

## ORIGINAL RESEARCH ARTICLE

# HIV/AIDS-related knowledge and misconceptions among women attending government-owned antenatal clinics in Gwagwalada Area Council of Abuja, Nigeria

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### Abstract

This study assessed the level of knowledge and misconceptions about HIV/AIDS transmission and prevention among women. Using a semi-structured pretested questionnaire we obtained relevant data from 420 respondents in five randomly selected antenatal clinics (ANCs) in Gwagwalada Area Council (GAC) of Abuja, Nigeria. Knowledge about the existence of HIV/AIDS was high (92.8%). Only 52.1% knew the cause of AIDS and 58.6% were aware that AIDS had no cure. About twenty percent of respondents believed that breast-milk could not transmit HIV and 27.9% were unaware that condom protects against HIV. Only 33.3% were aware that HIV infected persons may look and feel healthy. Mothers with at least secondary level education had significantly higher knowledge scores on HIV/AIDS transmission ( $X^2 = 14.8$ ,  $p = 0.01$ ) than less educated mothers and less educated mothers were more likely to relate HIV infection to past misdeeds ( $X^2 = 13.6$ ,  $p = 0.01$ ). Significant misconception concerning HIV transmission existed in the study population. More community outreach programmes to intensify HIV education and counseling in GAC is required. (*Afr J Reprod Health 2013; 17[1]: 114-121*).

### Résumé

Cette étude a fait une évaluation du niveau de connaissances et d'idées fausses sur la transmission du VIH / sida et sa prévention chez les femmes. A l'aide d'un questionnaire semi-structuré et pré-contrôlé, nous avons obtenu des données pertinentes parmi les 420 interviewées choisies au hasard dans cinq consultations prénatales (CPN) auprès du Conseil Local de Gwagwalada (CLG), Abuja, au Nigéria. La connaissance de l'existence du VIH / sida était élevée (92,8%). Seulement 52,1% connaissaient la cause du sida et 58,6% étaient au courant que le sida n'avait pas de remède. Environ vingt pour cent des interviewées croyaient que le lait maternel ne pouvait pas transmettre le VIH et 27,9% ne savaient pas que le préservatif protège contre le VIH. Seulement 33,3% étaient au courant que les personnes infectées par le VIH peuvent avoir l'air d'être en bonne santé. Les mères qui ont au moins une éducation secondaire ont obtenu des notes significativement plus élevées de connaissances de la transmission du VIH / sida ( $X^2 = 14,8$ ,  $p = 0,01$ ) que les mères moins instruites et les mères moins instruites étaient plus susceptibles d'attribuer l'infection du VIH aux méfaits du passé ( $X^2 = 13,6$ ,  $p = 0,01$ ). Un malentendu significatif concernant la transmission du VIH existe dans la population étudiée. Il faut davantage de programmes communautaires pour intensifier le renseignement sur le VIH et de conseil dans le CAG (*Afr J Reprod Health 2013; 17[1]: 114-121*).

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**Keywords:** HIV/AIDS, knowledge, misconception, antenatal clinic, pregnant women

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### Introduction

Current global estimates on HIV/AIDS show that about 33 million people are living with HIV/AIDS and nearly half of this number is women. About 67% of all persons living with HIV/AIDS (PLWHA) are in sub-Saharan Africa. Also, three-quarters of all women living with HIV/AIDS are in sub-Saharan Africa and about 58% of all

PLWHA in the World Health Organisation (WHO) African Region are women and girls<sup>1,2</sup>. The data show that women and girls still bear a disproportionate burden of the HIV/AIDS epidemic. The 2008 HIV sentinel sero-prevalence survey amongst women attending antenatal clinics in Nigeria revealed a national prevalence of 4.6% (a decline from 5.8% in 2001) while Abuja, the Federal Capital Territory (FCT), had 5.0%<sup>3</sup>.

