International Journal of Advances in Medicine
Nnebue CC et al. Int J Adv Med. 2018 Oct;5(5):1197-1206
http://www.ijmedicine.com
pISSN 2349-3925 | eISSN 2349-3933
DOI: http://dx.doi.org/10.18203/2349-3933.ijam20183894

Original Research Article

Sociodemographic determinants of maternal knowledge, attitude and uptake of routine immunization in 'Sabo' and 'Non-Sabo' communities in Awka, Nigeria

Chinomnso C. Nnebue[1,2]*, Chidebe O. Anaekwe[2], Adaeze N. Anaekwe[2]

[1]Department of HIV Care, Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria
[2]Department of Community Medicine, Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria

Received: 10 June 2018
Revised: 11 July 2018
Accepted: 27 July 2018

***Correspondence:**
Dr. Chinomnso C. Nnebue,
E-mail: nnebnons@yahoo.com

ABSTRACT

Background: Routine immunization coverage has been reportedly hampered by migration, and user characteristics, such as maternal knowledge and attitude. An understanding of these maternal variables could help modify preventive strategies. The objective of the present study was to assess and compare the Sabo and non-Sabo communities in Awka, Nigeria for sociodemographic determinants of maternal knowledge, attitude and uptake of routine immunization

Methods: A community based comparative study of 420 mothers and caregivers in Awka selected via multistage sampling technique, was conducted between July and October 2015. Data collection was by interview using semi-structured questionnaire, while analysis was done with Statistical Package for Social Sciences version 22.0. Chi-square, Fisher's exact, Yates correction and student's t tests were used to determine statistically significant associations between variables at p value of < 0.05.

Results: There was normal distribution of age groups of respondents for both communities. Married women (53.0%) in Sabo communities had better knowledge of routine immunization than (47.0%) in non-Sabo communities (p= 0.000). Self-employed women were the most knowledgeable in routine immunization 310 (74.0%) (p= 0.042). Married women in the Sabo communities (53.0%) had better attitude than (47.0%) (p= 0.000).in non-Sabo communities. The maternal uptake of routine immunization among the different communities, ethnic and religious groups were higher in non-Sabo, Igbo/others and Christian groups than the Sabo, Hausa/Fulani and Muslim groups. (p= 0.010).

Conclusions: This study found differences in baseline socio-demographic characteristics of the two communities, as well as better knowledge, attitude and uptake of routine immunization among the non-Sabo (Ibo/others and Christians) than the Sabo (Hausa/Fulani and Muslims). Addressing issues of factors identified to affect routine immunization will greatly assist in boosting uptake of routine immunization in both communities.

Keywords: Attitude and uptake of routine immunization, Determinants, Knowledge, Sabo communities

INTRODUCTION

The earliest documented instances of immunization are from China where in the 17th century, vaccination with powdered scabs from people infected with smallpox was

used to protect against the diseases.[1] This was long before the causes of diseases were known, and the processes of recovery were understood. Currently, more children than ever before are being reached with immunization and this averts an estimated 2.5million deaths per year.[2]

According to present estimates, there are about 214 million international migrants, 740 million internal migrants.[3] Migration has been associated with health risks and public health implications influencing low immunization uptake.[4] Population migration is a choice process that is influenced by socio-economic, socio-demographic and cultural factors.[5-7] Disparities in the access to health care and denial of the migrants' right to health are also major issues.[8] Differentials in immunization coverage levels show that uptake of vaccine services is dependent not only on provision of these services.[9-15] User socio-demographic and other determinants for immunization coverage include: mother's age, educational attainment, use of health care services, occupation as well as, income of head of household and visits by health workers.[16]

Studies on immunization coverage in migratory versus non-migratory populations showed that males had better immunization coverage when compared to females.[17-20] In Ekiti State Nigeria, region with a stronger Islamic influence reports low immunization coverage of 8.8% among Muslim majority, compared to 24.2% for the Christian minority.[21]. Children whose mothers have no formal education are far less likely to be fully vaccinated than children whose mothers have at least secondary education.[22]

Studies had shown that successful immunization depends on parents' good knowledge.[23,24] Attitudes of mothers are mainly influenced by their cultural and religious groups.[23] The northern regions of Nigeria are mainly patriarchal, thus mothers there have little or no decision-making autonomy. Majority of these mothers have low literacy level, which in turn further reduces the mothers' independence and decision making, even on immunization issues.

Nigeria presently has a lot of migrant communities. These migrants suffer from poverty, stigmatization, insecurity and unequal access to social and health benefit including routine immunization.[8] These can lead to low uptake of routine immunization in these migrant communities. It is anticipated that disaggregated data of such vulnerable population segments are necessary to understanding the problem of accessing child healthcare.

