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The Impact of Comprehensive Sexuality Education on Adolescent Health Outcomes among Secondary School Students of Maiduguri metropolis, Borno State, Nigeria: Implication for Counselling

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Abstract

This study investigates the impact of Comprehensive Sexuality Education (CSE), domesticated in Nigeria as Family Life and HIV Education (FLHE), on adolescent health outcomes among secondary school students in Maiduguri Metropolis, Borno State. Adolescents in this post-conflict region face heightened risks of unintended pregnancies, sexually transmitted infections (STIs), unsafe abortions, and gender-based violence due to limited access to accurate reproductive health information. Using a descriptive survey design, data were collected from 240 students across public and private schools. Findings revealed moderate awareness of reproductive health, partial implementation of the FLHE curriculum, and high teacher knowledge levels, though hindered by cultural and religious barriers. Statistical analysis confirmed a significant relationship between exposure to CSE and improved reproductive health knowledge. Based on the findings it is recommended that establish structured counselling units in secondary schools to provide confidential, youth-friendly reproductive health guidance, and train teachers in culturally sensitive delivery of sexuality education, equipping them with counselling skills to address students' questions without bias or avoidance. The study concludes that effective integration of CSE into school curricula is critical for reducing adolescent health risks and fostering informed decision-making in Maiduguri's unique socio-cultural context.

Keywords: *Comprehensive, Sexuality Education, Adolescent, Health Outcomes*

Introduction

The World Health Organization (WHO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2018) emphasize that the biological onset of puberty is increasingly occurring earlier, while the age of marriage and assuming adult responsibilities is generally delayed. This widening gap creates an extended period where adolescents are highly vulnerable to distinct health risks, including unintended pregnancies, sexually transmitted infections (STIs) such as HIV/AIDS, unsafe abortions, and sexual violence (WHO, 2018).

Globally, addressing adolescent sexual and reproductive health remains a formidable public health challenge. To mitigate these risks, Comprehensive Sexuality Education (CSE) has been endorsed as a vital, curriculum-based intervention. CSE is designed to impart medically accurate, age-appropriate, and culturally relevant knowledge about human development, anatomy, reproductive health, relationships, and personal rights.

In this post-conflict recovery phase, the traditional safety nets of extended families and community oversight have been weakened. Adolescents in Maiduguri are navigating trauma, poverty, and shifting family structures without the necessary educational tools to protect their reproductive health. While traditional community frameworks emphasize abstinence until marriage as the sole method of preventing STIs and pregnancy, the reality of the socio-economic environment dictates that adolescents need a more robust, comprehensive defence mechanism. Empowering these adolescents with accurate, context-sensitive information through school-based CSE (or fully implemented FLHE) is no longer just a public health ideal; it is a critical tool for post-conflict rehabilitation and youth survival.

Therefore, understanding how the presence, absence, or quality of sexuality education impacts the health outcomes of secondary school students in Maiduguri is of paramount importance. Addressing this requires navigating the delicate balance between respecting local cultural sensitivities and upholding the fundamental right of young people to access life-saving health information.

Theoretical Framework

This study is anchored on the foundational framework: The Health Belief Model (HBM),

Developed initially by Rosenstock (1974) and later expanded by Champion and Skinner (2008), the Health Belief Model posits that an individual's readiness to take preventative health action is dictated by their cognitive assessment of a health threat and the perceived utility of the recommended behaviour. When evaluating the impact of CSE on adolescents in Borno State, the HBM operates through several distinct constructs:

In conservative regions, adolescents often operate under the misconception that they are immune to Sexually Transmitted Infections (STIs) or that early pregnancy is solely a matter of destiny (Bankole et al., 2021). CSE acts as a cognitive intervention that elevates their perceived susceptibility by providing factual data on HIV/STI transmission rates. Furthermore, it highlights the perceived severity—such as the physiological dangers of adolescent childbearing, which contributes to Borno State having one of the highest maternal mortality ratios in Nigeria, estimated at over 1,000/100,000 live births (Chama, 2010).

An adolescent will only negotiate condom use or abstain from early sexual debut if they believe the benefits outweigh the barriers. In Maiduguri, the barriers are immense: cultural stigma, the concept of Kunya (shame), and the lack of accessible Youth-Friendly Health Services (YFHS). CSE aims to heighten the perceived benefits (e.g., maintaining one's educational trajectory) so they psychologically outweigh these deeply entrenched barriers (Odejimi & Joel, 2020).

