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High awareness, low uptake: Knowledge, attitudes, and practices regarding contraceptive use among adolescent girls and young women in Nsokolo Ward, Kalulushi District, Zambia

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Abstract

Background

Contraceptive use among adolescent girls and young women (AGYW) in Zambia remains low, contributing to high rates of unintended pregnancies, unsafe abortions, and school dropouts. Despite national efforts to promote family planning, rural communities face unique barriers that are poorly understood. This study assessed the knowledge, attitudes, and practices (KAP) regarding contraceptive use among AGYW in Nsokolo Ward, Kalulushi District, Zambia.

Methods

A community-based cross-sectional study was conducted from May to July 2025 among 161 AGYW aged 15–24 years in Nsokolo Ward. A structured questionnaire assessed socio-demographic characteristics, knowledge of contraceptive methods, attitudes towards contraceptive use, and actual practices. Data were analyzed using descriptive statistics, chi-square tests, and binary logistic regression ($p < 0.05$).

Results

Contraceptive awareness was high (87.6%), with male condoms (83.9%), oral pills (75.8%), and injectables (66.5%) being the most recognized methods. The mean number of methods known was 4.3 (SD = 2.1), with 50.3% having high knowledge (≥ 4 methods). However, only 44.1% reported ever using contraceptives, and among ever-users, only 50.7% reported consistent use. Barriers to use included societal stigma (32.9%), partner disapproval (25.5%), and fear of side effects (20.5%). Attitudes were generally positive, with 59.6% viewing contraceptive access as "very important" and 70.2% supporting open community discussion, yet moral ambivalence persisted, with only 49.7% believing contraceptive use was morally acceptable for unmarried adolescents. Education level, awareness, having enough information to make informed choices, and openness to community discussion were significantly associated with contraceptive use ($p < 0.05$). Participants aware of contraceptive methods were three times more likely to have ever used them (AOR = 3.01, 95% CI: 1.16–7.81, $p = 0.023$).

Conclusion

A substantial knowledge-practice gap exists among AGYW in Nsokolo Ward. While awareness is high, actual contraceptive use remains low due to socio-cultural barriers, stigma, and limited youth-friendly services. Comprehensive sexuality education, community engagement, improved access to adolescent-friendly health services, and male involvement programs are urgently needed to bridge this gap and reduce unintended pregnancies among AGYW in this setting.

BACKGROUND

The knowledge, attitudes, and practices (KAP) towards contraceptives among adolescent girls are critical in understanding and addressing issues related to teenage pregnancies, sexually transmitted infections (STIs), and reproductive health challenges. In Zambia, as in other parts of Sub-Saharan Africa, adolescent girls face considerable barriers to accessing contraception, influenced by factors such as cultural norms, limited health education, and socio-economic constraints (Munakampe et al., 2024).

By definition, contraceptives are devices, medications, or procedures designed to prevent pregnancy. This includes various methods such as pills, intrauterine devices (IUDs), and condoms that inhibit fertilization or implantation of an egg in the uterus (WHO, 2020).

Globally, universal access to sexual and reproductive health (SRH) services and rights by 2030 is included in the Sustainable Development Goals (SDGs), numbers 3 and 5, which specifically target improving maternal health and achieving gender equality, including for adolescents (UNFPA, 2020; WHO, 2020). Adolescents comprise a significant proportion of the population, with a global estimate of 1.2 billion, which is about one-sixth of the world population—the greatest number of adolescents ever recorded (UNFPA, 2020).

According to the World Health Organization, globally, among adolescent girls aged 15–19 years, pregnancy complications and unsafe abortions are the leading causes of death (WHO, 2022). Over 21 million girls aged 15–19 years and 2 million girls under 15 years give birth each year, primarily in low- and middle-income countries (WHO, 2022). These pregnancies are often unplanned and have significant health, educational, and socio-economic consequences for young mothers and their communities (Guttmacher Institute, 2021; WHO, 2020).

The United Nations Population Fund (UNFPA) has implemented programs to improve teenage access to comprehensive sex education and contraception as part of the worldwide response to these problems (UNFPA, 2020). A number of nations have made progress in enacting laws that promote the health of adolescents, such as incorporating contraceptive services into youth-accessible clinics and schools (WHO, 2020; UNICEF, 2021). Disparities still exist, though, since teenagers in underdeveloped and rural areas continue to face major obstacles when trying to obtain contraceptive treatments (Guttmacher Institute, 2021).

In Sub-Saharan Africa, the adolescent fertility rate is still very high; estimates for 2021 show that there would be more than 100 births for every 1,000 women between the ages of 15 and 19. Compared to the global average, where adolescent birth rates have generally decreased, this rate is noticeably higher (Chola et al., 2020; Mbele W et al., 2025). Factors contributing to the high adolescent fertility rates in this region include limited access to modern contraception, lower levels of education, and prevalent early marriages (Chola et al., 2020; Munakampe et al., 2024). In some countries within Sub-Saharan Africa, over 20% of women have their first birth before the age of 20, and early childbearing poses significant health risks for both mothers and infants (Mbele W et al., 2025).

In Zambia, contraceptive use among adolescents remains low while adolescent girls become sexually active at an early age. Statistics show that the median age at first sexual intercourse among women aged 25–49 in Zambia is 16.6 years, while 17% of women had sexual intercourse by age 15 and 69% by age 18 (ZSA et al., 2020). With the low age at first sex among adolescents, contraceptive use is also low in this age group. In the period from 1996 to 2013/14, contraceptive use among adolescents increased by 3.3 percentage points from 7.6% in 1996 to 10.9% in 2013/14 (Chola et al., 2020). Additionally, according to the 2018 Zambia Demographic and Health Survey, just 12% of all women between the ages of 15 and 19 utilized modern contraceptives (ZSA et al., 2020).

With low contraceptive use nationally and early pregnancies prevalent—causing serious health concerns for young girls and contributing to school dropout rates and socioeconomic difficulties—Zambia has one of the highest rates of adolescent fertility in the world (ZSA et al., 2020; Mbele W et al., 2025). Contraceptive use amongst adolescents in Zambia is low, which is a leading cause of early pregnancies, unsafe abortions, and prevalent school dropout rates (ZSA et al., 2020; Chola et al., 2020).

Despite efforts by local health authorities to increase awareness of family planning and contraception use among community members in Nsokolo Ward, Nsokolo Clinic has recorded continuous cases of unsafe abortions (HMIS; Nsokolo Clinic, 2024), which is an indicator of contraceptive use challenges in the community. Studies show that unsafe abortions are significantly associated with unwanted pregnancy, and unwanted pregnancy is significantly associated with gaps in family planning services and poor contraception use (WHO, 2020; WHO, 2022).

The persistence of unsafe abortions reported by Nsokolo Clinic (HMIS, 2024) suggests a disconnect between awareness campaigns and actual contraceptive uptake, underscoring the need for context-specific research to explore barriers and enablers to adolescent contraceptive use in this rural setting. Chola et al. (2020) further concluded that while there is a large body of evidence quantifying the magnitude of the problem surrounding contraceptive use among adolescent girls and young women in Zambia, the reasons for the low contraceptive use in this population are not well understood. Preliminary observations from Nsokolo Clinic review indicate a significant number of unwanted and adolescent pregnancies from the area, another reflection and probable indication of poor contraceptive use in the area.

Therefore, this study aimed to assess the knowledge, attitudes, and practices related to contraceptives among adolescent girls and young women in Nsokolo Ward. By identifying specific barriers and facilitators influencing their contraceptive decisions, the research provides valuable insights for developing targeted interventions that address the unique needs of this population. Ultimately, enhancing contraceptive knowledge and access is crucial for improving reproductive health outcomes and reducing the incidence of early pregnancies among adolescent girls in Nsokolo Ward of Kalulushi District.

