Journal of Health & Population in Developing Countries

Reproductive health behavior among adolescents and young adults in a semi-urban district in Uganda

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Abstract

This article presents findings from a reproductive health study conducted in 1999 among 464 Ugandan adolescents and young adults in the age group from 10-24 years. A high percentage (23% males, 29% females) reported to practice non-penetrative sex such as petting. Masturbation was reported practiced by 5% of participants (7% males, 4% females).

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Funding Source: United Nations Population Fund (UNFPA), Kampala, Uganda

The ***Journal of Health and Population in Developing Countries (ISSN 1095-8940)*** is a publication of the Department of Health Policy and Administration, School of Public Health University of North Carolina at Chapel Hill.

UNC SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF HEALTH POLICY AND ADMINISTRATION

Introduction

The impact of the HIV/AIDS pandemic on the African continent becomes more and more obvious as new figures are released. The United Nations AIDS Report 1998 indicates that out of the 30 million HIV infected persons worldwide, 86% reside in 34 countries in sub-Saharan Africa and 91% of all AIDS deaths are occurring in these countries. Out of an estimated 7,000 new HIV infections every day globally, half of the HIV infection affect adolescents and young adults in the age group from 10-24 years (Barongo et al., 1992). Sub-Saharan Africa has also serious women's health problems related to child bearing. In comparison to other continents, sub-Saharan Africa has the most disease burden due to childbearing. Sub-Saharan Africa lost 79.9 million Disability-Adjusted Life Years (DALY) in 1990, compared to 78.2 million DALY in India, 25 million DALY in China and 18 million DALY in Latin America due to maternal causes (World Bank, 1993). The countries in sub-Saharan Africa also have the highest level of early childbearing in the world. On average, more than 50 percent of young women in this region give birth before the age of 20 years. In some African countries, as many as 40 percent of women have their first child before the age of 18 (Crews, 1989). In 11 countries in sub-Saharan Africa, for which data were available, adolescent fertility contributed between 15 and 20 percent to the overall fertility (Population reference Bureau, 1992).

The high fertility in sub-Saharan Africa has important consequences for the health of women in terms of pregnancy-related mortality and morbidity. During a conference on safe motherhood in Nairobi, Kenya in 1987, it was reported that up to a half million women were dying each year due to childbirth related complications. Maternal mortality in Zimbabwe is reported to be 168 maternal deaths per 100,000 live births (Mbizuo, undated). In other sub-Saharan African countries the maternal mortality ratio is estimated to be much higher than in Zimbabwe with figures ranging between 500-1,000 maternal deaths per 100,000 live births. Seldom measured is the burden of pregnancy related morbidity such as vaginal-vesicula and colon-vaginal fistulae which causes tremendous suffering for women affected and which also ostracizes these women from the society.

It is known that much of the suffering due to pregnancy-related complications stems from pregnancies that were never intended. Fifty three percent of the world's couples are believed to use modern contraception (Spira, 1994). However, this figures is much lower in sub-Saharan Africa, where the overall contraceptive prevalence rate for modern contraceptives is 13% (Bambra, 1999). Bambra states that 25%-30% of maternal deaths in Africa are due to unwanted pregnancies (Bambra, 1999). The "unmet need" for family planning, i.e. women who do not want another child but do not practice modern family planning, is high. For example, in Kenya it was reported that out of 78% of married women who did not want another child, only 33% used modern contraceptives. Approximately 45% or 1,5 Million Kenyan women are currently at risk of becoming pregnant (Bambra, 1999). The wide gap between reproductive need and use of modern contraceptives is attributed to cultural traditional practices, and also to inadequate reproductive health care delivery, especially for adolescents and young adults. High fertility and rapid population growth in many parts of Africa is increasing substantially the absolute numbers of women in need of fertility regulation. It is also increasing the absolute number of women who are suffering from childbirth-related complications.

