



## Reducing HIV-related stigma among traders in model markets in Lagos, Nigeria through HIV education.

S.S. Ezeiru<sup>1</sup>, K.A. Odeyemi<sup>1</sup>

<sup>1</sup>Department of Community Medicine, College of Health Sciences,  
Department of Community Health and Primary Care,  
Lagos University Teaching Hospital, Idi-araba, Lagos, Nigeria

### KEYWORDS

HIV, AIDS,  
PLWHA,  
traders, Pre-  
intervention  
and post-  
intervention.

### ABSTRACT

**Background:** HIV/AIDS is a major Public health problem in Nigeria where the National seroprevalence rate is 4.1%. The objective of this study was to determine the effect of health education on knowledge of HIV and the stigmatization of people living with HIV/AIDS among traders in model markets in Lagos State.

**Methodology:** This study was a quasi-experimental study. The intervention and control markets were selected by simple random sampling method while systematic sampling method was used to select the participants in each market. A total of 400 participants were recruited into this study. The study phases were a baseline survey in both markets, a health education programme in the intervention market and a post-intervention survey in both markets. Epi Info 2002 (Windows version 3.5.1) statistical software was used for data analysis.

**Results:** After the intervention, the proportion of respondents who had correct knowledge of HIV/AIDS increased significantly by 27.9% in the intervention group ( $p < 0.001$ ). A slight increase (3.6%) was also observed in the control group but this was not significant. The proportion of traders in the intervention group who had a positive attitude towards PLWHA also increased significantly by 12.6% ( $p = 0.006$ ). However in the control group, there was no increase in the proportion of traders who had a positive attitude towards PLWHA.

**Conclusion:** Health education significantly increased knowledge of HIV/AIDS and reduced HIV-related stigma among the traders. Periodic HIV/AIDS education should be provided for the traders. Further research is recommended to assess sustained changes in stigma related attitude over time.

*Correspondence to*

Sonachi S. Ezeiru

Department of Community Health and Primary Care,  
Lagos University Teaching Hospital, Idi-araba, Lagos, Nigeria.

Phone number: 234-08034543483

Email: sonez32@yahoo.com

### INTRODUCTION

The worldwide HIV/AIDS epidemic disproportionately affects Sub-Saharan Africa where nearly two thirds of the world's HIV infected people live.<sup>1</sup> About 23.5 million people were estimated to be infected with the virus in Sub-Saharan Africa and 34 million people globally.<sup>2</sup> Nigeria has the third largest burden of HIV in the world with 3.0 million people living with HIV.<sup>2</sup> The HIV prevalence in Nigeria is 4.1% while Lagos State has a prevalence of 5.1% which is higher than the national prevalence.<sup>3</sup>

HIV/AIDS has many physical effects, but perhaps some of the most profound effects are on the psychological, social and economic health of the HIV-positive person, his or her loved ones and the community.<sup>4</sup> Fear, stigma and discrimination have continued to accompany the HIV pandemic, consequently, actions to reduce or protect against stigma and discrimination may be the most significant step that can be taken to improve the psychosocial well-being of people living with HIV/AIDS (PLWHA).<sup>5,6</sup>

The standard definition of stigma was given by

Erving Goffman after his classic study on stigma related to mental illness, physical deformities and what were perceived to be deviant behaviours. He described stigma as an attribute that is deeply discrediting and results in the reduction of a person or group from a whole and usual person to a tainted, discounted one.<sup>7</sup> By regarding others negatively, an individual or group confirms their own normalcy and legitimize their devaluation of others.<sup>7</sup> The stigma attached to individuals may be extended to those who associate with them.<sup>8</sup>

The concept of stigma has a long ancestry and has from the earliest times been associated with deviations from the normal.<sup>9</sup> It is also a prime mechanism of informal social control and can have a positive (for example stigma associated with theft or rape) as well as a negative social impact.<sup>10</sup>

Discrimination is the end result of the process of stigma. It refers to the negative acts that result from stigma which serve to devalue and reduce the life chances of the stigmatized.<sup>11, 12</sup> It is the societal response to the negative value attached to the stigma an individual may carry.<sup>8</sup>

