ORIGINAL RESEARCH ARTICLE

Exposure to Media Content and Sexual Health Behaviour among Adolescents in Lagos Metropolis, Nigeria

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Abstract

The influence of adolescents' exposure to sexual health content of mass media in their sexual health behaviour in Nigeria is still not clear. Data were gathered through a survey conducted among adolescents aged 12-19 years in Lagos metropolis between November 2009 and February 2010. A multistage sampling strategy was adopted in selecting respondents. Logistic regression technique was utilised in the analysis. The results indicate that the respondents were most frequently exposed to TV (male=92.2; female=94.9) and radio (male=88.2; female=91.7) media. The odds ratios indicate that sexual health content of mass media significantly predicted condom use, multiple sexual relationship, sexual intercourse and self reported occurrence of abortion in the study sample. The findings imply that positive media sexual health content is likely to promote sexual health among adolescents but negative contents can put adolescents' sexual health in danger. In addition, safe sex can be advanced among adolescents if the media provide accurate information on sexuality, emphasising the dangers of risky sexual practices. Finally, this study posits that accurate portrayal of sexuality in the media would contribute immensely to improving public health in the metropolis. (*Afr J Reprod Health 2013; 17[2]: 157-168).*

Résumé

L'influence de l'exposition des adolescents au contenu sexuel des médias sur leur comportement de leur santé sexuelle au Nigéria n'est pas encore évidente. Les données ont été recueillies à l'aide d'une enquête menée auprès des adolescents âgés de 12-19 ans dans la métropole de Lagos entre novembre 2009 et février 2010. Une stratégie d'échantillonnage à plusieurs étapes a été adoptée dans la sélection des interviewés. La technique de régression logistique a été utilisée dans l'analyse. Les résultats indiquent que les interviewés ont été plus fréquemment exposés à la télévision (hommes = 92,2; femmes = 94,9) et de radio (hommes = 88,2; femmes = 91.7) médias. Les rapports de cotes indiquent que le contenu en santé sexuelle des médias de masse prédit de façon significative l'utilisation du préservatif, plusieurs relations sexuelles, les rapports sexuels et l'auto- signalisation apparition de l'avortement dans l'échantillon étudié. Les résultats impliquent que le contenu des médias positif de la santé sexuelle est susceptible de promouvoir la santé sexuelle chez les adolescents mais des contenus négatifs peuvent mettre la santé sexuelle des adolescents en danger. En outre, les pratiques sexuelles sans risque peuvent être avancées chez les adolescents, si les médias fournissent des informations précises sur la sexualité, en mettant l'accent sur les dangers des pratiques sexuelles à risque. Enfin, cette étude postule que la représentation exacte de la sexualité dans les médias contribuerait énormément à améliorer la santé publique dans la métropole. (*Afr J Reprod Health 2013; 17[2]: 157-168).*

Keywords: *Mass Media, Sexuality, Public Health*

Introduction

Young people who constitute nearly a fourth of the population of sub-Saharan Africa are facing sexual and reproductive health problems not found anywhere in the world[1]. For instance, adolescents in the region are often exposed to unprotected sex, leading to unwanted or mistimed pregnancy, unsafe abortion and associated complications as well as unwanted childbirth; other sexual and reproductive health problems faced by adolescents in the region include risks of STIs (including HIV) and maternal death[2]. Marriage is now relatively delayed, as a result, adolescents (hereafter used interchangeably with young people) now experience extended period of sexual transition. This extended period increases their vulnerability to risky sexual activities that portends grave dangers for their well-being. In West Africa, on the average, between 21 and 59 percent of

adolescents would have had sexual intercourse by age 18[2]. The current global trend is that age at first sex outside of marriage is on the decline all on the world, particularly amongst girls[3]. There are strong indications that pre-marital sexual activity is predominant and sexual initiation occurs early in Nigeria[4, 5].

Sexual health consequences of the prevailing sexual behaviour among adolescents in Nigeria are exacerbated by low contraceptive use. For instance, in the 2008 Nigeria Demographic and Health Survey, only 9 percent of female adolescents aged 15-19 years used condom in the last sexual intercourse before the survey[6]. This implies that the high prevalence of pre-marital sexual activity is largely unprotected. The question of concern in this study is what are the factors predisposing young people to pre-marital sexual activities during this extended transition period? Some predictors identified in previous studies in Nigeria include peer group influence, household economic status, residential density, parental control, ethnic origin, and recently, the media[5, 7-9, 10]. However, little searchlight has been beamed on the role of the exposure to sexual health content of the mass media—newspapers/magazines, television, radio, internet, music (compact disc and tape) and video—on adolescent sexual health behaviour and outcome in Nigeria.