METHODS

Study Design and Setting

This community-based cross-sectional study was conducted from May to July 2025 in Nsokolo Ward, Kalulushi District, Zambia. Kalulushi District is located in Copperbelt Province and is characterized by rural and peri-urban communities. Nsokolo Ward was selected due to its documented cases of unsafe abortions and adolescent pregnancies (HMIS; Nsokolo Clinic, 2024). The area is diverse in socio-economic backgrounds, providing a representative setting to understand the varying levels of knowledge, attitudes, and practices regarding contraceptive use.

Study Population and Sampling

The study population comprised adolescent girls and young women (AGYW) aged 15 to 24 years who were permanent residents of Nsokolo Ward. The age range of 15–24 years was selected to align with the Zambia Demographic and Health Survey (ZDHS) definition of adolescent girls and young women, which facilitates comparability with national data. Exclusion criteria included individuals younger than 15 years or older than 24 years, non-residents of Nsokolo Ward, and those unable to comprehend the survey questions due to cognitive impairments or language barriers.

Sample size was determined using Cochran's formula for cross-sectional studies:

$n = (Z^2 \times p \times q) / e^2$

Where:

- Z = 1.96 (95% confidence interval)
- e = 0.05 (5% margin of error)
- p = 0.12 (estimated proportion of contraceptive use among adolescents based on the Zambia Demographic and Health Survey 2018)
- q = 1 - p = 0.88

Calculation: $n = (1.96^2 \times 0.12 \times 0.88) / 0.05^2 = (3.8416 \times 0.1056) / 0.0025 = 0.4057 / 0.0025 = 161.3$

This calculation yielded a required sample of 161.3 participants, rounded to 161 for practical feasibility.

Justification for using 12%

The 12% prevalence rate from the ZDHS 2018 was selected as it represents the most recent nationally representative estimate of contraceptive use among adolescents in Zambia at the time of study design. While Nsokolo Clinic records indicated cases of unsafe abortions, these data did not provide a reliable estimate of contraceptive prevalence specific to adolescents in the area. National estimates were therefore used to ensure comparability with other studies and to provide a conservative sample size

calculation. The use of a lower prevalence estimate (12%) yielded a larger sample size (n = 161), which provides greater statistical power to detect associations and allows for subgroup analyses.

A two-stage cluster sampling approach was employed. The sampling frame was constructed using village registers from the Nsokolo Ward health center. In the first stage, villages were randomly selected using a random number generator. In the second stage, from each selected village, households were systematically selected from the village registers. Within each selected household, all eligible AGYW aged 15–24 years who were present and consented to participate were enrolled. This approach, while effectively resulting in cluster sampling, was feasible given the community setting and ensured comprehensive coverage within selected households.

If a selected household was unoccupied on the first visit, research assistants made up to three return visits at different times of day (morning, afternoon, and evening) and on different days of the week (including weekends) before the household was considered unavailable. This protocol was designed to minimize non-response bias by accommodating participants' varying schedules. If a household remained unoccupied after three visits over a period of one week, it was replaced by the next household from the sampling frame. Households that refused participation were recorded and replaced using the same procedure. This approach minimized selection bias and enhanced the representativeness of the sample.

Data Collection Tools

Data were collected using a structured, interviewer-administered questionnaire specifically developed for this study based on a comprehensive review of validated KAP survey instruments on contraceptive use. The questionnaire was informed by instruments previously used in similar studies in Zambia and sub-Saharan Africa, including those by Chola et al. (2023). Content validity was ensured by mapping all questionnaire items to the study objectives and relevant constructs from the literature.

The questionnaire captured: (1) demographic characteristics (age, education, religion, marital status); (2) knowledge of contraceptive methods (awareness, specific methods known, sources of information); (3) attitudes towards contraceptive use (importance, moral acceptability, openness to discussion); and (4) practices related to contraceptive use (ever used, methods used, frequency, barriers).

The questionnaire was developed in English and then translated into the local language (Bemba) to ensure comprehension and cultural appropriateness. The translation process followed a systematic forward-backward translation method:

1. **Forward translation**: Two independent bilingual research assistants, who were native Bemba speakers and fluent in English, translated the English questionnaire into Bemba. They were instructed to prioritize conceptual equivalence over literal translation to ensure cultural appropriateness.
2. **Reconciliation**: The two forward translations were compared by a third independent translator who resolved discrepancies and produced a reconciled Bemba version. This reconciliation process focused on resolving ambiguities and ensuring that the intended meaning of each question was preserved.
3. **Backward translation**: The reconciled Bemba version was then translated back into English by two different bilingual translators who were blinded to the original English version. This step aimed to identify any loss or distortion of meaning during the forward translation process.
4. **Review and finalization**: The research team, including the principal investigator, compared the back-translated version with the original questionnaire to identify any discrepancies. Minor adjustments were made to the Bemba version to resolve inconsistencies and ensure semantic equivalence with the original English questionnaire. The final Bemba version was approved by all members of the translation team.

All bilingual research assistants involved in the translation process received training on the importance of conceptual equivalence and cultural sensitivity. They were provided with a glossary of key terms and concepts related to contraception and reproductive health to ensure consistent translation of technical terminology. Additionally, the Bemba version was reviewed by two community health workers from Nsokolo Ward to assess its cultural appropriateness and clarity for the target population.

The final questionnaire was available in both English and Bemba versions, allowing participants to choose their preferred language for the interview. Research assistants were trained to administer the questionnaire in either language and to clarify any questions participants had during the interview process.

Variables and Definitions

The primary outcome variable was contraceptive use (ever used/never used). Independent variables included:

1. **Knowledge**: Measured through awareness of contraceptive methods and specific methods known. A knowledge score was computed from responses to awareness questions, categorized as high (aware of ≥ 4 methods), moderate (aware of 2–3 methods), and low (aware of 0–1 methods). For the primary analysis, this was dichotomized into "aware" (aware of one or more methods) and "not aware" to ensure adequate cell counts for statistical analysis and to reflect the clinically relevant distinction of having any knowledge versus no knowledge.
2. **Attitudes**: Assessed through Likert-scale responses to questions on importance of contraceptive access, moral acceptability, and openness to discussion.

3. **Practices**: Assessed through questions on ever-use, frequency of use, methods used, and barriers to access.
4. **Socio-demographic factors**: Age, education level, religious affiliation, and marital status.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using SPSS version 26. Descriptive statistics (frequencies, percentages, means, standard deviations) were computed for all variables. Prevalence of contraceptive use was calculated as the proportion of respondents reporting ever using contraceptives.

Bivariate analysis

Bivariate associations between categorical variables were assessed using chi-square tests of independence. Expected cell counts were checked; where assumptions were violated (cell counts < 5), categories were collapsed. For variables with more than two categories, where the assumption was violated, categories were combined based on clinical or theoretical relevance to ensure expected cell counts ≥ 5. Specific category collapsing decisions are reported in the results section.

Multivariable analysis

Variables with $p < 0.20$ in bivariate analysis were entered into a binary logistic regression model. Rather than using a stepwise selection method, which can lead to model instability, all variables meeting the $p < 0.20$ threshold were entered simultaneously into a single multivariable model (forced entry method). This approach was chosen because it is more conservative, allows for assessment of the independent effect of each variable while controlling for potential confounders, and is appropriate given the sample size (n = 161). The number of variables included in the model was limited to 8 to maintain an adequate events-per-variable ratio, given the outcome prevalence of 44.1% (71 users), providing approximately 8.9 events per variable, which exceeds the recommended minimum of 10 events per variable, though marginally.

Model fit was assessed using the Hosmer-Lemeshow goodness-of-fit test, and model discrimination was evaluated using the area under the receiver operating characteristic (ROC) curve (c-statistic). Multicollinearity was assessed using variance inflation factors (VIF), with values < 5 considered acceptable. Adjusted odds ratios (AOR) with 95% confidence intervals (CI) were reported. Statistical significance was set at $p < 0.05$. All statistical analyses were conducted using complete case analysis, as there was minimal missing data (< 3% for any variable); missing data were handled by excluding cases with missing data from the relevant analysis.