HIV-related stigma and discrimination have serious individual and public health implications that contribute to the reluctance to be tested for HIV and to disclose positive results to partners, poor treatment adherence and increased risk of disability and drug resistance.<sup>6, 12</sup> The stigma of AIDS may discourage PLWHAs from seeking medical care. This is partly responsible for the under reporting of HIV infection and AIDS cases in Nigeria.<sup>3</sup>

Globally the pandemic of HIV and AIDS has continued to constitute serious health and socioeconomic challenges for more than two decades. In underdeveloped and developing countries it has reversed many of the health and developmental gains over the past three decades as reflected by indices such as life expectancy and others. The epidemic has also facilitated the re-emergence of other disease conditions.<sup>8, 3</sup>

Various studies have demonstrated that HIV-related stigma is a common phenomenon worldwide that occurs in a variety of contexts including the family, community, workplace, markets and healthcare setting.<sup>12</sup> Studies have also shown that awareness of

the existence of HIV/AIDS is relatively high but knowledge about prevention, care and support is low. Myths and misconceptions on HIV/AIDS are common.<sup>4</sup> Some studies in Nigeria have revealed that there is poor knowledge of HIV/AIDS among traders despite the high awareness of the disease.<sup>13, 14</sup> Exposure to HIV-related communication is associated with increased knowledge about HIV, which is in turn a strong predictor of accepting attitude towards people living with HIV/AIDS.<sup>4, 5, 6</sup>

Health education is an intervention or an activity aimed at assisting people to participate actively in health matters relevant to their personal and community interest on a sustained basis. Group education provides support and encouragement which are important in the maintenance of health behavior.<sup>15</sup>

Studies have proven that health education improves knowledge on HIV and therefore leads to a reduction in the stigmatization of people living with HIV/AIDS.<sup>16, 17</sup> The objective of this study was to determine the effect of health education on knowledge of HIV and the stigmatization of people living with HIV/AIDS among traders in model markets in Lagos State.

## METHODOLOGY

This is a quasi-experimental study which was carried out among traders in model markets in Lagos State, Nigeria. Lagos State is located in the South Western zone of Nigeria with a population of 9,013,234 people.<sup>18</sup> Although the state is essentially a Yoruba speaking state, it is the socio-cultural melting pot attracting both Nigerians and foreigners alike. There are 10 model markets in Lagos and they all offer a variety of goods thereby attracting buyers and sellers from the various ethnic groups in the country. A list of the markets was obtained from the Lagos State Ministry of Local Government and Chieftaincy Affairs.

The minimum sample size was estimated using the formula for the comparison of two independent groups.<sup>19</sup> This gave a total of 165 for each market. This figure was increased by 20% to minimize the effect of attrition giving approximately 200 and

therefore a total of 400 respondents in both markets. This study was conducted from August 2010 to January 2011.

Two model markets were selected from a list of the ten model markets in Lagos State by ballot. They are Moshood Abiola model market, Agege and Abibat Mogaji model market, Surulere. The two markets were allocated into intervention and control markets by balloting with Moshood Abiola model market emerging as the intervention market and Abibat Mogaji model market as the control market. Each participant belonged to either the intervention or control group because he or she was a trader in that particular market. There were 612 stalls and about 800 traders in the intervention market while the control market had 1447 stalls and about 2000 traders. A systematic sampling method was used to select the participants in each market. One participant was selected by ballot in stalls that had more than one eligible person.

**Inclusion criteria:** Participants in this study were traders in chosen stalls who were aged 15 years and above.

**Exclusion criteria:** Traders who were not in stalls e.g. hawkers and those who were less than 15 years old were excluded from the study.

A semi-structured interviewer administered questionnaire was used to obtain information on the socio-demographic characteristics, knowledge of HIV and attitude of the traders towards PLWHA. The questionnaire was adapted from the data collection tool used in the Nigerian National Demographic and Health Survey.<sup>20</sup> Six trained interviewers were used in data collection. The questionnaire was pretested among twenty traders in Ilupeju Model market.