Therefore, government agencies can easily recognize these segments and accord them special attention. Comparative studies on correlates of maternal knowledge, attitude and uptake of immunization by different ethnic groups are limited. The findings of this study could help fill this knowledge gap and also serve as a tool for policymakers in developing and implementing sound policies that would help in improving the lot of migrants. This study was thus designed to assess and compare the sociodemographic determinants of maternal knowledge, attitude and uptake of routine immunization in 'Sabo' and 'Non-Sabo' communities in Awka town of Anambra state.

METHODS

Study Area

Awka is the headquarters of Awka South LGA as well as the capital of Anambra State. It has a population of 167,738 people as of 2006 Nigerian census.[25,26] Immigrants comprise more than 60% of this population.[26] There are 33 villages and 8 political wards (Awka wards 1-V111) that make up Awka. Each of these wards has a primary health center except Awka ward V111 which has a health post.

These facilities offer immunization services. Sabon Gari means 'strangers quarters' or literally 'new town' in the Hausa language, plural Sabon Garuruwa.[27] Sabo communities in this study is a colloquial term describing the Hausa communities living in Awka and comprise the Awka wards 1V-V111. The non-Sabo communities consist of other residents in Awka, aside the Hausa community. They comprise Awka wards 1, 11, 111 and V11. The occupation of Sabo communities are mainly cattle rearing and trading on jewelries and clothing. The non-Sabo residents are mainly civil servants, traders and craftsmen.[28]

Study design

This was a community-based comparative cross-sectional study.

Study population

The population is made up of mothers or female caregivers of households in both communities, with children aged 12 to 23 months.[29] Households enrolled in this study must have lived in the community for a minimum of one year. This is based on the third phase of integrating new culture which is the adjustment phase. Time period for this phase is usually 6 to 12 months. The culture begins to make sense, and negative reactions and responses to the culture are reduced, thus averting culture shock.[30]

Inclusion criteria

- Households whose members had lived in the community for a minimum of twelve months.[30]
- Households with children between 12 to 23 months of age.[31]
- The mothers or female caregivers of the eligible households who provided immunization records either by immunization card or history.[29]

Exclusion criteria

- Temporary residents of the community
- The mothers or female caregivers of the eligible households who Wards declined voluntary consent to participate.

Sample size estimation

The sample size formula for comparison of two independent groups as presented in the WHO immunization coverage cluster survey reference manual, was used to estimate the number of households size per group (n), assuming that the immunization coverage in non-Sabo community with 70% based on DPT3 coverage rates reported in the 2008 NDHS and the 2010 NICS survey as Anambra is one of the states with persistently high coverage.[31] n=124 Subjects. A design effect/correction factor of 1.5 was considered in the cluster sampling technique used. This made the sample size. n = 1.5 × 124 = 186. Generally, if there was no previous information about design effect in the same area, 1.5 can be used as a default.[32] Assuming anticipated response rate to be 90%, to compensate for non-response, the study sample size was calculated as $\frac{n}{1-f}$ where f = % of non-response = 10%.[32] Allowing a non-response rate of 10% therefore (10% × 186 = 18.6), n = 186 + 18.6 = 205/group Thus the minimum sample size for each group was 205. This was rounded up to 210. Thus, the total sample size for both groups was 420.

Sampling technique

A multistage sampling technique was used to select the households.

Stage one

The eight political wards in Awka, were stratified thus; Awka 1V, V, V1, V111 (the Sabo communities) and Awka 1, 11, 111, V11 (the non-Sabo communities).

Stage two

Using this classification as sampling frame, two wards were selected (Awka V, V1) from the Sabo communities while two wards were also selected (Awka 1, 11) from the non-Sabo communities, using simple random sampling technique by balloting. Then proportionate allocation of subjects was done using the formula below.[32]

n_h (number of household in settlement) = $\frac{\text{Population of selected wards}}{\text{Total population of selected (two)wards in each community.}}$ x 210

The number of households selected from the wards were;

Awka V = $\frac{21369}{36259} \times 210 = 123.76 = 124$

Awka V1= $\frac{14890}{36259} \times 210 = 86.23 = 86$

Awka 1 = $\frac{21573}{47926} \times 210 = 94.53 = 95$

Awka 11= $\frac{26353}{47926} \times 210 = 115.47 = 115$

Sabo communities		Non-sabo communities	
Wards	No. of Households	Wards	No. of Households
Awka V	124	Awka 1	95
Awka V1	86	Awka 11	115

Stage three

A list of all the settlements was obtained for both the Sabo and non-Sabo communities. Noting the selected wards, in the Sabo communities a mapping of a random sample of selected settlements gave an average of about 50 eligible houses that were well delineated per settlement, while in non-Sabo communities a mapping of a random sample of selected settlements also gave an average of 50 eligible houses that were well delineated per settlement. With this assumption therefore, the number of settlements required, from each of the selected wards in the Sabo and non-Sabo communities was determined as follows;

- Awka V= 124 houses gave 3 settlements (given that 50 eligible houses per settlement)
- Awka V1= 86 houses gave 2 settlements (given that 50 eligible houses per settlement)
- Awka 1 = 95 houses gave 2 settlements (given that 50 eligible houses per settlement)
- Awka 11 = 115 houses gave 3 settlements (given that 50 eligible houses per settlement).