Since the primary aim of the mass media anywhere in the world is to attract audience, their activities are therefore designed primarily to stimulate and titillate rather than to educate[12, 13]. As a result, larger proportion of the pictures or images that are portrayed in both print and electronic mass media globally centre on sexuality or eroticism[14]. The Nigerian media landscape is no exception. Young people spend quality time with these media almost on daily basis[14, 15]. In view of the glut of sexual health problems adolescents are faced with, what role does the exposure to the sexual health content of the media play in the sexual health behaviour of adolescents in Nigeria? This is the question the present study seeks to answer. Sexual health content of the media, in the context of the present study, connotes images and information portrayed in the media that are related to sexuality and human reproductive health. It is positive when such images and information are capable of promoting the situation whereby adolescents are free to enjoy their sexual lives without any form of cohesion, having the power to negotiate use of condom during intercourse to protect themselves against STIs and unwanted or mistimed pregnancy, and prevent unsafe abortion since abortion is still largely illegal in the country; otherwise, Sexual health content is negative.

In the Western world, the negative implications of the exposure to sexual health content of the mass media among young people have been a major concern. In spite of the growing public concern of possible health consequences, most mass media seldom portray information that can promote responsible and healthy sexuality[14, 16, 17]. For instance, Brown and her colleagues stress that only one out of ten of television programmes examined mentioned the possible consequences of non-use of condom. "Despite the range of views expressed in this discourse, it appears there is a kind of consensus about the idea that there is more sex in the media, and that it is more explicit nowadays than it used to be"[3,p5], especially in the case of television. In a comprehensive review, the indication is that most of the media frequently used by teenagers have surplus of sexual content[18]. In Nigeria, the media portray more information and pictures that promote unhealthy sexuality than the ones promoting the contrary[19].

The literature on the relationship between adolescent's exposure to sexual content of the media and their sexual health behaviour appears inconclusive. Four main categories of findings exist over this relationship. First, some studies report that exposure to mass media breeds risky sexual activities among adolescents[12, 18-22]. These studies indicate that young people who are exposed regularly to the sexual content of mass media and more likely to report increased involvement in sexual activities. For instance, in an experimental study, 2414 participants were subjected to television viewing for two or more hours a day for a year; at the end of a year a follow-up survey indicated that 15.6% had experienced sexual initiation[22]. This finding supports the hypothesis that exposure to the media can bring about sexual initiation among young people. There is no doubt that this association is made possible by the fact that the media portray

more of sex inviting images that appeal to the emotions of adolescents.

The second position of the literature on the exposure to media relationship between sexual content and the sexual behaviour among adolescents states that the mass media could be a good channel through which young people can be reached with sex education messages and sexual health information, and influence them to take up healthy sexual practices such as condom use[24,25-29]. Thus, the mass media could be utilized as an effective channel to promote sexual health among young people. The third group of findings of the studies that have examined this relationship maintain a neutralist position. Such studies find that there is no statistically significant relationship between exposure to media and the sexual behaviour of adolescents. They conclude that the media is not a good predictor of adolescent sexual health[30]. In the fourth category, studies in East and West Africa, using nationally representative data (Demographic and Health Survey DHS), report mixed result[31, 32, 4]. The findings of these studies suggest there is no clear pattern of relationship between exposure to mass media and sexual health behaviour among adolescents; the conclusions of the studies are neither here nor there[10].

The forgoing has demonstrated that the findings of the previous studies that have examined this subject are incongruent. This calls for more studies to extend the frontiers of knowledge on this important relationship and contribute towards clarifying the direction of the relationship. Hence, the present study. Besides, research on the relationship between mass media and sexual health behaviour among adolescents in sub-Saharan Africa is scanty. In fact, the global literature review, carried out by Escobar-Chares and the colleagues in 2005 on this subject indicated that only 12 out of 2,522 articles reviewed addressed the relationship[33]. Although the review was carried out almost a decade ago, in the absence of a recent review the finding points out that limited studies have been conducted on the subjects of the media and sexual behaviour of adolescents worldwide. In addition, most studies that have looked at the subject concentrated on in-school adolescents, neglecting the out-of-school and the very young (age 10-14 years) [34, 35].

