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Knowledge, perception and use of contraceptives among adolescents attending Queens' Secondary School in Enugu North, Nigeria

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ABSTRACT: A major contributing factor to unwanted teenage pregnancy in Low Medium Income Countries (LMICs) is poor access to contraceptive services. When the sexual and reproductive health issues of adolescents are not prioritized, it can lead to an increased risk of agonizing transition to parenthood and early pregnancy, which can hinder education opportunities. This study assessed the level of knowledge, perception, and contraception use among adolescents attending Queens' Secondary School in Enugu North, Nigeria. A descriptive design was utilized among a sample size of 257 adolescent secondary school students selected through. a simple random technique. Data, collected with the aid of a researcher-developed structured questionnaire for 3 weeks in September 2023, was analysed using descriptive and inferential statistics. Descriptive statistics of frequency, percentage, and means were used to summarize the data. A mean of 2.5 was used as the criterion for decision, and a chi-square test was used to test the hypothesis at a 5% level of significance. The majority of adolescents had poor knowledge of contraceptives (65.0%). More than half of the students had negative perceptions (51.0%) about contraceptives, and the level of contraceptive use was low (10.6%). There was no significant relationship between knowledge of contraceptives and their use. However, there was a significant relationship between perception and utilization of contraceptives ($p < .001$). It is recommended that the Government should incorporate sex education and the importance of contraceptives as part of the educational curriculum of secondary school students. There is also a need for improved access to adolescent contraceptive services.

Keywords: Adolescents, contraceptives, contraceptive use, knowledge and perception.

INTRODUCTION

Adolescence is a critical stage of development characterized by noticeable physical, physiological, and emotional changes between childhood and adulthood. It has been described as a time of opportunity, vulnerability, and risk, especially in relation to health, unprotected sexual intercourse, and reproductive health (Ehiaghe and Barrow, 2022). When the reproductive health needs of adolescents are not prioritized, it leads to adverse life-long consequences. The WHO (2025) noted that appropriate information, contraception and treatment for sexually transmitted infections (STIs), which many adolescents may need for their sexual and reproductive health, may not be available or be provided in a way that makes adolescents feel unwelcome and embarrassed to access these essential services. Health services, particularly adolescent contraceptive services, should, therefore, be provided in a sensitive and attractive form that meets their needs and accommodates their peculiarities.

As of 2020, Nigeria aimed to achieve a modern contraceptive prevalence rate of 27% by the year 2024 (Federal Ministry of Health [FMoH], 2020). Unfortunately, there exist obstacles in the Nigerian healthcare space that pose as obstacles to the accessibility and use of contraceptives among adolescents. Evidence has shown

that these barriers include providers bias as determined by their cultural/social norms or client's characteristics (i.e. age, parity, and marital status), thus contraceptive providers are more willing to provide contraceptive services to married women or females older than 24 years of age as compared to unmarried and younger adolescents (Sieverding *et al.,* 2018) Similarly, The Performance Monitoring and Accountability 2020's (PMA2020's) (2017) Adolescents and Young Adults Health Brief indicated that though unmarried individuals might be able to access information and services for male condoms and emergency contraceptives, they have much lower chances accessing more effective user-controlled methods (i.e. implants, IUDs, or injectables). These circumstances may culminate in a low demand for contraceptive services among adolescents, which remains a significant bottleneck to increasing adolescent contraceptive prevalence rate in Nigeria, which may fuel an increasing adolescent pregnancy rate and an increase in the prevalence of STIs.

Adolescent pregnancies remain a major health concern worldwide. It is a serious reproductive health problem, especially in developing countries (Liang *et al*., 2019). According to the World Health Organization (WHO, 2023a), a report estimated that 21 million girls aged 15 to 19 years in developing regions become pregnant every year, and approximately 12 million of these girls give birth. According to Bellizzi *et al*. (2019), it was also reported that in developing countries, at least 10 million unintended pregnancies occur each year among adolescent girls aged 15 to 19 years.