There were three phases in the study namely the pre-intervention, intervention and post-intervention phases. The pre-intervention phase comprised a baseline questionnaire survey which went on simultaneously in both the intervention and control groups. The intervention for the participants in Moshood Abiola model market, Agege was health education which was provided weekly for four weeks giving a total of four sessions. The participants were the respondents in the baseline survey. The following

topics were covered during the health education sessions; explanation of HIV and AIDS, modes of transmission, preventive measures, treatment, home-based care of PLWHA, myths and misconceptions about HIV and coping with HIV. The sessions took place under a canopy set up at the market and each session lasted for one hour. Large flexi-posters measuring 10 by 7 feet were used as teaching aids. A PLWHA was the facilitator in the fourth health education session. The post-intervention phase comprised of a questionnaire survey in both the study and control groups three months after the intervention. **Outcome indicators** used in this study were the degree of change in knowledge of HIV/AIDS and attitude of respondents towards people living with HIV/AIDS.<sup>21,22</sup>

### **Ethical consideration**

Approval for the study was obtained from the Ethics and Research committee of the Lagos University Teaching Hospital (LUTH). Permission to carry out the study was also obtained from Agege and Surulere Local Government Authorities as well as the market leaders of both markets. Informed consent was obtained from the respondents before the administration of the questionnaire. Participation in this study was voluntary.

### **Data analysis**

The Epi Info 2002 (Windows version 3.5.1) statistical software was used for data entry, cleaning, and analysis. Analyzed data were presented in form of frequency and cross-tabulations tables and graphs.

Analysis was done in the following categories; within-group comparison of the intervention group before and after intervention; within-group comparison of the control group before and after intervention and post-intervention comparison of the intervention and control groups. Pearson's chi-squared test was used to evaluate differences between groups. A  $p$  value  $\leq 0.05$  was considered statistically significant.

### **Correct knowledge of HIV and AIDS**

Correct knowledge of HIV and AIDS was determined based on UNAIDS indicator.<sup>21</sup> It is defined as the percentage of respondents who

correctly identify the two major ways of preventing the sexual transmission of HIV (using condoms and limiting sexual intercourse to one faithful uninfected partner), who reject the two most common misconceptions about HIV transmission and who know that a healthy looking person can transmit HIV.

The indicator is computed from responses to the following set of prompted questions:

1. Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other sex partner?
2. Can people reduce the risk of getting HIV by using condoms every time they have sex?
3. Can a healthy-looking person have HIV?
4. Can a person get HIV from mosquito bites?
5. Can a person get HIV by sharing food with someone who is infected?

Numerator = Number of respondents who gave correct answer to all five questions

Denominator = Total number of respondents

### **Positive attitude towards people living with HIV and AIDS**

This was also determined based on the UNAIDS indicator for positive attitude.<sup>22</sup> Positive attitude towards PLWHA is defined as the percentage of respondents who reported positive attitude on all the following four questions:

1. Would you buy fresh vegetables from a shopkeeper or vendor if you knew that the person was HIV positive?
2. If a member of your family got infected with HIV, would you want it to remain a secret?
3. If a member of your family becomes sick with AIDS would you be willing to care for him or her in your own home?
4. In your opinion, if a female teacher is HIV positive but not sick, should she be allowed to continue teaching in the school?

A positive attitude for the respective questions is considered to be (1) Yes (2) No (3) Yes (4) Yes.

Numerator = Number of respondents who report positive attitude towards people living with HIV

Denominator = All respondents who have heard of HIV / AIDS

## **RESULTS**

A total of 400 traders, 200 in the intervention group and 200 in the control group participated in the baseline questionnaire survey. Three hundred and seventy one of the traders (181 in the intervention group and 190 in the control group) participated in the follow-up questionnaire survey giving an attrition rate of 9.5% in the intervention group and 5.0% in the control group. The mean age of the respondents was 32.3 in the intervention group and 31.3 in the control group. The highest level of education attained by majority of the respondents is secondary education, 100 (50.0%) and 123 (61.5%) in the intervention and control group respectively [Table 1]. There was a significant difference in the educational level of both groups with the control group being more educated ( $p=0.001$ ). The percentage difference between the Crude Odds ratio (OR) and the Mantel Haenzel Odds ratio ( $OR_{MH}$ ) is 4 thus level of education was not a confounding factor.

