Determinants of comprehensive knowledge of HIV/AIDS among women of the reproductive age (15-49) in Uganda

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Received: 10 June 2017
Accepted: 04 July 2017

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ABSTRACT

Background: Globally, HIV is the leading cause of death among women of the reproductive age and unprotected sex is the main driver of HIV transmission. Lack of accurate and complete knowledge is one of the major causes of increase in the number of new HIV infections among women in Africa. This study was aimed at finding out factors associated with comprehensive knowledge among women in the reproductive age group of 15-49 years in Uganda.

Methods: Data used was drawn from 2011 Uganda Demographic Health Survey (UDHS). Logistic regression model was used for analysis.

Results: Only (38%) of the respondents had comprehensive knowledge of HIV. Women in lower wealth quintile had less comprehensive knowledge compared to those in the highest quintile (OR=1.28). The study also found out that the older women aged 45-49 were more knowledgeable to HIV (OR=1.46) than young ones. Women who had access to radio were associated with increased odds (OR=1.11) of high knowledge on HIV than those without. High knowledge to HIV was also associated with women who had ever tested for HIV (OR=1.20) and also increased with level of education (OR=1.63 for primary and OR=3.6 for secondary).

Conclusions: Factors associated with comprehensive knowledge on HIV include: age of the woman, residence, education level, access to information and HIV response to testing. Programs designed should target young women below 19 years of age, rural women, poor women and uneducated women. Increasing campaigns to encourage more women to have HIV tests and messages using radios will increase comprehensive knowledge.

Keywords: Comprehensive, HIV, Knowledge, Uganda

INTRODUCTION

Globally, HIV is the leading cause of death among women of the reproductive age and unprotected sex is the main driver of HIV transmission. Lack of accurate and complete knowledge is one of the major causes of increase in the number of new HIV infections among women in Africa. Globally, less than (30%) of young women have comprehensive knowledge of HIV. This is because they account for two-thirds of the world’s illiterate adults of which there are 796 million. Uganda is still classified as a high burden country with high numbers of HIV infections. About 130,000 new HIV infections occur annually in Uganda. The HIV rates that had gone down from (18%) in the 1990’s have now shot up again. Around the year 2000, the epidemic had stabilized to (5%). As of the current year 2017, HIV prevalence rates have shot up to (7.3%) in the general population. More than 120,000 people were infected with HIV in 2010. Despite 25 years of implementing various HIV prevention interventions in Uganda such as (PMTCT) prevention of mother to child transmission, provision of safe medical circumcision, provision of treatment for sexually transmitted infections, promotion of HIV status through (VCT) and many others, the number of new HIV infections has increased. In Uganda,
there is now a return to wide spread risky sexual behavior as it was at the very beginning of the epidemic. Recent surveys show an increase in the prevalence of the epidemic to (7.3%). As of the year 2017 now, more women (8.2%) than men (6.1%) are suffering from this epidemic in Uganda.

**METHODS**

This study sought to explore factors influencing comprehensive knowledge of HIV/AIDS among women of the reproductive age (15-49) in Uganda. Data from 2011 Uganda Demographic Health Survey was utilized. Representativeness of the sample was ensured by weighting the data. Comprehensive knowledge used as the outcome variable in this study refers to knowledge of reducing HIV risk by consistent use of condoms and being faithful to one uninfected sexual partner who has no other partners, and includes rejection of misconceptions of mosquito bites and sharing of food with a person who has AIDS as modes of HIV transmission. In the UDHS of 2011, various questions were posed to measure comprehensive knowledge of HIV among women in Uganda. During the analysis, the variable “comprehensive knowledge” was generated out of five questions and therefore, respondents who answered all the five questions correctly were considered to have comprehensive knowledge while those who failed any of the questions were considered not to be having comprehensive knowledge. The questions which were asked to measure comprehensive knowledge included the following: (1) Can people get AIDS virus from mosquito bites? (2) Can people reduce the chance of getting the virus by using a condom whenever they are to have sex? (3) Can people get the virus by sharing food with a person who has AIDS? (4) Can people get the virus because of witch craft or supernatural powers? (5) Is it possible for a healthy looking person to have the AIDS virus?

Data was analyzed at three stages namely; univariate, bivariate and multivariate. Descriptive statistics to describe the back ground characteristics of the study such as age, residence, religion, wealth index, education status were generated. At bivariate level of analysis, association between dependent (comprehensive knowledge) and independent variables such as (age, marital status, religion, region, education status and wealth index) were tested using the Pearson chi square test at 5% (p=0.05) level of significance. At bivariate level, a number variables revealed a significant association (p<0.05) with having comprehensive knowledge and therefore were used for further analysis. At multivariate level, the study used a binary logistic regression model. This is because the dependent variable (comprehensive knowledge) is dichotomous (binary outcome) that is; respondents either have comprehensive knowledge or they don’t have it.

