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Sexual behaviour, contraceptive practice and reproductive health outcomes among Nigerian university students

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Abstract

Context: The continued poor reproductive health behaviour and outcomes among youths informed the investigation of the knowledge, attitudes, sexual behaviour, outcomes and care-seeking among university students in Zaria, north western Nigeria.

Methods: Using a cross-sectional descriptive study design, self-administered structured questionnaires were administered to a sample of 400 undergraduate students of Ahmadu Bello University students drawn by multi-staged sampling to collect information on their reproductive health knowledge and behaviour.

Findings: Knowledge of most aspects of reproductive health was high. However, gaps were found in some specific areas. Apart from ethnicity and faculty of study, no significant associations were found between knowledge and other demographic variables. Attitudes to reproductive health were generally negative. Overall, 64.1% of the respondents had had sexual intercourse; 65.4% of the males and 60.2% of the females students sexually experienced. The mean age at sexual exposure for females and males were 17.8 and 19.2 years, respectively. The mean number of lifetime sexual partners was 3.4 for males and 2.4 for the females. Of the 54.7% currently sexually active respondents, 53.5% of the males and 48.0% of the females were involved in multiple sexual relationships.

Only 32.4% of the sexually exposed respondents had ever used or were currently using a method of contraception. Condom use was only 30% among the sexually active respondents with use higher among the males; however, the use was inconsistent. Use of effective contraceptives was very low. Overall, 23.3% of the respondents had experienced symptoms suggestive of sexually transmitted infections within six months preceding the study, and self medication was the predominant method of treatment. Utilization of the university health services for their reproductive health needs was found to be abysmally low.

Conclusion: The gaps in reproductive health knowledge, negative attitudes, high prevalence of risky sexual activity and poor reproductive health care seeking behaviour call for mounting of educational intervention programmes and development of youth-friendly reproductive health services on campus.

Introduction

Globally, the youth proportion of the population is increasing.¹ In Nigeria, it is estimated that youths aged 15 to 24 years make up approximately 20%² of the estimated 130 million population. The increasing numbers of adolescents and youths and the worsening status of their reproductive health have become a cause of concern globally^{3, 4, 5} and in Nigeria.^{6, 7} The declining age at sexual maturation and the increasing age at marriage, partly because of the upsurge of interest in higher education among youths, have resulted in a big bio-social gap, lengthening the period between

reproductive maturity and marriage.⁷ The changing adolescent lifestyle caused by globalisation of communication, glamorisation of sex in the media and breakdown of traditional systems of sexual control are additional major challenges confronting the youths. These have led to declining age at sexual debut, increasing sexual activity characterized by unstable short-term unions and multiple sexual partners.⁹⁻¹⁴

Unfortunately, the youths engage in these risky sexual practices with poor knowledge of the consequences and, therefore, hardly take any precautions to protect themselves against the adverse consequences of unprotected sex.¹⁰⁻²⁰ The consequences of such practices among the

youths are disproportionately higher prevalence rates of HIV/AIDS^{21, 22}, unwanted pregnancies and abortions^{6, 23, 24, 25, 26, 27, 28} and sexually transmitted diseases.^{6, 7, 26, 29}

Majority of university students are unmarried youths. On entry into universities, they acquire independence from parental and secondary school restrictions. This increase in autonomy manifests in very permissive attitudes and increased sexual experimentation, replete with risky sexual practices. Because of their social positions, university students serve as role models to other youths and, thus, these negative tendencies may impact on other youths.

Universities provide the highest level of education in the country. Their role in national development through the generation of knowledge and provision of skilled labour for both the public and private sectors is crucial. Unfortunately, discourses on tertiary institutions tend to focus on their contributions to knowledge generation and development, with little attention to the health and welfare of the students.³⁰ In spite of the acknowledged prevalent risky sexual practices among students, their sexual and reproductive health needs hardly receive any attention.^{9, 11} Access to reproductive health services to students on campus is limited because of structural problems, and in many cases the services do not adequately address the sexual and reproductive health needs and perspectives of young people. The consequences of such neglect or oversight are a high prevalence of HIV/AIDS and other reproductive health pathologies that threaten national development efforts. As the global community focuses on achieving the Millennium Development Goals, developing programmes that are responsive to the reproductive health concerns of youths is of paramount importance in contributing to their actualization. For the development of evidence-based interventions, there is a need to conduct a situation analysis of reproductive health of the students. This study was, therefore, carried out among students of Ahmadu Bello University, Zaria to assess their reproductive health knowledge, sexual behaviour, contraceptive use and reproductive outcomes.