Sabo communities		Non-sabo communities	
Wards	No. of Households	Wards	No. of Households
Awka V	3	Awka 1	2
Awka V1	2	Awka 11	3

In Sabo communities, Awka V has 7 settlements and using this sampling frame, 3 settlements were selected. Awka V1 has 6 settlements and using this sampling frame, 2 settlements were selected, both by simple random sampling technique via balloting.

In non-Sabo communities Awka 1 has 4 settlements and using this as sampling frame, 2 settlements were selected. Awka 11 has 7 settlements and using this as sampling frame, 3 settlements were selected, both by simple random sampling technique via balloting.

Stage four

The houses from each settlement were selected by systematic random sampling technique. The enumeration list from National Programme of Immunization unit (NPI) of Awka South LGA served as the sampling frame.

Data Collection

Data collection was done using semi structured interviewer administered questionnaire adopted and adapted from that used by Odusanya et al, for the determination of vaccination coverage in rural Nigeria (33). Pretesting of the questionnaire was carried out in Mobile Police (Mopol) Base and Fulani settlement of Onitsha ward V111 for Sabo communities while Umunzekwe settlement of Nibo (a nearby town to Awka) ward 11 was used for non-Sabo communities.

Data analysis and management

Data cleaning and editing was done manually and with the computer. All identified errors were checked against the original questionnaire and corrected. Frequency distribution of all relevant variables were calculated and presented in tables for easy appreciation.

Scoring and grading of outcome variables

Scoring and grading of knowledge have two marks for each correct option, one mark for partially correct option and no mark for wrong option. Good knowledge was ≥5 points. Poor knowledge was <5 points.

Soring and grading of attitude have *o*ne mark for each correct option and no mark for wrong option. Good attitude was ≥7 points. Poor attitude was <7 points. Scoring and Grading of Uptake: One mark for each correct option, and no mark for wrong option. Good uptake was ≥4 points. Poor uptake was <4 points.

Data were analyzed using Statistical Package for Social Sciences (SPSS) version 22.[34] Associations were tested using student's t, chi square (x^2), Fisher's exact (F) and Yates correction (b) tests with statistical significance set at p-value <0.05.

RESULTS

Table 1 shows the socio-demographic characteristics of Sabo and non-Sabo communities.

Table 1: Socio-demographic characteristics of sabo and non-sabo communities.

Characteristics		Sabo n (%)	Non Sabo n (%)	Test statistic (x^2)	p- value	Degree of freedom
Age group	< 20 years	0 (0.0)	2 (100.0)	58.53(x^2)	0.000	3
	20-29	79 (52.3)	72 (47.7)			
	30-38	84 (44.7)	104 (55.3)			
	40-49	47 (59.5)	32 (40.5)			
	Mean±SD	32.54±7.35	32.64±6.88			
Marital status	Single	0 (0.0)	4 (100.0)	29.04(f)	0.000	3
	Married	210 (53.0)	186 (47.0)			
	Divorced	0 (0.0)	1 (100.0)			
	Widowed	0 (0.0)	19 (100.0)			
Type of marriage	Monogamy	125 (40.8)	181 (59.2)	42.94(x^2)	0.000	1
	Polygamy	85 (77.3)	25 (22.7)			
Ethnicity	Ibo	2 (1.1)	183 (98.9)	560.16(f)	0.000	2
	Hausa/Fulani	208 (100.0)	0 (0.0)			
	Others	0 (0.0)	27 (100.0)			
Religion	Muslim	145 (100.0)	0 (0.0)	221.46(x^2)	0.000	1
	Christian	65 (23.6)	210 (76.4)			
Highest educational qualification	Non formal	7 (87.5)	1 (12.5)	243.99(f)	0.000	1
	Primary	101 (99.0)	1 (1.0)			
	Secondary	102 (44.9)	125 (55.1)			
	Tertiary	0(0.00)	83 (100.0)			
Spouse highest educational qualification	Non formal	8 (100.0)	0 (0.0)	97.78 (f)	0.000	3
	Primary	30 (83.3)	6 (16.7)			
	Secondary	163 (57.2)	122 (42.8)			
	Tertiary	9 (9.9)	82 (90.1)			
Occupation	Housewife	4 (10.5)	34 (89.5)	123.99(x^2)	0.000	2
	Self employed	206 (65.8)	107 (34.2)			
	Public servant	0 (0.0)	69 (100.0)			

t=Student's t test; F = Fisher's exact test; x^2 = chi- square ; SD= Standard Deviation

Table 2: Association between socio-demographic characteristics and maternal knowledge of routine immunization.

