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Original article

Study of sexual behaviour in relation to sexually transmitted infections (STIs) among Nigerian undergraduates

Agan TU[1], Ekabua JE[1], Nyong PP[2], Ndifon WO[2], Itam HI[1]

[1]*Department of Obstetrics & Gynaecology*; [2]*Department of Community Medicine*, *University of Calabar*, *Nigeria*

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Abstract

Objective: To determine their reproductive health behaviour concerning fidelity and psychosocial intimacy in the face of current trends in sexually transmitted infections (STIs) and human immunodeficiency virus (HIV)/acquired immune deficiency syndromes (AIDS) pandemic. **Methods**: A cross-sectional comparative male/female cohort study using a semi-structured questionnaire to interview sexually activity of undergraduates in University of Calabar (UNICAL) was conducted over a three (3) month period in 2007. Markers used were number of sexual partners, frequency of sexual intercourse in the 6 months preceding, knowledge of last menstrual period (LMP), methods of self-protection against STIs, number of unwanted pregnancies terminated, and contraceptive use. **Results**: Of the 1 337 respondents, 648 out of 684 males (94.7 %) and 543 out of 653 females (83.2 %) had multiple sex partners. The gender difference was statistically significant ($P<0.01$). Only 36 (5.3 %) of males and 110 (16.9 %) of females maintained single mates in the past six months. About half of females (320, 49.0 %) and 314 (45.9 %) of males exhibited spontaneous sexual contact habits. The difference in frequency of intercourse between both groups was not statistically significant ($P>0.05$). While 275 (42.0 %) of the females could state the exact last menstrual period (LMP), only 14 (2.1 %) males could remember their mates LMP, and 496 (72.5 %) of males did not know anything about mates´menstrual habits. There was no statistical significance difference ($P>0.05$) between both groups in their safe sex practices. One hundred and sixty three (23.8 %) male and one hundred and forty one (22.8 %) females used condoms, while 347 (50.7 %) of male and 337 (51.6 %) of females did nothing. Two hundred and seventy six (40.0 %) of males´mates had terminated pregnancies and three hundred and forty eight (53.3 %) of female respondents admitted doing so. Thirty (4.60%) females terminated pregnancy more than six times. Females had more knowledge of contraceptives but males used condoms more. Respondents expressed need for sexuality education. **Conclusion**: Sexual behaviour of UNICAL undergraduates does not conform to current trends of safe-sex. There is need for more information, education and communication.

Keywords: Sexual intimacy; Undergraduates; Safe-sex

INTRODUCTION

Intimate mate connotes close regular sexual relationship between opposite genders[1]. Limitation of the number of sexual contacts and partners became a global norm as a result of the human immunodeficiency virus (HIV)/acquired immune deficiency syndromes (AIDS) pandemic[2]. Consequently, the concept of safe-sex became a necessity in order to control the deadly disease. Studies have shown that in most African countries the youth have been worst

Correspondence to: Dr. Agan TU, Department of Obstetrics & Gynaecology, Ucth, Calabar, Nigeria.
Tel: +2348023845652; +2348030822526
E-mail: evitomtu@yahoo.com

affected[3]. Lack of awareness and the globalization process that undermine African cultural mechanisms of sexuality control have been attributed to the spread of HIV/AIDS in Africans, especially amongst the adolescents who are now experiencing sexuality crises[4]. In most of the Nigerian higher institutions, it has been observed that burial parades have recently become a daily project amongst students who mourn their dead colleagues most of whom were afflicted by HIV/AIDS. Although, attention has been focused on commercial sex workers, long distant vehicle drivers, military men, hotels and brothel workers as well as other persons whose professions separate them frequently from their partners, it is now inevitable that anybody could be infected by HIV&AIDS, even the unborn bady[5]. The HIV infection is likely to be endemic among the undergraduates.

The twin phenomena of unwanted pregnancy and sexually transmitted infections (STIs) that the youth have to face make it expedient to tackle them jointly for a better result. Unwanted pregnancy might be complicated by post-abortion haemorrhage often associated with hypovolaemic shock, anaemic heart failure, overwhelming infections and early death. The long-term complications of tubal blockage, intrauterine adhesion, and consequent infertility in poorly managed patients, are not worth the prize of flirting experience of unsafe sex[6]. Apart from genital injuries, the poorly performed uterine evacuation by cheap but unsafe methods has a high chance of HIV transmission through inappropriately sterilized instruments. The consultation of non orthodox practitioners is informed by poor financial state of most youths as a result of dwindling family income[7]. Unless these complex linkages are broken by correct attitudes towards safe-sex, through urgent and proper information, education and communication (IEC), most African states might lose the future which the youth represents. The undergraduate is not spared from the aforementioned health consequences that may follow unguarded sexual practices.