**RESULTS**

In this study, majority of the respondents (24%) were in the age group of (15-19) and a high proportion of women (80%) resided in rural areas. Catholic religion had majority of the respondents (40%) compared to other religions. Majority of the respondents (59%) had attained primary level of education followed by those of secondary+ (28%). More than half of the respondents (62%) were married and 46% of women were from rich families followed by the poor (36%) and the middle class had the least (19%). The Central region (31%) had the highest proportion of respondents followed by the Western region (27%). Majority (83%) of the respondents had no access to television while about 66% of the respondents had access to radio. Findings of the study show that only 38% of the respondents had comprehensive knowledge of HIV in Uganda.

Bivariate results show that comprehensive knowledge was highly and positively associated (p<0.05) with unmarried women, higher levels of education level, in higher wealth quintile, in urban areas, exposure to media and ever tested for HIV. Further analysis shows that significantly high odds in comprehensive knowledge of HIV were associated with; women in the highest wealth quintile (OR=1.28), those aged between 45-49 and 35-39 (OR=1.46), with access to radio (OR=1.11), ever tested for HIV (OR=1.20) and those who had primary and secondary level of education (OR=1.63 and OR=3.6 respectively) compared to other women studied. Women from the East (OR=0.70) had significantly (p=0.000) low odds of having comprehensive knowledge of HIV.

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Table 1: Percentage distribution of women by background and intermediate characteristics.

| Variable       | Frequency (n) | Percentage (%) |
|----------------|---------------|----------------|
| Age (in years) |               |                |
| 15-19          | 2,048         | 24             |
| 20-24          | 1,629         | 19             |
| 25-29          | 1,569         | 18             |
| 30-34          | 1,086         | 13             |
| 35-39          | 1,026         | 12             |
| 40-44          | 729           | 8              |
| 45-49          | 587           | 7              |
| Total          | 8,674         | 100            |
| Marital status |               |                |
| Single         | 2,118         | 24             |
| Religion | Frequency (N) | Percentage (%) |
|----------|---------------|----------------|
| Married  | 5,417         | 62             |
| No longer in union | 1,334     | 13.1           |
| Total    | 8,674         | 100            |
| Catholic | 3,524         | 41             |
| Protestant| 2,601       | 30             |
| Muslim   | 1,125         | 13             |
| Pentecostal | 1,154      | 13             |
| SDA      | 168           | 2              |
| Other    | 104           | 1.2            |
| Total    | 8,674         | 100            |
| Residence| Frequency (N) | Percentage (%) |
| Urban    | 1,717         | 20             |
| Rural    | 6,957         | 80             |
| Total    | 8,674         | 100            |
| Central  | 2,696         | 31             |
| Eastern  | 2,135         | 25             |
| North    | 1,524         | 18             |
| Western  | 2,319         | 27             |
| Total    | 8,674         | 100            |
| Region   | Frequency (N) | Percentage (%) |
| Central  | 2,696         | 31             |
| Eastern  | 2,135         | 25             |
| North    | 1,524         | 18             |
| Western  | 2,319         | 27             |
| Total    | 8,674         | 100            |
| Education| Frequency (N) | Percentage (%) |
| No education | 1,119        | 13             |
| Primary   | 5,152         | 59             |
| Secondary+ | 2,402        | 28             |
| Total     | 8,674         | 100            |
| Wealth index | Frequency (N) | Percentage (%) |
| Poor      | 3,098         | 36             |
| Middle    | 1,607         | 19             |
| Rich      | 3,968         | 46             |
| Total     | 8,674         | 100            |
| Ever tested HIV | Frequency (N) | Percentage (%) |
| No        | 2,138         | 25             |
| Yes       | 6,532         | 75             |
| Media exposure radio | Frequency (N) | Percentage (%) |
| No        | 2,694         | 31.1           |
| YES       | 5,754         | 66.3           |
| None dejure residents | 226            | 2.6             |
| Television| Frequency (N) | Percentage (%) |
| No        | 7,174         | 82.7           |
| Yes       | 1,263         | 14.6           |
| None dejure residents | 226            | 2.6             |

Table 2: Percentage distribution of comprehensive knowledge among women age 15-49 years.

| Variable                  | Frequency (N) | Percentage (%) |
|---------------------------|---------------|----------------|
| Comprehensive knowledge   |               |                |
| No                        | 5,423         | 62.5           |
| Yes                       | 3,251         | 37.5           |
| Total                     | 8,674         | 100.0          |

Table 3: Factors associated with comprehensive knowledge among women age 15-49 years.