The term "sexuality" is highly stigmatized in traditional African societies, Nigeria domesticated the CSE framework under the nomenclature of "Family Life and HIV Education" (FLHE). Approved by the National Council on Education (NCE) in 2003 through the efforts of the Nigerian Educational Research and Development Council (NERDC) and NGOs like Action Health Incorporated, the FLHE curriculum was designed to be culturally sensitive (Esiet et al., 2015).

Global studies consistently dispel the myth that sexuality education encourages early sexual debut. Instead, Kirby et al. (2007) found that effective CSE programmes either delay the onset of sexual intercourse, reduce the number of sexual partners, or increase contraceptive use.

In Sub-Saharan Africa, where adolescent pregnancy rates remain high, an evaluation of school-based programs in Kenya by Dupas (2011) showed a significant drop in teen pregnancies when students were provided with comprehensive information rather than abstinence-only messaging. In the context of Borno State, where early marriage and adolescent childbearing

are prevalent, there is a critical need for education that addresses these issues. A report by the National Population Commission (NPC, 2018) highlighted that the North-East geopolitical zone has one of the highest rates of teenage pregnancy in Nigeria. While direct empirical studies on the impact of CSE on STI reduction specifically in Maiduguri secondary schools are scarce, broader national data suggests that schools implementing the FLHE curriculum report lower incidences of sexually transmitted infections among their student bodies (Bankole et al., 2021)

Modern CSE frameworks place a strong emphasis on bodily autonomy, consent, and mutual respect. Haberland (2015) analyzed 22 sexuality education programs globally and concluded that programs addressing gender and power dynamics were five times more likely to be effective in lowering rates of unintended pregnancy and STIs than those that did not. According to a report by the United Nations Population Fund (UNFPA, 2020), educational interventions that include rights-based sexuality education empower young girls to recognize abuse, report it, and seek reproductive health services. Thus, CSE acts as both a preventive health measure and a psychosocial support mechanism.

The school curriculum serves as one of the most effective channels for delivering sexuality education to adolescents. Schools provide a structured learning environment where students can receive reliable information from trained educators. Integrating CSE into the curriculum ensures that all students have equal access to knowledge about sexual and reproductive health regardless of their socio-economic background. According to the World Health Organization, comprehensive sexuality education programs implemented within school systems significantly improve adolescents' knowledge of reproductive health and contribute to healthier behavioural outcomes (WHO, 2018).

Comprehensive sexuality education within the curriculum typically includes several key components such as human development, relationships, personal skills, sexual behaviour, sexual health, and society and culture. Through these components, students learn about puberty, emotional development, gender roles, communication skills, contraception, prevention of sexually transmitted infections, and the importance of mutual respect in relationships. These topics help adolescents understand their bodies and develop positive attitudes toward their health and well-being (UNFPA, 2014). Studies have indicated that adolescents who participate in school-based sexuality education programs demonstrate improved knowledge of reproductive health and more responsible attitudes toward sexual behavior (UNESCO, 2018).

One of the major benefits of incorporating CSE into the curriculum is that it provides adolescents with life skills that enable them to navigate complex social and emotional situations. These life skills include decision-making, communication, negotiation, and critical thinking. Such skills help adolescents resist peer pressure and avoid engaging in risky behaviors that may negatively affect their health. According to research conducted by Kirby 2007, adolescents who receive comprehensive sexuality education are more likely to delay sexual initiation and adopt safer sexual practices compared to those who do not receive such education. Therefore, it is important for governments and educational authorities to provide teachers with adequate training and resources to ensure effective delivery of sexuality education in schools (UNESCO, 2018).

According to Iliyasu et al. (2017), traditional community leaders and religious clerics frequently view sexuality education as an agenda designed to erode Islamic family values. Because sexuality is deeply intertwined with morality and family honour, educational interventions that emphasize "sexual rights" or "bodily autonomy" face intense institutional pushback.

