

Navigating sexuality information: A comparative study on the actual and preferred sources by young people in Uganda's Island Communities

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Abstract

Background: Young people's access to sexuality information plays a central role in shaping sexual behaviour. Sexuality information comes from various sources, yet young people often lack access to their preferred and trusted sources. This paper examined the gap between actual and preferred sources of sexuality information, critical for inclusive and responsive interventions in the underserved, yet high-risk settings.

Methods: A cross-sectional mixed-methods study, guided by the Information–Motivation–Behavioral Skills (IMB) and bioecological models, was conducted among young people aged 10–24 years in Kkoome islands communities. A survey of 569 young people and six focus group discussions were conducted. McNemar tests were used to compare differences between actual and preferred sources of sexuality information by topic, and the rationale for preference was analyzed thematically.

Results: Significant differences ($p < 0.001$) were observed between actual and preferred sources across all sources. Books and recorded materials showed the largest gap (actual 21% vs preferred 59.9%; difference 38.9%). Healthcare workers increased from 10.5% to 31.6% (difference 21.1%), while biological parents rose from 5.6% to 23.9% (difference 18.3%). Yet, peers and others were commonly used but less preferred. For higher preference, young people valued privacy, emotional comfort, flexibility, accuracy, and trust in books and recordings; professional expertise and structured guidance from healthcare workers and teachers; and accessibility and emotional support from parents and other close social networks, consistent with the IMB constructs.

Conclusion: The pronounced mismatch between young people's actual and preferred sources of sexuality information indicates a substantial unmet demand for trusted, structured, and young people-responsive sexuality information and education in Uganda's island communities. Strengthening access to books and recordings, the capacity of healthcare workers, and parents to provide sexuality information, and aligning interventions with IMB components may enhance informed decision-making and improve sexual and reproductive health outcomes among young people in high-risk and underserved settings.

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Background

Sexuality information comes from various sources, yet young people often lack access to sources they trust. Access to sexuality information is shaped by multiple social, structural, and environmental factors that influence not only what young people learn, but also how, when, and from whom they learn it (1,2). The diversity of these sources reflects the layered and interconnected social contexts in which young people grow and develop (3). Drawing on Urie Bronfenbrenner, (1979), young people receive sexuality information directly from their immediate environments, the microsystem and mesosystem, and indirectly from other systems. At the microsystem level, young people engage directly with parents, caregivers, and siblings who often serve as primary and immediate sources of sexuality information. The mesosystem captures the community interactions between these immediate settings, such as the alignment or tension, between messages from families, schools, and religious institutions. The exosystem includes indirect but influential structures, such as media, community organisations, and health systems, which shape the availability and

framing of information. Finally, the macrosystem encompasses broader cultural norms, religious values, policies, and legal frameworks that define what sexuality information is considered acceptable or taboo within a society.

In this way, young people do not receive sexuality information from a single source; rather, they navigate a complex and sometimes fragmented network of influences that shape both the content and meaning of what they learn (4). Understanding this bioecological complexity is essential for designing interventions that ensure young people have equitable access to accurate, age-appropriate, complete, and comprehensive sexuality information. In many low- and middle-income countries, including those in sub-Saharan Africa, these information environments are often fragmented, resulting in incomplete or inconsistent messaging (5). While formal platforms such as schools and health facilities are recognised as important sources of structured and accurate information, young people frequently encounter barriers such as stigma, judgment, and fear of disclosure when engaging with these institutions.

Consequently, young people often rely on informal and easily accessible sources such as peers, social media, and mobile phones (6). Although these sources may enhance accessibility and privacy, they may also expose young people to misinformation, incomplete knowledge, or harmful norms. Recent studies highlight that young people actively evaluate information sources based on trust, confidentiality, and relevance to their lived realities (7). Understanding both the availability and acceptability of different sexuality information sources is therefore critical to young people's sexual behaviour.