Adolescents are most likely to die from pregnancy-related causes when compared to older women (WHO, 2023a). Alabi *et al*. (2017) noted that teenage pregnancy is an undesirable phenomenon and seems to be one of the social problems facing several countries, including Nigeria. Studies have also shown that adolescent mothers aged 10 to 19 years are at greater risk of eclampsia, puerperal endometritis and systemic infections and psychological impact of teenage pregnancy which may include stigmatization, rejection or violence by partners, parents, and peers than women aged 20 to 24 years and babies born to mothers under 20 years are at greater risks of low birth weight, preterm delivery and severe neonatal conditions (WHO, 2018).

When adolescents engage in risky and unprotected sexual behavior, it can lead to an increased chance of contracting Sexually Transmitted Infections (STIs). WHO has reported that more than one million STIs are contracted from infected vagina secretions, semen, blood, body fluids, blood, saliva, oral and anal sex (WHO, 2023b). Lack of contraceptive use, like condoms, has been identified as an indicator of sexual behavior (WHO, 2023b; Adedini *et al.,* 2021). Therefore, it is important that healthcare workers educate adolescents on the importance of contraceptives in preventing STIs.

The importance of addressing adolescent sexual and reproductive health, including contraception, has been recognized globally. The American Academy of Pediatrics (2023) reported that adolescent contraception is associated with benefits, including improved health and well-being and reduced global maternal mortality, and that education about contraceptive options can be taught in clinical and community care settings, in schools, and at home. In Nigeria, the FMoH (2020) asserted that Attention needs to be given to attitudes and perceptions of adolescent and youth access to high-quality reproductive health services.

Contraception allows for the spacing of pregnancies and helps young girls and older women who are at risk of health challenges defer pregnancy (WHO, 2023a). Over time, there has been increased use of contraception among adolescent girls, but its use is still lower than for other age groups, and adolescent girls may not be at ease consulting family planning clinics or even the youth-friendly ones (United Nations Population Fund, 2016). Reports have shown that the contraceptive prevalence rate among Nigerian adolescents is lowest when compared to other age groups (Duru *et al*., 2015). Coulson *et al*. (2023) reported that unmet needs for adolescent modern contraception in low- and middle-income countries (LMICs) are disproportionately higher than amongst all women aged 15–49 (24%). exposing them to numerous risks. These risks could be avoided if the contraceptive needs of adolescents were met (WHO, 2018). Contraception can prevent many of these tragic deaths by reducing the number of unintended pregnancies with a higher risk of pregnancy complications and unsafe abortions (WHO, 2018). Data from the Nigerian National Demographic Health Survey (FMoHSW, NPC and ICF, 2024) showed that with respect to teenage pregnancy, 5.9% of adolescents aged 15-19 have ever been pregnant; the highest rate recorded was in the Southeast Region, followed by 5.7% recorded for Ebonyi State. From the same report, 5% among teenagers in both Enugu and Ebonyi States have ever had a live birth. Adolescents plunged into early motherhood following teenage pregnancy may become victims of the cycle of poverty that follows from dropping out of school occasioned by their circumstance. Through adequate knowledge and improved access to contraceptives, adolescents will take charge of their sexual life, thereby preventing unintended pregnancies. Hence, this study evaluated the level of knowledge, perception, and use of contraception among adolescents attending Queens' Secondary School in Enugu North, Nigeria.

METHODOLOGY

Study design

A descriptive survey research design method was used in determining the level of knowledge, perception and use of

contraception among adolescents attending Queens' Secondary School in Enugu State, Nigeria.

Area of study

The area of study is Enugu State. Enugu State was created from the eastern two-thirds of Anambra State. Enugu is bounded by the states of Kogi and Benue to the north, Ebonyi to the east, Abia to the south, and Anambra to the west. It includes most of the Udi-Nsukka Plateau, which rises to more than 1,000 feet (300 m). Enugu state is covered by open grassland, with occasional woodlands and clusters of oil palm trees. The Igbo (Ibo) constitute the majority of the state's population. Agriculture plays an important role in the state's economy. Enugu, the state capital, is a major center for coal mining. Industries include textile manufacturing, food processing, soft-drink bottling, brewing, and furniture manufacturing are also found in the state. The study was conducted in Queens's secondary school in Enugu North, South-Eastern Nigeria, located at Annang Street, Beside JAMB Office, Ogui New Layout, Enugu. Queens's secondary school is an all-girls day secondary school equipped with laboratories, modern educational and sporting facilities, as well as qualified teachers.