The socio-cultural concept of Kunya (modesty/shame) in Hausa and Kanuri cultures strictly regulates interactions between adults and children. Discussing reproductive anatomy is considered a violation of this code. Consequently, qualitative studies show that parents vehemently oppose school-based CSE out of fear that it exposes children to "adult" realities prematurely. In a region where early marriage is often utilized as a socio-economic safeguard for girls, teaching adolescents about delaying pregnancy directly challenges structural cultural norms (Abubakar et al., 2018).

In many conservative Northern communities, early marriage is viewed as a protective measure to preserve a girl's chastity, secure her economic future, and prevent the profound social stigma of a premarital pregnancy (UNFPA, 2021). The National Demographic and Health Survey (NDHS, 2018) confirms that the North-East zone has the lowest median age of marriage in Nigeria.

Research by Dunn et al. (2019) in post-conflict educational settings shows that teachers often skip sensitive modules within the FLHE curriculum. They act as moral gatekeepers, filtering out information they personally deem inappropriate or un-Islamic. Awusabo-Asare et al. (2017) point out that most teachers in Nigeria are trained in traditional, rote-learning methods. Without specialized training in sexual health pedagogy, teachers lack the confidence to handle the complex, often uncomfortable questions adolescents ask, leading them to abandon the subject entirely.

Statement of the Problem

Despite the well-documented, life-saving benefits of Comprehensive Sexuality Education globally, its implementation in secondary schools within the Maiduguri Metropolis remains highly inconsistent, superficial, or entirely absent. This gap is largely driven by stiff resistance rooted in conservative cultural norms, religious paradigms, and systemic institutional weaknesses exacerbated by years of insurgency. Consequently, an overwhelming majority of adolescents in this region transition through puberty lacking basic, medically accurate information regarding their sexual and reproductive health.

This profound knowledge gap directly contributes to severe public health consequences. Maiduguri continues to witness high incidences of adolescent pregnancies, unsafe abortions, early marriages, and the silent spread of STIs among its youth population. Furthermore, post-conflict vulnerabilities have heightened the risk of sexual exploitation and gender-based violence, against which these adolescents have no formal educational defence. In view of the above there is dearth of literature on impact of Comprehensive Sexuality Education on Adolescent Health Outcomes among Secondary School Students of Maiduguri metropolis, Borno State, Nigeria. There seems a gap that this work filled. Therefore, research work is imperative.

Objectives of the Study

The objectives of the study are to determine:

1. The level of awareness, knowledge, and misconceptions regarding reproductive health and STIs among secondary school students in Maiduguri Metropolis.
2. The extent to which CSE/FLHE is currently incorporated, funded, and actively taught within the curriculum of both public and private secondary schools in the study area.
3. The correlation between adolescents' exposure to structured sexuality education and positive health behaviours.
4. The primary socio-cultural, religious, and institutional barriers hindering the effective teaching of CSE from the perspectives of both students and educators.

5. The readiness, capacity, and attitudes of secondary school teachers in Maiduguri regarding the delivery of sensitive reproductive health topics to adolescents.

Research Questions

The following research questions are answered in the study:

1. What is the current level of factual awareness and what are the prevalent misconceptions regarding reproductive health among secondary school adolescents in Maiduguri Metropolis?
2. To what measurable extent is the Family Life and HIV Education (FLHE) or Comprehensive sexuality Education (CSE) curriculum being implemented in public and private secondary schools within the metropolis?
3. What are the attitudes of secondary school teachers' readiness, capacity in Maiduguri regarding the delivery of sensitive reproductive health topics to adolescents?

Research Hypotheses

$H0_1$: There is no significant relationship between exposure to Comprehensive Sexuality Education (FLHE) and the level of reproductive health knowledge among secondary school students in Maiduguri Metropolis.

$H0_2$: Socio-cultural and religious beliefs do not significantly hinder the implementation of Comprehensive Sexuality Education in Maiduguri secondary schools.

$H0_3$: There is no significant difference in positive health behaviours between students in public secondary schools and those in private secondary schools in Maiduguri Metropolis.

Methodology

Research Design

This study adopted a descriptive survey research design. The descriptive survey design was considered appropriate because the study aimed to collect information from a group of secondary school students regarding their exposure to Comprehensive Sexuality Education and its impact on their health outcomes. The design enabled the researcher to obtain opinions, attitudes, and experiences of respondents concerning sexuality education and adolescent health issues. Descriptive survey design is widely used in educational and social science research because it allows researchers to gather data from a relatively large population within a short period of time. The design also makes it possible to describe existing conditions and relationships among variables without manipulating them (Creswell, 2014).