Methodology

The study location

The Ahmadu Bello University, Zaria, located in Kaduna State, northwest Nigeria, is the largest and most extensive university in sub-Saharan Africa. Spread over 7,000 acres of land, it has a total of 81 academic departments, 12 faculties and a postgraduate school, located on two campuses. The university has a student enrolment of 25, 348 undergraduate students, 9,800 postgraduate students and a staff of 5,000 non-academic and

1,500 academic staff. The students are drawn from all the states of the federation, the West and Central African sub-region, with a few students from other continents. The University Sick Bay, located on the main campus, provides primary care services for both students and staff with the major reproductive health services provided being maternal health care services targeting married women.

Methods

A cross-sectional descriptive study design was used for the survey. A sample of 400 undergraduate students was drawn from the total population of undergraduate students located on the main campus. A *p* value of 63% as the students found to be sexually experienced from an Ilorin study¹¹ was used in the calculation of sample size using the formulae for computation of sample size for descriptive studies.³¹ A multistage sampling method was used to select the sample. From a list of the 12 faculties on campus, four were selected using balloting method. In each of the sampled faculties, where applicable, a department was selected using simple random sampling method. Availability sampling method was used to recruit 25 students, following informed consent, from each of the different undergraduate levels in the sampled departments.

Pre-tested, structured, close-ended self-administered questionnaires were used to collect information on socio-demographic characteristics, knowledge of and attitudes to reproductive health, sexual behaviour, contraceptive use, and reproductive health outcome experiences and care-seeking from the sampled population. Retrieval of the questionnaires was ensured through the class representatives. The data were computer analysed using Epi-info version 6. Data were presented as simple frequencies and percentages with measures of central tendency (medians and means) and standard deviations to assess variability computed as appropriate. The questions on assessment of reproductive health touched on ovulation, contraception, HIV/AIDS and STI, and were scored on a 100-point scale which was used to classify the level of knowledge into excellent, good, fair and poor, and for bivariate analysis. The Chi-square test was used in assessing the significance of associations between categorical groups with *p*-value of 0.05 or less considered statistically significant.

Findings

A total of 387 questionnaires from the 400 administered were retrieved, giving a response rate of 88%. The faculties that were included in the sample were Environmental Design, Social Sciences, Veterinary Medicine and Education.

Socio-demographic characteristics of the respondents

Majority (57.9%) of the respondents were youths aged 15 to 24 years, predominantly Christian (68.5%) and about 75% were males. Minority ethnic groups constituted almost half of the total population (49.9%). Of the three major ethnic groups in the country, the Yoruba were in the majority (23.8%). Eighty per cent of the respondents were single, with students in 300 level making up about 36.2% of the total population (Table 1).

Table 1: Selected demographic characteristics of respondents

Characteristics	No.	%
Age		
15 – 19	65	16.8
20 -24	159	41.1
≥25	163	42.5
Sex		
Male	289	74.7
Female	98	25.3
Ethnicity		
Hausa	62	16
Yoruba	92	23.8
Ibo	40	10.3
Others	193	49.9
Religion		
Christianity	265	68.5
Islam	112	28.9
Traditional	1	0.3
Others	9	2.3
Marital Status		
Single	310	80.1
Married	69	17.8
Widowed/separated	8	2.1
Level of respondents		
200	95	24.6
300	140	36.2
400	52	13.4
500	100	25.8

Knowledge of reproductive health

Most of the respondents (90.1%) indicated that they had heard or read information about reproductive health. To assess the depth of knowledge of reproductive health, respondents were asked a series of questions on various aspects of

reproductive health.

Majority of the respondents (92.0%) knew correctly that reproductive tract infections are transmissible through sexual intercourse. However, less than 20% identified blood transfusion as a possible route of transmission of some of the sexually transmitted infections. Although most of the respondents (71.5%) knew of the protective effect of condoms against sexually transmitted infections, a large proportion erroneously thought that taking antibiotics (68.5%) or passing urine (45.7%) immediately after sex are methods of reducing the risk of transmission of STI (Table 2).