The main mode of transmission of the virus is through sexual intercourse which accounts for 70-80% of transmissions. In sub-Saharan Africa heterosexual intercourse remains the predominant mode of transmission, although injecting drug use is now an important factor in the HIV epidemics of Mauritius, Kenya, Zanzibar and Tanzania. Recent studies show high levels of HIV infection (40%) among men who have sex with men in Kenya and South Africa<sup>4,5,6</sup>. Other means of transmission of HIV include direct exposure to infected blood or blood products (e.g. blood transfusion, injection with contaminated needles and syringes, injecting drug use, needle-stick injury, scarification, tattoo marks, etc) and mother-to-child transmission (MTCT). Transmission is not known to occur through shaking of hands, hugging/embracing, drinking from same cup, sharing toilet and bathroom, touching, swimming or sitting close to an infected person<sup>7</sup>.

Certain sexual behaviours are associated with a high risk of acquiring the virus; some of these include casual sex, non-use of condom, multiple sexual partnership, commercial sex work, rape and use of drying substances in the vagina which may cause friction bruises.

The 2005 National HIV/AIDS and Reproductive Health Survey showed that many women (90.4%) had heard about HIV/AIDS, and were aware that transmission could occur through sexual intercourse (87.1%), blood transfusion (76.8%), MTCT (68.5%) and sharing needles (77.1%). Knowledge on preventive measures was also fairly high, as staying with one sexual partner (83.9%), abstaining from sex (71.3%), regular use of condom (46.2%) and avoidance of sharing sharp objects were identified as methods of preventing HIV infection<sup>8</sup>.

Misconceptions (i.e. false ideas believed to be true, fallacies) about HIV/AIDS are common, especially in developing countries where the level of education is generally low and cultural beliefs are tenaciously held unto. Some of these include the belief that illnesses are determined by the gods, that HIV/AIDS and other stigmatizing illnesses may result from past evil acts, certain illnesses are abominable and that persons with HIV/AIDS may transmit the virus by sharing foods or clothing

with a healthy person, hugging, through conversation, by lying in the same bed, etc.<sup>8,9</sup>.

Much of what is known concerning this subject in this part of Nigeria has come from government surveys. Independent assessments are rare or lacking. And in spite of the intense HIV education campaigns, it is not known to what extent these messages have been assimilated and utilized and whether issues of misconceptions concerning HIV transmission and prevention have been adequately addressed during these campaigns or not. The objective of the study was therefore to assess the level of HIV/AIDS-related knowledge and misconceptions among pregnant women in Gwagwalada Area Council (GAC), located in Abuja, the Federal Capital of Nigeria in order to correctly advise policy makers and health administrators on required interventions.

## Methods

### Study area

The study was carried out in Gwagwalada Area Council (GAC), which is one of the six area councils of the Federal Capital Territory in 2008. GAC is located along the Lokoja-Kaduna express road and is easily accessible from any direction of the federation. It has a land area of 1,500 km<sup>2</sup> and an estimated population of 157,770 people (population census 2005). It is the second largest area council in FCT. GAC consists of Gwagwalada town and six traditional communities namely, Paiko, Zuba, Gwako, Ibwa, Dobi and Tungamaje. The main resident ethnic groups are Gwari, Gbagi, Bassa, Gade and Hausa. GAC has experienced a very rapid population growth over the years. Nigerians of all ethnic backgrounds flood into the FCT and GAC in search of employment and greener pastures in business and other economic ventures.

### Study population

The study participants consisted of pregnant women attending selected government-owned health institutions in GAC. Criteria for the selection of participants included (1) that the respondent was pregnant (2) registered in the

antenatal clinics (ANC) of one of the designated health facilities (3) resident in GAC and (4) had given informed consent to participate.

### Study design

A descriptive cross-sectional study design was used to assess the level of knowledge and misconceptions on HIV/AIDS of pregnant women attending ANCs in Gwagwalada Area Council of FCT. Five health facilities (one tertiary, one secondary and three primary health facilities) located at Gwagwalada, Tungamaje and Zuba were used.

### Sample size determination

The sample was derived from all antenatal clients attending the designated health facilities during the study period. Using the Kish and Leslie formula<sup>10</sup> the maximum required sample was determined using a prevalence of 50% since the prevalence of the variables to be measured were not known and a precision of 0.05.

$$N = \frac{Z^2 P(1-P)}{d^2}$$

Where: N = sample size; Z = standard normal deviate for the required level of confidence (using 1.96 for 95% confidence); P = proportion in the target population of the characteristics being measured, since proportion was unknown, let p = 0.5 (for largest sample size); d = precision (0.05). Substituting:  $N = (1.96)^2 \times 0.5 \times 0.5 / (0.05)^2 = 382.2$ , but increased to 420 to allow for non-response.