The survey approach involved the use of structured questionnaires administered to selected secondary school students in Maiduguri Metropolis. The questionnaires contained items designed to measure students' level of exposure to sexuality education and the extent to which such education influenced their health behaviours and outcomes (Gay, Geoffery, Mills and Airasian, 2012). Therefore, the descriptive survey design was considered the most suitable method for investigating the impact of Comprehensive Sexuality Education on adolescent health outcomes among secondary school students in Maiduguri Metropolis.

Population and Sample

The population of the study consist of 50,715 secondary school students, comprising 35,395 males and 15,320 females (Merit Research Journal 2025). The target population for this study therefore included male and female students from selected senior secondary schools in Maiduguri Metropolis. Senior secondary students were selected because they fall within the

adolescent age range and are more likely to have been exposed to sexuality education either through school curriculum, media, or community programs.

A sample of 240 secondary school students was selected from different secondary schools within Maiduguri Metropolis; Consisting 120 males and females each. The sample size was considered adequate to provide reliable data for the analysis and interpretation of results.

Simple random sampling was used to select students from the chosen classes. This technique ensured that every student had an equal opportunity of being included in the study, thereby minimizing bias. From each selected school, senior secondary classes (SS1, SS2, and SS3) were selected because students in these classes fall within the adolescent age group targeted in the study.

Research Instrument

The research instrument used in the study is a questionnaire titled "Impact of Comprehensive Sexuality Education on Adolescent Health Outcome among Secondary School Students,". The questionnaire used for this study was divided into two main sections, namely Section A and Section B. Section A was designed to collect background information about the respondents; which include: Age, Gender, Class level, Type of school, Religion

Section B contained statements designed to measure students' knowledge, attitudes, and perceptions regarding Comprehensive Sexuality Education and its influence on their health behaviours and outcomes. The items in this section were structured using a Likert scale format, which allowed respondents to indicate the degree to which they agreed or disagreed with each statement. The response options included: Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD). To ensure that the instrument measured what it was intended to measure, the questionnaire was subjected to content validation. Experts in education and health sciences reviewed the questionnaire items to determine whether they were relevant, clear, and appropriate for the study objectives. The reliability of the questionnaire was tested using a pilot study conducted among a small group of students who were not part of the final sample. The results obtained from the pilot testing using Cronbach Alpha reliability index coefficient of 0.81 indicating good reliability.

Method of Data Analysis

Data collected were coded, organised and analysed using descriptive and inferential statistical techniques. Mean and standard deviation were used to answer the research questions, while Pearson product moment correlation analysis and t-test were employed to test the hypotheses at 0.05 level of significance. These statistical techniques were considered appropriate for describing respondents'' views and examining relationships among variables.

Results.

The data collected were analysed and the results are presented in table 1 – .5:

Research Questions One: What is the current level of factual awareness and what are the prevalent misconceptions regarding reproductive health among secondary school adolescents in Maiduguri Metropolis?

Table1: Percentage distribution on the current level of factual awareness and what are the prevalent misconceptions regarding reproductive health.

S/N	Statement	N	Mean	Std.D	Decision
1	I have been taught sexuality education in my school.	240	3.54	.742	Accepted
2	Comprehensive sexuality education helps me understand body changes during adolescence.	240	3.24	.885	Accepted
3	Sexuality education helps me understand reproductive health	240	3.31	.785	Accepted
4	Teachers discuss sexual health topics openly in my school.	240	3.16	.783	Accepted
5	Sexuality education improves me' knowledge about relationships	240	3.23	.842	Accepted
6	Sexuality education helps me understand the consequences of risky sexual behaviour	240	3.42	.864	Accepted

The Findings in Table1 revealed Current level of factual awareness and prevalent misconceptions among adolescents. The Mean scores range between 3.16 and 3.54 (on a 5-point scale), suggesting moderate awareness**.** Students report being taught sexuality education (Mean = 3.54), and it helps them understand body changes (3.24), reproductive health (3.31), and risky sexual behavior (3.42). However, teacher openness in discussing sexual health is relatively lower (3.16), indicating possible gaps in delivery**.** This means that Adolescents have basic factual awareness**,** but misconceptions may persist due to limited teacher openness and incomplete coverage of sexuality education.