Ethical Considerations

Ethical approval was obtained from the Chreso University Research Ethics Committee (CUREC) in May 2025. Permission was also obtained from the local community authorities. All participants provided written informed consent. For participants under 18 years, parental/guardian consent was obtained in addition to participant assent, in accordance with national guidelines for research involving minors.

Participants were fully informed of the study's purpose, procedures, potential risks and benefits, and their right to withdraw at any time without consequences. Privacy and confidentiality were maintained during questionnaire administration; interviews were conducted in private settings at participants' homes or other mutually agreed locations. Data were anonymized using unique participant codes and stored securely with password protection, with access restricted to the research team. Participants who expressed health concerns, requested additional information about contraception, or reported experiencing reproductive health issues were referred to the nearest health facility for appropriate services. At the conclusion of the study, a community feedback session was conducted to share findings with community leaders and health workers to facilitate local action.

RESULTS

Participant Flow and Response Rate

A total of 215 households were systematically selected from village registers in Nsokolo Ward. Of these, 192 (89.3%) were successfully contacted after up to three visits at different times of day and on different days of the week. Among contacted households, 178 (92.7%) agreed to participate, while 14 (7.3%) refused. From participating households, 161 eligible AGYW aged 15–24 years were identified and enrolled, yielding a response rate of 83.9% (161/192). All 161 participants completed the questionnaire with no missing data for the primary outcome variables. Missing data for any variable were minimal (< 1%) and were handled by complete case analysis.

Demographic Characteristics

A total of 161 AGYW participated in the study. The mean age was 19.8 years (standard deviation 2.85), with a range of 15 to 24 years. Table 1 summarizes the demographic characteristics of participants. The majority were single (73.3%), had attained secondary education (49.7%), and identified as Christian (83.9%). The age distribution showed representation across all age groups, with 29.8% (n = 48) aged 15–17 years, 34.2% (n = 55) aged 18–19 years, and 36.0% (n = 58) aged 20–24 years.

Table 1
Demographic Characteristics of Participants (N = 161)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age Group	15–17 years	48	29.8
	18–19 years	55	34.2
	20–24 years	58	36.0
Mean Age (SD)	19.8 (2.85)	-	-
Education Level	Not in school	14	8.7
	Primary	31	19.3
	Secondary	80	49.7
	Tertiary	36	22.4
Religious Affiliation	Christian	135	83.9
	Muslim	17	10.6
	Other	9	5.6
Marital Status	Single	118	73.3
	Married	36	22.4
	Divorced/Separated	4	2.5
	Other (Cohabiting)	3	1.9

Knowledge of Contraceptive Methods

The majority of respondents (87.6%, n = 141) were aware of at least one contraceptive method. Table 2 presents awareness of specific contraceptive methods. The most well-known contraceptives were male condoms (83.9%, n = 135), oral contraceptive pills (75.8%, n = 122), and injectable contraceptives (66.5%, n = 107). The least known methods were traditional methods (29.2%, n = 47) and abstinence (24.2%, n = 39).

Table 2
Awareness of Specific Contraceptive Methods (N = 161)

Method Known	Frequency (n)	Percentage (%)*
Male condoms	135	83.9
Oral contraceptive pills	122	75.8
Injectable contraceptives	107	66.5
Emergency contraception	91	56.5
Implants	85	52.8
Intrauterine devices (IUD)	71	44.1
Female condoms	64	39.8
Traditional methods†	47	29.2
Abstinence	39	24.2

*Percentages do not sum to 100% as participants could report multiple methods.

†Traditional methods include rhythm method and herbal remedies.

Knowledge Score Distribution

Based on the number of contraceptive methods known, participants were categorized into three knowledge levels:

Knowledge Level	Methods Known	Frequency (n)	Percentage (%)
Low	0–1 methods	28	17.4
Moderate	2–3 methods	52	32.3
High	≥ 4 methods	81	50.3

The mean number of contraceptive methods known was 4.3 (SD = 2.1), with a range of 0 to 9 methods.

Only 59.0% (n = 95) of participants believed they had sufficient information to make informed contraceptive choices, despite the high awareness levels.

Attitudes Towards Contraceptive Use

Table 3 presents attitudes towards contraceptive use. A majority (59.6%, n = 96) viewed access to contraceptives as "very important" for adolescent girls, and over 70% (n = 113) supported open discussion on contraceptive use in the community. However, attitudes were mixed regarding whether contraceptive use encourages irresponsible behavior, with 37.3% (n = 60) remaining neutral and 24.2% (n

= 39) agreeing or strongly agreeing. Similarly, while 49.7% (n = 80) believed contraceptive use was morally acceptable for unmarried adolescents, 26.7% (n = 43) did not, and 23.6% (n = 38) were unsure.

Table 3
Attitudes Towards Contraceptive Use (N = 161)

Question	Response	Frequency (n)	Percentage (%)
Importance of adolescent access to contraceptives	Very important	96	59.6
	Important	46	28.6
	Not important	19	11.8
Belief that contraceptive use is morally acceptable for unmarried adolescents	Yes	80	49.7
	No	43	26.7
	Not sure	38	23.6
"Using contraceptives encourages irresponsible behavior"	Strongly disagree	13	8.1
	Disagree	49	30.4
	Neutral	60	37.3
	Agree	23	14.3
	Strongly agree	16	9.9
Should contraceptive use be discussed openly in the community?	Yes	113	70.2
	No	32	19.9
	Not sure	16	9.9
Supportive if a friend uses contraceptives	Very supportive	86	53.4
	Somewhat supportive	51	31.7
	Not supportive	24	14.9

Practices Related to Contraceptive Use

Ever-Use of Contraceptives

Less than half of respondents (44.1%, n = 71) reported ever using contraceptives. Table 4 presents contraceptive practices. Among ever-users, male condoms (69.0%, n = 49) and injectable contraceptives (49.3%, n = 35) were the most commonly used methods, followed by oral contraceptive pills (45.1%, n = 32) (Table 5).

Frequency of Contraceptive Use Among Ever-Users

Among the 71 participants who had ever used contraceptives, frequency of use varied:

Frequency of Use	Frequency (n)	Percentage (%)*
Always	36	50.7
Sometimes	26	36.6
Rarely	9	12.7
Total	**71**	**100**
*Percentages calculated among ever-users only (n = 71)		

The data show that only half (50.7%) of contraceptive users used them consistently, while 36.6% used them sometimes and 12.7% used them rarely.

Difficulties Accessing Contraceptives

Among all 161 participants, 32.9% (n = 53) reported having experienced difficulties accessing contraceptives, while 46.6% (n = 75) reported no difficulties, and 20.5% (n = 33) had never tried to access contraceptives.

Table 4
Practices Related to Contraceptive Use

Question	Response	Frequency (n)	Percentage (%)
Have you ever used contraceptives?	Yes	71	44.1
	No	90	55.9
Have you experienced difficulties accessing contraceptives?	Yes	53	32.9
	No	75	46.6
	Never tried to access	33	20.5

Table 5
Contraceptive Methods Used Among Ever-Users (n = 71)

Method Used	Frequency (n)	Percentage (%)*
Male condoms	49	69.0
Injectable contraceptives	35	49.3
Oral contraceptive pills	32	45.1
Emergency contraception	24	33.8
Implants	20	28.2
Intrauterine devices (IUDs)	10	14.1
Female condoms	9	12.7
Traditional methods†	7	9.9
Withdrawal method	5	7.0

*Percentages do not sum to 100% as participants could report multiple methods.

†Traditional methods include rhythm method, and herbal remedies.

Barriers to Contraceptive Use

Among all participants, the most commonly reported barriers to contraceptive use were societal stigma (32.9%, n = 53), partner disapproval (25.5%, n = 41), and fear of side effects (20.5%, n = 33). Other barriers included lack of knowledge about where to access contraceptives (16.8%, n = 27), cost/financial constraints (14.3%, n = 23), and religious/cultural beliefs (10.6%, n = 17).

