completeness of data coverage of HIV infected pregnant women in the month of July 2015 was obtained through a well-structured questionnaire. The questionnaire was

administered to One hundred (100) respondents made up of ninety (90) HIV infected pregnant women and ten (10) key informants (made up of three nurses working in the maternal unit in each of the health facilities, three monitoring and evaluation officers in each of the facilities, three program managers of NGOs, and one laboratory scientist). The exercise lasted two weeks with voluntary participation of respondents.

The 90 infected pregnant women who participated were obtained by convenient sampling of those who accessed pre-natal and ante-natal care in each of the three health centres within the time period of 2013 - 2015. The selection process of these women was done through non-governmental organisations working in the study area while selection of the key informants was based on their years of working experience in each of the facilities. The questionnaire has ten indicators reflecting relevant variables on challenging factors faced by health workers and patients in Gembu. The questionnaire was developed on a 3-point Likert type-scale ranging from 1(less challenging), 2 (challenging) to 3(most challenging).

Ethical statement

Ethical approval for data collection was obtained from Association of Women Living with HIV/AIDS in Nigeria (ASWAN), Taraba. Voluntary consent was also obtained from participants who participated in the exercise.

Rating of data coverage

The responses obtained from the questionnaire were used for rating data coverage. Mean rating was used in ranking these factors according to the level of challenges they impacted on data coverage, using the equation

$$MR = \frac{\sum_{i=1}^3 R_{pi} \cdot R_i}{N}$$

Where MR =Mean Rating

R_{pi} = rating point ranging from 1 to 3

R_i = response on rating point i

N = total number of respondents

(See Gwatau and Nimlyat, 2006)

The estimated completeness of data coverage was rated using the following decision rule;

3.00 – 2.50	Most Challenging
2.49 - 1.50	Challenging
1.49 – 1.00	Less Challenging

Analysis and Results

Socio-demographic characteristics

A total of 90 women aged 15 – 45 who were picked via convenience sampling, responded to the questionnaire. 40 of the women sampled reside in Gembu town while 50 reside in the semi urban and rural areas of Sardauna local government. Amongst the 90 sampled, 10 are Fulani while the rest are of various ethnic tribes found in the mountainous towns of the Mambilla. Out of the 90 sampled, 60 are Christians and the rest Muslims, 20 of the respondents have no formal education, while 40 attended primary and secondary school, the rest attended tertiary and are gainfully employed. These are presented in Figs. 1 – 5.