Study population

The study population consisted of all Senior Secondary School students in Queens' Secondary School in Enugu State, Nigeria. A total of 600 students in the Senior Secondary comprised the population of the study. Students who were not willing to participate and not psychologically ready were excluded from the study.

Sample size

A sample size of 257 was calculated using the power analysis formula as given below:

$$Sample\ size = \frac{n}{1 + \frac{(n)}{Population}}$$

$$n = \frac{Z^2 \text{x}\ P(1\text{x}P)}{(d^2)}$$

Where : Z = level of confidence, 95% = 1.96; P = 50% = expected prevalence or proportion (P is considered 0.5); d = 5% = 0.05 (allowable error).

$$n = \frac{Z^2 \text{x}\ P(1\text{x}P)}{(d^2)}$$

Therefore,

$$n = \frac{(1.96)^2 \text{x}\ 0.5(1\text{x}0.5)}{(0.05^2)}$$

$$n = 384.16 = 384$$

Applying the power analysis formula above

$$Sample\ size = \frac{n}{1 + \frac{(n)}{Population}}$$

$$Sample\ size = \frac{384}{1 + \frac{(384)}{600}}$$

$$= \frac{384}{1 + 0.64}$$

$= \frac{384}{1+0.64} = 234.15$ which is approximately 234 students + 10% attrition

= 234 + 23.4 = 257.4 which is approximately 257 students.

Sampling technique

Queens' Secondary School was purposively selected as the area of study, simple random technique was used in selecting the respondents, using a non-replacement method which involved Yes and No options on a piece of paper, the papers were folded and put in a basket and the students were asked to pick. Students who picked yes were included in the study and it took the researchers 3 weeks in September 2023 to collect data after the students after they were educated on the objectives of the study.

Instrument for data collection

A structured developed questionnaire with closed ended questions were used to collect data. The questionnaire consisted of five (5) sections: Section A consist of questions on socio-demographic variables; Section B consist of questions on knowledge of contraceptives, Section C consist of questions on perception of contraceptive and Section D on use of contraceptives among the students.

Data collection

The researchers, with the help of 2 research assistants, administered 257 copies of questionnaires to the students at their schools daily for 3 weeks in September 2023 after obtaining the respondents' assent. Oral assent was obtained from the respondents, and they were also assured of confidentiality by the researchers before giving out the questionnaire.

Data analysis

Data was analyzed and coded using Statistical Package for Social Sciences (SPSS), version 25 and Microsoft Excel. The collected data was analysed using descriptive and inferential statistics. The scaled items were assessed with mean and standard deviation, and a mean of 2.5 was used as the criterion for decision since the Likert scale used was a four-point scale. The chi-square test was used to test the hypothesis at a 5% level of significance. A significant relationship will exist if the p-value is less than 0.05; otherwise, no significance.

Ethical consideration

Ethical clearance was obtained from the Research Ethics Committee of the Ministry of Health, Enugu State, with Ref. Number MH/MSD/REC21/456. Administrative permit was obtained from the Principal of Queens's Secondary School for the inclusion of her students. Ethical issues like anonymity, confidentiality, informed consent and respect were addressed before collecting data from the students. Two forms were given to the students: one for the guardian and another for the student. Only students who had signed assent forms signifying respondents' assent and consent from the parent/guardian were included in the study.

RESULTS

Socio-demographic data

A total of 254 students (response rate was 98.82%) who met the inclusion criteria were randomized and included in the study. Socio-demographic characteristics of the students (Table 1) showed the mean and standard deviation age of 15.25±1.40 of ages between 12-19 years and modal age group of 13-15 years. The majority of them were day students (70.5%). Those living with both parents were in higher proportion (66.1%). Among those not living with both parents, those living with a female gender were more (53.5%). The students' family type was mostly the nuclear family (79.1%). Their place of residence was 3-bedroom flat (28.3%), public yard (22.0%) and 2-bedroom flat (20.5%). Very many earned money or received pocket money (78.3%), and the majority from their parents (74.9%).