The gaps highlighted above make the present study an important research goal. The study sought to expand upon findings of previous studies through the examination of the implications of exposure to media sexual health content for sexual health behaviour in a sample of adolescents (including the very young). Two main hypotheses are tested. First, exposure to sexual health content of mass media is related to risky sexual health behaviour among adolescents. Second, adolescents' exposure to sexual health content of media is associated with healthy sexual practices among them.

Materials and Methods

Study Setting

This study was conducted in Lagos metropolis. The metropolis was considered appropriate for two reasons. First, it is the commercial nerve centre of Nigeria where almost every ethnic group in the country is represented. Second, the state is the most urbanized in the country and represents where the most intense operation of print and electronic media can be found in the country. Ikeja and Ajeromi-Ifelodun Local Government Areas (LGA) of the State were purposely chosen to capture young people from low and high income backgrounds. Ikeja LGA is the capital of the state and it is located within Obafemi Awolowo Way (to the north), Bank Anthony Way (in the South), Lagos-Ibadan express way (to the East) and the swamp behind the Muritala Mohammed International Airport at *Onipetesi* (to the West). It is predominantly a high income residential area (it also the modern Central Business District of the State). On the basis of 2006 census, the LGA has a projected population size of 718, 864 and average household size of five. *Ajeromi-Ifelodun* LGA is bounded in the north by *Obale* canal through *Okota* to *Otto* Wharf, south by Coca-Cola Canal, East by *Iganmu* LGA and in the West by *JMJ* Canal. It is largely a slum and mainly a low income residential area. It is the second largest LGA in the State with a projected population size of 1,590, 489 and an average household size of seven[36].

Population, Sample Size and Sampling Technique

The study population includes all male and female adolescents, 12 to 19 years of age in the metropolis, in-school and out-of-school. Using a multistage sampling strategy, a total of 1026 adolescents (male=498 and female=528) were sampled. The average age of the adolescents selected was approximately 16 years with standard deviation of 1.7. In each LGA, the number of wards was identified and a list prepared. In *Ajeromi-Ifelodun* LGA, one ward was randomly selected out of 10 and one ward was also selected out of six in Ikeja LGA. The wards are the political demarcation of the city for electoral purposes. There were 82 streets in the ward selected in *Ajeromi-Ifelodun* LGA and 32 streets in the one selected in Ikeja LGA. Five percent of the streets in *Ajeromi-Ifelodun* were randomly selected leading to four streets that were used for the survey in the Local Government Area. On the other hand, about 20 percent of the 32 streets in Ikeja (sparsely populated LGA) were randomly selected. Buildings were selected on each selected street systematically, using a roughly estimated sampling fraction of 1/5. In each building, one household was selected through a random process. In light of ethical consideration, the purpose of the study was explained to one eligible randomly selected respondent. Verbal consent was obtained directly from those aged 15-19 and from parents of 12-14 years old before interview was conducted. Verbal consent was preferred because sexual behaviour is culturally a difficult subject to discuss in the society and it would have been practically impossible to get respondents to document their consents out of fear of any 'false repercussion'. The respondents were made to realise that they were free to decide not to participate in the study if they so wished.

Data Collection

A survey instrument was administered among 1026 respondents to elicit quantitative data between December 2009 and January 2010. The instrument was pre-tested among 20 adolescents. Preliminary data captured were analysed and the outcome informed necessary revision of the instrument to enhance quality of data. Four field assistants were recruited and trained on proper interpretation of the questions in the instrument and the how of the execution of the survey. The interview exercise employed a face-to-face approach whereby the field assistants read the questions to each respondent and recorded the responses accordingly.

Measurement of key survey variables

Sexual health content of mass media was the main independent variable in the study. It was measured through a question structured in a table in the questionnaire. In the table, eight media—radio, compact disc, tapes, TV, cable network, videos, internet and newspapers/magazines—were listed and four categories of sexual health related contents—sex education, contraceptive issues, sexual partnership issues and nudity—were also indicated under each media. The objective was to allow respondents clearly identify the sexual health contents under each media as classified and indicate hours of exposure to each per week. Respondents were expected to provide multiple responses. Duration of exposure was measured through the hour (s) of exposure indicated by respondents against each media/sexual health content. Four categories of hours were indicated (1 hour, 2 hours, 3 hours and above 3 hours). These categories were collapsed into two—1 hour and 2 hours+—during recoding in order to eliminate empty categories. This process was also imperative in view of the sensitive nature of logistic regression technique[37].