Role of Sexuality Information in shaping young people

Sexuality information plays a central role in shaping sexual behaviour and health outcomes across the life course. Comprehensive sexuality education (CSE) has been widely recognised as an effective strategy for promoting informed decision-making, safer sexual practices, and the prevention of unintended pregnancy and sexually transmitted infections (STIs), including HIV (8). Access to complete and reliable sexuality information during these formative years enables young people to build knowledge, attitudes, and skills that support safer behaviours and positive relationships throughout their lives (9). According to international guidance, complete sexuality information should cover eight core domains: healthy relationships; values, rights, and culture; gender equality and equity; violence prevention and safety; communication, decision-making, and negotiation; human body development; pregnancy, HIV, and other STIs; and the sexual lifecycle and response (8,10). When these topics are delivered in a culturally sensitive and age-appropriate manner, they contribute to safe sexual behaviour and empower young people to navigate complex social and relational environments with confidence(11–13). However, the extent to which young people access complete and accurate sexuality information varies across contexts, particularly in low-resource and marginalised settings. These disparities highlight the importance of strengthening both the availability and accessibility of complete and comprehensive sexuality education to ensure that all young people can make informed choices and achieve better health and life outcomes.

Despite these benefits, many young people in sub-Saharan Africa continue to face sexual and reproductive health risks. Early sexual debut, unintended pregnancy, and high HIV prevalence remain persistent challenges, particularly among vulnerable populations(14). These outcomes are often linked to gaps in

complete, comprehensive, timely, and culturally appropriate sexuality information. Evidence shows that limited access to information on consent, gender equality, communication, contraception, and HIV prevention contributes to unsafe practices and poor health outcomes(15,16).

The Information–Motivation–Behavioural Skills (IMB) model provides further insight into how sexuality information influences behaviour (17). According to this model, behaviour change requires not only access to accurate information but also motivation and the behavioural skills necessary to apply knowledge in real-life situations. Young people may have basic knowledge of HIV prevention or contraception but fail to adopt protective behaviours due to stigma, fear, or lack of confidence. Therefore, identifying trusted and preferred information sources is essential for strengthening behavioural outcomes.

Contextual Challenges in Uganda and Island Communities

In Uganda, sexuality education remains a socially sensitive and contested issue. Although many stakeholders support school-based sexuality education, public debate persists around the scope and content of programmes, particularly regarding contraceptive access, gender equality, and sexual autonomy. Cultural norms, religious beliefs, and social expectations often restrict open communication about sexuality within families and communities(18). These contradictions create a complex environment in which young people are expected to make responsible decisions but are often denied access to comprehensive and rights-based information.

These challenges are magnified in island communities. Uganda’s island populations experience unique vulnerabilities, including geographic isolation, limited access to health services, shortages of trained teachers, and high poverty levels (19). Occupational mobility linked to fishing livelihoods increases exposure to HIV and other sexual health risks. Health and education services are often inconsistent or unavailable, reducing opportunities for structured sexuality education (20,21). As a result, informal sources such as peers, social networks, and digital media may become primary sources of sexuality information. However, the reliability and completeness of these sources remain uncertain.

From an ecological perspective, these dynamics reflect interactions between individual, interpersonal, community, and societal factors. Social norms, gender expectations, and power relations shape young people’s access to information and services(22–24). In island settings, fear of stigma and lack of privacy may discourage young people from seeking information or care (25,26). These structural and contextual barriers contribute to persistent inequalities in access to sexuality information and sexual behaviour.

Despite growing attention to young people’s sexual and reproductive health in Uganda, empirical evidence on how young people navigate multiple sources of sexuality information remains limited. Much of the existing literature focuses on sexual behaviours, health outcomes, or service utilisation rather than the pathways through which young people access and evaluate information. Furthermore, island communities are often grouped with rural mainland populations, masking their distinct challenges related to geographic isolation, service scarcity, and occupational mobility.

There is also limited research comparing actual and preferred sources of sexuality information. Understanding this gap is essential because interventions often focus on formal sources without

considering young people's preferences and trust. When preferred sources are inaccessible, young people may rely on alternative channels that do not adequately meet their needs. This mismatch can reduce the effectiveness of sexual and reproductive health programmes and contribute to misinformation.