In Uganda, the government has recognized and addressed reproductive health as a serious matter. Impressive successes in combating the HIV/AIDS epidemic have been achieved with significant reductions of the HIV-1 prevalence in young pregnant women in several parts of the country (Kilian et al., 1999; Opio et al., 2000). However, other reproductive health programs such as family planning have been less successful as indicated by the lower reproductive health indicators in Uganda compared to the region (East Africa) and sub-Saharan Africa. Population growth in Uganda was 2.9% with a corresponding rate of 2.6% for sub-Saharan Africa and 2.4% for Africa (Population reference Bureau, 1999). The Total Fertility Rate (TFR) was estimated at 8.0 for Uganda, for East Africa 6.0, for sub-Saharan Africa 5.8 and for Africa 5.2 (Population reference Bureau, 1999). Also significantly lower is the contraceptive prevalence rate in Uganda with 10% in comparison to East Africa 18% and sub-Saharan Africa 18% (Population reference Bureau, 1999). The "unmet need" for family planning in Uganda was

reported to be 38% while it was only 25% in sub-Saharan Africa (Population Action International, 2001). The political commitment in Uganda to family planning is still ambiguous at all levels which manifests itself in the lack of data and/or clear policies and guidelines for the workers involved in family planning programs.

Few studies other than those related to HIV/AIDS have been published on reproductive health issues in Uganda. The Demographic and Health Survey from 1995 provides overall national data on reproductive health. Bagarukayo investigated reproductive knowledge and behavior in school students in two rural districts (Bagarukayo, 1995). Mirembe looked at teenage pregnancies in Ugandan Schools (Bagarukayo, 1995). Agyei et al examined reproductive knowledge and behavior in adolescents and young adults in a rural district in Uganda and in Kampala (Agyei, Epema, & Lubega, 1992; Ageyi, Gapere, & Epema, 1994). Most of the other literature is unpublished reports and conference proceedings. Reproductive health information from Uganda is coming mainly from rural areas or from townships. There is little information available from areas that are located in the vicinity of a big city like Kampala and which are considered semi-urban. We selected Mukono district as a semi-urban district located only miles from the capital city Kampala.

The purpose of this study was to facilitate the planning process for reproductive health programs in Mukono district so that the reproductive health needs of adolescents and young adults could be better met in the service delivered. The study had the following objectives:

- Identify opinions about various issues regarding sexuality and reproductive health in adolescents and young adults
- Identify major sources of information regarding sexual behavior and reproductive health of adolescents and young adults
- Determine the sexual behavior in adolescents and young adults and to identify their safe sex practices
- Determine the perceptions, attitudes and use of modern contraceptive methods in adolescents and young adults;

Background information

The collection of data took place in 1999 in Mukono District, a semi-urban district in central Uganda. The Republic of Uganda covers a total land area of 241,139 km^2 in the East-African region. The country has a total population of 21 million inhabitants, with a female/male ratio of 96/100. Uganda has a young population with over 50% of its population below the age of 15 years. Uganda is one of the least urbanized countries in sub-Saharan Africa. Only 15% of the population are living in townships and most of those in the national capital Kampala. Uganda is especially hard hit by the HIV/AIDS pandemic, but the Ugandan government has mounted an effective and internationally acclaimed HIV/AIDS control program that has resulted in the decline of HIV-1 prevalence in various parts of the country.

Mukono district is one of the largest districts in Uganda covering an area of 14,241 square kilometers. It is located in central Uganda and had a population of 1,063,200 in 1998. Mukono is divided into six counties and thirty-two sub-counties. The district capital is Mukono Town, situated only 18 km from Kampala on the main road going North (Mbale). The population lives from subsistence agriculture and live stock keeping. Fishing is another source of income for a majority of the people. The Baganda are the major ethnic group, followed by Basoga, Bagisu, Iteso and others. The dominant religion affiliations are protestant (Anglican), followed by Catholic and Muslim. The average population growth was 2.2% in 1998. Persons aged 10 – 24 years form a high percentage of the Mukono population: 31.5% of males and 32.4% of females of the 1991 population in Mukono were in this age group. The Total Fertility Rate (TFR) in Mukono is 6.8 children and is slightly lower than the national average (7.1). Similarly, life expectancy is slightly higher than the national average (50,2 years for Mukono, 48.1 years for Uganda).

Compared to other districts, Mukono has a higher literacy rate and is economical further ahead of most other Ugandan districts.

The health services in this region comprise six hospitals or health centers and 56 peripheral health facilities. Leading causes of deaths are acute respiratory tract infections (15%), AIDS (12%), diarrhea (11%), and nutritional deficiencies (3%). The basic health services coverage is better than in many other districts allowing for better accessibility of the rural population to essential services.