### Sampling procedure

Government owned health facilities in Gwagwalada Area Council were grouped into tertiary, secondary and primary health facilities. University of Abuja Teaching Hospital, the only tertiary facility in GAC, was selected. The FCDA Township Clinic, a GAC owned comprehensive health centre whose functions were very close to those of a secondary facility, was selected and regarded as a secondary facility as there was no government owned secondary health facility in GAC. Three PHC clinics were selected by simple

random sampling from a list of 18 PHC clinics in GAC. These were located at Kutunku in Gwagwalada town, Tungamaje and Zuba.

All consenting pregnant women attending ANC in the selected health facilities who met the inclusion criteria during the study period were interviewed. The number of respondents obtained from each health facility was proportional to the average annual attendance being recorded. Only about 1% of clients failed to give consent.

### Data collection

In each ANC, a careful explanation of the purpose, content and implications of the study was given to the attendees (individually or in a group) and informed consent obtained. Subsequently, self-administered questionnaires were distributed to the clients for response. Where the client was illiterate, she was assisted by trained assistants who were conversant with the local languages.

In order to ensure valid responses the questionnaire contained mainly structured questions with a few carefully selected open-ended questions. To reduce interviewer bias and errors, trained research assistants were used to administer the questions when necessary. The questionnaire, which was translated to the local languages and back translated to English, was then pre-tested in Kubwa General Hospital whose antenatal clients were similar in relevant characteristics to the women population in GAC. The pretesting ensured that the questions were easily understood and measured what they were intended to measure.

### Data analysis

Data collected was analysed using Epi Info version 6.04 programme. The frequencies, proportions and percentages of relevant variables were generated. The Chi-Square test ( $X^2$ ) was used to test associations between variables at the 5% level of significance.

### Results

Two hundred and seventy-nine respondents, representing 66.4%, were interviewed at the University of Abuja Teaching Hospital, while

25.2% and 8.4% were interviewed at the FCDA Town Clinic and the three PHC clinics respectively. Majority of the respondents (84.1%) were aged 20-34 years. Almost all (96.2%) of them were married. About eighty-four percent of the married women were in monogamous marriage while sixteen percent were in polygamous relationships. About sixty-five percent were Christians while Muslims accounted for 34.0%. As many as 64.1% of the women had at least secondary level education while 15.7% had no formal education at all. One quarter of the respondents were Ibos, while Hausa, Gwari and Yoruba together accounted for 44.0% and 31.0% were other tribes (table 1).

**Table 1:** Distribution of respondents according to personal characteristics (n = 420)

Characteristic	No. of respondents (%)
<b>Age (yrs)</b>	
≤ 19	24 (5.7)
20-34	353 (84.1)
≥35	43 (10.2)
<b>Ethnic group</b>	
Others	130 (31)
Igbo	105 (25)
Hausa	67 (16)
Gwari	59 (14)
Yoruba	59 (14)
<b>Marital status</b>	
Married	404 (96.2)
Single	10 (2.4)
Divorced	6 (1.4)
<b>No. of wives in household</b>	
One	354 (84.3)
More than one	66 (15.7)
<b>Education</b>	
Secondary or more	269 (64.1)
Primary	85 (20.2)
No formal education	66 (15.7)
<b>Religion</b>	
Christianity	275 (65.5)
Islam	143 (34.0)
Others	2 (0.5)
<b>Recruitment sites</b>	
UATH	279 (66.4)
FCDA Town clinic	106 (25.2)
PHC Kutunku	21(5.0)
PHC Tungamaje	8 (2.0)
PHC Zuba	6 (1.4)