On the other hand, the upsurge of unprotected sex by the youth with the associated high transmission rate of STIs especially HIV/AIDS had since aroused the interest of some world bodies especially the World Health Organization. It has been observed that mortality ratios of the developing countries which were falling had recent risen again because of adolescent unsafe-sex and unsafe abortions[8]. Despite the implementation of Safe-Motherhood initiatives in the 1990s and other efforts to stem the increasing maternal morbidity and mortality[9], the adolescents are still ignorantly behaving as if AIDS is "American invention to discourage sex". Thus, the need arose to focus on undergraduates with a view to observing if, with their vantage position, they are able to show good examples to their less privileged peers in the society.

The main objective of the study was to measure the level of sexual fidelity amongst undergraduate students.

A modified empirical framework on undergraduates´sexual behaviour is hereby used for analysis in order to determine their knowledge of the dreaded HIV/AIDS pandemic as a contemporary global health problem. Thus, the study aims at setting another foothold to adequately appreciate the undergraduate reproductive health problems with a view to devising appropriate IEC for the purpose of preventing the diseases amongst them[10,11].

This will also measure other reproductive health indices, like the level of intimacy, contraceptive knowledge and use, management of sexual crises like unwanted pregnancy and safe protective measures against STIs.

It is also expected that the work may encourage Nigerian undergraduates, to appreciate the need to "manage their sex life as a joint venture"[12].

MATERIALS AND METHODS

This study was carried out in the University of Calabar, Nigeria. The cross-sectional comparative study was carried out within 3 months in 2007. Data were obtained from the respondents in various departments by pre-computed quota sampling using the open-ended questionnaire while they were waiting for a lecture or immediately after the lecture. The exclusion lists were pregnant women, Catholic nuns and those who declined to participate in the interview.

The markers that focused on the objective of the

study in the questionnaire were: (a) Frequency of sexual intercourse; (b) Number of sexual contacts in the 6 months prior to the study; (c) Knowledge of last menstrual period of the female mate; (d) Methods of self protection against STIs; (e) Number of unwanted pregnancies that were terminated; (f) Knowledge and use of contraceptives.

The first step to data analysis was to separate the males from females in order to establish a cohort between them. The compiled data were analyzed using EPI info version 2000 and results presented using percentages. Significant level was set at $P < 0.05$.

RESULTS

A total of 1 350 copies of questionnaire were distributed. Only 1 337 (99.0 %) were correctly completed and analyzed. Thirteen (1.0 %) were discarded.

A total of 146 (10.9 %) of the undergraduates kept one sexual partner while 1 191 (89.1 %) kept multiple partners. More males had multiple sex partners than females (94.7 % versus 83.2 %) and there was statistically significant difference ($P < 0.01$). About 634 (47.3 %) of the respondents had no regular pattern of sexual intercourse and there was no marked divergence in the frequency of sexual activities between the female and the male respondents (Table 1). It was however not significant defferent ($P > 0.05$) when compared with those who had regular sexual frequency. About 51.0 % of the males and 44.3 % of the females had two or more sexual mates each and a negligible percentage (5.3 %) of males and 16.8 % of females maintained single sexual partners in the preceding six months.

Only 14 (2.1 %) of males could remember the last menstrual period (LMP) of their supposed intimate mates, while a significant proportion of 496 (72.5 %) did not know the periodicity of their mates´LMP. A statistically significant higher proportion of males had no knowledge of their partner´s LMP than the females ($P < 0.05$). Seventy nine (12.1%) females could not remember their LMP while two hundred and seventy five (41.2 %) were able to remember their exact menstrual date. About 10.6% of the females were menstruating at the time of the interview (Table 1).

Six hundred and eighty four (51.2 %) of the respondents (males 347, females 337) were not aware of how to protect themselves, while 22.7 % used condoms. Only 11.0 % of the males and 9.5 % of the females practice abstinence. Although more than half had no knowledge of self protection against STIs as against those who knew, the gender difference was not statistically significant ($P > 0.05$, Table 1).

About 40.4 % of males´mates were involved in the termination of unwanted pregnancies through financial sponsorship. The method of termination was dilatation and curettage. Involvement in pregnancy termination was significantly more among females than male respondents ($P < 0.01$). It was observed that 53.3 % of females had terminated one or more pregnancies in their lifetime. Thirty (4.6 %) of the females had 6 or more pregnancy terminations (Table 1).