Questions were structured on each of the key dependent variables in the survey instrument. First, on multiple sexual partnerships, it was asked "did you have regular sex partner (s) in the last six months (yes or no)?" and the follow-up question was "if yes, how many did you have at a time?" Two options were provided—one or more than one. Respondents who chose "more than one" were considered as engaging in multiple sexual partnerships. Secondly, condom use in the six months preceding the survey was measured in the instrument through this question: "did you use the male or female condom in sexual intercourse in the last six months?" "No or yes" options were provided for respondents to choose one. Thirdly, age at first sex was measured through a question:

"have you experienced sexual intercourse before (yes or no)?" and the follow-up question was "if yes, how old were you when you had the first sexual intercourse?"

Fourthly, unwanted pregnancy and abortion were measured through three questions. First, "did you have any case (s) of unwanted pregnancy in the last 12 months (yes or no)?" The next question was "approximately how many cases(s) did you have during this period?" and lastly, did you get rid of any?" Engaging in sexual intercourse in the last six months was measured through the question: "did you have sexual intercourse in the last six months?" Respondents were expected to choose one of "yes or no". Finally, to measure the desire to prevent STIs/HIV, respondents were asked "in your candid opinion, do you desire to prevent STIs/HIV?

Data Analysis

Responses to questions in the survey instrument were entered into the statistical package for social sciences (SPSS). Data cleaning and necessary variable transformations/recoding were done. The first step involved running percentage distributions of the socio-demographic characteristics of the survey respondents and all the variables included in the five models as presented in Tables 1 and 2.

Multivariate models using the logistic regression technique was constructed to identify sexual content of media predicting the indicators of sexual health behaviour in the study sample. Five logistic regression models were constructed to test the hypotheses that exposure to sexual health content of mass media is likely to affect (i) multiple sexual relationships, (ii) use of condom during sexual intercourse within six months before the survey, (iii) occurrence of abortion within 12 months before survey, (iv) engaging in sexual intercourse within six months before survey, and (v) desire to prevent HIV. The independent variables were entered into the models as dummy.

Results

In Table 3, model 1[a] represents the odds of exposure to various sexual health contents of media and reported cases of abortion by sex

Table 1: Percentage distribution of survey respondents by socio-demographic characteristics and by sex

Characteristics	Male	Female
	n=498	n=528
Local Government Area		
Ajeromi-Ifelodun	48.8	57.6
Ikeja	51.2	42.4
Average age	16.3	15.8
Marital status		
Never married	93.8	92.7
Cohabiting	3.3	2.1
Married	0.6	3.9
Separated/Divorced	0.6	0.4
Average age at first marriage	16.5	15.5
Religious affiliation		
None	2.0	1.3
Traditional	2.0	0.8
Islam	30.1	30.5
Christianity (Catholic)	28.5	26.9
Christianity (Protestants)	37.4	40.5
Education		
None	0.6	1.1
Primary School	3.1	4.6
Junior Secondary School	18.4	22.8
Senior Secondary School	75.7	70.7
Tertiary	2.2	0.8
Average years of schooling	11	10.69
Occupation		
Student	88.6	90.5
Unemployed	2.3	1.6
Self-employed	8.3	6.9
Formal employment	0.8	1.0
Ethnicity		
Edo	8.8	6.6
Efik/Calabar	6.7	8.4
Hausa/Fulani	6.6	9.6
Igbo	27.2	22.8
Ijaw/Itsekiri	2.7	2.6
Urhobo	3.3	4.1
Yoruba	46.0	44.6
Living with parent		
Yes	80.7	80.4
No	19.3	19.6
Drink/Smoke		
Alcohol	17.5	8.3
Cigarette	6.0	3.2
Hard Drug	5.4	6.8
None	71.1	81.6

Table 2: Percentage distribution of respondents by the sexual health content of mass media by sex