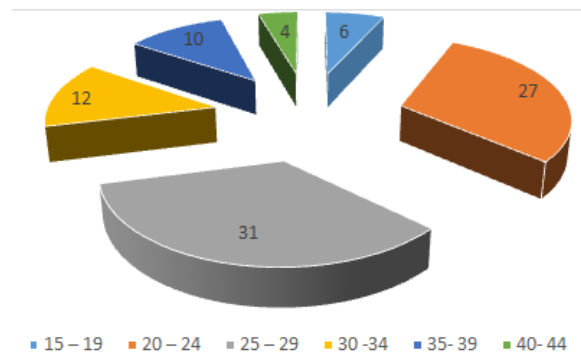


Fig. 1: Age group of respondents

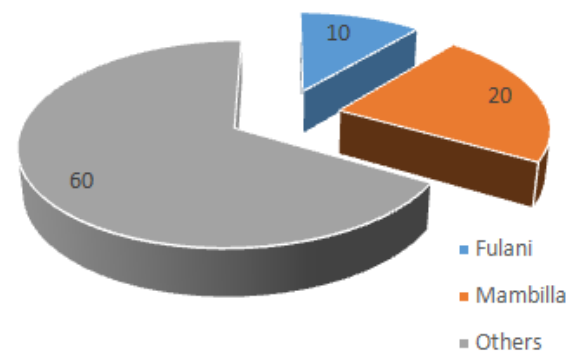


Fig. 2: Ethnicity of respondents

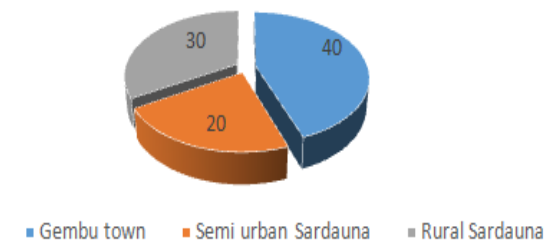


Fig. 3: Residence of respondents

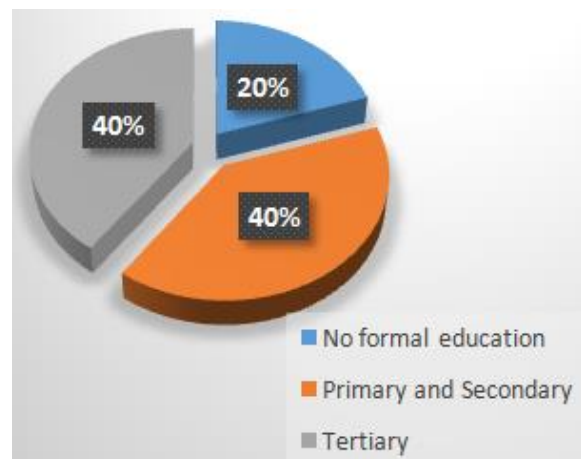


Fig. 4: Educational status of respondents

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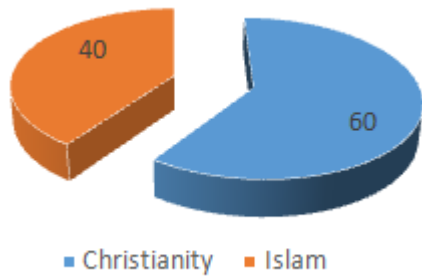


Fig. 5: Religious affiliation of respondents

Completeness of data coverage of health facilities

The total number of HIV infected pregnant women registered in the three health facilities from 2013 – 2015 obtained by Yamusa (2017) using capture-recapture is 612. Hence, data coverage completeness for the three health facilities were computed by the application of the following formula; the result is presented in Table 1.

$$\text{Data coverage} = \frac{\text{number of registered cases in each facility}}{\text{total number of cases in all the facilities obtained from capture recapture}} * 100$$

The result shows GECHAAN facility achieved 44.28% of data coverage completeness; MBH achieved 35.46%, and GH achieved 36.93%. The result shows none of the facilities recorded up to 50% data coverage.

Table 1: Estimated completeness of data coverage from 2013 - 2015

Source Data	Number of Registered Cases	Percentage of Registered Cases (%)
GECHAAN	271	44.28
MBH	217	35.46
GH	226	36.93

Rating of factors affecting data coverage completeness

From the responses, lack of completeness of data coverage in the study area was attributed to several factors that were identified during the study as shown in Table 2. The results indicate that accessibility to health facilities, constraints of stigmatization and religious beliefs, and poor data management practices were ranked as the 1st, 2nd and 3rd most challenging factors affecting the completeness of data coverage. Human errors is ranked 8th, while process of referrals from government health facilities to referral centres, and Social and economic inequalities were ranked 9th and 10th factors, respectively.

Table 2: Ranking of factors affecting the completeness of data coverage

S/N	Challenging Factors	Rating Points(R _{pi})				Total Points	Mean Rating Points	Rank
		LC (1)	C (2)	MC (3)	Total (N)			
1	Accessibility to health facilities	18	22	60	100	242	2.42	1 st
2	Social and economic inequalities	64	25	11	100	147	1.47	10 th
3	Constraints of religious belief/stigmatization	13	33	54	100	241	2.41	2 nd
4	Illiteracy and lack of communications	38	16	46	100	208	2.08	6 th
5	Lack of test kits and equipment	26	20	54	100	228	2.28	5 th
6	Poor compliance with services	34	30	36	100	166	1.66	7 th
7	Poor record and information management system	20	25	55	100	235	2.35	3 rd
8	Lack of motivation	19	31	50	100	231	2.31	4 th
9	Human errors	43	20	37	100	157	1.57	8 th
10	Process of referrals from government health facilities to referral centers (referral systems)	60	25	15	100	155	1.55	9 th

LC = Less Challenging; C = Challenging; MC = Most Challenging

From the mean ratings obtained as shown in Table 2 there are four less challenging and six challenging factors militating against completeness of data coverage in Sardauna. The challenging factors consist of the following:

Accessibility to health facilities

Results from the study shows accessibility to health facilities with mean rating point of 2.42 as the leading factor militating against achieving completeness of data coverage of HIV in pregnant women. 60% respondents agreed that accessibility to health facility in Sardauna is the most challenging factor. This agreed with the result obtained by Yamusa (2017), where capture recapture study was carried out in the study area. The result shows that only 28% of the women from the rural areas have been tested and registered. This is because all the health centres are sited in Gembu, the headquarters of Sardauna while the health facility sited in Warwar village is difficult to access by four wheel drive; also most of the towns in Sardauna are on a plateau with a mountainous terrain having no motorable road network. The distance affects the quality of pre-natal services provided since patients have to travel long distances from their villages to Gembu in order to be counselled and tested. This shows that accessibility to health

facility is a major problem affecting completeness of data coverage in the study area especially for residents in the semi-urban and rural areas.

Stigmatization and religious constraints

Stigmatization and religious constraints is another leading factor affecting completeness of data coverage with mean rating of 2.41. From the results presented in Table 1 or Table 2, 54% of the respondents who participated in the exercise sited stigmatization as another most challenging factor. The women prefer to remain at home, to be attended to by the local midwives in the region rather than to be tested, while some of the towns in Sardauna LGA like Nguroje, Yermarru, Mayo Ndaga are largely populated by the Fulani (Abbah, 2015) whose attitudes towards orthodox system of healthcare is largely influenced by cultural and religious beliefs. This attitude has largely contributed to the poor data coverage in Sardauna LGA preventing so many of these women from accessing pre-natal care.

Poor record, data management system

Poor record and data management is the third most challenging factor affecting completeness of data coverage on HIV in pregnant women in Gembu with mean rating of 2.35.

These factor is pointed out by the key informants in the health system. Most of the records of these infected women in the maternal unit are paper based rather than computerized and there are inadequate tools for data capturing, some of the women properly accessed the pre-natal services provided but the poor management information system resulted to some of the names not been properly written and are barely legible, with names written in multiple registers. The records are also poorly kept with missing data problems. Verification of names in the hospital record book depends on the present focal person currently employed especially in the reference centres,

Poor motivation

Poor remuneration and poor motivation of public health personnel by employers is ~~also~~ another factor affecting completeness of data coverage of HIV in pregnant women as obtained from the study findings with mean rating of 2.31. Poor remuneration of health workers result in; absenteeism on the job, high rotation of staff in units, under staffed health workers and over worked health personnel on duty, sloppy job delivery of test results and poor supervision.

Lack of test kits and equipment

The mountainous terrain of Gembu and distance from the State capital is one of the bases for lack of test kits and equipment as deduced from the key informant interview session which has a mean rating point of 2.28. Most of the equipment (CD4 count machines) are not working properly and in some cases, test kits are sent to these locations late. Those products arrive almost expired or even expired in some cases.

Illiteracy and lack of communications

The finding of this study shows that Illiteracy and lack of communications has a mean rating point of 2.08. Reason being that Sardauna is a local government with diverse tribes, Fulani being one of the main languages spoken in that area. Some of the women who need to be encouraged to access pre-natal services in health facilities are not literate and can neither speak nor understand English, only Fulani. Our findings show that some of these women, who reside in faraway towns like Yermarru, are not educated and cannot communicate in English nor Hausa. Most of them are cattle rearers and do not see the need to be tested for HIV or to know their status before giving birth.

Conclusion

Key barriers to achieving completeness of data coverage of HIV in pregnant women are accessibility to health facilities, stigmatization/religious constraints, poor data record/management practices, poor motivation, lack of test kits and equipment as well as illiteracy and lack of communications. Knowledge of these barriers maybe helpful as a checklist for use by health care providers and policy makers when implementing HIV eradication programmes for these women in that local government area.

Recommendation

More studies needs to be done in the study area to ensure that maximum coverage is achieved, as pregnant woman knowledge of her HIV status and how to care for herself will prevent transmission of HIV to the new born infant via vertical transmission. The mountainous terrain of the study

area and distance to health facilities is a factor that limits the desire of pregnant women in Sardauna to access pre -natal services, hence, strategies should be put in place for easier access to pre-natal and ante-natal services so these women can be tested and counselled where ever they reside. This will help bring down the prevalence rate of HIV in these women to the absolute minimum.

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Conflict of Interest

Authors declare that there are no conflicts of interest.

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