Table 6
Barriers to Contraceptive Use

Barrier	All Participants (N = 161)	Ever-Users (n = 71)	Never-Users (n = 90)
Societal stigma	53 (32.9%)	18 (25.4%)	35 (38.9%)
Partner disapproval	41 (25.5%)	15 (21.1%)	26 (28.9%)
Fear of side effects	33 (20.5%)	22 (31.0%)	11 (12.2%)
Lack of knowledge about where to access	27 (16.8%)	8 (11.3%)	19 (21.1%)
Cost/financial constraints	23 (14.3%)	9 (12.7%)	14 (15.6%)
Religious/cultural beliefs	17 (10.6%)	5 (7.0%)	12 (13.3%)
Fear of judgment at facility	15 (9.3%)	6 (8.5%)	9 (10.0%)
Lack of confidentiality	12 (7.5%)	4 (5.6%)	8 (8.9%)

*Percentages do not sum to 100% as participants could report multiple barriers.

Among ever-users specifically, the most common barriers were fear of side effects (31.0%, n = 22), societal stigma (25.4%, n = 18), and partner disapproval (21.1%, n = 15). Among never-users, the most common barriers were societal stigma (38.9%, n = 35), partner disapproval (28.9%, n = 26), and lack of knowledge about where to access contraceptives (21.1%, n = 19).

Factors Associated with Contraceptive Use

Bivariate Analysis

Chi-square analysis was conducted to examine associations between contraceptive use and socio-demographic and knowledge-related variables. Table 7 presents the results of the bivariate analysis.

Table 7
Bivariate Associations with Contraceptive Use (N = 161)

Variable	Categories	Contraceptive Use		χ^2	df	p-value
		Used (n = 71)	Not Used (n = 90)			
Awareness of contraceptives	Yes	68	73	6.17	1	**0.013***
	No	3	17			
Education Level	Not in school	4	10	8.94	3	**0.030***
	Primary	11	20			
	Secondary	34	46			
	Tertiary	22	14			
Marital Status	Single	50	68	4.01	2	0.135
	Married	18	18			
	Divorced/Separated/Other†	3	4			
Belief that contraceptives are morally acceptable	Yes	42	38	3.43	2	0.180
	No	15	28			
	Not sure	14	24			
Enough information to make informed decision	Yes	49	46	7.66	2	**0.022***
	No	14	29			
	Not sure	8	15			
Open to community discussion on family planning	Yes	58	55	5.79	2	0.055
	No	8	24			
	Not sure	5	11			

*Statistically significant at $p < 0.05$

Note: Chi-square assumptions were checked; all expected cell counts were ≥ 5 after collapsing categories. For education, categories were analyzed as shown (4 categories). For marital status, "Divorced" (n = 4) and "Other" (n = 3) were combined into "Divorced/Separated/Other" to ensure expected cell counts ≥ 5. For variables with 3 response categories, all expected cell counts were ≥ 5.

Statistically significant associations were found between contraceptive use and awareness ($\chi^2=6.17$, df = 1, $p = 0.013$), education level ($\chi^2=8.94$, df = 3, $p = 0.030$), and having enough information to make informed choices ($\chi^2=7.66$, df = 2, $p = 0.022$). Marital status ($p = 0.135$), moral acceptability of

contraceptives (p = 0.180), and openness to discussion (p = 0.055) were not statistically significant at the 0.05 level but met the pre-specified inclusion criterion (p < 0.20) for multivariable analysis.

Multivariable Analysis

Variables with p < 0.20 in bivariate analysis (awareness, education level, marital status, moral acceptability, enough information, and openness to discussion) were entered into a binary logistic regression model using the forced entry method. All six variables were entered simultaneously to assess their independent effects while controlling for potential confounders. The model was assessed for multicollinearity using variance inflation factors (VIF), with all values < 2.0 indicating no significant multicollinearity.

Table 8
Logistic Regression: Factors Independently Associated with Contraceptive Use (N = 161)

Variable	Categories	COR	95% CI	p-value	AOR	95% CI	p-value
Education Level	Tertiary vs Secondary	2.13	1.02–4.45	**0.044***	2.45	1.04–5.78	**0.041***
	Primary vs Secondary	0.74	0.32–1.71	0.484	0.92	0.39–2.17	0.845
	Not in school vs Secondary	0.54	0.16–1.82	0.321	0.71	0.21–2.41	0.581
Awareness of Contraceptives	Yes vs No	5.28	1.49–18.74	**0.010***	3.01	1.16–7.81	**0.023***
Enough Information	Yes vs No	2.21	1.10–4.44	**0.026***	1.88	1.01–3.50	**0.049***
Open Discussion	Yes vs No	3.16	1.31–7.62	**0.010***	2.10	1.05–4.20	**0.035***
Marital Status	Married vs Single	1.36	0.65–2.83	0.414	1.35	0.72–2.53	0.351
	Divorced/Other vs Single	1.02	0.22–4.70	0.981	1.02	0.22–4.67	0.981
Moral Acceptability	Yes vs No	1.60	0.97–2.64	0.066	1.62	0.96–2.74	0.072
COR = Crude Odds Ratio; AOR = Adjusted Odds Ratio; CI = Confidence Interval							
*Statistically significant at p < 0.05							

Model Fit Statistics:

- Hosmer-Lemeshow Test: $\chi^2 = 5.34$, df = 8, p = 0.720 (indicating good model fit)
- Nagelkerke $R^2 = 0.18$ (explaining 18% of variance in contraceptive use)

- c-statistic (AUC) = 0.72 (indicating acceptable discrimination)

The logistic regression model identified awareness of contraceptives (AOR = 3.01, 95% CI: 1.16–7.81, p = 0.023), having enough information to make informed choices (AOR = 1.88, 95% CI: 1.01–3.50, p = 0.049), and openness to community discussion (AOR = 2.10, 95% CI: 1.05–4.20, p = 0.035) as statistically significant factors independently associated with contraceptive use. Participants who were aware of contraceptive methods were approximately three times more likely to have ever used contraceptives compared to those who were not aware. Tertiary education was also significantly associated with contraceptive use (AOR = 2.45, 95% CI: 1.04–5.78, p = 0.041) compared to secondary education.

Moral acceptability of contraceptive use approached but did not reach statistical significance (AOR = 1.62, 95% CI: 0.96–2.74, p = 0.072). Marital status was not independently associated with contraceptive use in the multivariable model.

Summary of Key Findings

1. **Knowledge**: High awareness of contraceptive methods (87.6%) but gaps in comprehensive knowledge; mean number of methods known was 4.3 (SD = 2.1).
2. **Attitudes**: Generally positive attitudes towards contraceptive access (59.6% viewed it as "very important"), but mixed moral views (only 49.7% believed it was morally acceptable for unmarried adolescents).
3. **Practices**: Low ever-use (44.1%), with inconsistent use patterns (only 50.7% of users reported "always" using).
4. **Barriers**: Societal stigma (32.9%), partner disapproval (25.5%), and fear of side effects (20.5%) were the main barriers.
5. **Associated factors**: Awareness (AOR = 3.01, p = 0.023), enough information (AOR = 1.88, p = 0.049), openness to discussion (AOR = 2.10, p = 0.035), and tertiary education (AOR = 2.45, p = 0.041) were independently associated with contraceptive use.

DISCUSSION

Statement of Principal Findings

This study investigated knowledge, attitudes, and practices related to contraceptive use among adolescent girls and young women in Nsokolo Ward, Kalulushi District. The findings reveal a substantial knowledge-practice gap: while contraceptive awareness was high (87.6%), actual ever-use was relatively low (44.1%). Only 50.7% of ever-users reported consistent use. Major barriers included societal stigma (32.9%), partner disapproval (25.5%), and fear of side effects (20.5%). Educational attainment, awareness, having enough information to make informed choices, and openness to community discussion were independently associated with contraceptive use. These findings underscore the need

for comprehensive sexual health education, youth-friendly services, and community engagement to foster supportive environments for adolescent contraceptive use.