Methodology

The study population consisted of adolescents and young adults in the age group from 10-24 years in Mukono district. The study was cross-sectional and descriptive, using quantitative and qualitative research methods. A structured questionnaire was used to assess perceptions about sexuality, reproduction and sexual behavior in the study population. The questionnaire contained 40 closed questions relating to important areas of reproductive health such as knowledge about HIV/AIDS and family planning, condom use, sexual behavior patterns, sources of information, perception about services, etc. It was administered in the field by eight interviewers. Four were male and four were female. Male interviewers interviewed male participants and female interviewers interviewed female participants. Training of interviewers followed the guidelines of the "Practical guide for health workers on interviewing and recording of community health surveys (WHO, 1986). The training session for interviewers lasted three days. Ten (five in male and five in female respondents) pre-tests of the questionnaire were done for cultural acceptability and final wording of the questions. Pre-tests took place in areas in Mukono district, which were not included in the study. The questionnaire was translated into Luganda and back translated into English for comparison and validation. Interviews were conducted in the local language Luganda.

The respondents were selected based on the random selection of households, using a multi-stage cluster sampling. All sub-counties in Mukono district were listed and classified as urban or rural. Then in each category one sub-county was selected. In a second stage, in the two sub-counties for urban and rural representation, four parishes were chosen – two from the urban sub-county and two from the rural sub-county. The sub-counties selected were Kayunga and Ntenjeru. The parishes located in Kayunga sub-county was classified as urban while those located in Ntenjery sub-county wasclassified as rural.

Subsequently, in each parish a list of all villages was obtained and two villages were included in the study. In each village, a list of households was used to select 25 households, therefore a total of 200 households were included in the study. All selections were based on simple random sampling, using random tables. A sample size of 550 respondents was chosen, 250 males and 300 females. In each village, the selected households were visited and all adolescents and young adults in the respective age groups were asked for an interview until 50 interviews were completed in each village. If an eligible person was not at home, a second attempt was made to trace him/her. If a respondent could not be located on the second attempt, he/she was excluded.

In order to verify the results from the interviews, four focus group discussions were conducted – two with male and two with female respondents. Each group consisted of 8-12 participants assembled with the assistance of the village leaders. A prepared topic guide was used to focus the discussion on the selected objectives. Focus groups were held in the vernacular language and were tape-recorded. All results were translated into English for analysis. Controversial issues were discussed at length in order to arrive at a group consensus. However, dissenting views were not disregarded in the analysis. Male interviewers moderated male groups and female interviewers moderated female groups. One of the two interviewers moderated the discussions while the other one noted any issues to be discussed later and any facial expressions or other body language that were exhibited by the discussants. The focus group discussion guide was pre-tested twice.

The questions from the questionnaire were coded and entered in Epi Info version 6.0 on a desktop computer by two data entry clerks. We checked the data entry daily for completeness and missing values. The Epi Info validation program was used to check the codes on consistency with the coding list and the

appropriate range of values of the coded questions. Descriptive analysis was done using frequency distributions. Differences between categorical variables were assessed with the chi-square test; differences between continuous variables with the t-test. Significance in differences was set at the 5% level.

Consent in writing for the study was sought from the district authorities (District Medical Director, District Education Officer) and from the village headmen. The purpose of the study was also explained to each person who participated in the study, and verbal consent was obtained and recorded on the questionnaires. In order to keep results anonymous, no names were recorded on the data collection sheets. As many participants were under the age of 18 years, parents' consent was required and obtained. The National Council for Science and Technology and the Ministry of Health approved the study protocol. The data collection took place in the first half of 1999.

Results

Out of the 550 selected respondents, 464 were interviewed, resulting in a response rate of 84%. Among those interviewed, 198 were males and 266 were females. Males were more likely not to be available for the interview with a response rate of 79% compared to a response rate of 87% for females. A total of 86 participants was not available and could not be traced. Nobody who was available refused to be interviewed. Demographic characteristics are summarized in Table 1.

During the survey, 196 households were visited. Household background characteristics are shown in Table 2.

Twenty-six percent of the respondents had a leading or responsible role in the household, e.g. as a head or a spouse with high responsibilities for the health and welfare of the family. Fourteen percent of males below the age of 15 were head of a household; 18% of those in the age group from 15-19 years were household heads. Similarly, in the same age group high percentages of females were already spouses (9% and 28% respectively). The socio-economic standard of the respondents' households were categorized as relatively high compared with other parts of Uganda: 73% of the respondents lived in permanent housing structures, 90% had some kind of transport available, e.g. 22% had a motorcycle or a motor vehicle.