Characteristics		Maternal Knowledge Sabo n (%)	Non Sabo n (%)	Test statistic	p-value	Degree of freedom
Age group	<20 years	Good 0 (0.0) Poor 0 (0.0)	2 (100.0) 0 (0.0)	25.30 (x^2)	0.710	3
	20-29	Good 78 (52.0) Poor 1 (100.0)	72 (48.0) 0 (0.0)			
	30-38	Good 83 (45.0) Poor 1 (0.33)	102 (55.0) 2 (67.0)			
	40-49	Good 47 (60.0) Poor 1 (100.0)	31 (40.0) 0 (0.0)			
Marital status	Single	Good 0 (0.0) Poor 0 (0.0)	3 (100.0) 1 (100.0)	19.63 (f)	0.000	3
	Married	Good 2 08(53.0) Poor 2 (50.0)	187(47.0) 2 (50.0)			
	Divorced	Good 0 (0.0) Poor 0 (0.0)	187(47.0) 2 (50.0)			
	Widowed	Good 0 (0.0) Poor 0 (0.0)	19 (100.0) 0 (0.0)			
Type of marriage	Monogamy	Good 125 (41.0) Poor 0 (0.0)	180 (59.0) 1 (100.0)	4.90 (x^2)	0.027	1
	Polygamy	Good 82 (77.0) Poor 2 (67.0)	25 (.023) 1 (33.0)			
Highest educational qualification	Non formal	Good 7 (88.0) Poor 0 (0.0)	1 (12.0) 0 (0.0)	1.77 (f)	0.623	3
	Primary	Good 99(98.0) Poor 1 (100.0)	2 (2.0) 0 (0.0)			
	Secondary	Good 100 (45.0) Poor 2 (50.0)	123 (55.0) 2 (50.0)			
	Tertiary	Good 0 (0.0) Poor 0 (0.0)	83(100.0) 0 (0.0)			
Spouse Highest educational qualification	Non formal	Good 8 (100.0) Poor 0 (0.0)	0 (0.0) 0 (0.0)	7.07(f)	0.070	3
	Primary	Good 28 (82.0) Poor 2 (100.0)	6 (18.0) 0 (0.0)			
	Secondary	Good 161 (57.0) Poor 2 (67.0)	121 (43.0) 1 (33.0)			
	Tertiary	Good 9 (10.0) Poor 0 (0.0)	82 (90.0) 0 (0.0)			
Occupation	Housewife	Good 4 (10.0) Poor 0 (0.0)	0 (0) 32 (90.0)	6.33 (x^2)	0.042	2
	Self employed	Good 204 (66.0) Poor 2 (67.0)	2 (100.0) 106 (34.0)			
	Public servant	Good 0(0.0) Poor 0 (0.0)	1 (33.0) 69 (100.0)			
Religion	Muslim	Good 144 (100.0) Poor 1 (100.0)	0 (0.0) 0 (0.0)	0.49 (x^2)	0.427	1
	Christian	Good 65 (24.0) Poor 1 (25.0)	206 (76.0) 3 (75.0)			

F = Fisher's exact test, x2 = chi- square

The commonest age group was 30- 39 years, 84 (40%) in Sabo and 104 (49.5 %) in non-Sabo, with mean age groups of 32.54±7.35 in Sabo and 32.64±6.88 in non-sabo communities (t = -.151; p = 0.125). Monogamy was more in the non-Sabo 181(86.2%), while polygamy was more in the Sabo communities. All respondents in non-Sabo were Christians, while in Sabo communities, Islam 145 (69%) was the predominant religion.

Table 2 shows the association between socio-demographic characteristics and maternal knowledge of routine immunization. Married women were in the majority. (53.0%) in Sabo communities reporting better knowledge of routine immunization than (47.0%) in non-Sabo communities (χ^2 =72.03; p= 0.000; df= 2). Good maternal knowledge of routine immunization in the monogamous marriages in Sabo communities (41.0%)

was less compared to (59.0%) in non-Sabo communities Also good maternal knowledge of routine immunization was more among polygamous marriages of Sabo communities (77.0%) compared to (23.0%) in non-Sabo communities. (χ^2 =4.90; p= 0.027; df=1), while (59.0%) women that are self-employed had more knowledge (χ^2=6.33; p= 0.042; df=1).

Table 3: Association between socio-demographic characteristics with maternal attitude of routine immunization.