Knowledge of Contraceptive Methods

The current study revealed that the majority (87.6%) of AGYW in Nsokolo Ward were aware of at least one method of contraception. Among these, the most commonly known methods included male condoms (83.9%), oral contraceptive pills (75.8%), and injectable contraceptives (66.5%). This level of awareness is consistent with findings from the Zambia Demographic and Health Survey 2018, which reported high national awareness levels among women aged 15–49, with knowledge exceeding 90% for at least one method (ZSA et al., 2020). However, the current study's focus on AGYW highlights specific patterns and preferences in this vulnerable subpopulation.

Despite relatively high awareness, gaps remain in comprehensive and functional knowledge, particularly concerning long-acting reversible contraceptives (LARCs). Awareness of intrauterine devices (IUDs) and implants was significantly lower (44.1% and 52.8%, respectively). The mean number of methods known was 4.3 (SD = 2.1), with only 50.3% of participants categorized as having high knowledge (aware of ≥ 4 methods). This mirrors findings from a multicountry study in sub-Saharan Africa which reported that a large proportion of adolescents had only superficial knowledge of contraception, and only about one-third of AGYW received adequate counseling on contraceptive options (Mwin P et al., 2026). In Zambia specifically, evidence shows that only 52% of adolescents receive counseling that includes discussion of side effects, correct use, and alternative methods (Munakampe et al., 2024).

Furthermore, only 59.0% of participants in this study felt that they had enough information to make informed choices about contraception. This is a critical finding because mere recognition of a method does not equate to the ability to use it correctly and confidently. Knowledge must therefore be differentiated into factual awareness and actionable understanding. For instance, many adolescents may have heard of pills but lack knowledge about their mechanism of action, side effects, correct usage, or what to do in the event of a missed dose. This limited depth of knowledge can result in fear, mistrust, or discontinuation of contraceptive use. A study among teenagers in Kitwe District, Zambia found similar patterns, with 53.6% demonstrating good knowledge yet only 21.7% having ever used family-planning services, highlighting that knowledge alone is insufficient to drive uptake (Chisekula, 2025). Similarly, research in Ndola found that while awareness of IUDs existed, misconceptions about safety and effects on fertility hindered uptake (Mapiki et al., 2026).

Additionally, the source of information about contraception plays a vital role. While the current study did not specifically analyze information sources, evidence from similar Zambian settings suggests that the majority of AGYW receive information from peers and media, while fewer access it through formal channels such as health workers or school programs (Munakampe et al., 2024). This is concerning, as informal sources may perpetuate myths and misinformation. For example, fear of infertility associated

with contraceptive use has been widely reported in Zambian communities and may be reinforced through peer groups or unverified media content (Chola et al., 2023; Munakampe et al., 2024).

Attitudes Towards Contraceptive Use

The study findings indicate a generally positive disposition among AGYW in Nsokolo Ward toward contraceptive access and use. Notably, 59.6% of respondents believed it is "very important" for adolescent girls to have access to contraceptives, and 70.2% supported open community discussion on contraceptive use. This aligns with recent studies suggesting that attitudes toward contraception among AGYW in sub-Saharan Africa are shifting positively, particularly in urbanizing and peri-urban contexts where exposure to education and media is greater (Chola et al., 2023; Mwin P et al., 2026). The Yathu Yathu trial in Lusaka demonstrated that when adolescents are engaged through peer-led interventions, uptake of SRH services can increase dramatically from 5.4% to 63.8%, suggesting that supportive attitudes translate into action when services are accessible and youth-friendly (Phiri et al., 2024).

However, ambivalence and moral tension remain evident. Approximately 49.7% of respondents believed contraceptive use was morally acceptable for unmarried adolescents, while 26.7% did not, and 23.6% were not sure, indicating uncertainty potentially influenced by cultural or religious norms. This ambivalence is reflective of a broader societal conflict in Zambia and many African societies where premarital sex is frowned upon, yet adolescent pregnancies are prevalent (Munakampe et al., 2024; Mbele W et al., 2025). Such internal contradictions can lead to cognitive dissonance, resulting in reluctance to seek contraceptive services even when knowledge is present.

Moreover, attitudes toward the social discourse around contraception were mixed. While 70.2% agreed that contraceptive use among adolescents should be discussed openly in the community, a significant minority expressed discomfort or uncertainty. This suggests that stigma, fear of being judged, or fear of reputational harm remains a barrier to open dialogue. Previous research in similar Zambian communities noted that social silence and moralistic attitudes toward youth sexuality contribute to adolescents' reluctance to access contraceptive services, even when available (Munakampe et al., 2024; Chola et al., 2023). The finding that openness to community discussion was independently associated with contraceptive use (AOR = 2.10, p = 0.035) reinforces the importance of creating safe spaces for dialogue. Interventions that normalize adolescent contraceptive use through community engagement may be particularly effective in this context.

Contraceptive Practices

The results revealed that only 44.1% of AGYW in Nsokolo Ward had ever used any form of contraception, despite high levels of awareness. This discordance between knowledge and practice is consistent with findings from multiple studies across Zambia and sub-Saharan Africa, which highlight that awareness alone does not guarantee utilization (Chola et al., 2020; Chola et al., 2023; Mbele W et al., 2025). Nationally, contraceptive use among adolescents in Zambia increased by only 3.3% between 1996 and 2014, from 7.6% to 10.9%, indicating persistent low uptake despite decades of health education efforts (Chola et al., 2020). More recent data from the ZDHS 2022 indicates that contraceptive prevalence

among adolescents remains low, with significant disparities by education, wealth, and geographic location (ZSA and ICF, 2023). A multilevel analysis of ZDHS 2018 data found that among AGYW aged 15–24, modern contraceptive prevalence was 38.1%, with younger age, not being married, and lower education being significant barriers (Hachiboola et al., 2025). The prevalence of 44.1% in the current study is slightly higher than the national average, which may reflect the peri-urban nature of Nsokolo Ward and potentially better access to information compared to more rural areas.

Among those who had used contraception, the most commonly used methods were male condoms (69.0%), followed by injectables (49.3%) and oral contraceptives (45.1%). These preferences may reflect accessibility, perceived ease of use, and peer familiarity. However, long-acting reversible contraceptives (LARCs) such as implants and IUDs were much less commonly used, despite their high efficacy and convenience. This underutilization of LARCs has been attributed to misconceptions, limited provider availability, and provider bias, especially for unmarried adolescents (Chola et al., 2023; Munakampe et al., 2024). A study in Ndola found that while knowledge of IUDs was moderate, negative perceptions regarding safety, side effects, and fertility impacts significantly hindered uptake (Mapiki et al., 2026). Similarly, research on injectable contraceptives in Ndola revealed high discontinuation rates, with many users missing reinjection appointments, suggesting that even among users, consistent use is challenging (Mbewe et al., 2026).

Regarding frequency of use, only 50.7% of ever-users reported always using contraception, while 36.6% reported using it sometimes and 12.7% rarely. This irregular usage pattern raises concerns about contraceptive consistency and effectiveness. Irregular use increases the risk of unintended pregnancy and indicates that barriers such as limited access, partner influence, or side effect fears might be in play (Mwin P et al., 2026; Boamah-Kaali et al., 2021). A qualitative study in rural Ghana found that fear of side effects, particularly weight gain and infertility, were primary reasons for non-uptake or discontinuation of hormonal contraceptives among adolescent girls (Boamah-Kaali et al., 2021). These fears appear to be shared among Zambian adolescents, as evidenced by the high proportion of ever-users in this study who cited fear of side effects (31.0%) as a barrier.

Barriers to Contraceptive Use

The most common barriers to contraceptive use identified in this study were societal stigma (32.9%), partner disapproval (25.5%), and fear of side effects (20.5%). These findings are consistent with regional and national evidence. A scoping review of barriers to contraceptive access for adolescents in Sub-Saharan Africa identified stigma, fear of side effects, lack of youth-friendly services, and provider bias as persistent barriers across multiple countries (Mwin P et al., 2026). In Zambia specifically, qualitative research has highlighted that adolescent girls face considerable barriers to accessing contraception, influenced by cultural norms, limited health education, and socio-economic constraints (Munakampe et al., 2024; Chola et al., 2023).