General awareness about the existence of HIV/AIDS was high (92.8%), but only 52.1% knew that AIDS was caused by a virus and 58.6% were aware that AIDS had no cure. Knowledge on the modes of HIV transmission was generally high. Majority of the respondents reported that transmission could occur through unprotected sexual intercourse (82.8%), blood transfusion (89.0%), breast-feeding (62.1%), contaminated needles and syringes (81.9%), unprotected homosexual contact (54.7%), having many sexual partners (82.4%) and MTCT (65.7%). Many respondents believed that HIV could be acquired through shared instruments like the barber's clippers (79.0%) and razor blade (82.4%) but only 47.6% knew that sharing tooth brush could also transmit HIV. While 67.4% of respondents said that abstinence from sex could protect against HIV transmission, only 54.2% believed that the use of condom could also protect against transmission. Many (58.8%) believed, correctly, that native medication (herbs) could not prevent or cure AIDS (table 2).

The knowledge level of respondents was scored based on responses to a set of 10 general knowledge (HIV transmission and prevention) questions. Those with correct scores of 0-3 were regarded as having low scores; those with scores of 4-6 were considered to have moderate scores while those with 7-10 had high scores. About 12.6% of the respondents had low general knowledge scores. Respondents with higher education (at least secondary education) were significantly more likely to have high knowledge score on HIV transmission methods ( $X^2 = 14.8$ ,  $p = 0.01$ ) (table 3 and 4).

Tables 5, 6 and 7 test misconceptions among respondents. The level of misconception concerning HIV was generally low but significant. Only 11.0% of respondents believed that HIV could be transmitted by shaking hands with an HIV/AIDS patient. Nineteen percent and 14.3% of respondents believed it could be transmitted by sharing cutleries with HIV infected person and as punishment for evil done in the past respectively. About 10.7% respondents felt that HIV/AIDS could result from an act (will) of God but only 5.0% believed it could be prevented by making sacrifices to gods. However, a large number of

**Table 2:** Knowledge on HIV/AIDS (n = 420)

<b>Cause of AIDS</b>	<b>No. of respondents (%)</b>		
Virus	219 (52.1)		
Inflicted on Africa by America	24 (5.7)		
Bacteria	15 (3.6)		
Anger of the gods	8 (1.9)		
Worms	7 (1.7)		
Witchcraft	5 (1.2)		
I don't know	133 (31.7)		
No response	9 (2.1)		
<b>Prevention/curability of HIV</b>	<b>Response</b>		
	<i>Yes</i>	<i>No</i>	<i>I Don't know</i>
AIDS has a cure	63 (15.0%)	246 (58.6%)	111 (26.4%)
Condom can protect	227 (54.2%)	117 (27.9%)	76 (17.9%)
Herbs can cure	32 (7.6%)	247 (58.8%)	141 (33.6%)
Abstinence from sex can protect	283 (67.4%)	78 (18.6%)	59 (14.0%)
<b>HIV transmission</b>			
Multiple sexual partners	346 (82.4%)	22 (5.2%)	52 (12.4%)
MTCT	318 (75.7%)	39 (9.3%)	63 (15.0%)
Blood transfusion	374 (89.1%)	14 (3.3%)	32 (7.6%)
Injection with dirty needle	344 (81.9%)	24 (5.7%)	52 (12.4%)
Breast milk	261 (62.1%)	82 (19.6%)	77 (18.3%)
Unprotected sex	348 (82.8%)	25 (6.0%)	47 (11.2%)
Homosexual Contact *	230 (54.8%)	53 (12.6%)	127 (30.2%)
Barber's Clippers	332 (79.0%)	24 (5.7%)	64 (15.3%)
Sharing Razor Blade	346 (82.4%)	21 (5.0%)	53 (12.6%)
Sharing Tooth Brush	200 (47.6%)	123 (29.3%)	97 (23.1%)

\*10 (2.4%) did not respond

respondents, 53.6%, had the misconception that HIV infected persons always look and feel sick, while about 33.3% knew that they could look perfectly healthy. Islam ( $X^2 = 8.9$ ,  $p = 0.01$ ) and low education ( $X^2 = 13.6$ ,  $p = 0.01$ ) were significantly associated with certain misconceptions (Tables 6 and 7).