The percentage of respondents who had correct knowledge of HIV and AIDS is the percentage of respondents who gave the correct answers to all the five prompted questions. Less than half of the respondents in both the intervention 57 (28.5%) and control 78 (39.0%) groups had correct knowledge of HIV and AIDS pre-intervention [Table 2].

Percentage of respondents who had a positive attitude towards PLWHA is the percentage of respondents who gave the correct answers to all the four prompted questions. Before the intervention, only 42 (21.1%) of respondents in the intervention group and 76 (38.4%) in the control group had a positive attitude towards PLWHA [Table 3].

The proportions of respondents who had correct knowledge of HIV and AIDS increased significantly by 27.9% in the intervention group ( $p= 0.000$ ). The

increase (3.6%) observed in the control group was not statistically significant ( $p=0.466$ ). The difference between the two groups post-intervention was statistically significant ( $p = 0.008$ ) [Table 2].

There was a statistically significant increase in the proportion of respondents in the intervention group who had a positive attitude towards PLWHA ( $p = 0.006$ ). There was however a slight decrease in the proportion of respondents in the control group who had a positive attitude towards PLWHA although this was not statistically significant ( $p=0.921$ ). The difference between both groups post- intervention was not statistically significant ( $p=0.400$ ) [Table 3]. Pre-intervention, there was a statistically significant difference in knowledge and attitude of participants in the intervention and

control groups ( $p=0.026$  and  $p=0.000$  respectively).

Figure 1 shows that about half of the respondents in both groups would sleep in the same room with an HIV-positive person pre-intervention (intervention; 97 (48.7%) and control; 104 (52.5%)) There was an increase in the percentage of respondents who would sleep in the same room with an HIV-positive person after the intervention, 126 (69.6 %) and 110 (57.9%) for the intervention and control groups respectively. The increase observed in the intervention group was statistically significant ( $p=0.000$ ) while that of the control group was not ( $p=0.445$ ).

**Table 1: Age, sex and educational level of respondents**

<b>Variable</b>	<b>Intervention Freq (%) (N=200)</b>	<b>Control Freq (%) (N=200)</b>	<b>X</b>	<b>df</b>	<b>P-value</b>
<b>Age group (yrs)</b>					
<20	30 (15.0)	26 (13.0)			
20-29	68 (34.0)	83 (41.5)			
30-39	50 (25.0)	49 (24.5)	<b>2.86</b>	<b>5</b>	<b>0.720</b>
40-49	29 (14.0)	23 (11.5)			
50-59	17 (8.5)	14 (7.0)			
≥60	6 (3.0)	5 (2.5)			
<b>Sex</b>					
Female	101 (50.5)	117 (58.5)	<b>2.58</b>	<b>1</b>	<b>0.110</b>
Male	99 (49.5)	83 (41.5)			
<b>Education</b>					
None	5 (2.5)	0 (0.0)			
Primary	51 (25.5)	26 (13.0)	<b>16.00</b>	<b>3</b>	<b>0.001</b>
Secondary	100 (50.0)	123 (61.5)			
Tertiary	44 (22.0)	51 (25.5)			



**Table 2: Effect of health education on knowledge of HIV and AIDS**

Knowledge of HIV and AIDS	Intervention group			Control group		
	Pre-interv Freq( %)	Post-interv Freq (%)	% change	Pre-interv Freq (%)	Post-interv Freq (%)	% change
Correct knowledge	57 (28.5)	102 (56.4)	27.9	78 (39.0)	81 (42.6)	3.6
Incorrect knowledge	143 (71.5)	79 (43.6)	-27.9	122 (61.0)	109 (57.4)	-3.6
<b>Total</b>	<b>200 (100)</b>	<b>181 (100)</b>		<b>200 (100)</b>	<b>190 (100)</b>	

Comparison of intervention and control groups:

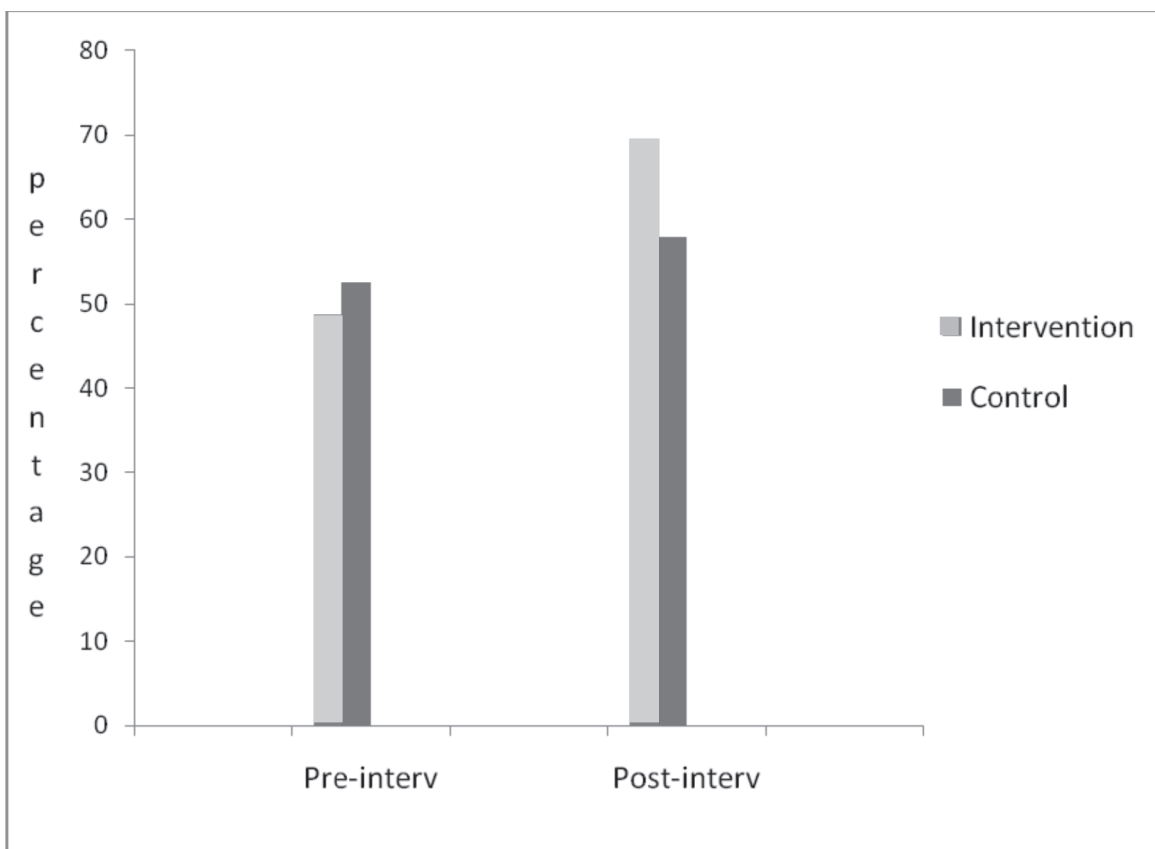
Pre-intervention  $X^2 = 4.93$   $p = 0.026$ , Post intervention  $X^2 = 6.98$   $p = 0.008$

**Table 3: Effect of health education on attitude of respondents towards PLWHA**

Attitude	Intervention group			Control group		
	Pre-interv Freq( %)	Post-interv Freq (%)	% change	Pre-interv Freq (%)	Post-interv Freq (%)	% change
Positive	42 (21.1)	61 (33.7)	12.6	76 (38.4)	72 (37.9)	-0.5
Negative	157 (78.9)	120 (66.3)	-12.6	122 (61.6)	118 (62.1)	0.5
<b>Total</b>	<b>199 (100)</b>	<b>181 (100)</b>		<b>198 (100)</b>	<b>190 (100)</b>	

Comparison of intervention and control groups:

Pre-intervention  $X^2 = 14.80$   $p < 0.001$ , Post intervention  $X^2 = 0.71$   $p = 0.400$



**Fig 1: Respondents who would sleep in the same room with an HIV positive person before and after intervention**

## DISCUSSION

The mean age of the respondents in this study was 32.3 years in the intervention group and 31.3 in the control group with majority of the respondents in both groups aged between 20-39 years. In a similar survey among traders in Port-Harcourt, Nigeria, 50% of the respondents were aged between 21-30 years while in another survey in Ethiopia, 55% of the respondents were aged between 20-30 years of age.<sup>23</sup>

<sup>24</sup> Most traders have a flexible work schedule which could explain why there were slightly more females in the intervention and control groups (50.5% and 58.5% respectively). This choice of occupation ensures that their families are not neglected as a result of busy schedules. The highest educational level attained by half and majority of the respondents in the intervention and control groups respectively was secondary education. This implies that at least, half of the respondents were literate.

The mass media has played a major role in creating

awareness about HIV/AIDS awareness since the first case in Nigeria was discovered in 1986. This is probably the reason for the high level of awareness of the disease among respondents in this survey where 91.5% and 90.0% of respondents in the intervention and control groups respectively were aware of HV/AIDS. This is similar to what was observed in a national survey in Nigeria where 88% of women and 94% of men had heard about HIV.<sup>20</sup> However, less than half of the respondents in both the intervention and control groups had correct knowledge of HIV/ AIDS. This shows that despite the high awareness of HIV/AIDS among the respondents in both groups, knowledge of HIV and AIDS was poor. This is similar to what was observed in a Nigerian survey where 26.9% of women and 38.4% of men in Lagos State had correct knowledge of HIV/AIDS while 23.4% of women and 35.6% of men in Nigeria had correct knowledge of HIV/AIDS.<sup>20</sup>

More participants in this survey (69.3% and 74.2% in

the intervention and control groups respectively) knew that a healthy-looking person can have HIV than what was found in a survey which was conducted in Dakar, Senegal where only 48% of the trader sub-population knew that a healthy-looking person can have HIV.<sup>25</sup>

Stigma and discrimination have been shown to be barriers to HIV prevention, HIV Counseling and Testing and care for people living with HIV/AIDS.<sup>26</sup> HIV-related stigma was common among respondents in both the intervention and control markets. Only 21.1% of respondents in the intervention group and 38.4% in the control group had a positive attitude towards PLWHA pre-intervention. This might not be unrelated to the poor knowledge of HIV/AIDS observed in both groups.

Since HIV/AIDS first emerged globally, the role of behaviour change has been recognized as critical to the control of the pandemic. Against this background, considerable efforts and energy were devoted to implementing communication programmes to educate people about HIV, modes of transmission and prevention strategies.<sup>9</sup> Attempts have been made to reduce HIV related stigma in developed and developing countries with fewer interventions conducted in developing countries.<sup>27</sup>

Health education is known to improve knowledge on HIV and therefore leads to a reduction in HIV-related stigma.<sup>17, 28</sup> The health education sessions provided an opportunity for the traders to acquire a comprehensive knowledge of HIV/AIDS. The traders participated actively in the health education sessions due to the key role played by the market leaders especially in the mobilization of the participants. The proportion of respondents who had correct knowledge of HIV and AIDS increased by 27.9% in the intervention group and 3.6% in the control group. The increase was statistically significant in the intervention group ( $p = 0.008$ ) but not in the control group. There was also a statistically significant increase in the proportion of respondents in the intervention group who had a positive attitude towards PLWHA ( $p = 0.006$ ). There was no increase in the proportion of respondents in the control group who had a positive attitude

towards PLWHA. One of the health education sessions was facilitated by a healthy-looking PLWHA to further reinforce the knowledge that a healthy-looking person can be HIV positive. This may have contributed to the decrease in stigmatizing attitude observed in the intervention group because many of the participants saw a healthy HIV positive person for the first time.