Sexual Content of Mass Media	Percent	
	Sex	
	Male	Female
	n = 498	n = 528
Radio		
1 hour (sex education)	62.2	60.2
2 hours + ,,	37.8	39.8
1 hour (contraceptive)	77.3	71.8
2 hours + ,,	22.7	28.2
1 hour (sexual partnership)	72.7	68.0
2 hours+ ,,	27.3	32.0
Compact Disc		
1 hour (sex education)	78.5	75.0
2 hours + ,,	21.5	25.0
1 hour (contraceptive)	85.3	83.7
2 hours + ,,	14.7	16.3
1 hour (sexual partnership)	84.5	86.7
2 hours+ ,,	15.5	13.7
Tape		
1 hour (sex education)	82.1	81.2
2 hours + ,,	17.9	18.8
1 hour (contraceptive)	86.1	84.5
2 hours + ,,	13.9	15.5
1 hour (sexual partnership)	85.9	87.9
2 hours+ ,,	14.1	12.1
Television Programmes		
1 hour (sex education)	55.4	45.6
2 hours + ,,	44.6	44.6
1 hour (contraceptive)	68.5	68.5
2 hours + ,,	31.5	31.5
1 hour (sexual partnership)	71.9	71.9
2 hours+ ,,	28.1	28.1
1 hour (nudity)	74.7	74.7
2 hours+ ,,	25.3	25.3
Cable network programmes		
1 hour (sex education)	83.1	80.3
2 hours + ,,	16.9	19.7
1 hour (contraceptive)	85.5	84.5
2 hours + ,,	14.5	15.5
1 hour (sexual partnership)	85.1	87.1
2 hours+ ,,	14.9	12.9
1 hour (nudity)	83.9	88.1
2 hours+ ,,	16.1	11.9
Video		
1 hour (sex education)	78.3	74.4
2 hours + ,,	26.7	25.6
1 hour (contraceptive)	80.5	82.4
2 hours + ,,	19.5	17.6
1 hour (sexual partnership)	79.3	86.2
2 hours+ ,,	20.7	13.8
1 hour (nudity)	76.3	85.0
2 hours+ ,,	23.7	15.0
Internet		
1 hour (sex education)	82.3	83.5
2 hours + ,,	17.7	16.5
1 hour (contraceptive)	81.3	88.3
2 hours + ,,	18.7	11.7
1 hour (sexual partnership)	30.2	87.5
2 hours+ ,,	19.1	12.5
1 hour (nudity)	73.9	85.0
2 hours+ ,,	26.1	15.0
Print media		
1 hour (sex education)	76.7	70.8
2 hours + ,,	23.3	29.2
1 hour (contraceptive)	81.7	78.0
2 hours + ,,	18.3	22.0
1 hour (contraceptive)	78.9	78.2
2 hours + ,,	21.1	21.8
1 hour (contraceptive)	76.3	75.4
2 hours + ,,	23.7	24.6
Have regular sexual partner (yes)	16.7	14.5
Self reported incidence of abortion (male=partner's report)	3.6	4.0
Multiple sexual partnerships	11.2	6.9
Condom use in previous six months (yes)	16.3	9.1
Sex within last six months (yes)	17.7	13.4
Desire to prevent HIV (yes)	73.0	71.0

partner of male respondents. Three media types were statistically significant. Male respondents who reported exposure to radio programmes on sexual partnership for 2 hours + were over six times more likely for their sexual partners to have aborted pregnancy within the last one year before the survey compared with those exposed for one hour or less. Exposure to tapes on contraceptives for two hours or more was over eight times more likely to have had female sexual partners reporting abortion cases relative to exposure for one hour or less. Exposure to contraceptive issues on cable network for 2 hours + was almost four times more likely to have sexual partners reporting involvement in at least one abortion compared with the reference exposure.

Model 2[a] reveals that video and internet media were significantly related to condom use in the last

six months before survey. Those who were exposed to videos on sex education for two or more hours were less likely to have used condom while those who were exposed to nude videos for two hours or more were over four and half times more likely to have used condom compared with those exposed for one hour or less. Exposure to sexual partnership issues on internet for two hours plus was near three times more likely to have used condom during the period relative to exposure for one hour or less.Model 3[a] centres on predictors of the practice of multiple sexual partnerships among male respondents. Three types of mass media were significantly related to multiple sex partnership. Exposure to nude human pictures on TV for two or more hours was more than twice more likely to have engaged in multiple sexual relationships than those exposed to it for an hour. Two hours or more exposure to sex education videos was less likely to lead to involvement in multiple sexual partnerships relative to the reference category. Respondents exposed to contraceptive issues on the internet for two hours or more were over two times more likely to have had more than one sexual partner simultaneously compared with those exposed for one hour or less.