Sexual behavior and practice

Median age of first sexual contact was 14.6 years for males and 16.0 years for females. A high number of participants of both sexes reported that they had had sexual intercourse (16%, 58% and 91% in the three age groups 10-14 years, 15-19 years and 20-24 years). Of those 192 participants who reported having had sexual contacts, 117 or 61% said that they have been sexually active in the past six months. Out of 40 participants under the age of 15 years, 18 or 45% said that they were currently sexually active. If asked about the circumstances at the first sexual intercourse, the following answers were given: wanted to try (67%), for reward (19%), under influence of alcohol (4%) and was forced/raped (13%). These figures were similar for males and females except for the last answer, where only 3% of males but 20% of females reported having being forced into sexual intercourse. Details for the breakdown into the age groups are given in Table 3.

Table 1: Demographic characteristics of the sample

	Characteristic	Males	Females	Total sample
Age group (years)	10-14	123 (62%)	129 (49%)	252 (54%)
	15-19	45 (23%)	80 (30%)	125 (27%)
	20-24	30 (15%)	57 (21%)	87 (19%)
Marital status	Single	178 (90%)	213 (80%)	391 (84%)
	Married	19 (10%)	51 19%)	70 (15%)
	Separated/divorced	1	2	3
Type of marriage	Married monogamously	6 (32%)	17 (33%)	23 (33%)
	Married polygamously	2 (11%)	16 (31%)	18 (26%)
	Cohabiting monogamously	9 (47%)	16 (31%)	25 (36%)
	Cohabiting polygamously	0	2	2
Residence	Urban	115 (58%)	148 (56%)	262 (57%)
	Rural	83 (42%)	118 (44%)	201 (43%)
Education level	Never been at school	3 (1%)	12 (5%)	15 (3%)
	Primary	161 (81%)	194 (72%)	355 (76%)
	Secondary	32 (16%)	55 (21%)	87 (19%)
	Post-secondary	3 (2%)	5 (2%)	8 (2%)
	Currently enrolled in school	156 (79%)	169 (64%)	325 (70%)
	Literate	186 (94%)	236 (89%)	422 (91%)
Religious affiliation	Roman catholic	54 (27%)	76 (29%)	130 (28%)
	Protestant	88 (44%)	125 (47%)	213 (46%)
	Moslems	39 (20%	48 (18%)	87 (19%)
	Others	17 (9%)	17 (6%)	34 (7%)
Ethnicity	Baganda	128 (64%)	177 (67%)	305 (66%)
	Basoga	15 (8%)	34 (13%)	49 (11%)
	Banyala	10 (5%)	9 (3%)	19 (4%)
	Others	45 (23%)	46 (17%)	91 (19%)
	Non-Ugandans	5 (3%)	4 (2%)	9 (2%)

Table 2: Background characteristics of study households

Characteristics		Males	Females	Total sample
Role in household	Head	42 (21%)	5 (3%)	47 (10%)
	Spouse	3 (1%)	69 (26%)	72 (16%)
	Child	102 (52%)	107 (40%)	209 (45%)
	Inlays	6 (3%)	22 (8%)	28 (6%)
	Other relatives	21 (11%)	42 (16%)	63 (14%)
	Non-relatives	23 (12%)	19 (7%)	42 (9%)
Housing quality	Permanent	151 (76%)	188 (71%)	339 (73%)
	Temporary	47 (24%)	78 (29%)	125 (27%)
Source of income	Agriculture	111 (56%)	175 (66%)	286 (61%)
	Trade, commerce	44 (22%)	61 (23%)	105 (23%)
	Others	43 (22%)	30 (11%)	73 (16%)
Availability of transport	Bicycle	150 (76%)	166 (62%)	316 (68%)
	Motorcycle	27 (13%)	26 (10%)	53 (11%)
	Motor vehicle	21 (11%)	24 (9%)	49 (11%)
	None	0	50 (19%)	50 (10%)

Table 3: Sexual behavior and practice among those respondents who reported to have started sexual intercourse.