This study is important for advancing public health, equity, and youth wellbeing in marginalised settings. By examining both actual and preferred sources of sexuality information, the research provides insights into how young people engage with their information environments and how interventions can be designed to meet their needs. The findings are expected to support the development of youth-centred and context-specific strategies, improve the delivery of comprehensive sexuality education, and strengthen health communication approaches.

Additionally, the study contributes to efforts to reduce health inequalities by focusing on underserved populations. Island communities face heightened vulnerability to HIV and other sexual health risks, yet they remain underrepresented in research and programming. Generating context-specific evidence is therefore critical for informing policy, resource allocation, and programme design. The study also aligns with global and national commitments to adolescent health, gender equality, and universal access to sexual and reproductive health services.

This study aimed to compare the actual and preferred sources of sexuality information among young people in Uganda's island communities, to inform the design of inclusive, young people-responsive, and equitable sexuality information and education interventions in underserved and high-risk settings.

METHODOLOGY

Study design and setting

This study employed a convergent mixed-methods design, integrating quantitative and qualitative approaches⁽²⁷⁾ to provide a comprehensive understanding of young people's sexuality information environments. The study was conducted in the island communities of Lake Victoria in Uganda.

Mukono District was randomly selected from the seven districts with islands on Lake Victoria. Within Mukono, Kkoome Subcounty, the only island subcounty in the district, was purposively selected. From the four parishes that constitute Kkoome (Bugombe, Busanga, Lwomolo, and Mubembe), Busanga and Bugombe were randomly selected.

The Kkoome Islands (0°00'–0°20'N; 32°40'–33°00'E) are a group of remote islands in Lake Victoria, central Uganda, under Mukono District. The islands are predominantly fishing communities with high population mobility and youthful demographics. They are characterised by dispersed settlements, limited transport networks, inadequate health and education services, and restricted infrastructure. These structural and socio-economic conditions contribute to increased vulnerability to HIV, sexually transmitted infections, and unintended pregnancies among young people.

Study population and Sampling

The study population included young people aged 10–24 years residing in the island communities, estimated at 345,000 (28). In addition, qualitative participants comprised adults and community stakeholders such as parents, guardians, religious and cultural leaders, community leaders, healthcare workers, and teachers.

The sample size for the survey was determined using the Yamane & Israel, (1967) formula for a known population(29):

$$n = \frac{N}{1 + Ne^2}$$

Where: n = required sample size, N = population size (345,000), e = margin of error (0.05). This yielded a minimum sample of approximately 400 respondents. Adjusting for a design effect of 1.5 increased the sample to 600. Accounting for a 10% non-response rate, the final sample size was 600 **young people**. Only Data were collected at a single point in time in May 2025 through structured interviewer-administered surveys. A sampling frame of villages in the selected parishes was developed in collaboration with the Community Development Officer, parish officials, and Local Council leaders. In each parish, six villages were purposively selected with a high concentration of young people aged 10–24 years, accessibility during the study period, and representation of both landing-site and inland communities. Within each village, household listings identified households with at least one eligible young person. Where more than one eligible individual was present, a simple random selection method was applied by drawing numbered slips. This minimized intra-household selection bias. This approach ensured balanced representation across developmental stages and gender. Community leaders supported participant identification while maintaining randomness and ethical standards. The study successfully recruited 569 young people, 86.2% of the targeted sample size.

The qualitative component aimed to explore contextual barriers to accessing complete sexuality information. Purposive and stratified sampling were used to recruit participants for focus group discussions (FGDs) and key informant interviews. Six FGDs were conducted across the two parishes, stratified by sex and age group (10–14, 15–17, and 18–24 years). Each group included six participants.

Data collection procedures

Quantitative data were collected using structured questionnaires administered by trained research assistants. The survey captured socio-demographic characteristics such as age, sex, education level, religion, schooling status, employment, living arrangements, belonging to a club or a group, modes of receiving sexuality information (verbal, observation, reading, video, gaming), actual and preferred sources of sexuality information, across eight sexuality topics defined by UNESCO.