About half of the respondents in both groups would sleep in the same room with an HIV positive person pre-intervention (intervention; 48.7% and control; 52.5%). There was a statistically significant increase in the percentage (69.6%) of respondents in the intervention group who would sleep in the same room with an HIV positive person after the intervention ( $p < 0.001$ ). An increase was also observed among respondents in the control group (57.9%) but this was not significant. The increase observed in the proportion of participants in the intervention group can be compared to that observed in a similar survey among traders in Ibadan, Nigeria where 35% of the respondents would sleep in the same room with an HIV positive person before the intervention but this increased to 52% after the intervention.<sup>17</sup> In both instances the traders participated in HIV education programmes and increase in correct knowledge of HIV/AIDS led to a reduction in stigma among the traders.

## CONCLUSION

The intervention programme was effective because it significantly increased the knowledge of HIV/AIDS among the traders in the intervention group compared to those in the control group. In addition, there was a reduction in HIV-related stigma among the traders in the intervention group.

## RECOMMENDATIONS

The health educators in the Local Government Areas should collaborate with NGOs working with HIV/AIDS to organize periodic health education sessions for traders in markets. Active participation of the market leaders is necessary in order to ensure effective mobilization of the traders as found in this study. The participation of a PLWHA as a facilitator during the health education programme in this study gave a human face to HIV. Therefore providers of health education should identify individuals in their



communities who are HIV positive and have disclosed their status publicly and in addition are knowledgeable about HIV to act as facilitators during the health education sessions. This can be done through support groups for PLWHA. Seeing someone who is HIV positive and healthy in real life can reinforce the knowledge that a healthy-looking person can be HIV positive which in turn could erase the fear of death associated with HIV thereby reducing stigmatizing attitude among the traders. This study did not assess sustained changes in stigma related attitude over time, therefore further research to assess this is recommended.

#### **ACKNOWLEDGEMENT AND CONFLICT OF INTEREST:**

We are grateful for the support we received from the Medical officers of Health of Agege and Surulere Local Government Areas, Dr Bankole-Adekunle and Dr Oguntoyinbo respectively. Potential conflicts of interest with regards to the publication of this paper do not exist.

#### **CONTRIBUTION TO JOINT PUBLICATION:**

S.S. Ezeiru contributed to literature search, data collection, data analysis and write-up of the manuscript. K.A. Odeyemi contributed to the study design, data analysis and write-up of the manuscript.

#### **REFERENCES**

1. UNAIDS. Global Report: UNAIDS report on the global AIDS epidemic 2012. 9-14. Available from URL: [www.unaids.org/2012/120\\_UNAIDS\\_Global\\_Report\\_2012\\_en.pdf](http://www.unaids.org/2012/120_UNAIDS_Global_Report_2012_en.pdf) Accessed on 8<sup>th</sup> of January 2013
2. UNAIDS. World AIDS Day Report. 2012. 6-7. Available from URL: [www.un.org/en/event/aidsday/2012/docs.shtml](http://www.un.org/en/event/aidsday/2012/docs.shtml) Accessed on 8<sup>th</sup> of January 2013
3. Federal Ministry of Health Abuja, Nigeria. Technical Report. National HIV Seroprevalence Sentinel Survey 2010. 2-28.
4. Mutalewa P, Kisoka W, Ngigo V. Manifestations and reduction strategies of stigma and discrimination on people living with HIV/AIDS in Tanzania. *Tanzan J. Health Res.* 2008; 10(4):220-5.
5. Stephenson R. Community factors shaping HIV-related stigma among young people in three African countries. *AIDS Care.* 2009; 21(4):403-10.
6. Dlamini PS, Wantland D, Makoae LN. HIV stigma and missed medication in HIV positive people in five African countries. *AIDS patient care STDs.* 2009; 23(5):377-87.
7. Goffman E. *Stigma; Notes on the management of spoiled identity.* New York. Simon and Schuster Incorporated. 1963. 2-4
8. Larios SE, Davies JN, Gallo LC. Concerns about stigma, social support and quality of life in low income HIV positive Hispanics. *Ethn Dis.* 2009; 19(1):65-70.
9. Scambler G. Health related stigma. *Sociology of Health and illness.* 2009; 31(3):441-55
10. UNAIDS. Expert consultation on behaviour change in prevention of sexual transmission of HIV: Highlights and recommendations. April 2007. Geneva. Available from URL: <http://www.unaids.org/en/media/unaids/contentassets/dataimport/pub/report/2007> . Accessed on 10<sup>th</sup> of November 2009
11. Nyblade L, Pande R, Mathan S, Macquarrie K, Kidd R, Banteyerga H, et al. Disentangling HIV/AIDS stigma in Ethiopia, Tanzania and Zambia. *International Centre for Research on Women (ICRW): Washington, D.C;* 2003.
12. Mahendra VS, Gilborn L, Bharat S, Mudoi R, Gupta I, George B, et al. Understanding and Measuring AIDS related stigma in health care settings: A developing country perspective. *Journal of social aspects of HIV/AIDS.* 2007; 4(2): 616-625
13. Campbell PC, Bamgbala AO, Oduwole AO. Awareness of HIV/AIDS among market women in an urban market. *NQHM.* 2004; 14 (2):147-150.