**Table 3:** Distribution of respondents' knowledge level on modes of HIV transmission

<b>Number of Modes of HIV transmission identified out of a list of 10</b>	<b>No of respondents (%)</b>
0 – 3 (Low score)	53 (12.6)
4 – 6 (Moderate score)	50 (11.9)
7 – 10 (High score)	317 (75.5)
<b>Total</b>	<b>420 (100%)</b>

## Discussion

The preponderance of respondents from the tertiary and secondary institutions as indicated was so because attendance at the PHCs, which were situated in rural areas, was quite poor, ranging from zero to five clients per clinic day and the ante-natal clinics were held once and at most twice in a week. On the contrary, the ANC at the University of Abuja Teaching Hospital was running daily throughout the week. This constituted a limitation to this study as the client distribution, and therefore responses, was skewed in favor of urban dwellers that mostly use the tertiary and secondary facilities.

However, given the large presence of non-indigenes in GAC, the results of this study could apply to other parts of Nigeria particularly the southern part which accounted for more than 40% of the respondents.

About two-thirds (64.1%) of the respondents were clearly literate, having attained either a

**Table 4:** Relationship between level of education and knowledge level on modes of HIV/AIDS transmission

Level of education	Number of modes of transmission correctly identified out of a list of 10			Total
	0 - 3	4 - 6	7 - 10	
No formal education	17 (25.8%)	8 (12.1%)	41(62.1%)	66
Primary education	8 (9.4%)	14 (16.5%)	63(74.1%)	85
Secondary education or more	28(10.4%)	28 (10.4%)	213(79.2%)	269
<b>Total</b>	<b>53</b>	<b>50</b>	<b>317</b>	<b>420</b>

**Table 5:** Misconceptions about HIV/AIDS transmission and prevention (n = 420)\*

Misconception	Number of respondents (%)		
	Yes	No	I don't know
Transmission can occur via handshake	46 (11.0)	289 (68.8)	85 (20.2)
Transmission can occur via shared cutleries <sup>1</sup>	79 (18.8)	231 (55.0)	104 (24.8)
AIDS as punishment for past misdeeds <sup>2</sup>	60 (14.3)	212 (50.5)	133 (31.6)
AIDS acquisition is will of God	45 (10.7)	282 (67.2)	93 (22.1)
Acquisition may be prevented by sacrificing to gods	21 (5.0)	275 (65.5)	124 (29.5)
Acquisition may be prevented using herbs	32 (7.6)	247 (58.8)	141 (33.6)
HIV infected persons always look and feel sick	225 (53.6)	132 (33.3)	55 (13.1)

\* = total number of respondents; 1 = there were six (1.4%) non-respondents; 2 = there were fifteen (3.6%) non-respondents

**Table 6:** Relationship between religion and the belief that HIV infection is the Will of God

Religious belief	HIV infection is the Will of God			Total
	Yes	No	I don't know	
Christianity	21 (7.6%)	195(70.9%)	59 (21.5%)	275
Islam and others	24 (16.6%)	87 (60.0%)	34 (23.4%)*	145
<b>Total</b>	<b>45</b>	<b>282</b>	<b>93</b>	<b>420</b>

\*Only two respondents were non-Muslim

**Table 7:** Relationship between educational level and the belief that HIV infection is punishment for past misdeeds

Religious belief	HIV infection is a punishment for past misdeed			Total
	Yes	No	I don't know	
Low education	34 (22.5%)	62(41.1%)	55 (36.4%)	151
High education	31(11.5%)	83 (30.9%)	83 (30.9%)	269
<b>Total</b>	<b>65</b>	<b>217</b>	<b>138</b>	<b>420</b>

secondary or post-secondary education. This literacy level was higher than the 57.1% reported for the North Central region in the 1999 National Demographic Health Survey (NDHS 2000)<sup>11</sup> in Nigeria, but much lower than observed in a study conducted to assess change in attitude, sexual behaviour and risk of HIV/AIDS in south western Nigeria in which 90% of the women reportedly attained secondary or tertiary education<sup>4</sup>. Education seemed to influence clinic attendance going by the result of this study which showed that only 15% of the respondents without formal education accessed this service while nearly two-thirds had at least secondary level education.