Table 3: Logistic regression odds ratios on the association between exposure to sexual content of the media and sexual health behaviour among male adolescents in Lagos Metropolis, 2010

Variables	Model 1[a]	Model 2[a]	Model 3[a]	Model 4[a]	Model 5[a]
Radio					
2 hours $^{+}$ (sex education)	0.513	-	-	-	1.970*
2 hours $^{+}$ (contraceptives)	0.507	-	1.256	1.356	-
2 hours^{+} (sexual partnerships)	6.181**	-	-	-	-
Compact Disc					
2 hours $^{+}$ (sex education)	-	1.471	-	-	0.696
2 hours $^{+}$ (contraceptives)	-	-	-	-	1.551
2 hours^{+} (sexual partnerships)	-	-	0.579	2.186*	0.625
Tape					
2 hours $^{+}$ (sex education)	0.183	-	-	0.705	1.176
2 hours $^{+}$ (contraceptives)	8.115**	-	-	-	-
2 hours^{+} (sexual partnerships)	-	-	-	-	0.426*
Television Programmes					
2 hours $^{+}$ (sex education)	0.432	-	-	0.635	-
2 hours^{+} (nudity)	-	1.482	2.171*	1.762	
Cable network programmes					
2 hours $^{+}$ (sex education)	3.056	-	-	-	0.633
2 hours $^{+}$ (contraceptives)	3.834*	-	-	-	-
2 hours^{+} (nudity)	-	-	1.889	2.192*	-
Video					
2 hours $^{+}$(sex education)	-	0.364*	0.470*	-	-
2 hours $^{+}$(contraceptives)	-	0.605	-	-	-
2 hours^{+} (sexual partnerships)	-	4.587***	-	-	-
Internet					
2 hours $^{+}$(sex education)	-	1.690	-	-	-
2 hours $^{+}$(contraceptives)	-	-	2.298*	-	-
2 hours^{+} (sexual partnerships)	0.276	2.858**	-	3.076***	-
Print media					
2 hours $^{+}$ (sex education)	-	0.538	-	-	-
2 hours $^{+}$ (contraceptives)	-	-	-	0.450*	-
-2 Log Likelihood	123.964	383.499	308.805	413.830	342.389
Model chi-square	30.832***	58.409***	36.774***	50.278***	14.622*

**p < 0.05, **p < 0.01, ***p < 0.001; exposure to sexual health content for 1 hour is reference category;*
- = not included in model; Model 1[a]: Reported abortion cases by male respondents' sexual partners;
Model 2[a]: Condom use last six months before the survey; Model 3[a]: Concurrent sexual partnership;
Model 4[a]: Had sex last six months before the survey; Model 5[a]: Desire to prevent HIV

Model 4[a] shows predictors of having had sex in the last six months before the survey among male respondents. Exposure to two of the mass media was significantly related to having had sex in the last six months before the survey. Exposure to sexual partnership issues on compact disc for two hours or more was a little more than twice more likely to have had sex than exposure for one hour. In a similar way, those who were exposed to nude human pictures on cable network were over twice more likely to have had sex than exposure for one hour. Model 5[a] presents the odds ratios on predictors explaining the desire to prevent HIV among young people. Exposure to sex education radio programmes for over one hour was almost twice more likely to have expressed desire to prevent the epidemic than those exposed to it for an hour. Also, exposure to tapes on sexual partnership issues for two or more hours was less likely to have the desire to prevent HIV among the male respondents compared with those exposed for one hour or less.

Table 4 shows the odds ratios on the five indicators of sexual and reproductive health among female respondents. In model 1[b], four of the media were significantly related to self reported incidence of abortion. Those exposed to radio programme on sex education for two hours or more were thrice more likely to have aborted pregnancy within one year before the survey. But those exposed for two or more hours to sex education on cable network and video were less likely to have aborted a pregnancy compared with those exposed for one hour or less. Exposure to nude videos for two or more hours was over five and half times more likely to have aborted pregnancy. In addition, females who were exposed to nude human pictures in print media for two hours or more were over three times more likely to have experienced abortion a year before the survey compared with the reference category.

In model 2[b], only two types of media were significantly related to condom use six months before the survey. Two or more hours' exposure to sex education on radio media was almost two times more likely to have used condom. Exposure to nude pictures on cable network for two or more hours was over four times more likely to have used condom during sexual intercourse relative to those exposed for one hour or less. Multiple sexual partnerships among females was significantly related to four types of mass media. Those who were exposed to sex education on radio for two hours or more were four times more likely to have engaged in multiple sexual relationships compared with those exposed for one hour or less. Exposure to nude TV programmes for two hours or more was another important predictor of multiple sexual relationships. Females in this category were over four times more likely to have engaged in multiple sexual relationships. Those who were exposed to nude videos for two hours or more were also almost four times more likely to be involved in such sexual partnerships. Exposure to tapes on contraceptives and sex education on videos for two hours plus were less likely to be in multiple sexual relationships.