14. Oladele J, Adeiga ZA, Ricketts F, Goodluck H. Adolescent Girls Reported STI symptoms and Mothers Perception of Their HIV Risk in an Urban Market in Lagos Nigeria. *Research Journal of Medical Sciences*. 2008;2(5):220-223.
15. Obionu CN. Primary Health Care for Developing Countries. 2nd edition. Institute for Development Studies, University of Nigeria. 2007. 313-319.
16. Volk JE, Koopman C. Factors associated with condom use in Kenya: a test of Health Belief Model. *AIDS Educ Prev*. 2001; 13(6):495-508.
17. Adeokun L, Okonkwo P, Oladapo AL. The stigmatization of people living with HIV/AIDS. In: Adeyi O, Kanki PJ, Odutolu O, Idoko JA (Eds). *AIDS in Nigeria, a Nation on the threshold*. Harvard Centre for Population and Development Studies. 2006; 213-233
18. Federal Republic of Nigeria, Official Gazette. No 24, Vol 94, B 175-198. Legal notice on publication of the details of the breakdown of the national and state provincial totals 2006 census. Lagos, Nigeria, May 15, 2007.
19. Prabhakara GN. *Biostatistics*. Jaypee Brothers Medical Publishers Limited. 2006; 110-119.
20. National Population Commission Abuja, Nigeria. National Demographic and Health Survey 2008. 197-208, 609-611.
21. United Nations. Millennium Development Goals Indicators. Available from: URL: [www.mdgs.un.org/unsd/mdg/default.aspx](http://www.mdgs.un.org/unsd/mdg/default.aspx) Accessed on 5<sup>th</sup> February 2010.
22. UNAIDS. Core indicators for National AIDS programme: Guidance and specifications for additional recommended indicators. April 2008. Geneva. 38-41.
23. Frank- Peterside N, Ibang IA. HIV/AIDS awareness among traders in Port Harcourt. *Mary Slessor Journal of Medicine* 2009;4(3): 221-2.
24. Yaheh N, Betemariam G, Daniel B, Mebratu B. A community- based study on knowledge, attitude and practice on HIV/AIDS in Gambela town. Western Ethiopia. *Ethiop .J. Health Dev*. 2003; 17 (3): 205-213
25. Ministry of Public Health and Prevention, Senegal. HIV/AIDS Behavioural Surveillance Survey. Round 3 Summary Report, 2001. 10-12.
26. Idoko JA, Taiwo B, Murphy PL. Treatment and care of HIV disease. In: Adeyi O, Kanki PJ, Odutolu O, Idoko JA (Eds). *AIDS in Nigeria, a Nation on the threshold*. Harvard Centre for Population and Development Studies. 2006; 368.
27. Brown L, Trujillo L, Macintyre K. Interventions to reduce HIV/AIDS stigma: what have we learned? *AIDS Educ Prev*. 2003 Feb; 15(1): 49-69.
28. Visser MJ, Makin JD, Vandormael A. HIV/AIDS stigma in a South African community. *AIDS Care*. 2009 Feb; 21(2):197-206.