Knowledge on HIV/AIDS existence was, expectedly, high due to the intense awareness campaigns which had been carried out over the years. As many as 92.8% of the respondents were aware of a disease called HIV/AIDS. In three related studies, one in south western Nigeria, another among adolescent girls in Benin City and the third among students in Ilorin, Nigeria, knowledge of HIV/AIDS was reportedly as high<sup>4,12,13</sup>. More than half of the respondents knew that AIDS was caused by a virus, but about a third could not say what the cause was. This knowledge level was higher than was observed in the study in Benin City<sup>12</sup>. Only a little over half of the respondents were aware that AIDS had no cure while as many as 15.0% believed that AIDS could be cured. This was potentially dangerous as these women may not protect themselves adequately from the disease because of the erroneous belief that a cure was available. Respondents showed a high knowledge level on methods of HIV transmission such as blood transfusion, injection with contaminated needles, unprotected sexual intercourse and usage of contaminated sharp objects. The study in Benin City (a place with comparatively higher rate of female education) surprisingly reported a much lower knowledge score on the various modes of transmission than this study but the results obtained in the study in SW Nigeria among urban dwellers were equally high<sup>4,12</sup>. However, in this study, knowledge on some other very important aspects of HIV transmission such as breastfeeding and protection using condom was low. Improving knowledge on these aspects of HIV transmission is critical to the

control and prevention of HIV transmission in women in the research area and Nigeria in general.

Attainment of higher education was significantly associated with good general knowledge on HIV/AIDS. Generally, the higher the level of education the better the knowledge on HIV/AIDS. Only sixty-two percent of women with no formal education could identify 7-10 modes of HIV transmission (high knowledge) from a list of 10, compared with seventy-nine percent of women with at least secondary-level education (high education).

A good number of misconceptions about the cause of HIV/AIDS were identified. A few respondents believed AIDS was caused by witchcraft, others believed it was caused by some angry gods while some believed that AIDS was inflicted on Africans by the Americans. In the early days of HIV/AIDS, it was largely believed in Africa that AIDS was a whiteman's illness. Similar misconceptions were reported in a related study among pregnant adolescents and young mothers<sup>14</sup>. Low or lack of education and religious belief were associated with misconceptions. For example, Moslem mothers were significantly more likely to ascribe HIV/AIDS acquisition to God's (Allah's) will ( $X^2 = 8.9$ ,  $p = 0.01$ ) and poorly educated mothers were more likely to associate HIV infection with past wrong doing. These misconceptions were potentially dangerous because mothers who had these wrong beliefs were unlikely to take the right preventive measures and were likely to isolate and discriminate against people living with HIV/AIDS. Over half of the respondents believed, erroneously, that HIV infected persons always look and feel sick. This meant that a large section of women in GAC were at a high risk of exposure to HIV by having unprotected sexual intercourse with deceptively healthy looking HIV infected persons. Only 33.3% of women in this study were aware that an HIV positive individual could look and feel quite healthy. This rate was low when compared with the 45% reported in the State of the World's Children of 2004 and the 67% reported in the national HIV/AIDS and reproductive health survey of 2005<sup>8,15</sup>. This finding underscored the need to further educate women on the risk of indulging in

unsafe sex based on the physical appearance of the would-be sexual partner.

In all the results re-emphasized the need to redirect resources and interventions at improving HIV awareness generally and the misconceptions in particular through more vigorous HIV education campaigns in the research area and Nigeria in general. Leaders of faith-based organisations (e.g. imams and pastors) and relevant non-governmental organizations (NGOs) can play a leading role in this respect. Many of the misconceptions are at the root of the discriminations and stigmatizations experienced by people living with HIV/AIDS (PLWHA), which tend to diminish HIV control and prevention efforts and therefore encourage transmission. Intervention should also include efforts to improve female education, especially at the rural areas where this was unacceptably low.

## Contribution of Authors

Dr Aboh O. Otokpa – Conceived and designed the study. Also collected and analysed data, prepared the manuscript and provided the funds for the research.

Prof T. O. Lawoyin – Conceptualisation, data analysis and preparation of the manuscript.

Prof M. C. Asuzu – manuscript preparation and aspects of data analysis.

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