Table 2 highlights the contraceptive awareness and usage among the undergraduates. There was general poor awareness of contraceptives and their use as compared to earlier studies. However, females relatively knew and used contraceptives more than the male counterparts. The main method patronized by both males and females was condom (22.7 %) of all the methods used while Postinor (emergency contraceptive pills) occupies the second position (14.3%). However, the knowledge of condom was quite high at 97.6 %. Despite this, only 23.8 % of the respondents used the method, thus generating a wide KAP-gap (73.8 %) due to certain unmet needs. The contraceptive practice in this study was 11.6 % only.

Out of the 133 7 respondents, 838 (62.9 %) made comments ranging from excited expressions to outright resentments like "how dare you probe into private matters", while 499 (37.3 %) did not. Overall, about a third of the respondents expressed the need for sexuality education.

Table 1 Rrequency of intercourse, menstrual knowledge, methods of self protection against STIs and involvement in pregnancy termination among UNICAL students.

		Male	Female
Frequency of intercourse	Daily	30(4.4)	24(3.7)
	1 – 3 times per week	105(15.3)	105(15.3)
	Monthly	79(11.5)	93(14.2)
	Once in two months	81(11.8)	49(7.5)
	Indeterminate(spontaneous)	314(45.9)	320(49.0)
	Nil	75(11.0)	62(9.5)
Timings of menstruation	Exact date	14(2.0)	275(42.1)
	Last month	43(6.3)	126(19.3)
	Survey month	77(11.3)	104(15.9)
	Currently menstruating	54(7.9)	69(10.6)
	Unknown	496(72.5)	79(12.1)
Methods of self-protection from STIs	Sexual abstinence	75(11.0)	62(9.5)
	Use of condom	163(23.8)	141(22.7)
	Other methods (Douching, antibiotics and urinating after sex	99(14.5)	106(16.2)
	Nothing done	347(50.7)	337(51.6)
Involvement in Pregnancy termination	None	418(61.1)	305(46.7)
	One	125(18.3)	158(24.2)
	Two or more	141(20.6)	190(29.1)

Table 2 Contraceptive knowledge among UNICAL students.

Methods	Knowledge	Practice	Knowledge	Practice
Natural	84	10	122	45
Condoms	652	163	653	141
OCPs	137	13	420	22
Hormonal injections	57	2	206	3
Postinor	63	23	143	48
Norplant	11	0	28	0
BTL	146	0	570	0
Vasectomy	121	0	326	0
IUCD	60	2	465	16
sTFP	8	3	31	6
Total	133 9*	216	296 4*	281

* Aggregate value that shall be extrapolated on the use of contraceptives. It implies that some respondents knew more than one contraceptive method.

OCPS (oral contraceptive pills), BTL (bilateral tubal ligation), IUCD (intrauterine contraceptive device), sTFP (some traditional family planning).

DISCUSSION

This study assessed the sexual behaviour of undergraduates with emphasis on frequency and number of sexual contacts, menstrual and contraceptive knowledge and usage as well as prevention of STIs and pregnancy termination practices.

The result obtained from this study shows that undergraduates seem to lack reproductive life education and plan, hence their response to the current HIV/AIDS pandemic does not conform to their counterparts like in Thailand and elsewhere[13]. Their level of psychosocial intimacy was superficial. It was therefore not surprising that there was a high prevalence of risky sexual practices as shown in the results. These findings agree with previous reports among youths[14]. For example, the males were not interested in menstrual problems of their intimate mates. This indicates that they are not managing their sex life as a joint venture, neither is intimacy so close-knitted, as the occurrence of menses is an evidence that there was no unwanted pregnancy. It is understandable therefore, why they resort to abortions which is yet to be legalized in Nigeria, instead of using contraceptives especially condoms which protect against STIs and unwanted pregnancies[14].

The essence of knowing the LMP is to determine the ovulation period in order to prevent unplanned pregnancy[15]. If 79(12.10 %) of female undergraduates could not state the exact date, then among the illiterates, the situation could be worse. The risky sexual behaviour is demonstrated by their inability to practise safe sex. Only a few of them abstained sexually (A), or were being faithful (B) and made use of condoms (C). Contraceptive use was lower than an earlier study in Ilorin, Nigeria[16]. The fact that 89.08 % of the 133 7 respondents had more than one sexual partner, within six months prior to the interview, is a cause for concern. This pattern of risky sexual behaviour could have a significant implication on the prevalence of STIs including HIV&AIDS as well as the global fight against the conditions.

Another implication is that as potential parents, many might likely become infertile due to the long-term sequelae of genital infections. Thus, a factor to sexual stability appeared to be having an intimate mate. If they had and remained faithful, they would realize that it is less expensive, more convenient and the most confident way towards realizing life goals in the contemporary global village[17].