In model 4[b], female respondents who were exposed for two hours + to radio sex education programmes were about twice more likely to have had sex while those who were exposed to tapes on sex education were less likely to have had sex during the period compared to exposure for one hour or less. Exposure to nude TV programmes for two hours or more among the respondents was three and half times more likely to have had sex than those exposed for one hour or less. The model on the desire to prevent HIV (model 5[b]) among females indicates that only sex education on compact disc was significantly related and those exposed for two hours or more were less likely to express the willingness to prevent HIV.

Discussion

This study has investigated the relationship between exposure to media sexual health content and sexual health behaviour among adolescents in Lagos metropolis. Findings of previous studies on this relationship lack agreement and have been quite inconclusive. In this light, the present study aimed at contributing to the debate with the goal to clarify the nature of the relationship. In the first place, the respondents reported high level of access to various media. This is not surprising because Lagos State is the most developed, relatively most industrialised and urbanised in the country; the availability and influence of print and

Table 4: Logistic regression odds ratios on the association between exposures to sexual content of the media on sexual health behaviour among female adolescents in Lagos Metropolis, 2010

Variables	Model 1[b]	Model 2[b]	Model 3[b]	Model 4[b]	Model 5[b]
Radio					
2 hours [+] (sex education)	3.768*	1.978*	4.085**	1.796*	-
Compact Disc					
2 hours [+] (sex education)	-	-	-	-	0.342**
2 hours [+] (contraceptives)	-	-	0.521	-	2.020
2 hours[+] (sexual partnerships)	2.799	-	-	-	-
Tape					
2 hours [+] (sex education)	0.355	0.474	-	0.416*	-
2 hours [+] (contraceptives)	0.112		0.242*		0.494
Television Programmes					
2 hours [+] (sex education)	-	0.700	-	0.670	1.390
2 hours [+] (contraceptives)	2.340	-	-	-	-
2 hours[+] (nudity)	-	-	4.151**	3.553***	1.104
Cable network programmes					
2 hours [+] (sex education)	0.057*	-	0.388	-	-
2 hours [+] (contraceptives)	2.320				0.904
2 hours[+] (nudity)	4.962	4.180***	-	1.562	
Video					
2 hours [+](sex education)	0.134*	-	0.077**	-	-
2 hours [+](contraceptives)	-	-	-	-	-
2 hours[+] (nudity)	5.662*	-	3.966*	-	-
Internet					
2 hours [+](sex education)	-	-	-	-	0.992
2 hours [+](contraceptives)	2.132	-	-	-	-
2 hours[+] (sexual partnerships)	-	-	3.490	1.362	-
2 hours[+] (nudity)	0.366	1.800	-	-	-
Print media					
2 hours [+] (sex education)	-	0.604	1.939	-	-
2 hours [+] (contraceptives)	3.487*	-	-	-	-
-2 Log Likelihood	134.175	296.656	199.428	381.629	374.729
Model chi-square	42.411***	24.849***	62.996***	35.275***	18.512*

*p < 0.05, **p = 0.01, ***p = 0.001; exposure to sexual health content for 1 hour is reference category; - = not included in model; Model 1[b]: Reported abortion cases; Model 2[b]: Condom use last six months before the survey; Model 3[b]: Concurrent sexual partnership; Model 4[b]: Had sex last six months before the survey; Model 5[b]: Desire to prevent HIV

electronic media are expected, to be about the highest in the country. Although majority of the respondents reported one hour exposure to most of the media per week, more respondents were exposed to the TV for three hours or more. This may be explained in the sense that TV presents graphical or pictorial messages which fascinate young people and it is also superior in entertainment.

One of the sexual health problems confronting young people in sub-Saharan Africa is the HIV/AIDS pandemic[38]. Its spread in the region has been attributed to multiple heterosexual relationships[39, 40].