Respondents' level of knowledge of contraceptives

As indicated in Table 2, more than half of the respondents have heard about contraceptives (61.8%). Most of the respondents had the knowledge that contraceptives prevent unwanted pregnancy (90.4%), sexually transmitted infections (74.5%) and come in drug and device form (74.5%). Less than half of the respondents knew that contraceptives does not provide 100% protection against pregnancy and STIs (48.4%), that some are not used during period (41.4%), that some contraceptives cause infertility (38.2%), that some are used after sexual intercourse (26.8%) and that some cause irritation and make one add weight (15.3%). The overall knowledge of contraceptives among respondents was poor (65.0%). Respondents' major source of knowledge was from their peers (59.2%), while family and teachers (1.9%) were minimal sources of knowledge of contraceptives.

Respondents' perception of contraceptives

As shown in Table 3, forty-nine percent (49.0%) of the respondents had positive perceptions about contraceptive use, while more than half of the students (51.0%) had negative perceptions about contraceptive use. Their perceptions include that the process of acquiring contraceptives was often embarrassing (2.66±0.88), contraceptives could cause womb damage in future (2.61±1.05), it felt bad to receive contraceptive information from parents (2.51±0.97), and contraceptives are expensive (2.41±0.83).

Respondents' use of contraceptives

As shown in Table 4, the respondents' level of contraceptive use was 10.6%, while the majority of the respondents, 89.4%, do not use contraceptives. As regards the type of contraceptives used, slightly above half of the respondents use condoms (59.3%) followed by pills (33.3%); none of the respondents indicated using implants and diaphragm. The reason for use was mainly to prevent pregnancy (59.3%). The frequency of use in the last 3 months was between 1 month (37.0%) to 2 months (29.6%). Findings from the study also showed that the source of procurement was mainly the chemist/pharmacy store (37.0%) and friend/family member (29.6%). The side effect experienced was mainly change in menstrual flow and cycle (37.0%), missed period (33.3%), and headache (29.6%). The respondents' reasons for non-use among non-users were being scared of obtaining it because of age (32.6%), practice of abstinence (30.8%) and scared of what parents would say if they find out (24. 7%).

Association between respondents' level of knowledge and use of contraceptives

Table 5 showed that there was no significant association between respondents' knowledge of contraceptives and its use ($p = 0.577$). The level of use was 15.7% for those with good knowledge and 19.1% for those who have poor knowledge, hence comparable.

Table 1. Socio-demographic characteristics of the respondent's (n = 254).

Socio-demographic characteristics	Frequency	Percent	Range	M±SD
Age				
< 12	4	1.6		
13-15	149	58.7	12-19	15.25±1.40
16+	101	39.8		
Class				
SS1	77	30.3		
SS2	97	38.2		
SS3	80	31.5		
Student type				
Day	179	70.5		
Border	75	29.6		
Who are you living with				
Both parents	168	66.1		
Single parent	32	12.6		
Guardian relative	39	15.4		
Unrelated guardian	15	5.9		
Gender of the person you are living with if not with both parents *(n = 86)*				
Male	13	15.1		
Female	46	53.5		
Couple	27	31.4		
What family type are you living with				
Extended	36	14.2		
Nuclear	201	79.1		
Not staying with a family	17	6.7		
Living arrangement				
Public yard	56	22.0		
1 room self-contained	22	8.7		
2-bedroom flat	67	26.4		
3-bedroom flat	72	28.3		
Duplex	35	13.8		
Others (bungalow, government reserved area)	2	0.8		
Do you earn money or receive pocket money				
Yes	199	78.3		
No	55	21.7		
Who and who gives you pocket money *(n = 199)*				
Parents	149	74.9		
Relatives	42	21.1		
Friends-non relatives	26	13.1		
I work and earn money	24	12.1		

Table 2. Respondents level of knowledge of contraceptives.

