TITLE: MODELLING Social Risk Factors for Sexually Transmitted Diseases among Female Youths in Nigeria

ABSTRACT

The study which utilized NDHS, 2008 data focused on female youths aged 15-24 (*n=8093*) who ever had sexual intercourse with man. The outcome variable is contacting STDs in the last 12 months before the survey. The logistic regression was used to model the data. Data analyses revealed that the mean age of the respondents was 20.2±2.5. Female youths who were aged 20-24(2.5%) contacted STD more than those aged 15-19(1.4%) years. The prevalence of STD among female youths in Nigeria was 2.1%. Socio-demographic factors such as age, educational status, wealth index, marital status, toilet shared, place of residence, contraceptive use and total life-time number of sexual partners were found to be significantly associated with STDs acquisition ($P<0.05$). The data confirmed wealth index and contraceptive use as important predictors of STDs acquisition. Abstinence, constant condom use and having one uninfected sexual partner can help reduce the risk of STDs transmission.

EXTENDED ABSTRACT

Background

Nigeria population is young and it is widely accepted that the future of the country rests to a greater extent on how successfully its youth's transition to a healthy and productive adulthood. Young women in Nigeria are facing with myriad challenges, particularly, risk of Sexually Transmitted Diseases (STD). Previous studies on STD among youths in Nigeria only focused on its risk factors but failed to model these risk factors as evidenced in this study.

Methods

The study is retrospective cross-sectional in design. The data for the study were extracted from the record of survey conducted by ICF Macro Calverton, Maryland, USA in conjunction with National Population Commission (NPC), Nigeria in 2008 (Nigeria Demographic and Health Survey, 2008 (NDHS)). During the survey, all women aged 15-49 were interviewed using a well designed questionnaire. However, the current study focused on female youths aged 15-24 who ever had sexual intercourse with man. In the questionnaire designed for the survey, a question was asked from the respondents on whether they have contacted STDs in the last 12 months. Here, the respondents are to choose from three options; No, Yes and Don't Know. Meanwhile, those who chose the last option (Don't know) were excluded from the analysis because their status could not be determined.

The analysis began with Chi-square model which was used to determine if there is association between some background variables and contacting sexually transmitted diseases in the last 12 months before the survey. Thereafter, variables found to be significant in the analysis were entered into a logistic regression model to predict the strength of the associations between these

variables and contacting sexually transmitted diseases. The logistic regression on the data was performed at two stages.

STAGE 1: Variables that were significant at 0.1%, 1% and 5% from the Chi-square analysis were entered into the logistic regression model in that order. This produces three models as seen in TABLE 2.

STAGE 2: Variables that were at most 5% significant from the Chi-square analysis were entered into the logistic regression model one after the other based on their Chi-square value. This is because, the higher the Chi-square value, the higher the strength of the association. These procedures generated eight different models (TABLE 3).

Results

Data analysis revealed that the year prevalence of STD among female youths in Nigeria was 2.1%. The mean age of the respondents was 20.2±2.5 and there is no clear distinction between the ages of those who contacted STD in the last 12 months preceding the survey and those who did not. Female youths who were aged between 20-24 years contacted STD in the last 12 months (2.5%) than those between the ages of 15-19 months.

The percentage of female youths who had STD was higher in the Southern (2.3%) than Northern region (1.9%), however, no significant differences existed between these two regions. There was a significant difference ($p<0.05$) between urban (2.7%) and rural (1.8%) female youth. The percentage of female youths who contacted STD also varied considerably between education subgroups and increases with increasing level of education ($p<0.001$). The prevalence ranges from 1.4% among those with no education to 4.6% among those with higher level of education. The STD prevalence was higher among Christians (2.5%) than those who belong to Islam religious sect (1.7%). STD was found to be more common among those who shared toilet facility (3.0%) than those who did not (1.8%) and the difference was statistically significant ($p<0.001$).

The data further shows that, in different wealth quantile levels, percentage of female youths contacting STD increases consistently with increasing wealth index. It increases from 0.9% among female youths in the poorest wealth index to 3.2% in the richest and the difference was statistically significant ($p<0.001$). Significant difference also existed between female youths who were working (1.9%) and those who are not (2.3%), ($p<0.05$). Also female youths who never married (2.6%) showed a higher percentage of having STD than their married (1.7%) counterparts. The total life-time number of sexual partners and contraceptive are both significantly associated with contacting STD. Higher percentage of those who have multiple sexual partners (2.9%) contacted STD than those with only one sexual partner (1.8%). It is striking that STD prevalence was higher among female youths who ever used (33.0%) contraceptive than never users.

The results of the regression analysis provide a global view of the combined effects of the factors considered. We distinguished here three analytical models. The first one considers only the joint effects of education, contraceptive use and wealth index. By adding the effects of age, toilet facility shared and total life-time number of sexual partners (Model 2), the coefficients of the young women who had STD in the last 12 months preceding the survey increased among those who ever used contraception (from OR=1.62 to 1.87) (Model 2) and wealth index categories.

The gap in the difference of odd ratio before and after adding these variables is wide (Model 2). Also women who belong to poorer wealth quintile had significant increase risk of contacting STD which was initially not significant before the new variables were added. The risks increased further for contraceptive use and wealth index when place of residence and marital status were used as control (Model 3) and are statistically significant. However, the wealth index and contraceptive use effects diminish when place of residence and marital status were used as control.

The risk of contacting STDs increases with increasing wealth index, as female youths who come from richer and richest homes are 2.2 ($p<0.05$), 2.1 ($p<0.05$) more likely to contact STDs than their counterparts from poorest homes. These hazards increased further when potentially confounding variables such as current age, toilet facility shared, total life-time number of sexual partners, place of residence and marital status were used as control. Even though the chance of contacting STDs is higher among married youths, rural dwellers, having multiple sexual partners, sharing of toilet facilities and female youth aged 20-24 years, these variables showed non-significant association as risks of contacting STDs.

The eight analytical models of the regression analysis, point to the interaction effects of contraceptive use, wealth index, total life-time number of sexual partners, toilet facility shared current age and marital status.

In the first model, the risk of contacting STDs among youth increases with increasing level of education. Female youths who had attained secondary and higher level of education are 1.79 ($p<0.01$) and 3.38 ($p<0.001$) more likely to contact STDs than their counterparts who had no education. The statistical significant disappears for those with secondary education when contraceptive use was introduced as control, but those in higher level of education still retain the strength of their relationship. Therefore, contraceptive use added in the second model reduces the effect of education (Model 2).

Wealth index reduces further the effect of education and also diminishes the effect of ever use of contraceptive (Model 3). Total life-time number of sexual partners does not affect the influence of the wealth index but reduces the influence of ever use of contraceptive (Model 4). Sharing toilet facility increased considerably the influence of wealth index among all wealth categories

and also for female youths who ever used contraceptive (Model 5). The current age of the respondent, place of residence and marital status are not important factors affecting other characteristics of young women in terms of their risk of contacting STDs (Models 6,7 and 8).

Among all the variables considered in the model, only contraceptive use and wealth index showed a significant relationship with contacting STDs. Although, patterns which are similar to other studies are seen in this study for other variables considered, but their consideration as risk factors for contacting STDs do not show statistical significant ($p>0.05$).

Conclusion

The data confirmed wealth index and contraceptive use as important predictors of STDs acquisition. Abstinence, constant condom use and having one uninfected sexual partner can help reduce the risk of STDs transmission.