Respondents were asked the most likely period during a menstrual cycle that a woman could become pregnant, only 46.5% correctly identified the middle of the cycle as the most likely period. Significantly, more females (65.5%) than males (38.1%) knew of the correct timing ($X^2 = 27.76$, $df = 1$ and $p < 0.001$). Generally, the level of knowledge of contraceptives was high, but comparatively fewer respondents knew that condoms are also contraceptives. Approximately 25% thought that use of contraceptives could result in foetal abnormalities in subsequent pregnancies (Table 2).

Overall, 31.0% of the respondents had excellent knowledge, 56.6% good, 5.9% fair and 6.5% poor knowledge of reproductive health. There were no significant associations between sex ($X^2 = 1.74$, $df = 1$ $p = 0.20$), age ($X^2 = 6.3$, $df = 6$ $p = 0.01$), religion ($X^2 = 8.6$, $df = 6$, $p = 0.20$), year of study ($X^2 = 4.54$, $df = 6$, $p > 0.50$) and knowledge of reproductive health. Significant associations were found between ethnicity ($X^2 = 19.69$, $df = 9$, $p = 0.002$), and faculty of study ($X^2 = 50.3$, $df = 9$, $p < 0.001$) and knowledge with significantly higher proportions of the Yoruba and minority ethnics and students in the faculties of Social Sciences and Veterinary Medicine than Environmental Design and Education more knowledgeable.

Attitudes towards sexual behaviour and contraceptive use

There was a rather negative attitude to use of condoms, with 81.9% of the respondents asserting that it interferes with pleasure during sex and would thus not use it, while 60.2% indicated that they would not use condoms in sexual relationships with partners they know very well. Majority of the respondents (60.2%) also indicated that they were unlikely to go and purchase or ask for contraceptives because they 'will feel shy'. A sizeable proportion of the respondents (46.7%) asserted that they may not be able to say no to sex when demanded by their partners.

Majority of the female respondents (52.0%) indicated that they were more likely to seek

Table 2: Knowledge of reproductive health

Statement	No. Correct responses	% Correct responses
A person can get a reproductive tract infection from sexual intercourse	356	92.0
Some sexually transmitted infections could be acquired through blood transfusion	74	19.1
A woman is most likely to get pregnant if she has sex in the middle of her menstrual cycle	179	46.3
People can reduce their chances of contracting sexually transmitted diseases by taking antibiotics after sex	265	68.5
People can reduce their chances of getting sexually transmitted diseases by passing urine immediately after sexual intercourse	177	45.7
Use of condoms reduce the chances of acquisition of sexually transmitted disease	277	71.5
The pill is a contraceptives	350	90.4
Condom is a contraceptive	334	86.3
There are injectable contraceptives	256	66.2
Use of contraceptives could result in foetal abnormalities	94	24.3

abortion when confronted with an unwanted pregnancy. There was a more positive attitude to sexually transmitted diseases as 78.3% said they were worried about contracting a sexually transmitted disease. Conversely, majority of the respondents (61.2%) were less likely to consult a doctor on acquisition of the infection (Table 3).

Sexual behaviour

Of the 384 respondents, 64.1% reported ever having sex. A larger proportion of the males (65.4%) compared to (60.2%) of the females had a history of sexual exposure; the difference was, however, not statistically significant. The mean age at sexual debut was 17.8 years \pm 1.1 years for the females and 19.2 \pm 1.2 years for the males while the median age was 18 years for both sexes. Sexually exposed males reported an overall mean lifetime sexual partners of 3.4 \pm 0.4, while females reported 2.4 \pm 0.3. Of the sexually exposed males, 40.7% (77) had more than 4 lifetime partners compared to 20.5% (13) for the females.

Current sexual activity was assessed by obtaining a history of sexual activity within six months preceding the study. Overall, 54.7% of the respondents were sexually active; a slightly higher proportion (55.0%) of the males was sexually active compared to 53.3% of the females. Of the currently sexually active respondents, 53.5% (89) of the males and 48.0% (27) of the females were in

multiple sexual relationships (Table 4).