Characteristics		Maternal Good n (%)	Attitude Poor n (%)	Test statistic (x^2)	p- value	Degree of freedom
Marital status	Single	2 (0.5%)	2 (0.5%)	39.734	0.000	3
	Married	388 (92.4%)	8 (1.9%)			
	Divorced	1 (0.2%)	0 (0.0%)			
	Widowed	19 (4.5%)	0 (0.0%)			
Type of marriage	Monogamy	301 (71.6%)	5 (1.1%)	0.513	0.474	1
	Polygamy	107 (25.5%)	3 (0.7%)			
Highest educational qualification	Non formal	7 (1.7%)	1 (0.2%)	7.686	0.053	3
	Primary	101 (24.0%)	1 (0.2%)			
	Secondary	219 (52.1%)	8 (1.9%)			
	Tertiary	83 (20.0%)	0 (0.0%)			
Spouse highest educational qualification	Non formal	8 (1.9%)	0 (0.0%)	4.198	0.241	3
	Primary	34 (8.1%)	2 (0.5%)			
	Secondary	277 (66.0%)	8 (1.9%)			
	Tertiary	91 (22.0%)	0 (0.0%)			
Occupation	Housewife	35 (8.3%)	3 (0.7%)	5.877	0.053	2
	Self Employed	308 (73.3%)	5 (1.1%)			
	Public servant	67 (16.0%)	2 (0.5%)			
Community location	Sabo	205 (49.0%)	5 (1.1%)	0.000	1.000	1
	Non Sabo	205 (49.0%)	5 (1.1%)			
Ethnicity	Ibo/others	207 (49.3%)	5 (1.1%)	7.526	0.376	7
	Hausa/Fulani	203 (48.3%)	5 (1.1%)			
Religion	Muslim	143 (34.0%)	2 (0.5%)	0.956	0.328	1
	Christian	267 (64.0%)	8 (1.9%)			

x^2= chi square; f= Fishers' exact test

Table 3 shows association between socio-demographic characteristics and maternal attitude towards routine immunization. Married women in the non- Sabo communities (53.0%) had better attitude than those in Sabo communities (47.0%) (f =39.73; p= 0.000; df=3). Table 4 shows association between socio-demographic characteristics and maternal uptake of routine immunization.

There was less uptake of routine immunization in monogamous marriages of Sabo communities (41.0%) than (59.0%). in non-Sabo communities.

Also, there was better uptake of routine immunization in polygamous marriages of Sabo communities (77.0%) than (23.0%) in non-Sabo communities (χ^2 =64,344; p= 0.037; df=1). Majority of sampled women with Primary education in Sabo communities (99.0%) had good uptake of routine immunization as against their non-Sabo counterparts (1.0%) (f =13.859.33; p= 0.003; df=3). Self-employed women were in majority with good uptake of routine immunization, with (66.0%) in Sabo communities compared to (34.0%) in non-Sabo communities (χ^2=18.963; p= 0.0000; df=2).

The maternal uptake of routine immunization among the different communities, ethnic and religious groups were higher in non-Sabo, Igbo/others and Christian groups than the Sabo, Hausa/Fulani and Muslim groups. (χ^2=6.678; p= 0.010; df=1).

DISCUSSION

This comparative study assessed and compared the socio-demographic determinants of maternal knowledge,

attitude and uptake of routine immunization in 'Sabo' and 'non-Sabo' communities in Awka town of Anambra state. This study has a major strength in the high response rate (100%) achieved.

Table 4: Association between socio-demographic characteristics with maternal uptake of routine immunization.

Characteristics		Maternal Uptake Good n (%)	Poor n (%)	Test statistic' (x^2)	p-value	Degree of freedom
Marital status	Single	4 (1.0%)	0 (0.0%)	1.496	0.683	1
	Married	348 (83.8%)	48 (11.4%)			
	Divorced	1 (0.2%)	0 (0.0%)			
	Widowed	18 (4.3%)	1 (0.2%)			
Type of marriage	Monogamy	276 (65.7%)	30 (7.1%)	4.344	0.037	1
	Polygamy	91 (20.0%)	19 (4.5%)			
Highest educational qualification	Non formal	8 (1.9%)	0 (0.0%)	41.633	0.000	3
	Primary	73 (17.4%)	29 (6.9%)			
	Secondary	207 (49.3%)	20 (4.8%)			
	Tertiary	83 (19.8%)	0 (0.0%)			
Spouse highest educational qualification	Non formal	6 (1.4%)	2 (0.5%)	13.859	0.003	3
	Primary	32 (7.6%)	4 (1.0%)			
	Secondary	243 (57.9%)	42 (10.0%)			
	Tertiary	90 (21.4%)	1 (0.2%)			
Occupation	Housewife	38 (9.0%)	0 (0.0%)	18.963	0.000	2
	Self employed	264 (63.0%)	49 (12.0%)			
	Public servant	69 (16.4%)	0 (0.0%)			
Community location	Sabo	166 (40.0%)	44 (10.5%)	31.141	0.000	1
	Non Sabo	205 (49.0%)	5 (1.1%)			
Ethnicity	Ibo/others	206 (49.3%)	6 (1.4%)	34.132	0.000	7
	Hausa/Fulani	165 (39.3%)	43 (10.2%)			
Religion	Muslim	120 (29.0%)	25 (6.0%)	6.678	0.000	1
	Christian	251 (60.0%)	24 (5.7%)			