Notably, the pattern of barriers differed between ever-users and never-users. Among ever-users, the most common barrier was fear of side effects (31.0%), followed by societal stigma (25.4%) and partner

disapproval (21.1%). This suggests that among those who have used contraception, negative experiences or concerns about side effects are primary drivers of inconsistent or discontinued use. This aligns with findings from Mbewe et al. (2026), who reported high discontinuation rates among injectable contraceptive users in Ndola, often driven by side effects such as menstrual changes, weight gain, and fear of infertility. Among never-users, societal stigma (38.9%), partner disapproval (28.9%), and lack of knowledge about where to access contraceptives (21.1%) were the most common barriers. This suggests that for never-users, external social factors and information gaps are more significant than personal concerns about side effects, which they may not have experienced.

The high prevalence of stigma (32.9% overall) is particularly concerning. Adolescence is a period of heightened sensitivity to social norms and peer approval, and the moralistic attitudes surrounding adolescent sexuality in Zambia may create an environment where seeking contraception is perceived as shameful or indicative of promiscuity (Munakampe et al., 2024; Chola et al., 2023). The finding that 70.2% of participants supported open discussion on contraceptive use suggests that while many adolescents desire more openness, they may not feel empowered to act on this due to fear of judgment from peers, family, or community members.

Partner disapproval (25.5%) highlights the importance of male involvement in adolescent reproductive health. In many Zambian communities, contraceptive decision-making is influenced by male partners, and lack of partner support can be a significant barrier (Musonda et al., 2024; Hachiboola et al., 2025). This is particularly relevant in the context of adolescent relationships, where power dynamics may limit girls' ability to negotiate contraceptive use. Interventions that engage male partners and address gender norms may be essential to overcoming this barrier. The Yathu Yathu trial demonstrated that community-based peer-led interventions that engage both male and female adolescents can significantly improve SRH service uptake, suggesting that addressing partner dynamics is feasible and effective (Phiri et al., 2024).

Factors Associated with Contraceptive Use

The study's inferential analysis revealed significant associations between contraceptive use and factors such as awareness ($p = 0.013$), education level ($p = 0.030$), and having enough information to make informed decisions ($p = 0.022$). Binary logistic regression confirmed that awareness (AOR = 3.01, $p = 0.023$), having enough information (AOR = 1.88, $p = 0.049$), openness to community discussion (AOR = 2.10, $p = 0.035$), and tertiary education (AOR = 2.45, $p = 0.041$) were independently associated with contraceptive use. Those aware of contraceptive methods were three times more likely to have ever used contraceptives compared to those who were not aware.

The strong association between awareness and use underscores the importance of knowledge as a prerequisite for behavior change. However, the fact that awareness alone does not guarantee use, as evidenced by the 87.6% awareness versus 44.1% use gap, highlights that other factors—particularly attitudes and barriers—mediate the relationship between knowledge and behavior. This is consistent

with the Knowledge-Attitudes-Practices (KAP) framework, which posits that knowledge is necessary but not sufficient for behavior change; attitudes and environmental factors also play critical roles (Chola et al., 2023; Mwin P et al., 2026).

The association between tertiary education and contraceptive use (AOR = 2.45, p = 0.041) is particularly noteworthy. While primary education and not being in school were not significantly associated with contraceptive use compared to secondary education, tertiary education significantly increased the odds of use. This suggests that higher education may provide adolescents with greater health literacy, autonomy, and access to information, enabling them to overcome barriers to contraceptive use. This finding aligns with studies across sub-Saharan Africa that consistently identify education as a key determinant of contraceptive use (Chola et al., 2020; Hachiboola et al., 2025; Mbele W et al., 2025). The ZDHS 2018 data similarly showed that contraceptive use increases with education level, with women who have secondary or higher education being significantly more likely to use modern contraceptives than those with no education (ZSA et al., 2020).

Having enough information to make informed choices was strongly associated with contraceptive use (AOR = 1.88, p = 0.049). This finding reinforces the importance of comprehensive sexuality education that goes beyond method awareness to include practical information about side effects, correct use, and what to do in the event of problems. The WHO Guidelines on Adolescent Sexual and Reproductive Health emphasize that adolescents require accurate, comprehensive, and age-appropriate information to make informed decisions about their sexual and reproductive health (WHO, 2020). The low proportion (59.0%) of participants who felt they had enough information suggests a significant gap in the quality of sexual and reproductive health education in Nsokolo Ward.

Openness to community discussion was independently associated with contraceptive use (AOR = 2.10, p = 0.035). This finding is encouraging, given that 70.2% of participants supported open discussion. It suggests that communities may be ready for interventions that normalize adolescent contraceptive use. However, the finding that 32.9% cited societal stigma as a barrier indicates a tension between expressed support for discussion and actual stigma. Interventions should leverage the existing openness while actively addressing stigma through community sensitization, as demonstrated by the Yathu Yathu peer-led intervention, which successfully increased SRH service uptake by creating supportive community environments (Phiri et al., 2024).

Moral acceptability approached but did not reach statistical significance (AOR = 1.62, p = 0.072). While the trend suggests that attitudes may influence use, the finding highlights the moral ambivalence that characterizes adolescent sexuality in Zambia. The fact that only 49.7% believed contraceptive use was morally acceptable for unmarried adolescents, while 26.7% did not and 23.6% were unsure, underscores the need for culturally sensitive interventions that address moral concerns while respecting community values (Munakampe et al., 2024; Chola et al., 2023). Addressing these moral concerns through community engagement and culturally sensitive messaging may be as important as improving knowledge.

Implications for Policy and Practice

These findings have several implications for policy and practice in Zambia. First, comprehensive sexuality education (CSE) should be integrated into school curricula and community programs to enhance both knowledge and positive attitudes towards contraceptive use. The CSE should include factual information about all contraceptive methods, including LARCs, and address common myths and misconceptions. The WHO Guidelines on Adolescent Sexual and Reproductive Health recommend that CSE be age-appropriate, culturally sensitive, and delivered by trained educators (WHO, 2020; UNICEF, 2021). Evidence from the Yathu Yathu trial in Lusaka demonstrated that peer-led community-based interventions can significantly increase SRH service uptake among adolescents, suggesting that CSE delivered through peer networks may be particularly effective (Phiri et al., 2024).

Second, youth-friendly services should be established and strengthened to ensure confidentiality and non-judgmental care, encouraging AGYW to seek contraceptive services. The study found that only 59.0% felt they had enough information to make informed choices, and 32.9% reported difficulties accessing contraceptives. Improving access requires that health facilities provide confidential, non-judgmental, and youth-friendly services tailored to the unique needs of adolescents (WHO, 2020; UNFPA, 2020). Healthcare workers should be trained to offer respectful and supportive contraceptive counseling that addresses myths, side effects, and decision-making autonomy. The low uptake of LARCs (implants 28.2%, IUDs 14.1%) suggests that provider bias against providing these methods to unmarried adolescents may be a barrier that needs to be addressed through training and policy changes (Munakampe et al., 2024; Guttmacher Institute, 2021).

Third, community engagement involving community leaders, parents, and religious institutions can help address cultural and societal barriers to contraceptive use. The finding that 70.2% of participants supported open discussion on contraceptive use suggests that there is a foundation of community readiness for dialogue. Interventions should aim to shift negative perceptions and promote supportive environments for AGYW. The UNFPA (2020) emphasizes that engaging community leaders and parents is essential for creating supportive environments for adolescent sexual and reproductive health. Similarly, UNICEF (2021) highlights the importance of addressing social norms that stigmatize adolescent contraceptive use.