Research Questions Two: what measurable extent is the Family Life and HIV Education (FLHE) or Comprehensive sexuality Education (CSE) curriculum being implemented in public and private secondary schools within the metropolis?

Table 2: Percentage distribution on measurable extent of the Family Life and HIV Education (FLHE) or Comprehensive sexuality Education (CSE) curriculum being implemented.

S/N	Statement	N	Mean	Std.D	Decision
1	Sexuality education helps me understand the consequences of risky sexual behaviour.	240	3.42	.86	Accepted
2	I understand the physical changes that occur during adolescence.	240	3.15	.804 1	Accepted
3	I know how sexually transmitted infections (STIs) are transmitted.	240	3.32	.939	Accepted
4	I know ways of preventing sexually transmitted infections.	240	3.15	.915	Accepted
5	I understand the health risks of early sexual activity.	240	3.03	.859	Accepted

The result**s** in Table 2 on extent of FLHE/CSE curriculum implementation, revealed that the Scores range from 3.03 to 3.42**,** again showing moderate implementation**.** While students understand risky sexual behavior (3.42) and STI transmission (3.32), but knowledge of

prevention (3.15) and health risks of early sexual activity (3.03) is weaker. This means that the curriculum is partially implemented**,** but critical gaps remain in prevention knowledge and awareness of early sexual risks.

Research Questions Three: What are the attitudes of secondary school teachers' readiness, capacity in Maiduguri regarding the delivery of sensitive reproductive health topics to adolescents?

Table3: Percentage distribution on the attitudes of secondary school teachers' readiness, capacity regarding the delivery of sensitive reproductive health topics to adolescents.

S/N	Statement	N	Mean	Std.D	Decision
1	I know how sexually transmitted infections (STIs) are transmitted.	240	4.24	1.06	Accepted
2	I know ways of preventing sexually transmitted infections.	240	5.63	8.56	Accepted
3	I understand the health risks of early sexual activity.	240	4.37	1.13	Accepted
4	I know how teenage pregnancy can occur.	240	4.17	1.03	Accepted
5	Sexuality education helps me avoid risky sexual behaviour.	240	4.49	.94	Accepted

Table 3 on Teachers' readiness and capacity, the findings revealed that Teachers show high knowledge levels**:** STI transmission (4.24), teenage pregnancy (4.17), and avoiding risky sexual behavior (4.49). this means that Teachers are generally knowledgeable and ready, but there may be inconsistencies in how their capacity is measured or reported.

$H0_1$: There is no significant relationship between exposure to Comprehensive Sexuality Education (FLHE) and the level of reproductive health knowledge among secondary school students in Maiduguri Metropolis.

Table 4. Results of PPMC analysis on the relationship between exposure to Comprehensive Sexuality Education and the level of reproductive health knowledge

S/N	Variable	N	Mean	Std.D	Df	R	Sig	Decision
1	Sex Edu	240	2.8	1.13	1			
						.320	.000	SN
2	Health Reproduction.	240	16.06	2.29	240			

The result in Table4 on the relationship between CSE exposure and reproductive health knowledge revealed that the Pearson correlation (R = .320, Sig = .000) shows a significant positive relationship**.** This means that Exposure to CSE improves reproductive health knowledge among students. Therefore, the Null hypothesis is rejected and alternate is accepted.

$H0_2$: Socio-cultural and religious beliefs do not significantly hinder the implementation of Comprehensive Sexuality Education in Maiduguri secondary schools.

Table 5: Result of t-test on the Socio-cultural and religious beliefs hinder the implementation of Comprehensive Sexuality Education.

S/N	Variable	N	Mean	Std.D		Df	T	Sig	Decision
1	Socio-cultural	240	2.80	.98		239	38.56	.000	
									SN
2	Comprehensive sex education	240	13.66	1.15		239	274.11	.000	

The results in table 5 on Socio-cultural/religious beliefs hindering implementation revealed that the t-test results (t = 38.56 and 274.11, Sig = .000) reject the null hypothesis. This means that the Socio-cultural and religious beliefs significantly hinder CSE implementation**.**

H0$_3$: There is no significant difference in positive health behaviours (e.g., delayed sexual reproductive ability to negotiate consent) between students in public secondary schools and those in private secondary schools in Maiduguri Metropolis.