x^2= chi square; f= Fishers' exact test

From the findings of this study, the commonest age group reported is consistent with findings from a recent cross-sectional National Demographic Health Survey (NDHS) from Nigeria, which showed that maternal age of 34 years.[35]

Another study on migrant and non-migrant groups from Bangladesh, also showed that older mothers were more likely to have their children fully immunized than the youngest and oldest age groups.[36] This was explained in the light that maternal age may serve as a proxy for the women's accumulated knowledge of health care services, which may in turn have a positive influence on acceptance of full immunization of their children.

The current research revealed that though married women generally reported good knowledge of routine immunization, more than seven in ten of monogamous marriages had better knowledge than their polygamous counterparts. This is finding is consistent with those of Adeyinka et al, and Adebayo et al, both in south west Nigeria.[37,38] In the later study, children from monogamous families were found to be twice more likely to complete immunization than those from polygamous homes and children of the first and second birth order than those of third order and above.[38] This may be related to socioeconomic and domestic pressures of a large family due to time pressures and cost of transportation for each child, especially if health care facilities are not in close proximity.[38]

Present study findings also highlighted the statistically significant association between marital status and maternal attitude towards routine immunization. This shows that majority of the married women had good attitude towards routine immunization, with those in the non-Sabo communities reporting better attitude than those in Sabo communities. Also, women in monogamous marriages had good attitude towards routine immunization. This finding was not statistically

significant, though it runs contrary to the reports of another survey, where lack of confidence and trust in routine immunization seemed relatively common in many parts of Nigeria.[39] This observed variation may be due to differences in methodologies such as study areas, subjects' characteristics, sampling procedures and data collection techniques.

Present study revealed statistically significant difference in the educational attainment of Sabo and non-Sabo communities with regards to uptake of routine immunization. This report is in keeping with that of the study by Basu and Stephenson, on the low levels of maternal education and the proximate determinants of childhood mortality.[40] This particularly found a strong evidence for the protective role of maternal education for many mortality and mortality-determinant outcomes, thus inferring that literacy may help women become more receptive to health information.[41]

From this study, statistically significant difference was found between ethnicity and uptake of routine immunization. There was good uptake of routine immunization in Ibo/other ethnic compared to the Hausa/Fulani. This finding is in keeping with the NDHS 2013 in which the Hausa/Fulani ethnic especially the group in the northwest had low uptake of routine immunization (6%), compared to the Igbo/other ethnic group in the southeast (44.6%).[22] This could also be alluded to explanation in the study by Singh et al, where most of the migrant women were delivered of their babies at home and did not access delivery at the health facility thus resulting in poor uptake of routine immunization.[18]

The index study also found a statistically significant difference in Christian and Muslim religion with regards to uptake of routine immunization. It showed that Christians were more likely to have better uptake of routine immunization than Muslims, as authors observed significant difference in religion of the participants in Sabo and non-Sabo communities.

Although we did not elicit information on the duration the individuals had practiced their religious precepts, findings elsewhere reported a link to religious inclinations and practices, which could influence health seeking behavior.[42] This scenario is consistent with that of a study by Ankrah and Nwaigwe, in Ekiti State Nigeria, where the region with Islamic stronghold, have low immunization coverage.[43] Further studies are needed in this area.

Lastly, authors were not able to enquire more information on other factors such as income, number of children, spouses'/partners' age and spouses' occupation. These could have been associated with the maternal knowledge, attitude and uptake of routine immunization. Authors recommend that subsequent studies should consider this too.

CONCLUSION

This study found inequities in baseline socio-demographic characteristics (ethnic groups, religious groups, educational qualification) of the two communities. The contribution of migration on maternal knowledge, attitude and uptake of routine immunization was significant and there were better knowledge, attitude and uptake of routine immunization among the non-Sabo (Ibo/others and Christians) than the Sabo (Hausa/Fulani and Muslims). Monogamous marriages had better knowledge than their polygamous counterparts. Concerning maternal autonomy, more Sabo than non-Sabo mothers were not self-sufficient and would depend on their spouse for everything including transportation fare to take their child for immunization. With respect to ethnicity/ religion and uptake of routine immunization, there was better uptake in Ibo/other ethnic groups cum Christian religion compared to the Hausa/Fulani and Muslim religion. Addressing issues of factors identified to affect routine immunization will greatly assist in boosting uptake of routine immunization in both communities.