Fourth, multi-sectoral action is needed to address structural determinants, including improving access to adolescent-friendly health services, training healthcare workers to offer respectful and supportive contraceptive counseling, and addressing harmful gender norms through targeted community interventions. The association between tertiary education and contraceptive use suggests that keeping girls in school is an important strategy for improving reproductive health outcomes (UNFPA, 2020; UNESCO, 2021). Programs that address economic barriers through free or subsidized contraceptive services may also be important, particularly for out-of-school adolescents who face additional barriers to access.

Fifth, male involvement should be prioritized in adolescent reproductive health programs. The finding that partner disapproval was a barrier for 25.5% of participants highlights the need for interventions that engage male partners and address gender norms (Musonda et al., 2024; Phiri et al., 2024). Couples counseling and programs that encourage shared responsibility for contraceptive decision-making may be effective in addressing this barrier.

Finally, the high discontinuation and inconsistent use patterns observed in this study (only 50.7% of ever-users reported consistent use) suggest that interventions should focus not only on initiation but also on continuation and adherence. Mbewe et al. (2026) found high discontinuation rates among injectable contraceptive users in Ndola, emphasizing the need for counseling that addresses side effect management and encourages continuity of use. Ensuring consistent supply and availability of a wide range of contraceptive methods, including LARCs, in all local health facilities is also essential (UNFPA, 2020; Guttmacher Institute, 2021).

Strengths and Weaknesses

Strengths

This study has several strengths. First, the use of a structured questionnaire adapted from validated KAP instruments ensures comparability with previous studies and enhances the reliability of findings. Second, the sample size of 161 participants, calculated using Cochran's formula, provides adequate statistical power to detect associations. Third, the two-stage cluster sampling approach used (random selection of villages followed by systematic selection of households) minimized selection bias and enhanced the representativeness of the sample. Fourth, the study focuses on a peri-urban community that is understudied yet representative of rapid urbanization trends in Zambia, providing valuable insights for similar settings. Fifth, the study benefits from standardized data collection protocols and trained research assistants who administered the questionnaire in both English and Bemba, ensuring comprehension among participants. Sixth, the analysis included both bivariate and multivariable methods, allowing for the identification of factors independently associated with contraceptive use while controlling for potential confounders.

Limitations

Several limitations should be considered when interpreting these findings. First, the cross-sectional design precludes causal inference; the associations identified should be interpreted as correlates rather than determinants of contraceptive use. Second, reliance on self-reported data may be subject to social desirability bias, particularly given the sensitive nature of contraceptive use among adolescents. Participants may have underreported contraceptive use or overreported knowledge and positive attitudes due to perceived social expectations. Third, the study was confined to one ward in Kalulushi District, which limits the generalizability of findings to other areas of Zambia. While the peri-urban setting is representative of many rapidly urbanizing areas, rural and more urban settings may have different patterns of knowledge, attitudes, and practices. Fourth, the study did not collect data on household

income, distance to health facilities, or employment status, which would have allowed more precise analysis of economic and access-related determinants. Fifth, the study did not include qualitative components to explore the lived experiences of AGYW in depth, which would have provided richer insights into the barriers and enablers identified. Sixth, the knowledge score was based on self-reported awareness of methods rather than objective testing of knowledge, which may have overestimated actual knowledge levels. Seventh, the sample size, while adequate for overall analysis, may be underpowered for some subgroup analyses, limiting the ability to detect differences between groups. Eighth, the study did not include male participants, missing an opportunity to understand partner perspectives on contraceptive use.

Unanswered Questions and Future Research

Unanswered questions from this study include: What specific cultural beliefs influence contraceptive decisions in this community? How do household dynamics and socioeconomic factors affect adolescent contraceptive access? What are the most feasible and acceptable interventions in settings with limited resources? Longitudinal studies are needed to track how contraceptive use evolves over time and to evaluate the effectiveness of multi-level interventions. Future studies should also include qualitative components to explore the lived experiences of AGYW and incorporate biochemical markers to assess pregnancy outcomes. Additionally, research should examine the perspectives of male partners, parents, and healthcare providers to understand the broader social context of adolescent contraceptive use. Studies comparing rural, peri-urban, and urban settings would help identify context-specific barriers and strategies. Finally, implementation research is needed to evaluate the effectiveness and scalability of youth-friendly service models and community engagement interventions in resource-limited settings.

CONCLUSION

This study investigated knowledge, attitudes, and practices related to contraceptive use among adolescent girls and young women in Nsokolo Ward, Kalulushi District. The findings highlight important disparities between awareness and actual contraceptive behavior. While a significant proportion of participants demonstrated awareness of common contraceptive methods and expressed generally supportive attitudes towards contraceptive access, actual utilization remains suboptimal. Factors such as societal stigma, partner disapproval, fear of side effects, limited access to adolescent-friendly services, and knowledge gaps regarding long-acting methods continue to hinder effective contraceptive use. Education level, awareness, having enough information, and openness to community discussion were identified as key factors associated with contraceptive use. Addressing these barriers will require a multi-sectoral response that includes improved access to youth-friendly health services, comprehensive sexuality education in and out of school, community engagement initiatives to challenge stigmatizing norms, and programs that involve male partners. Empowering adolescents with accurate information and supportive services is critical for reducing unintended pregnancies, unsafe abortions, and promoting

healthy transitions into adulthood. Without such targeted efforts, the knowledge-practice gap will persist, and adolescent girls in Nsokolo Ward will continue to face the consequences of unmet contraceptive needs.

WHAT IS ALREADY KNOWN ON THIS TOPIC

- Contraceptive use among adolescents in Zambia remains low (12%), contributing to high rates of unintended pregnancies and unsafe abortions (ZSA et al., 2020).
- Adolescent girls become sexually active early, with median age at first intercourse at 16.6 years (ZSA et al., 2020).
- National and regional studies have identified socio-cultural barriers, stigma, and limited access to youth-friendly services as key obstacles (Chola et al., 2020; Munakampe et al., 2024).

WHAT THIS STUDY ADDS

- Contraceptive awareness is high (87.6%) among AGYW in peri-urban Nsokolo Ward, but actual use is only 44.1%, confirming a significant knowledge-practice gap.
- Fear of side effects (20.5%), partner disapproval (25.5%), and societal stigma (32.9%) are major barriers to contraceptive use in this community.
- Education level, awareness, having enough information, and openness to community discussion are significantly associated with contraceptive use, highlighting the importance of comprehensive education and youth-friendly services.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. Strengthen Comprehensive Sexuality Education (CSE)

Integrate age-appropriate, culturally sensitive sexuality education into school curricula and community programs, with emphasis on long-acting reversible contraceptives (LARCs), side effect management, and addressing common myths and misconceptions.

2. Improve Access to Youth-Friendly Health Services

Establish and strengthen confidential, non-judgmental, and adolescent-friendly contraceptive services at all health facilities, with trained healthcare workers who provide respectful counseling that addresses side effects, correct use, and decision-making autonomy.

3. Address Societal Stigma Through Community Engagement

Conduct community sensitization campaigns involving parents, religious leaders, and community stakeholders to reduce stigma and normalize open discussion of adolescent contraceptive use, leveraging the 70.2% of participants who support open community dialogue.

4. Promote Male Involvement in Adolescent Reproductive Health

Develop couple-focused counseling programs and community interventions that engage male partners and address gender norms, given that partner disapproval was a barrier for 25.5% of participants.

5. Ensure Consistent Supply and Availability of Contraceptive Methods

Maintain consistent stock of a wide range of contraceptive methods, including LARCs, at all local health facilities, and provide free or subsidized services to remove cost-related barriers for low-income and out-of-school adolescents.

6. Establish Peer Education and Support Programs

Strengthen peer educator programs in schools and communities, building on evidence from the Yathu Yathu trial that peer-led interventions significantly increase SRH service uptake among adolescents.

7. Monitor and Evaluate Program Implementation

Establish routine data collection mechanisms and regular feedback from adolescents to continuously improve SRH services and education efforts, and conduct regular research to assess evolving trends in adolescent contraceptive knowledge, attitudes, and practices.