	Age group	Males	Females	Both sexes
Ever had sex	10-14	25 (20%)	15 (12%)	40 (16%)
	15-19	33 (73%)	40 (50%)	73 (58%)
	20-24	25 (83%)	54 (95%)	79 (91%)
Age at first sexual encounter	10-14	46 (56%)	39 (36%)	85 (44%)
	15-19	36 (43%)	65 (60%)	101 (53%)
	20-25	1 (1%)	5 (4%)	6 (15%)
Sex for reward	10-14	5 (20%)	4 (27%)	9 (23%)
	15-19	1 (3%)	10 (26%)	11 (13%)
	20-24	2 (8%)	14 (24%)	16 (20%)
Currently sexual active (sex in the past 6 months)	10-14	11 (44%)	7 (47%)	18 (45%)
	15-19	18 (55%)	16 (40%)	34 (41%)
	20-24	23 (91%)	42 (78%)	65 (82%)
Sex with friend	10-14	10 (40%)	6 (41%)	16 (40%)
	15-19	5 (15%)	12 (30%)	17 (20%)
	20-24	7 (28%)	20 (37%)	27 (34%)
Sex with stranger	10-14	2 (8%)	4 (27%)	6 (15%)
	15-19	2 (6%)	2 (5%)	4 (5%)
	20-24	2 (8%)	0	2 (3%)

When asked what other sexual activities were practiced besides intercourse, 65% (68% males, 64% females) of all participants said that they had sexually motivated body contacts in order to manage and/or express their sexuality but not to engage in high risk practice and sexual intercourse. Touching sensitive body parts was mentioned most often, followed by hugging (32%), kissing (31%) and touching genitals (26%). Older participants more likely practiced these non-penetrative behaviors. Masturbation was practiced as well with five percent of the respondents saying they ever did it (7% of male and 4% of female participants). Masturbation was most often practiced in young males (23%) in the age group 20-24 years. For details see Table 4.

Condom knowledge and use

Condom knowledge was universally high in both males and females in all age groups, ranging from 100% of males 15-19 years of age to 91% of females 20-24 years old (see Table 5).

The most frequent reason for condom use in males was prevention of HIV/AIDS, while more females responded that they use condoms to prevent pregnancy. Only 31% of both sexes said that they use condoms to prevent a sexually transmitted disease. Condom use was highest with regular partners and lowest with casual partners. The overall proportion of adolescents (out of those sexually active) currently using a condom was 20%. The lowest current condom use of 3.6% was in the age group 10-14 years. Also, all young males from 10-14 years had never used a condom. Use of condoms was associated with reading newspapers ($p=0.001$), urban residence ($p=0.065$), being enrolled in school ($p=0.006$) and level of education ($p<0.001$).

Table 4: Non-penetrative sexual contacts in sexually active respondents

	Age group	Males	Females	Both sexes
Hugging	10-14	10 (8%)	7 (5%)	17 (7%)
	15-19	26 (58%)	34 (43%)	60 (48%)
	20-24	25 (83%)	47 (83%)	72 (83%)
Kissing	10-14	11(9%)	3 (2%)	14 (6%)
	15-19	19 (42%)	35 (44%)	54 (43%)
	20-24	24 (80%)	50 (88%)	74 (85%)
Touching breasts	10-14	14 (11%)	-	-
	15-19	24 (53%)	-	-
	20-24	23 (77%)	-	-
Touching genitals	10-14	6 (5%)	3 (2%)	8 (3%)
	15-19	17 (38%)	29 (36%)	46 (37%)
	20-24	23 (77%)	44 (77%)	67 (77%)
Masturbation	10-14	2 (2%)	5 (4%)	7 (3%)
	15-19	5 (11%)	3 (4%)	8 (6%)
	20-24	7 (23%)	2 (4%)	9 (10%)

Table 5: Condom knowledge and use in sexually active adolescents

	Age group	Males	Females	Both sexes
Knowledge of condoms	10-14	23 (96%)	6 (40%)	29 (73%)
	15-19	32 (100%)	37 (80%)	69 (83%)
	20-24	26 (100%)	51 (94%)	77 (97%)
Ever use of condoms	10-14	0	1 (7%)	1(3%)
	15-19	14 (42%)	14 (35%)	28 (34%)
	20-24	20 (80%)	23 (43%)	43 (54%)
Current use of condoms	10-14	0	1 (7%)	1 (3%)
	15-19	8 (24%)	6 (15%)	14 (17%)
	20-24	12 (48%)	11 (20%)	23 (29%)
Intention to use condoms in future	10-14	19 (76%)	1 (7%)	20 (50%)
	15-19	29 (88%)	26 (65%)	55 (66%)
	20-24	20 (80%)	32 (59%)	52 (66%)

Forty percent of all respondents have refused at least once to use a condom on the request on their partner (45% for males and 33% for females). Reasons for refusing a condom were given as follows: No money to buy (62%), partner refused (17%), sex is not enjoyable with condoms (10%), condoms were not available (6%), and wanted to become pregnant (5% of females). When asked if participants intend to use condoms in future, 73% of respondents said that they would consider condom use in future (males 83%, females 64%). There was also a significant association between intention to use a condom and reading a newspaper ($p<0.001$).