Parameters	Frequency	Percent
Have you heard about contraceptives		
Heard	157	61.8
Never heard	97	38.2
Contraceptives are used to prevent unwanted pregnancy *(n = 157)*		
Know	142	90.4
Don't know	15	9.6
Contraceptives can used to prevent STIs *(n = 157)*		
Know	117	74.5
Don't know	40	25.5
Contraceptives come in both drugs and devices *(n = 157)*		
Know	111	70.7
Don't know	46	29.3
Some contraceptives do not prevent menstruation *(n = 157)*		
Know	45	28.7
Don't know	112	71.3
Some contraceptives cause infertility *(n = 157)*		
Know	60	38.2
Don't know	97	61.8
Some contraceptives should be used after sexual intercourse *(n = 157)*		
Know	42	26.8
Don't know	115	73.2
Some contraceptives should be used during sexual intercourse *(n = 157)*		
Know	91	58.0
Don't know	66	42.0
Some contraceptives cause irritation and make one add weight *(n = 157)*		
Know	24	15.3
Don't know	133	84.7
Contraceptives does not provide 100% protection against pregnancy and STIs *(n = 157)*		
Know	76	48.4
Don't know	81	51.6
Overall knowledge		
Good *(knowledge score ≥ 50%)*	89	35.0
Poor *(knowledge score < 50%)*	165	65.0
Knowledge source *(n = 157)*		
Peers	93	59.2
Textbook	43	27.4
TV/radio	21	13.4
Social media/internet	53	33.8
School	16	10.2
Health workers	6	3.8
Others (teacher, family)	3	1.9

Table 3. Respondents perception of contraceptives (n = 157).

Parameters	SD	D	A	SA	MSD
Contraceptives are for only adult persons	34	45	54	24	2.43±1.00
Contraceptives are so expensive to use	22	61	61	13	2.41±0.83
Adolescents who use contraceptives are bad	36	48	48	25	2.39±1.01
Contraceptive use leads to infertility	31	43	60	23	2.48±0.97
It feels bad to receive contraceptive information from parents	27	50	53	27	2.51±0.97*
The process of acquiring contraceptives is often embarrassing	19	39	75	24	2.66±0.88*
There is nothing wrong with the use of contraceptives	37	51	46	23	2.35±1.00
Some contraceptives interfere with sexual pleasure and therefore should not be used	35	44	56	22	2.41±0.99
Contraceptives promote promiscuity	36	65	32	24	2.28±0.99
Contraceptives can cause womb damages in future	30	38	52	37	2.61±1.05*
Only married people should use contraceptives	44	50	27	36	2.35±1.12
Perception of contraceptive use					2.53±0.51
Perception group	**Frequency**		**Percent**		
Positive *(mean perception score ≥ 2.5)*	77		49.0		
Negative *(mean perception score < 2.5)*	80		51.0		

Item with mean (M) > 2.5 was accepted by the respondent; * indicates item accepted (with M > 2.5).

Table 4. Respondents use of contraceptives (n = 254).

Parameters	Frequency	Percent
Use of contraceptive		
Yes	27	10.6
No	227	89.4
Type of contraceptives *(n = 27)*		
Condom	16	59.3
Pills	9	33.3
Emergency contraceptives	5	18.5
Injectable/injection	4	14.8
Implants	-	-
Diaphragm	-	-
Intrauterine devices (IUDS)	1	3.7
Reasons for contraceptive use *(n = 27)*		
To prevent pregnancy	19	70.4
To prevent sexually transmitted diseases (STIs))	8	29.6
Frequency of use in the last 3 months *(n = 27)*		
0	1	3.7
1	10	37.0
2	8	29.6
3	5	18.5
4	3	11.1
Source of procurement *(multiple procurement existed, n = 27)*		
Chemist/pharmacy store	11	40.7
Hospital/health center	8	29.6
From a friend/ family member	9	33.3

Table 4. Contd.

Parameters	Frequency	Percent
Side effects *(multiple side effects existed, n = 27)*		
Missed period	9	33.3
Changes in menstrual flow and cycle	10	37.0
Headache	8	29.6
Nausea and vomiting	4	14.8
Weight gain	5	18.5
Breast tenderness/enlargement	4	14.8
Reasons for non-use of contraceptives *(n = 227)*		
It is costly	24	10.6
Scared to obtain it because of my age	74	32.6
Scared of what parents/guardian would say if they find out	56	24.7
It will make me add weight	22	9.7
Practicing abstinence, hence no need to use it	70	30.8
It will change my menstrual cycle	42	18.5

Table 5. Association between respondents' level of knowledge and use of contraceptives.

Knowledge	Contraceptive Use			Chi-Square	p-value
	Yes	No	Total		
Good	14(15.7)	75(84.3)	89	0.311	0.577
Poor	13(19.1)	55(80.9)	68		

Table 6. Association between respondents' perception and use of contraceptives.