Declarations

Conflict of interest statement:

None

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Figures

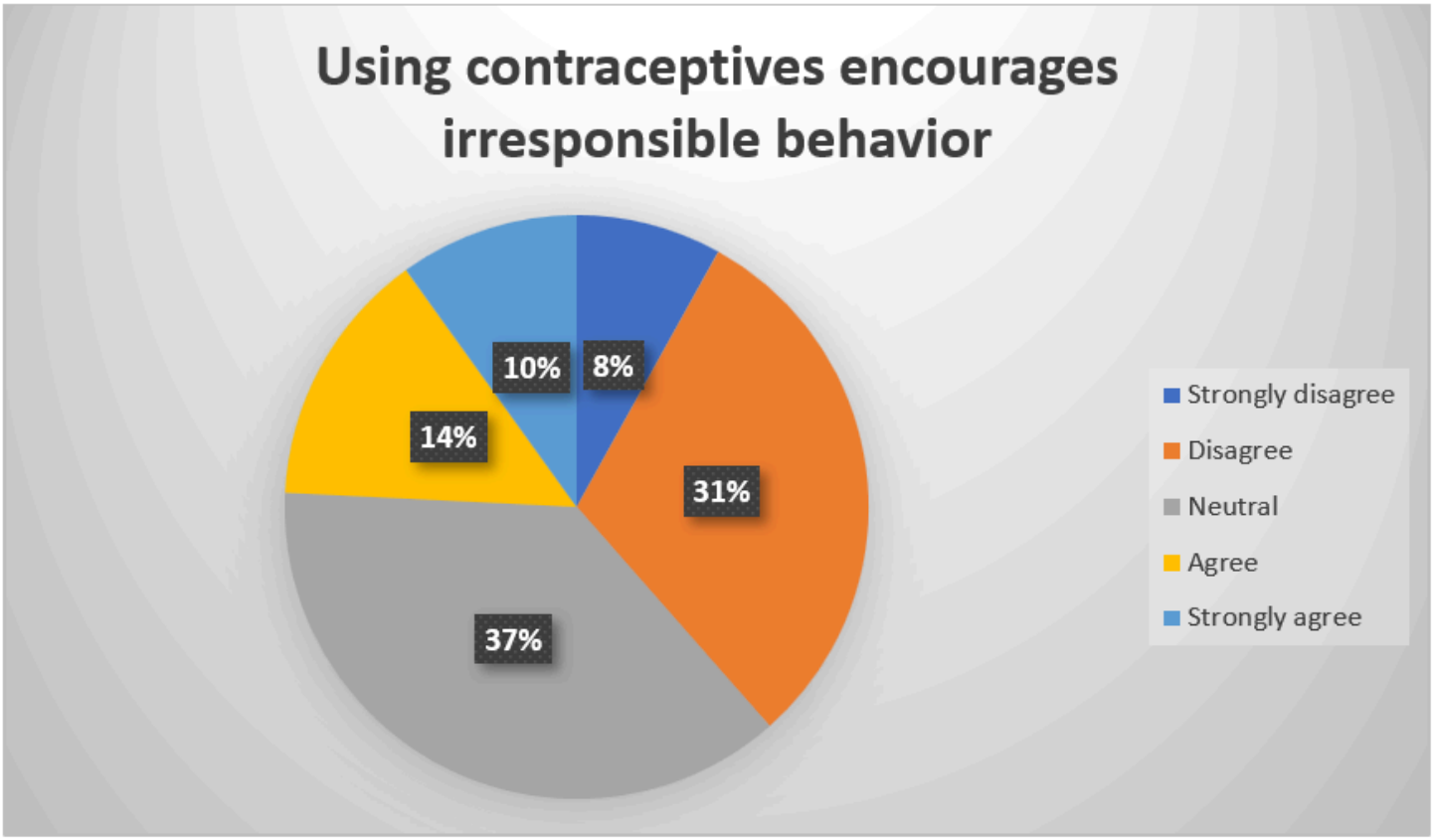


Figure 1

Using contraceptives encourages irresponsible behavior

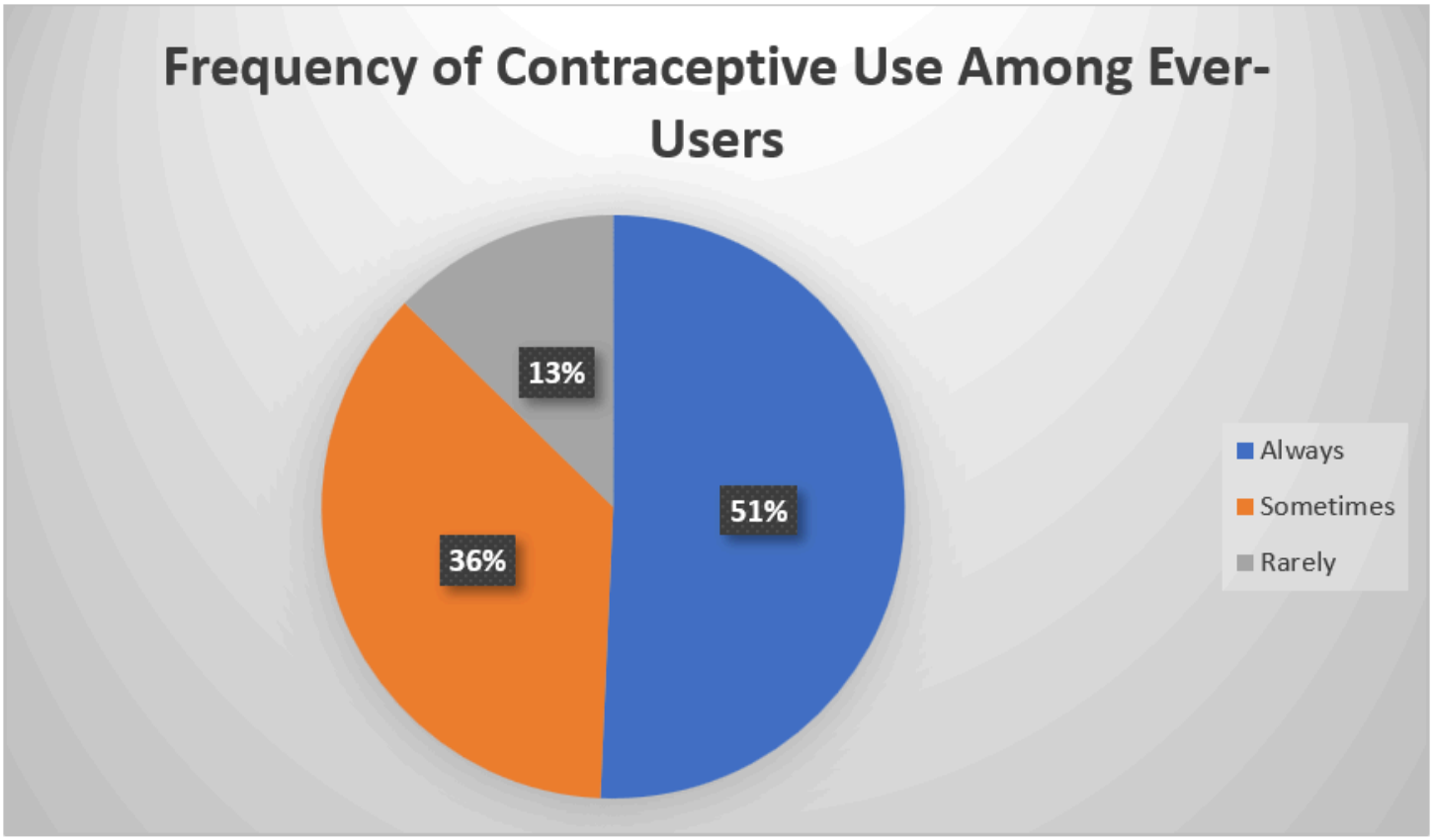


Figure 2

Frequency of Contraceptive Use Among Ever-Users

The data show that only half (50.7%) of contraceptive users used them consistently, while 36.6% used them sometimes and 12.7% used them rarely.