Focus group discussions were conducted in private and safe locations using either Luganda or English, depending on participants' preference. Discussions were audio-recorded with consent. A structured discussion guide explored participants' experiences, preferences, barriers, and contextual influences on sexuality information access. Safeguarding protocols were strictly followed, particularly for minors.

Study Variables

Actual and preferred sources of sexuality information within young people’s social environments. These were conceptualized using the bio-ecological framework and categorized into: Microsystem (household): Parents, siblings, guardians. Mesosystem and community: Friends and peers, peer educators, teachers, religious leaders, healthcare workers, community leaders, internet, books, and recordings.

Sources were assessed across eight sexuality information topics:1) Healthy relationships, 2) Values and rights, 3) Gender equality and equity, 4) Privacy and safety, 5) Communication and decision-making, 6) Human body and development, 7) Sexual and reproductive health, and 8) Sexual expression and lifecycle.

Data analysis

Quantitative data were analyzed using STATA version 18. Analysis was conducted in two stages. Univariate analysis described the distribution of socio-demographic characteristics and information sources using frequencies, percentages, and means. Bivariate analysis assessed differences between actual and preferred sources of sexuality information. The McNemar test was used to evaluate paired differences at a 95% confidence level.

Qualitative data were transcribed verbatim and translated where necessary. Data were imported into NVivo for thematic analysis. Coding was inductive, allowing new themes to emerge. The analysis focused on identifying patterns related to access, trust, and preferences of sexuality information sources.

Ethical considerations

Ethical approval was obtained from The AIDS Support Organization (TASO) Research Ethics Committee, number TASO-2025-323. A research permit (SS3785ES) was granted by the Uganda National Council for Science and Technology.

All participants provided informed consent. For those aged 10–17 years, assent was obtained alongside parental or guardian consent. The study adhered to principles of voluntary participation, confidentiality, anonymity, and child safeguarding throughout the research process.

RESULTS

Profile of young people participating in the survey

The results in Table 1. describe the socio-demographic characteristics and modes through which young people in the Koome Islands receive sexuality information. The sample was balanced across the two parishes, with 50.8% from Busanga and 49.2% from Bugombe, ensuring representativeness of the island communities.

Table 1: Characteristics of young people who responded to the survey

Note: This table has been adapted from Kirwana et al. (2025) with permission(4)

Socio-demographics of young people	Categories	Frequency	Percentage
Parish	Bugombe	280	49.2
	Busanga	289	50.8
Age group 16.433±3.155	10-14years	178	31.3
	15-17years	177	31.1
	18-24years	214	37.6
Sex	Female	292	51.3
	Male	277	48.7
Residence	Rural	94	16.5
	Peri-Urban	475	83.5
Religion	Catholic	309	54.3
	Muslim	42	7.4
	Pentecostal	106	18.6
	Protestant	88	15.5
	Tradisionist	24	4.2
Schooling status	No	347	61.0
	Yes	222	39.0
Education level	None	10	1.8
	Primary	227	39.9
	Secondary	298	52.3
	Tertiary/University	34	6.0
Employment status	No	320	56.2
	Yes	249	43.8

Belong to a club/group	No	231	40.6
	Yes	338	59.4
Living arrangements	Alone	229	40.3
	Biological Parent	101	17.8
	Spouse	93	16.3
	Other	146	25.7
Receiving Sexuality by Observation	No	196	34.5
	Yes	373	65.6
Receiving sexuality information verbally	No	139	24.4
	Yes	430	75.6
Receiving sexuality information by reading	No	538	94.6
	Yes	31	5.5
Receiving through video or games	No	560	99.8
	Yes	1	0.2

Most respondents were aged 18–24 years (37.6%), followed by 10–14 years (31.3%) and 15–17 years (31.1%), with a mean age of 16.4 years. Females constituted 51.3% of the sample, allowing meaningful gender comparisons.

Most participants lived in peri-urban landing sites (83.5%). Catholicism was the dominant religion (54.3%), indicating the strong influence of faith-based institutions on social norms and sexuality communication. A large proportion of young people were out of school (61.0%), although over half had attained secondary education. Employment was reported by 43.8% of respondents, while 59.4% belonged to youth clubs or groups.