| Variables | Bivariate | Multivariate |
|-----------|-----------|--------------|
|           | Comprehensiv | OR | p>| 5% (CI) |
| Comprehensive knowledge | No (%) | Yes (%) | P value |  | | |
| Age (in years) | 15-19** | 63.4 | 34.6 | | |
| 20-24 | 59.6 | 40.0 | | |
| 25-29 | 60.4 | 39.6 | | |
| 30-34 | 60.5 | 39.5 | | |
| 35-39 | 62.5 | 37.5 | 0.001 | 1.00 | 0.39 | 0.89 | 1.32 |
| 40-44 | 67.0 | 33.0 | | |
| 45-49 | 64.4 | 35.6 | | |
| Marital status | Single** | 59.8 | 40.2 | 0.000 | 1.00 | | |
Older women with older ages had higher odds of having comprehensive knowledge compared to teenagers. This shows that comprehensive knowledge increases with age of a woman. This result is in consonance with other studies elsewhere. In Raigad district of India, respondents below 20 years of age were less likely to have comprehensive knowledge of HIV compared to those with older ages. Married women had less odds (OR=0.98) of having comprehensive knowledge compared to those who were single. The findings are in conformity with the study conducted among Vietnamese women which reported that married women had less odds of having comprehensive knowledge of HIV compared to singles because they believe that marriage is a protection to risky sexual behaviors. Women in rural areas (OR=0.91) 95% CI (0.77-1.09) had lower odds of having comprehensive knowledge compared to urban women in this study. This result correlates with several findings. A study conducted in Kenya, Swaziland, Zimbabwe, Tanzania, Lesotho, Malawi and Uganda also reported that urban women had greater knowledge of HIV prevention compared to rural women. Respondents with primary and secondary+ (OR=1.63) 95% CI=1.34-1.99) (OR=3.6 95% 2.86-4.58) respectively had significant (p=0.000) higher odds of having comprehensive knowledge compared to those with no education. Findings show that the higher the level of education, the higher the chances of having comprehensive knowledge of HIV. This study is in agreement with other studies. As education and wealth increase, the proportion of women reporting early sexual initiation decreases. Opportunities to obtain knowledge about HIV are extremely limited for young people not in school. Rich women (OR=1.3) had significant (p=0.000) higher odds of having comprehensive knowledge compared to the poor. Results in this study are in conformity with a study conducted among young married women in Tamil Nadu state in India which reported that women from households with better standards of living were more likely to have comprehensive knowledge of STIs compared to those from poor households. Better standards of living among the rich women have an influence on comprehensive knowledge since the rich can easily afford and access information from media and other socio services. It was interesting to learn that women from the North had higher odds (OR=1.01) of having comprehensive knowledge compared to women from the central region while women from the East (OR=0.98) had lower odds of having comprehensive knowledge compared to those from central. Respondents who had ever had an HIV test had significant higher odds (OR=1.4) of having comprehensive knowledge of HIV compared to those who had never tested. This is in agreement with other studies. As education and wealth increase, the proportion of women reporting early sexual initiation decreases. Opportunities to obtain knowledge about HIV are extremely limited for young people not in school. Rich women (OR=1.3) had significant (p=0.000) higher odds of having comprehensive knowledge compared to the poor. Results in this study are in conformity with a study conducted among young married women in Tamil Nadu state in India which reported that women from households with better standards of living were more likely to have comprehensive knowledge of STIs compared to those from poor households. Better standards of living among the rich women have an influence on comprehensive knowledge since the rich can easily afford and access information from media and other socio services. It was interesting to learn that women from the North had higher odds (OR=1.01) of having comprehensive knowledge compared to women from the central region while women from the East (OR=0.98) had lower odds of having comprehensive knowledge compared to those from central. Respondents who had ever had an HIV test had significant higher odds (OR=1.4) of having comprehensive knowledge of HIV compared to those who had never tested. This is in agreement with other studies.
agreement with a study among urban women in Kenya which revealed that those who had ever tested for HIV were 1.6 times more likely to have comprehensive knowledge compared to their counter parts. Respondents who had access to radio had significant higher odds (OR=1.20) of having comprehensive knowledge of HIV compared to those with no radio. Women who had televisions had higher odds (OR=1.11) of having comprehensive knowledge compared to those with no television. A study in South Africa shows that majority of the respondents (96%) reported that TV and radio had a positive impact on their understanding of HIV/AIDS prevention and transmission and more than four in ten decided to change their sexual behavior as a result of what they learned about HIV/AIDS from media.  

CONCLUSION

Programs designed should target young women below 19 years of age, rural women, poor women and uneducated women. More efforts to promote girl child education to avoid them from stopping at only primary level are needed since results show that the higher the level of education, the higher the chances of having comprehensive knowledge of HIV. There is need to promote accessibility to information and quality education.

ACKNOWLEDGEMENTS

The authors would like to extend their appreciation to some academic staff of the School of Statistics and Planning, Makerere University for their valuable comments.