Knowledge and use of contraceptive methods

Forty-one percent of the sexually active respondents had never used a contraceptive method. This figure was the same for males and females. Ever use of a modern contraceptive was 42% (males 34%, females 48%). Ever use of a traditional method was slightly lower (37% all, males 44%, females 32%). Ever use of any modern contraceptive method was lowest in the youngest age group (3%), while it increased in the middle age group (36%) and was highest in the oldest age group. This age trend was significant for all ($p>0.001$) and for each sex separately (males $p>0.0010$, females $p>0.001$). The method most frequently ever used was the condom (34% of male respondents, 35% of female respondents). Reasons for non-use of modern contraception were given as: not sexually active (57%), worried about my health (30%), partner objected (3%), lack of information (10%). Of those who were worried about the side affects of modern hormonal contraceptives, males were more likely to reject modern hormonal contraceptives because of health reasons (38%) while only 21% of the females said that modern hormonal contraceptives are dangerous to one's health.

Access to reproductive health information

Almost half of the respondents (48%) read a newspaper or a magazine regularly. The majority of those read print media once a month (24%), once a week (19%) and every day (5%). Male respondents were more likely to read newspapers/magazines compared to female respondents ($p>0.001$). 83% of the respondents said that they have a radio at home. Of those who listen to radio regularly, 14% said that they listen once a month to the radio, and 17% listen once a week, while 60% said that they listen every day to a radio broadcast. The age and gender differentials in listening to radio are significant, with males listening more often to a radio than females and older males and younger females listening more frequently than younger males and older females. If asked what the most popular programs were, the following answers were given: drama (30%), family matters (20%), news (15%), music broadcasts (12%),

youth issues (12%) and health education (11%). Higher proportions of females listen more often to youth and sexual health broadcasts than males. 18% of the respondents said that they have a TV at home. More females than males had never watched TV at all (69% resp.58%). 12% of those who had a TV said that they watch TV daily, 14% said that they watched TV weekly and 9% said that they watch on average TV once per month. Preferred TV programs were drama (46%), news or sports (36%) and music (9%). None of the televised programs related to reproductive health were mentioned.

When asked what their primary source of information on reproductive health was the following answers were given: media 35%, schools 15%, friends 13%, health professionals 2%, and others 3%. 32% said that they never received any information on reproductive health. Only 18% of the respondents who received information on reproductive health said that they get it regularly.

Discussion

This study examined responses of adolescents and young adults in Mukono district to an interview applied questionnaire about reproductive health issues. The demographic variables in males and females were similar except for marital status, therefore a gender based comparison was legitimate. We focussed our studies on age and gender related differences and included in the interview participants in the youngest age group of 10-14 years with the consent of their parents.

The study has shown that the majority of adolescents and young adults are sexually active and that a fairly high proportion had their first intercourse before the age of 15 years. This confirms findings from other studies in Uganda where the age of first intercourse was between 14-16 years for adolescents[15]. Also the 1995 Demographic Health Survey (DHS) revealed that adolescents start sexual activities early including intercourse (Ministry of Planning, Uganda & Macro International, 1996). The finding that fewer younger participants compared to older participants reported having had sex before 15 years of age indicates that there is a shift in age for the start of sexual activities. This is similar to findings from a program of surveillance of sexual behavior of secondary school students in Kabarole district, where it was observed that during the time from 1991 to 1997 age of the first intercourse increased by one year. (Kilian 2002, unpublished observation).