The strength and weaknesses of the undergraduates in particular and other Nigerian youths in general, within the available opportunity they have, rest on collective ineptitude of the society. Even some amount of threats within the strength, weakness, opportunity and threat (SWOT) concept might not supplant the unfortunate suicidal trend predicated on sexual crises among the youth. It appears the blame on globalization effects is sometimes overplayed because most African governments have underestimated their responsibilities to the rising youth population by not considering their reproductive health needs[18]. One example of how government ineptitude affects the youths negatively is in housing policy. The poor accommodation of the students, as in most other universities in Nigeria, is another indictment of institutional failure to adapt to the increasing adolescent sexuality needs that call for appropriate strategies to assist them[19]. About twenty students now occupy hostel space meant for 4 occupants in the 1970s. The absence of privacy has increased deviant sexual practices especially homosexuality among room mates with high tendency of genito-anal trauma and easy penetration of HIV through the damaged membranes[20]. Nigeria lacks youth-friendly strategies like social franchising to reduce the cost of safe-sex[21], neither is the ABC to Z concept of Willard Cates being considered[22]. To complicate the matter, the persistent and long periods of schools´ closures have left the undergraduates with nothing but unprotected sex as a way of relieving boredom.

Many parents are handicapped educationally, morally and psychologically to bring up their children to enable them adjust to the inevitable global changes. Some parents get stuck in expiring cultural norms or religious instructions they themselves can not abide with[23]. It has been observed that even educated mothers are unable to educate their adolescent daughters on the implications of menarche. Where such knowledge is imparted such mothers use inappropriate directives like "you will be pregnant if

a man touches you". Curious as teenagers are, they might wish to test such hypothesis and see the consequences. It appears as if governments, the society, educational institutions and parents are ill-equipped for the present traumatic global changes. The youth deserve empathy and sympathy that should be translated to brave steps aimed at assisting them adapt and quickly too. Without pragmatic and multifaceted approaches being taken to assist the youth, it would appear as if the current adult generation is stealing the future from the youth[24].

It is hereby recommended that the current efforts by the Federal Government of Nigeria to control HIV/AIDS must focus on the multiple predicaments of the youth. Free HIV screening tests for all youth below 25 years of age would assist early diagnosis and treatment. Incentives like offer of hostel space to those who have undergone the test can boost the moral but there must be arrangement to manage those who are seropositive. The idea of confidential handling of cases is becoming counter-productive; hence HIV infection should be managed like other diseases. This would impose self-checks and reduce the spread. Continuous shielding of affected individuals is no guarantee for the protection of potential victims; it only assures infected individuals that they are free to spread the disease unabatedly.

The comments by the respondents clearly show their yearning for knowledge on unmet reproductive health needs[25], which had been taken for granted for so many years. Paucity of funds at all level of governance tends to influence adversely the prioritization of adolescent reproductive health services. The ministries of information must develop a system to educate, inform and establish efficient communication with students on safe-sex. We agree with some respondents that University of Calabar (UNICAL) should also include in the General Study (GS) curriculum, a course on reproductive health for all undergraduates and issues of safe sex should not be underscored. Undergraduates and the public must remember that you are either infected or affected.

Youths especially UNICAL undergraduates are called upon to form youth-friendly HIV/AIDS control non-governmental organizations for self-checks and to monitor peers activities all aimed at discouraging unsafe sex among the students and friends. Parents must rise above simplistic cultural and religious sentiments by continuous advice, monitoring of their children and re-directing their efforts towards useful assignments during the holidays. The undergraduates themselves must abstain from unsafe sex, use the condom if it is absolutely necessary and watch out for genital infections and other STI syndromes in their sexual partners[26].

As the future leaders of any nation, the undergraduates, by virtue of their role-modeling in most societies, have a greater role to play in stemming the tide against the mortal and ubiquitous HIV/AIDS. They must be appropriately informed and educated. Other urgent strategic actions including empirical focalization towards the disease dynamics for early diagnosis and treatment, preventive actions like ABC concepts of abstinence, being faithful, condom use and the avoidance of other risky behaviours like traumatic kissing and the use of unhygienic objects, have been advocated. One example is post abortion care network (PACNET) strategy, developed by Baird et al in 1998 to address the problem of unsafe sex in Nigeria, "irrespective of creed, politics, social and economic status"[10], as a result of the close link between STIs and unsafe sex. By using SWOT analytical framework, the authors deciphered the hazards of unplanned pregnancy using multi-faceted approach to address the bipolar health variables of unsafe sex[2].