More emphasis should be placed on developing holistic and comprehensive immunization programs for mothers especially those migrants who are not yet socially connected with the health workers and the health facilities in their host communities. Women empowerment is very important, government should employ and create an enabling environment for women to work and earn their livelihood and not to depend on their spouses. Maternal autonomy is very vital in preventing incomplete immunization. Government should encourage community participation, involve religious and community leaders as this would help stop misperceptions, myths and rumors surrounding immunization.

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

REFERENCES

1. World Health Organization (WHO). World TB Day, Health topic- immunization. Available at www.who.int/topics/immunization/en/. Accessed 24th March 2014.
2. Abdulkarim AA, Ibrahim RM, Fawi AO, Adebayo OA, Johnson A. Vaccine and Immunization: The past, present and the future in Nigeria. Nigerian J Pediatr. 2011;38(4):186-94.
3. World Health Organization (WHO). Health of migrants: the way forward, WHO report of a global consultation, Madrid, Spain. Available at URL: http://www.who.int/hac/events/consultation_report_health_migrants_colour_web.pdf. Accessed on 5th February 2015

4. Kiros GE, White MJ. Migration, community context, and child immunization in Ethiopia. Social Sci Med. 2004 Dec 1;59(12):2603-16.
5. Jegasothy K. Population and rural-urban environmental interactions in developing countries. Int J Social Economics. 1999 Jul 1;26:1027-55.
6. Smith LC, Ruel MT, Ndiaye A. Why is child malnutrition lower in urban than rural areas? Evidence from 36 developing countries. World Development. 2005;33:1285-1305.
7. Sastry N. What explains rural-urban differentials in child mortality in Brazil? Soc Sci Med. 1997;44:989-1002.
8. Biswas T, Mandal PK, Biswas S. Assessment of Health, Nutrition and Immunisation status amongst under -5 children in migratory brick klin population of periurban Kolkata, India. Sudanese J Public Health. 2011;6;7-11
9. Torun SD, Bakirci N. Vaccination coverage and reasons for non-vaccination in a district of Istanbul. BMC Public Health. 2006;6:125.
10. Anand S, Barnighausen T. Health workers and vaccination coverage in developing countries: an econometric analysis. Lancet. 2007;369:1277-85.
11. Williams IT, Milton JD, Farrell JB, Graham NM. Interaction of socioeconomic status and provider practices as predictors of immunization coverage in Virginia children. Pediatrics. 1995;96(3 Pt. 1):439-44.
12. Hutchins SS, Jansen HA, Robertson SE, Evans P, Kin-Farley RJ. Studies of missed opportunities for immunization in developing and industrialized countries. Bull World Health Org. 1993;71:549-60.
13. Bardenheier B, Gonzalez MI, Washington ML, Bell BP, Averhoff F, Massoudi MS. Parental knowledge, attitudes, and practices associated with not receiving Hepatitis A vaccine in a demonstration project in Butte County, California. Pediatrics. 2003;112:269-74.
14. Luman ET, McCauley MM, Stokley S, Chu SY, Pickering LK. Timeliness of childhood immunizations. Pediatrics. 2002;110:935-9.
15. Klevens R, Luman ET. US children living in and near poverty risk of vaccine-preventable diseases. Am J Prev Med. 2001;20(4 Suppl.):41-46.
16. Migration in India, 2007-2008, Ministry of Statistics and Programme Implementation. Government of India, June. 2010. Available at http://www.mospi.nic.in/Mospi_New/upload/533_final.pdf . Accessed 5th February 2015.
17. Anand S, Verma P, Sinha U, Mahawar P. Evaluation of primary immunization coverage in migratory versus non migratory labour population of urban area in Bhopal city. Pediatric On Call J. 2014 April-June; 11(2):35-8.
18. Singh P, Yadav RJ. Immunization status of children in BIMARU states. Indian J Pediatr. 2001;68:495-50.
19. National Family Health Survey (NFHS 2), India, 1998-99, Mumbai: International Institute for Population Sciences and ORC Macro. 2000:210.
20. Gulati SC, Bhatt PN, Sharma S. Rapid Household Survey, RCH project phase II, Agra, Uttar Pradesh, Population Research Center, University Enclave, New Delhi, 1999. Available at: www.researchgate.net. Accessed 24th March 2014.
21. Ankrah V, Nwaigwe F. Immunization system review and training needs assessment in Ekiti State. February. Ado-Ekiti Ministry of Health. PATHS; 2005. Available at: www.scirp.org. Accessed 26th March 2014.
22. Nigeria Demographic and Health Survey 2013 - preliminary report. Available at: www.dhsprogram.com/PR41.pdf. pg 23 Accessed 26 March 2014.
23. Nisar N, Mirza M, Qadri MH. Knowledge, Attitude and Practices of mothers regarding immunization of one year old child at Mawatch Goth, Kemari Town, Karachi. Pak J Med Sci. 2010;26(1):183-6.
24. Hamid S, Andrabi SA, Fazli A, Jabeen R. Immunization of Children in a Rural Area of North Kashmir, India: A KAP Study. Online J Health Allied Sci. 2012 Apr 15;11(1):153-6.
25. Federal Republic of Nigeria Official Gazette (15 May 2007) Legal Notice on Publication of the Details of the Breakdown of the National and State Provisional Totals 2006 census (PDF) Retrieved 2007-05-19. Available at: file:///C:/Users/indias/Downloads/Vol%2003%20Table%20DSx%20LGAPop%20by%20SDistrict-PDF.pdf
26. Anambra state, Nigeria. People, Local Government and Business opportunities in Anambra. Available at www.ngex.com. Accessed 6th February 2014.
27. Anambra State Government, Ministry of Health. Available at: www.anambrastate.gov.ng. Accessed 22nd August 2013.
28. Historical Society of Nigeria. Available at: www.historicalsocietynigeria.org. Accessed 22nd August 2013.
29. Sabon Gari-Kano. Nigeria Available at www.vanguardngr.com. Accessed 24th March 2014
30. World Health Organization (WHO). Immunization coverage cluster survey-reference manual. WHO/IVB/04.23 June 2005. Available at: www.who.int/vaccine-document/ Accessed 26th March 2014
31. Culture shock-UCI Study Abroad Center-University of California, Irvine. Available at: www.cie.uci.edu. Accessed on 5th February 2015.
32. Wonodi C, Stokes-Prindle C, Aina M, Oni G. Landscape-Analysis of Routine Immunization in Nigeria. (NDHS 2008 National Immunization Cluster Survey 2010). Available at: www.jhsph.edu. Accessed 26th March 2014.