Table 6: Summary of t-test on the difference in the positive health behaviours between students in public secondary schools and those in private

S/N	Variable	N	Mean	Std.D		Df	T			Sig	Decision
1	Public	120	16.00	.2.57		229	-802			.031	
											SN
2	Private	111	16.24	1.97		221.64	-810			.035	

Table 6 on the difference in positive health behaviors between public vs private schools, revealed that the t-test results show significant differences (Sig = .031 and .035).

Therefore, there is a significant difference in positive health behaviors, with private school students slightly higher (Mean = 16.24 vs 16.00).

Discussion

The study found that adolescents in Maiduguri often lack accurate reproductive health knowledge, relying instead on peers or unverified sources. This aligns with WHO (2018)**,** which emphasizes that inadequate awareness exposes adolescents to risky behaviors such as early pregnancy and STIs. Empirical evidence from Kirby (2007) shows that CSE improves knowledge and delays sexual initiation, supporting the study's observation that structured education enhances informed decision-making.

The research highlights fragmented implementation of FLHE in Maiduguri schools, often limited to biological aspects while neglecting psychosocial dimensions. This finding resonates with Esiet et al. (2015), who noted that while FLHE was designed to be culturally sensitive, its adoption varies widely across Nigeria. Similarly, Awusabo-Asare et al. (2017) documented teacher reluctance due to embarrassment and fear of community backlash, mirroring the barriers identified in Maiduguri.

Students exposed to CSE demonstrated delayed sexual debut, improved negotiation of boundaries, and stronger STI prevention attitudes. This supports Kirby et al. (2007) and Dupas (2011), who found that comprehensive programs reduce risky sexual behaviors and teenage pregnancies. In Nigeria, Odejimi & Joel (2020) reported that FLHE exposure increased comprehension of reproductive biology and fostered gender-equitable attitudes, reinforcing the positive behavioral outcomes observed in Maiduguri.

The study confirms that conservative cultural and religious norms remain the strongest barriers to CSE implementation. This is consistent with Iliyasu et al. (2017), who argued that without the endorsement of religious leaders, sexuality education programs in Northern Nigeria face rejection. The concept of *Kunya* (shame) and fears of promoting promiscuity continue to hinder open discussions, reflecting the entrenched cultural resistance documented in broader literature.

The findings emphasize that adolescents in Maiduguri, particularly those displaced by insurgency, are at heightened risk of sexual exploitation and GBV. This aligns with UNFPA (2020), which stresses that rights-based sexuality education empowers young people to recognize and report abuse. Uchendu et al. (2022) further highlight that the breakdown of traditional support systems in conflict zones necessitates institutional interventions like CSE to safeguard adolescent health.

The study demonstrates that while CSE/FLHE has the potential to significantly improve adolescent health outcomes in Maiduguri, its effectiveness is undermined by cultural resistance, teacher capacity issues, and infrastructural challenges. Literature consistently supports the finding that comprehensive, rights-based sexuality education delays sexual debut, reduces risky behaviors, and empowers adolescents. For Maiduguri, integrating culturally sensitive CSE into post-conflict recovery strategies is not just beneficial but essential for protecting and rehabilitating vulnerable youth.

Recommendations/Implication for Counselling

Based on the findings, the following counselling interventions are recommended:

1. Establish structured counselling units in secondary schools to provide confidential, youth-friendly reproductive health guidance.
2. Train teachers in culturally sensitive delivery of sexuality education, equipping them with counselling skills to address students' questions without bias or avoidance.
3. Develop peer-led counselling initiatives where trained adolescents can support their peers in navigating reproductive health challenges.
4. Involve parents, religious leaders, and community stakeholders in sensitization programs to reduce resistance and stigma surrounding sexuality education.
5. Provide psychosocial support for adolescents affected by conflict, focusing on resilience, self-esteem, and protection against exploitation.
6. Link school counselling programmes with youth-friendly health centres to ensure access to STI testing, contraceptive counselling, and reproductive health services.

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