Living arrangements were diverse, with 40.3% living alone, followed by those living with biological parents, spouses, or other guardians. Most respondents received sexuality information through verbal communication (75.6%) and observation (65.6%). In contrast, very few accessed information through reading (5.5%) or digital media (0.2%).

Comparison between actual and preferred sources of sexuality information.

Tables 2 and 3 compare the average actual and preferred sources of sexuality information, revealing consistent gaps between where young people currently obtain information and where they would prefer to receive it. Books or recordings emerged as the most preferred source (59.9%) despite moderate actual use (21%), producing the largest difference (38.9%). Healthcare workers (31.6% vs. 10.5%) and biological parents (23.9% vs. 5.6%) were also highly preferred, suggesting a strong desire for credible and trusted sources.

Among the medium-preference sources, friends or confidants (21.6%), teachers (20.6%), and religious leaders (14%) showed notable but smaller gaps, indicating their continued importance within young people’s social environments.

Table 2. ***Comparing actual and preferred sources of sexuality information by topic***

Topic	Source	Bioecological Level	Actual n (%)	Preferred n (%)	Difference (%)	McNemar (χ^2 , p-value)
Topic 1: Healthy Relationships	Biological parents	Microsystem	81 (14.2)	203 (35.7)	21.5	106.3 (p < 0.001)
	Siblings	Microsystem	54 (9.5)	148 (26.0)	16.5	92.0 (p < 0.001)
	Guardians	Microsystem	48 (8.4)	64 (11.3)	2.9	9.86 (p = 0.002)
	Friend/Confidant	Mesosystem	23 (4.0)	137 (24.1)	20.1	110.1 (p < 0.001)
	Peer	Mesosystem	1 (0.2)	27 (4.8)	4.6	26.0 (p < 0.001)
	Teacher	Mesosystem	88 (15.5)	121 (21.3)	5.8	21.4 (p < 0.001)
	Religious leader	Mesosystem	110 (19.3)	143 (25.1)	5.8	16.8 (p < 0.001)
	Community leader	Mesosystem	19 (3.3)	16 (2.8)	-0.5	0.3 (p = 0.590)
	Healthcare worker	Mesosystem	40 (7.0)	59 (10.4)	3.4	8.8 (p = 0.003)
	Internet	Mesosystem	3 (0.5)	33 (5.8)	5.3	30.0 (p < 0.001)
	Book/Recording	Mesosystem	2 (0.4)	278 (48.9)	48.5	274.0 (p < 0.001)
Topic 2: Values and Rights	Biological parents	Microsystem	42 (7.4)	146 (25.7)	18.3	87.2 (p < 0.001)
	Siblings	Microsystem	7 (1.2)	57 (10.0)	8.8	46.3 (p < 0.001)
	Guardians	Microsystem	1 (0.2)	22 (3.9)	3.7	21.0 (p < 0.001)
	Friend/Confidant	Mesosystem	0 (0.0)	146 (25.7)	25.7	146.0 (p < 0.001)
	Peer	Mesosystem	18 (3.2)	54 (9.5)	6.3	18.5 (p < 0.001)
	Teacher	Mesosystem	5 (0.9)	101 (17.8)	16.9	92.2 (p < 0.001)
	Religious leader	Mesosystem	6 (1.1)	16 (2.8)	1.7	4.6 (p = 0.053)
	Community leader	Mesosystem	95 (16.7)	10 (1.8)	-14.9	85.0 (p < 0.001)