Funding: This was partly funded by the authors with support from Makerere University

Conflict of interest: None declared

Ethical approval: Not required. The study used secondary data and was accessed from Measure DHS from their web portal

REFERENCES

1. World Health Organisation (WHO). Global HIV/AIDS Response. Epidemic update and health sector progress towards Universal Access Progress Report 2011. 20 Avenue Appia, 1211 Geneva 27, Switzerland, 2011.
2. UNAIDS. UNAIDS report on the global AIDS epidemic 2013. 20 Avenue Appia, 1211 Geneva 27, Switzerland, 2013.
3. Ministry of Health (MOH). Uganda AIDS Indicator Survey (UAIS). Kampala, Uganda, 2011.
4. Uganda AIDS Commission (UAC). National HIV Prevention Strategy 2011- 2015. Expanding and doing HIV prevention better. Kampala, Uganda, 2011.
5. Uganda AIDS Commission (UAC). Global AIDS Response Progress Report: Country Progress Report, Uganda, 2012.
6. Uganda AIDS Commission (UAC). HIV and AIDS Uganda country Progress report: 2013. Kampala-Uganda. 2014. Available at: http://www.aidsuganda.org/. Accessed on 4 July 2017.
7. Uganda Bureau of Statistics (UBOS) & ICF International Inc. Uganda Demographic and Health Survey 2011. Kampala, Uganda: UBOS and Calverton, Maryland: ICF International Inc, 2012.
8. National Bureau of Statistics (NBS) [Tanzania] and ORC Macro. Tanzania Demographic and Health Survey 2004-05. Dar es Salaam, Tanzania: National Bureau of Statistics and ORC Macro, 2005.
9. Epsley EJ, Nhandi B, Wringe A, Urasa M, Todd J. Evaluation of knowledge levels amongst village AIDS committees after undergoing HIV educational sessions: results from a pilot study in rural Tanzania. BMC Int Health Human Rights. 2011;11(1):14.
10. Teshome R, Youjje W, Habte E, Mohamedkassm N. AIDS and Clinical Research Comparison and Association of Comprehensive HIV / AIDS Knowledge and Attitude towards people Living with HIV / AIDS among Women Aged 15-49 in Three East African Countries: Burundi, Ethiopia and Kenya. 2016;7(4):4–11.
11. Ochako R, Ulwodi D, Njagi P, Kimetu S, Onyango A. Trends and determinants of Comprehensive HIV and AIDS knowledge among urban young women in Kenya. AIDS Res Therapy. 2011;8(1):11.
12. Wang W, Soumya A, Shanxiao W. HIV-Related Knowledge and Behaviors among People Living with HIV in eight High HIV Prevalence countries In sub-saharan Africa (DHS Analytical Studies No. 29) (Vol. 29). Calverton, Maryland, USA: ICF International. 2012.
13. Hong SY, Thompson D, Wanke C, Omosa G, Michael R. Knowledge of HIV Transmission and Associated Factors among HIV-Positive and HIV-Negative Patients in Rural Kenya. 2013;3(7):1–13.
14. Solat S, Velhal GD, Mahajan H, Rao A, Sharma B. Assessment of Awareness about HIV / AIDS and Operationalization of Interventions in Rural Population. 2012;2(11):1–14.
15. Huy NV, Lee HY, Nam YS, Tien NV, Huong TTG, Hoat LN. Secular trends in HIV knowledge and attitudes among Vietnamese women based on the Multiple Indicator Cluster Surveys, 2000, 2005, and 2011: what do we know and what should we do to protect them? Glob Health Action. 2016;9:10.3402.
16. CiCCió I, Sera D. Assessing the knowledge and behavior towards HIV/AIDS among youth in northern Uganda: a cross-sectional survey 2010;15:29–34.
17. Megabia B, Awoke T. Comprehensive knowledge, attitude and practice of street adults towards human immunodeficiency virus / acquired immune
deficiency syndrome (HIV/AIDS) in Northwest Ethiopia. 2013;5(6):181–7.
18. Tuntufye SM. Education level and (HIV/AIDS knowledge in Kenya. 2014;6(2):28–32.
19. Ravi RP, Kulasekaran RA. A Cross-Sectional Study of Knowledge, Perceptions and Misconceptions about RTIs, STIs and HIV/AIDS among Young Married Rural Women in Tamilnadu State, India. 2014;31(1):84–90.
20. The Henry J. Kaiser Family Foundation. Young South Africans, Broadcast Media, and HIV/AIDS Awareness: Results of a National Survey. 2007.

Cite this article as: Ankunda D, Asiimwe JB. Determinants of comprehensive knowledge of HIV/AIDS among women of the reproductive age (15–49) in Uganda. Int J Community Med Public Health 2017;4:3530-5.