Contraceptive use

Use of contraceptives among the sexually experienced respondents was generally low, with only 39.2% indicating that they had ever used contraceptives. Among the currently sexually active respondents, the level of contraceptive use was lower than the lifetime rate, with just about a third of the respondents using any contraceptive method. Both lifetime use and current usage of contraceptives were higher among the males than females; the male: female ratio for lifetime use was 3:2. However, the commonest methods of contraceptives used were the less reliable methods. Majority of the respondents were either using periodic abstinence (33.9%) or condoms (30%). Utilization of condoms was higher among the males than females. Only approximately 10% of the respondents were using a more effective method of contraception (Table 5).

Frequency of use of condoms was sought from the sexually active respondents that indicated its use. The use was not consistent. None of the respondents used condoms during each act of sexual intercourse and only 31.9% of the males that used condoms and 20% of the females indicated its use in about half or more of the times they engaged in sexual intercourse.

Table 3: Attitude to reproductive health

statement	n	yes(%)
I approve of premarital sexual practice	258	66.7
I don't need to use condoms during sex with people I know very well	254	60.2%
I will not use condoms because they interfere with sexual pleasure	316	81.7%
Use of contraceptives can interfere with future pregnancies (foetal abnormalities/infertility)	296	76%
I will seek for an abortion rather than deliver a baby when faced with an unwanted pregnancy (females only)	201	51.9%
I feel shy going to ask for condoms and other contraceptives	250	64.6
I have trouble saying no if my sex partner demands sex	181	46.8
I am worried about getting a sexually transmitted disease	303	78.3%
If I had a sexually transmitted disease, I will be embarrassed to see a doctor or nurse	237	61.2%

Patent medicine vendors were the main sources of contraceptives for 45% of the 48 sexually active respondents using a procurable method. Health facilities were the sources of supply for only a quarter (12) of the respondents with only 4 of these mentioning the University Health Services as their source of supply. Overall, only 8.3% of the respondents sourced for contraceptives from the University Health Services. Half of the female respondents (4) and a quarter (10) of the males obtained their contraceptives from their sexual partners.

Protection against pregnancy was the dominant reason given by three quarters of the respondents for using contraceptives while only one in five of the respondents used it for protection against sexually transmitted infections. The reasons for not utilizing contraceptives by the sexually active respondents are shown in Table 6. Lack of preparedness for sex was the main reason given by 50.0% and

41.4% of the female and male respondents respectively. Contraceptive inconvenience was the excuse given by 28.0% of the respondents with thrice as many males as females refusing to use contraceptives because of this reason. The cost of contraceptives being an impediment to use was noted as a reason in only one in ten cases.

Reproductive experiences and care-seeking

One hundred and forty (36.5%) respondents reported symptoms suggestive of sexually transmitted diseases in the preceding six months, 33.2 (96) and 44.9% (98) of the males and females respectively (Table 7). Among the females, vaginal discharge (23.3%) and lower abdominal pain (23.5%) were the commonest symptoms reported while penile discharge and sore near the penis were the leading symptoms reported by 23.3%, and 10.0% of the male respondents, respectively. Majority of the respondents with reproductive tract symptoms resorted to either self medication (68.6%) or consultation of patent medicine vendors (6.4%) (Table 8). More males than females self-medicated. Overall, only 17.7% of the respondents sought treatment from a health facility, either from the University Health Services, the teaching hospital or private clinics with almost thrice as many females as males resorting to treatment from these sources (31.8% versus 12.6%). Generally, utilization of the University Health Services for the treatment of their reproductive tract infections was very low; only 2.2% sought help from this source.

Discussion

The study shed some light on the knowledge, attitudes, sexual behaviour, contraceptive use and sexual outcomes of university undergraduates in a part of Nigeria where, comparatively little information is available. The study found a generally high level of knowledge or reproductive health that was comparable to findings from similar studies in the country.^{9, 11, 12} However, there were observed gaps in knowledge, with more than half of the respondents ignorant of the most fertile period during a woman's menstrual cycle. The poor knowledge of the fertile period of a woman in this study was also documented by Nichols *et al.* in Ibadan⁹ and Amazigo *et al.* in Enugu.¹² Poor knowledge of the most fertile period during a woman's cycle in the face of observed high sexual activity and low utilization of contraceptives exposed the female respondents to the