It was interesting for us to find that adolescents and young adults are practicing non-penetrative sexual activities such as sexual touching (petting) and masturbation. There was a clear trend that this was more common in the older age groups, where 23% of male participants in the age group of 20-24 reported having practiced masturbation and 77% having practiced petting. A similar response was obtained from female participants with high numbers reporting petting to satisfy their sexual desires. The acceptance and frequent practice of non-penetrative sexual behaviors has not been described in the reproductive health literature from sub-Saharan Africa. It offers additional opportunities for the promotion of safe sex practices in Uganda. Non-penetrative sexual practices have not been included in most education programs in Uganda and elsewhere in Africa as a means to prevent the transmission of HIV/AIDS. The incorporation of such relevant messages in ongoing AIDS education programs (presented in an appropriate way in the cultural context) that could help youngsters to engage in safe sex practices, especially for those who do not want to use condoms. There may be moral objections and health questions about non-penetrative sexual practices. Practicing non-penetrative sex in spite of any possible disadvantages may be another real option for HIV transmission control. Balancing pros and cons of non penetrative sex needs to be done from the public health perspective.

We did not ask, whether participants believed if sexual touching and masturbation had adverse side effects on their physiological and/or mental health or caused feelings of guilt. Therefore we do not know if there was a health concern about this. Surprisingly, we did not find any references on this topic in the studies that we reviewed in a Medline search on Africa. One explanation is that the extremely open approach to sexual education by the Ugandan government made it possible to ask these kinds of sensitive questions, a situation that may not exist in other African countries. In order to decide if messages about non-penetrative sexual practices should be included in reproductive health information for adolescents, all

stakeholders concerned, (e.g. health professionals, educators, government representatives, church and community leaders, teachers and parents) should openly discuss this issue together.

As we expected, knowledge of condoms was universally high in this population due to the wide-scale national condom promotion program. Condom use was rarely existent in participants of the age group 10-14 years, who were sexually active: all males who reported that they had sexual intercourse in the past six months, had not used a condom. As these relationships were more likely casual than stable, non-condom use may have exposed those participants to a particularly high risk of acquiring HIV/AIDS. The gap of high condom knowledge and high intent to use condom with the actual condom use is of great concern within this age group. It also shows that the educational programs have not effectively reached these young adolescents. It may also indicate that adults (parents, program mangers, health staff, etc.) may consider the sexual relationships of these very young teenagers as immoral and therefore also deny they exist, in spite of the fact that a high proportion in this age group does actually have sexual relationships. Access to information and reproductive health programs may be severely limited for this younger age group.

Use of oral contraceptives was low in this study which is consistent with other findings from Uganda, where the national contraceptive prevalence rate for modern contraceptives is 10%, resulting in a fast population growth of 3.0%. The substantial number of participants (30%) reporting that modern contraceptives are dangerous to their health indicates a high degree of misinformation and misconceptions about modern contraceptives. Low use of modern contraceptives in adolescents was also reported from other areas in Uganda such as Mbale district and Kabarole District (Ageyi, Gapere, & Epema, 1994; Ndyanabangi & Kipp, 2001). There is a great need for the unbiased promotion of hormonal contraceptives and better access for unmarried adolescents to use them. A study from Kabarole district has shown that the community-based family planning project in this district did well in recruiting older married clients. Unmarried younger women and adolescents did not benefit from this program. Most of them did not even know that the family program existed (Flaherty & Kipp, 2003).

Our study revealed some degree of sexual abuse, especially for females (females 20% vs. males 3%) during the first sexual experience. There is very little known about sexual abuse in children and adolescents from sub-Saharan Africa. Many professionals estimate it to be high. In Yaounde, Cameroon, the incidence of sexual abuse in children and adolescents was estimated at 2%, girls being twenty times more likely to be affected compared to males[20]. Sexual intercourse forced upon adolescents may also specifically predispose to HIV/AIDS in a high HIV prevalence country such as Uganda and this contribute to the spread of HIV. As we did not validate responses to this question, there may have been some potential for ambiguity, e.g. adolescents feeling compelled due to desire or pressure (but did not have sex against their will), or females pretend resistance when sex is desired.

Peers and the media were the most important sources for reproductive health information. Use of condoms was directly associated with reading a newspaper. Information about condoms and pills was least likely given by parents and/or school teachers, but was most likely provided through the media such as newspaper and radio. The “silence” of parents and teachers on modern contraceptives is contradictory to the actual situation of sexual activities commencing in young adolescents. There is a great need to protect young girls from pregnancy with all its negative consequences for them and others. These parents have either a true lack of information or else a blind spot that prevents them from accepting the reality that young people begin sexual activities early. The many contradictions between attitudes of adults towards sexual activities of teenagers and the actual sexual practice of teenagers pose many serious questions and demonstrate the need to re-examine reproductive health policies and educational programs. The finding that teachers were more likely to teach about the less reliable traditional family planning methods instead of the effective modern methods shows some inadequacies of school-based sex education.