Perception	Contraceptive use			Chi-Square	p-value
	Yes	No	Total		
Positive	24(30.8)	54(69.2)	78	20.051	< .001
Negative	3(3.8)	76(96.2)	79		

Association between respondents' perception and use of contraceptives

As shown in Table 6, findings revealed a significant relationship between respondents' perception and use of contraceptives ($p < 0.001$). The use was significantly higher among those with positive perceptions (30.8%) than those with negative perceptions (3.8%).

DISCUSSION

The study examined the adolescents' level of knowledge, attitude, and use of contraceptives in Queens Secondary School, Enugu, Nigeria. The majority of the adolescents had poor knowledge of contraceptives, and the major source of information was peers. The findings in this study do not agree with a study by Ese and Esievo (2023) among secondary school students in Port Harcourt, Nigeria, which found that the majority of the respondents exhibited good knowledge of contraception and that friends were the major source of knowledge. It also contradicts the findings in Offa Local Government Area, Nigeria, where the majority of the students knew about contraceptives (Oyewumi *et al*., 2019). However, the findings from this study agree with the findings in a study conducted in the Kumbungu District of Northern Ghana, where a majority of the students had poor knowledge of contraceptives, and peers were the major source of information (Frimpong *et al*., 2021). It can be seen from these findings that there are variations in the level of knowledge of contraceptives among adolescents across settings and regions. This implies that poor knowledge of contraceptives, as seen in this study, could be related to poor public enlightenment on the types of contraceptives and the importance of using contraceptives, especially among adolescents. There may also be other socio-cultural factors peculiar to the area of study responsible for this poor level of knowledge. Hence, it is advocated that health workers organize campaigns and awareness programmes in schools, markets and other

public places to educate and enlighten adolescents on contraceptives. It is worrisome that a greater percentage of the respondents in our study got their information on contraceptives from peers. Although peer education has been noted as a possible means for information sharing for health issues, there is a need for other stakeholders, including healthcare providers, organizations and family members to take center stage in educating adolescents on contraceptive issues.

Furthermore, findings from this study showed that the majority of the students had negative perceptions of contraceptives, such as the process of acquiring contraceptives was often embarrassing, contraceptives could cause womb damage in the future, and ill feelings as regards receiving contraceptive knowledge from parents. The findings agree with a study in the Kumbungu District of Northern Ghana, which found out that infertility, interference with sexual pleasure and promotion of promiscuity indicated negative perception among the students' study group (Frimpong *et al.,* 2021). However, these findings are inconsistent with a study done on Idjwi Island, where the students had positive attitudes towards emergency contraceptives (Maurice *et al*., 2022). The difference in the finding may be attributed to the fact that the present study was not just focused on emergency contraceptives but contraceptives of all types. Adolescents who may be anxious about getting pregnant after sexual intercourse may be more accepting of contraceptives in such a situation. In this study, the use of contraceptives among students was poor, the findings are consistent with the study done in Rwamagana District, Rwanda, which showed poor use of contraceptives among students (Ngerageze *et al*., 2022). This study found that majority of the reasons for poor use of contraceptives include fear of what parents and guardians will say, fear of buying contraceptives, the practice of abstinence, and change in the menstrual cycle which also agrees with the result of the study by Ezenwaka *et al*. (2020), in their study among adolescents in South East, Nigeria which found that similar factors also caused the poor uptake of contraceptives. The implication of these findings is that factors that affect the use of contraceptives, like permission of their guardians and parents before purchasing contraceptives, should be addressed and polices that permit supervised adolescents' uptake, purchase, and accessibility should be made.

Conclusion

Achieving the Sustainable Developmental Goal (SDG) is paramount. SDG 3, which aims at ensuring healthy lives and promoting well-being for all at all ages, is aided by the findings from this study on knowledge, perception and use of contraceptives among adolescents attending Queens' Secondary School in Enugu North, Nigeria. Therefore, based on the findings of this study, the overall level of knowledge of the adolescents on contraception was poor as only 35.0% had good knowledge, overall perception towards contraception use was negative (51.0%), and the level of contraceptive use was low (10.6%). It is recommended that targeted educational programmes should be made at school level, community level, and public places to improve adolescent sexual and reproductive health in Enugu State, Nigeria by providing them with vital information on contraceptive knowledge, perception and use.

CONFLICT INTEREST

The authors declare no conflict of interest.

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