Exposure to nude human pictures on TV and contraceptive issues on internet appears major predictors of multiple sexual relationships among male respondents. Among their female counterparts, exposure to sex education, nude pictures and contraceptive contents of media were significant predictors of multiple sexual partnerships. This suggests that young people exposed to negative sexual health content of media are likely to exhibit higher odds of engaging in

risky sexual behaviour. This result supports the hypothesis that exposure to sexual health content of mass media is likely to play a significant role in the prevalence of this sexual practice among young people in the study population. The result is similar to the report of previous studies in other parts of the world indicating that more frequent exposure to sexual content of media leads to increased sexual activities[18, 22, 23].

Exposure to sex education, sexual partnership issues and nude pictures were significantly related to having had sexual intercourse the last six months before the survey. This finding implies that exposure for two or more hours to sexual health content of media significantly predicted sexual activity of young people. This finding supports the findings of previous studies indicating that exposure to sexual content of the media is likely to fan the desire to have sex and to actually engage in increased sexual activities among adolescents[18,22]. Abortion is an important sexual and reproductive health challenge among young people in developing countries. The association between exposure to media content and abortion among adolescents is quite insightful. In the first place, the data have shown that in the study sample exposure to media sexual health content is significantly predicted self reported cases of abortion among female respondents and female sexual partners of male respondents. It is surprising that those who are exposed for more hours to sex education and contraceptive content of media are more likely to have reported incidence of abortion or had sexual partners who reported same. The contrary is expected but it is possible that young people interpret sex education they are exposed to wrongly and use such for negative purposes. It is also likely that in most cases, exposure to contraceptive issues in the media for more hours did not translate into constant use for the purpose of preventing unwanted or mistimed pregnancy. It is also possible that young people intermittently rely on traditional contraceptives such as the traditional methods which make them vulnerable to unwanted pregnancy owing to the failure rate of such methods. So they resort to abortion when pregnancy occurs.

However, the likelihood of exposure to media sexual content promoting condom use was supported by the data. Exposure to nude videos and web pages on sexual partnership for two hours or more exhibited high odds for condom use among males and exposure to radio sex education programmes and cable nude pictures indicated high odds for condom use among females. These findings suggest that condom use among adolescents could likely be more frequent through increased exposure no these media contents. It is likely that exposure to such media contents enlightens young people to the dangers of unprotected sex, as a result such persons use condom for preventive purposes. This result supports findings of previous study that a positive relationship between media and use of contraceptives exists[28, 29]. Although in a recent analysis of the Nigerian DHS data, significant relationship between exposure to media sexual content and condom use was not found, findings of earlier studies in the country support the position that the media is an important channel through which family planning could be promoted[5, 25].

Before ending this discussion, I will like to highlight some of the limitations of the study. In the first place, as in any other sexuality study, the sensitive nature of the subject often makes young people to either overstate (as common among males) or under-report (among females) their sexual activities[41]. The report presented here might have suffered from this limitation. Another limitation of the study lies in the fact that using survey research design in assessing exposure to media may suffer from respondents' inability to report their actual level of exposure to the identified media. Further studies utilizing experimental design to re-examine the research questions, perhaps using a nationally representative sample, may be necessary.

Conclusion

In spite of these limitations, some important and insightful conclusions can be drawn on the relationship between exposure to the sexual content of media and sexual health behaviour among adolescents in Lagos metropolis. First, the more young people are exposed to negative sex education on radio, nude human pictures on TV and video, the more frequent they are likely to

keep multiple sexual relationships with high risk of getting infected with HIV. Second, exposure for two or more hours to sex education programmes on radio and pornographic pictures on TV significantly predicted young people engagement in sexual intercourse. Third, although it is likely that exposure to sex education on radio and nude pictures on cable/satellite network promote condom use among young people in the study area, exposure for more hours did not translate into more use. Fourth, there is a significant association between prevalence of abortion and exposure to sex education on radio and cable/satellite as well as nude human pictures on video and print media among young people. Finally, print and electronic media (most especially the TV) would be very useful in promoting sex education campaigns. Thus, safe sex can be advanced among adolescents if the mass media give accurate portrayal of sexuality, ensuring that the risky elements of sexuality are highlighted.

Acknowledgements

This study was funded through the 2009 Professor Olikoye Ransome-Kuti Research Grant awarded by the Women Health and Action Research Centre (WHARC), Benin City, Edo State. The author is therefore very grateful to WHARC. I also appreciate Buky E. S. Dansu, Chinomso Nwanchuku, Dipo Oseni and Bolawale Odunaike who acted as the field assistants. I am also highly indebted to Mr. Ranti Samuel for his useful comments on a previous version.

Contribution of author

I designed the study, collected and analysed data, and prepared the manuscript.

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