Table 4: Sexual history

	Ever had sex	Mean age at sexual debut	Median age at sexual debut	Mean number of lifetime sexual partners	Had sex in the past six months	Mean number of sexual partners in the six months
Males	76.1%	19.8 years	18 years	3.4	55.0%	3.2 ± 0.1
Females	60.2%	17.9 years	18 years	2.4	53.3%	2.1 ± 0.05
Overall	64.1%	18.7 years	18 years	3.1	54.7%	

Table 5: Contraceptive use

	Ever used(%)	Currently using(%)	Method currently used(%)					
			Condoms	Periodic abstinence	Withdrawal	Vaginal foams/jelly	Pills	Injectables
Male	42.7	33.8	31.7	35.6	15.6	0.0	2.2	6.7
Female	27.3	27.5	27.3	27.3	18.2	9.1	9.1	9.1
Total	39.2	32.4	30.4	33.9	16.1	1.8	3.2	7.1

risks of pregnancy. Also, the wrong perception about methods of prevention of sexually transmitted diseases, with high proportions of the respondents indicating that urination immediately after a sexual act and prophylactic use of antibiotics after sexual intercourse are effective methods of prevention of sexually transmitted diseases, may provide a false sense of protection with negative implications for the transmission of sexually transmitted diseases. The latter has the added risk of promoting the emergence of drug-resistant strains of sexually transmitted pathogens.

Knowledge is one of the factors that shape attitudes and attitudes influence behaviour. Similar to other studies, there was discordance between knowledge and attitude and practice^{4, 9, 32, 33}. The high level of knowledge did not translate to positive reproductive health attitudes. Generally, attitudes towards reproductive health were negative. There was a generally permissive attitude to premarital sexual relationship that might have informed the high level of sexual exposure similar to observations in studies in Ibadan.^{9, 34} Condom use for the sexually active engaged in high risk sexual behaviours, remains the most effective strategy for limiting the risk of acquisition of STI, including HIV/AIDS. Unfortunately, attitudes towards condom was found to be rather negative with 81.6% of the respondents indicating that they are unlikely to use condoms because it interferes with sexual pleasure

and 60.2% saying they would not use them in sexual relationships with people they know very well. This general belief that condoms are not used in sexual relationships with regular partners or within marriage has been documented across regions by WHO⁴. The negative attitude might have informed the low utilization of condoms among the sexually active respondents.

About one in five of the respondents had the erroneous belief that the utilization of contraceptives would result in foetal abnormalities in future pregnancies. This may be a barrier to its use. Both Amazigo *et al*¹² and Otoide *et al*³⁵ found similar misconceptions about the effects of contraceptives, with the latter study in Benin showing that adolescents were more willing to abort than use contraceptives because of fear of its effects on future childbearing. It is instructive to note that in spite of the legal restrictions on abortion, majority of the female respondents indicated they would rather terminate an unwanted pregnancy than carry it to term. The unwillingness to carry on with an unwanted pregnancy did not appear to have any effect on the use of effective contraceptives by the sexually active female respondents. Attitudes of the students towards sexual activity and contraceptive use provide an insight into their values and the setting within which information and service delivery programmes will be received. It is evident that the

general negative attitudes have translated to the negative reproductive health behaviours observed in the study. There is thus a need to mount reproductive health education programmes using strategies that appeal to the students, with their involvement aimed at correcting misconceptions and modifying their behaviours positively.

Table 6: Reasons for not using contraceptives (%)

Reasons	Males N=116	Females n=44	Total n= 150
Don't know where to get it	13.8	17.6	14.7
Not prepared to have sex	41.4	50.0	43.3
Contraceptives expensive	10.3	11.8	10.7
Contraceptives inconvenient	32.8	11.8	28.0
Desire pregnancy	1.7	8.8	3.3

Almost half of the respondents reported they will be unable to say no to sex on demand by a friend. This is indicative of a lack of sexual negotiating and assertiveness skills. There is the need to help the students develop these skills through appropriate training.