REFERENCES

1 **Robey B**, Rutstein SO, Morris LT. Reproductive revolution: New survey findings. *Pop Rep* 1992; 20(11):1 – 37.

2 **Nelson KE**, Celentano DD. Eiumtrakol S, et al. Changes in sexual behaviour and a Decline in HIV infections among youths/ men in Thailand. *N Engl J Med* 1996; 335(5): 297 – 303.

3 **Finger W**, Fischer S. Applying social franchising techniques to youth reproductive health/HIV Services (Youth Issues Paper 2). *FHI Youth Net Program* 2003. 1 – 27.

4 **Cadwell JC**. Africa faces reproductive crises. *Afr J Repr Health* 1997;1(2): 10 – 11.

5 **Zhang ZQ**, Schuler T, Zupacic M, et al. Sexual transmission and propagation of HIVin resting and activated CD_4^+ cells. *Science* 1999; 286(5443): 1353 – 1357.

6 **Saltier C**, Johnston HB, Hengen N. Care of post-abortion complications: Saving women´s lives. *Pop Rep* 1997; 25(1):3 – 28.

7 **Okonofua F**. Economic development and reproductive health in Africa. *Afr J Repr Health* 1997;1(2):6 – 7.

8 World Health Organization. *Maternal Health and safe-motherhood: A tabulation of available data on the frequency and mortality of unsafe abortions*. Geneva: WHO; 1994. 1 – 117.

9 **Archibong EI**. Illegal abortions: A continuing problems in Nigeria. *International J Gynaecol & Obstet* 1991; 34(3): 261 – 265.

10 **Baird TL**, Ogedengbe B, Tubi AM, Shittu SO, Giwa-Osigie O, Akinosho T. Nigerian Network develops strategy to address unsafe abortions. *Dialogue* (*IPAS*) 1998;2(3):1 – 2.

11 **Sonti S**, Thapa S. Youth participation in reproductive health and HIV/AIDS programs. HIV/Youth Program Services Consultation. Monteux, Switzerland: WHO; 2003. 6 – 8.

12 **Robey R**, Ross B, Bushan I. Meeting the unmet need: New strategies. *Pop Rep* 1996;24(1):3 – 32.

13 **Van Landingham M**, Trujillo L. Recent changes in heterosexual attitudes, norms and behavior among unmarried Thai men: a qualitative analysis. *Int Fam Plann Perspect* 2002; 28(1):6 – 15.

14 **Cates W Jr**, Steiner MJ. Dual protection against unintended pregnancy and STIs: What is the best contraceptive approach? *Sex Transm Dis* 2002; 29(3):168 – 174.

15 **Wilcox A**, Weinberg C, Baird D. Timing of sexual intercourse in relation to ovulation. *New Eng J Med* 1995; 333:1517 – 1527.

16 **Araoye MO**, Fakeye OO, Jalayemi ET. Contraceptive methods amongst adolescents in a Nigerian tertiary institution. *West Afr J Med* 1998; 17(4):227 – 230.

17 **MaCauley AP**, Saltier C, Kiragu K, Senderowitz J. Meeting the needs of young adults. *Pop Rep* 1995; 28(3):3 – 38.

18 **Nare C**, Katz K, Tolly E. Adolescent access to reproductive health and family Planning services in Dakar (Senegal). *Afr J Repr Health* 1997; 1(2):15 – 25.

19 **Garnet GP**, Anderson RM. Strategies for limiting the spread of HIV in developing countries: Conclusions based on studies of transmission dynamics of the virus. *J Acquir Immune Defic Syndr Hum Retroviral* 1995; 9(3):500 – 511.

20 **Miller CJ**. Mucosal transmission of human immunodeficiency virus. *Curr Top Microbial Immunol* 1994; 188:107 – 122.

21 **Montagu D**. Franchising of health services in low – income countries. *Health Policy Plan* 2002; 19(2):121 – 130.

22 **Cates W**. Barrier Methods: The ABC to Z approach – condoms are one element in a comprehensive approach to HIV/STI prevention. *FHI* 2002; 22(4):3 – 19.

23 **Gage-Bradon AJ**, Meekers D. Sexual activity before marriage in sub-Saharan Africa. *Soc Biol* 1993:41 – 60.

24 **Green CP**, Rhinehart W, Goldstein SM. The environment and population growth: A decade for action. *Pop Rep* 1992; 20:1 – 28.

25 **Nelson K**, MacLaren L, Magnani R. Assessing and planning for youth friendly reproductive health services. Washington DC, Focus on Young Adult. 2002.

26 **Senanyaka P**. Positive approaches to education for sexual health with examples from Asia and Africa. *Soc Adolesc Med* 1992; 13(5):350 – 353.

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