33. Smart Methodology. Sampling methods and sample size calculation for the SMART methodology, 2012 Available at: www.smartmethodology.org. Accessed 22nd August 2013.
34. Statistical Package for Social Sciences (IBM SPSS) 22.0 version. Armonk NY: IBM United States. IBM Corp. 2013.
35. Glenda LL, Brynley, Craina M, Peter BM. Reasons for incomplete immunization among Australian children. Australian Fam Physician. 2004;33(7):13-19.
36. Bloom S, Wypij D, Das Gupta M. Dimensions of women's autonomy and the influence of maternal health care utilization in a North Indian city. Neurography. 2001;38(1):67-78.
37. Bond L, Nolan T, Pattison P, Carlin J. Vaccine preventable diseases and immunisations: a qualitative study of mothers' perceptions of severity, susceptibility, benefits and barriers. Aust N Zs J Public Health. 1998;22:441-6.
38. Adeyinka DA, Oladimeji O, Adeyinka FE, Aimakhu C. Uptake of childhood immunization among mothers of under-five in Southwestern Nigeria. Internet J Epidemiol. 2009;7(2):1-5.
39. Brieger WR, Salami KK, Ogunlade BP. Catchment Area Planning and Action: Documentation of the community-based Approach in Nigeria. Arlington, Va.2004; BASIC 11 for USAID. Available at www.popline.org. Accessed 22nd August 2013.
40. Basu AM, Stephenson R. Low levels of maternal education and the proximate determinants of childhood mortality: a little learning is not a dangerous thing. Social Sci Med. 2005;60(9):2011-23.
41. Parashar S. Moving beyond the mother-child dyad: Woman's education, Child immunization and the importance of context in rural India. Social Sci Med. 2005;61(5):989-1000.
42. Muñoz-Laboy MA, Murray L, Wittlin N, Garcia J, Terto Jr V, Parker RG. Beyond faith-based organizations: using comparative institutional ethnography to understand religious responses to HIV and AIDS in Brazil. Am J Public Health. 2011 Jun;101(6):972-8.
43. Kaufmann JR, Feldbaum H. Diplomacy and the polio immunization boycott in Northern Nigeria. Health Affairs. 2009;28(4):1091-101.

Cite this article as: Nnebue CC, Anaekwe CO, Anaekwe AN. Sociodemographic determinants of maternal knowledge, attitude and uptake of routine immunization in 'Sabo' and 'Non-Sabo' communities in Awka, Nigeria. Int J Adv Med 2018;5:1197-206.