The study found that 64.1% of the students were sexually experienced; this is comparable to the 62.8% found among University of Ilorin students¹¹ and 63% documented in Benin³⁶ but much lower than the figure of 92%³³ found among university students by Haring *et al* and 85.2% in Ibadan.⁹ Unlike most other studies where they find young males more likely to be sexually exposed with lower mean ages at sexual debut than females^{4, 9, 11, 32}, this study did not find marked differences in the proportions of sexually exposed males and females and the median age at sexual debut was the same for both sexes while the mean age was about a year earlier among the females. Perhaps because university students have higher aspirations, the mean age at sexual debut was much higher than of similar studies conducted among secondary school students. The mean age at sexual debut was found to be much higher than the mean ages of similar studies among secondary school adolescents^{12, 13, 25, 26, 36, 37} but comparable to figures obtained by Araoye among university students in Ilorin¹¹ but lower than figures among a similar cohort found in Ibadan.⁹ Perhaps, comparatively higher career aspirations among university students may be a factor delaying the age at sexual initiation. More than half of the study population were currently sexually active and a very large proportion of them engaged in multiple sexual relationships. Gender differences were found in multiplicity of sexual

partners with the men having higher mean number of lifetime partners and a larger proportion currently involved in multiple sexual relationships. Such differences have been well documented across countries.⁴ While under-reporting of sexual activity among females has been given as a possible explanation of the disparity, most likely, the differential cultural gender approval of sexual activity might be a more potent explanation.

In spite of the high rate of sexual activity with a large proportion of it risky and the high level of awareness of condoms, the rate of condom use was found to be low, with just about a third of the study population using it. Gender disparity was found in the use of the condoms with more males using it than females. The low utilization of condoms, even in the face of risky sexual practices that predispose them to sexually transmitted diseases including HIV/AIDS have been well documented in similar studies^{4, 11, 12, 26, 29, 32, 37, 38, 39}. Even when condoms were used, it was found that its use was inconsistent with the number of the respondents using it with each sexual act, and only about 30% said they used it at least half the times they engaged in intercourse. The lack of consistent use further limits the protective effectiveness of the condom. The very poor utilization of condoms may be associated with the very negative attitudes to it that was elicited.

Table 7: History of symptoms of sexually transmitted diseases in the preceding six months

Symptoms	Males %	Females %
Penile/vaginal discharge	23.3	23.3
Painful penile swelling	7.8	---
Pain when passing urine	7.4	2.9
Sore near or on penis/vaginal	10.4	5.2
Groin swelling	4.7	4.1
Lower abdominal pain		23.5

Generally, contraceptive use among the sexually active respondents was low, with majority of the respondents using either condoms or natural methods. Rhythm/ periodic abstinence and withdrawal were more commonly used than other more effective methods. Comparable findings have been documented in other studies.^{4, 11} The non ready availability of contraceptives in friendly and accessible environments, the shyness associated with procurement of contraceptives openly and the misconception of its effect on future fertility may all be factors limiting uptake. It is noteworthy that 41.2% of the respondents indicated that they did not use contraceptives because they were unprepared for sex. This point to the need to ensure availability of contraceptives, especially condoms in accessible locations for such situations.

The high prevalence of sexually transmitted infections among the study population is a consequence of the high prevalence of risky sexual practices. The proportions of the respondents with symptoms were found to be higher than that found among university students in Ilorin.⁴ The very high

Table 8: Sources of treatment of the sexually transmitted diseases

Source of treatment	Males	Females	Total
	(n =96) %	(n =44) %	(140) %
University health services	6.3	11.4	7.9
ABU Teaching Hospital	2.1	4.5	2.9
Private clinics	4.2	15.9	7.9
Patent medicine vendors	5.2	11.4	6.4
Native treatment	7.1	9.7	6.4
Self medication	75.1	47.7	68.6

prevalence of self medication for the treatment of the symptoms is a cause for concern as the potential for promoting the development of antimicrobial-resistant organisms is high.

The University Health Service is the source of primary care for the students. The aversion to its use for their reproductive health needs as adjudged by its low patronage for contraceptives and for the management of their sexually transmitted infections calls for further investigation. There is a need for a clearer documentation of exactly what factors are militating against its use as a source of contraceptives or for the management of the sexually transmitted diseases so as to take remedial action.

The negative reproductive health attitudes and high prevalence of risky sexual practices resulting in high rates of sexually transmitted infections call for the development of educational programmes aimed at behaviour modification. Teachers, peers and health workers all have a role to play. This should go in tandem with the provision of youth-friendly reproductive health services that respond to the reproductive health concerns of the students.

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