Study Limitations and Strengths

We cannot exclude interview bias, but we tried to minimize it by using well-trained and experienced local interviewers. The reproductive health literature includes courtesy bias as a possible error in a study. Participants, especially young ones may be prone to courtesy bias, wherein they may be reluctant to express negative opinions. Courtesy bias can involve the tendency of a research participant to respond as she believes the interviewers want her to respond Whittaker et al., 1996; Simmons & Elias, 1994). However, the main findings of the study from the interviews were confirmed in the focus groups.

The strength of the study was that the sampling frame allowed us to include both adolescents enrolled in schools and adolescents not attending schools. In many studies only school students are investigated because they are more easily accessible than adolescents not enrolled in school. The percentage of those not attending schools in our study was small (3%), but we had a considerable number of participants who did not complete primary school and had only a few years of schooling. As our study included both groups, those enrolled and those not enrolled in schools the reproductive health information given is more representative of the general population in this age group as if only school students would have been included.

The age group selected included the younger adolescents from 10 years upwards, which are generally overlooked in a study of this nature. The finding that these very young adolescents are sexually active makes this study more valuable and noteworthy.

Conclusions

Most of the findings of this study are in line with other study findings from Uganda and elsewhere. However, three important aspects emerge from this study, which have not been covered widely in the published literature:

- Adolescents of the age group between 10-14 years are sexually active, but do not practice safe sex e.g. use of condoms.

- Adolescents and young adults do practice non-penetrative sexual behavior such as sexual touching and masturbation. This is more common in the older age groups.

- Female respondents are at a significant higher risk for sexual abuse than male respondents. One in five female respondents reported having had such an experience.

These three findings have important implications for planning and implementing reproductive health programs in Uganda. For example, unprotected sex in the 10-14 years olds exposes them to a high risk of acquiring HIV/AIDS and other sexually transmitted diseases compared to the older age groups. This finding is confirmed by the results of the sentinel HIV surveillance in Kabarole district, where in 1991 33% of pregnant women (the highest proportion HIV infected compared to older age groups) between 16-19 years were HIV positive[8]. It is most likely that many of these pregnant women had been infected with HIV infection much earlier and would probably have fallen into the age group 10-14 years at the time of infection. The national HIV/AIDS sentinel surveillance does not include the age groups between 10-14 years. As this group is already sexual active and mostly unprotected, it would be very important to know the level of HIV and STD infection rates. The non-use of condoms in this age group is somewhat surprising, taking into account that Uganda has one of the most aggressive and effective condom promotion programs in Africa. Surveillance programs should also include the very young adolescents and establish their levels of reproductive morbidity such as HIV infection. On the other hand, the observed trend that the age of the first sexual contact increases is a positive sign that sexuality is postponed to higher ages which would indicate that the existing sexual education programs are effective.

Reproductive health programming should also take into account that a substantial number of adolescents have been subjected to force during the first sexual intercourse. As affected adolescents are more at risk to acquire HIV/AIDS, special counseling services (or special training of existing counselors) are needed to address the needs of this group. Uganda has been praised for its vigorous response to the HIV/AIDS epidemic and its open discussion about sexual matters. Therefore it could be one of the first African countries to include such a special counseling program for sexually abused adolescents in its ongoing efforts to mitigate the social impact of this pandemic.

In summary, we believe this study documents new information that should reform current reproductive health education programs in Uganda and perhaps beyond. The target population for reproductive health programs has to include the very young who are in reality sexually active and are at greatest risk. A viable option for meeting their sexual needs that can be openly incorporated into the program is non-penetrative sex, since it is already practiced by many. Sexual abuse with its great negative impact on the healthy development of sexual behavior needs to be included in the counseling/education programs, but its inclusion should be based on more conclusive studies on this topic.

Acknowledgments

The Authors would like to acknowledge the role played by the implementing ministry of the Program for Enhancing Adolescent Reproductive Health in Uganda (PEARL), the Ministry of Gender, Labor and Social Development, Kampala, Uganda, for approval of the study and allowing publication of the findings. Furthermore the financial and technical support provided by United Nations Population Fund (UNFPA) is greatly appreciated. We would also like to thank the young people and district officials of Mukono district for their cooperation and support to ensure successful completion of this study.

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