	Healthcare worker	Mesosystem	5 (0.9)	12 (2.1)	1.2	2.9 (p = 0.090)
	Internet	Mesosystem	1 (0.2)	34 (6.0)	5.8	33.0 (p < 0.001)
	Book/Recording	Mesosystem	2 (0.4)	276 (48.5)	48.1	272.0 (p < 0.001)
Topic 3: Gender equality and equity	Biological parents	Microsystem	2 (0.4)	79 (13.9)	13.5	75.1 (p < 0.001)
	Siblings	Microsystem	61 (10.7)	80 (14.1)	3.4	11.7 (p = 0.001)
	Guardians	Microsystem	0 (0.0)	17 (3.0)	3	17.0 (p < 0.001)
	Friend/Confidant	Mesosystem	43 (7.6)	82 (14.4)	6.8	22.7 (p < 0.001)
	Peer	Mesosystem	0 (0.0)	21 (3.7)	3.7	21.0 (p < 0.001)
	Teacher	Mesosystem	1 (0.2)	67 (11.8)	11.6	66.0 (p < 0.001)
	Religious leader	Mesosystem	43 (7.6)	74 (13.0)	5.4	27.5 (p < 0.001)
	Community leader	Mesosystem	43 (7.6)	16 (2.8)	-4.8	17.8 (p = 0.023)
	Healthcare worker	Mesosystem	23 (4.0)	35 (6.2)	2.2	5.1 (p = 0.023)
	Internet	Mesosystem	2 (0.4)	34 (6.0)	5.6	32.0 (p < 0.001)
Topic 4: Violence prevention and staying safe	Biological parents	Microsystem	6 (1.1)	109 (19.2)	18.1	99.2 (p < 0.001)
	Siblings	Microsystem	33 (5.8)	31 (5.5)	-0.3	0.1 (p = 0.883)
	Guardians	Microsystem	2 (0.4)	22 (3.9)	3.5	20.0 (p < 0.001)
	Friend/Confidant	Mesosystem	70 (12.3)	125 (21.7)	9.4	25.0 (p < 0.001)
	Peer	Mesosystem	0 (0.0)	7 (1.2)	1.2	7.0 (p = 0.008)
	Teacher	Mesosystem	5 (0.9)	66 (11.6)	10.7	55.5 (p < 0.001)
	Religious leader	Mesosystem	25 (4.4)	143 (25.1)	20.7	102.4 (p < 0.001)

	Community leader	Mesosystem	7 (1.2)	9 (1.6)	0.4	0.3 (p = 0.617)
	Healthcare worker	Mesosystem	5 (0.9)	82 (14.4)	13.5	75.1 (p < 0.001)
	Internet	Mesosystem	1 (0.2)	33 (5.8)	5.6	32.0 (p < 0.001)
	Book/Recording	Mesosystem	1 (0.2)	277 (48.7)	48.5	274.0 (p < 0.001)
Topic 5: Communication, negotiation, and Decision making	Biological parents	Microsystem	9 (1.6)	103 (18.1)	16.5	83.4 (p < 0.001)
	Siblings	Microsystem	42 (7.4)	71 (12.5)	5.1	27.5 (p < 0.001)
	Guardians	Microsystem	20 (3.5)	17 (3.0)	-0.5	0.29 (p = 0.000)
	Friend/Confidant	Mesosystem	63 (11.1)	145 (25.0)	13.9	53.4 (p < 0.001)
	Peer	Mesosystem	1 (0.2)	22 (3.9)	3.7	21.0 (p < 0.001)
	Teacher	Mesosystem	53 (9.3)	119 (20.9)	11.6	53.1 (p < 0.001)
	Religious leader	Mesosystem	47 (8.3)	113 (19.9)	11.6	57.3 (p < 0.001)
	Community leader	Mesosystem	5 (0.9)	10 (1.8)	0.9	2.3 (p = 0.0132)
	Healthcare worker	Mesosystem	28 (4.9)	51 (9.0)	4.1	11.8 (p = 0.001)
	Internet	Mesosystem	1 (0.2)	33 (5.8)	5.6	32.0 (p < 0.001)
	Book/Recording	Mesosystem	1 (0.2)	278 (48.9)	48.7	275.0 (p < 0.001)
Topic 6: Human body and development	Biological parents	Microsystem	6 (1.1)	61 (10.7)	9.6	49.6 (p < 0.001)
	Siblings	Microsystem	5 (0.9)	36 (6.3)	5.4	27.5 (p < 0.001)
	Guardians	Microsystem	2 (0.4)	1 (0.2)	-0.2	0.33 (p = 0.564)
	Friend/Confidant	Mesosystem	6 (1.1)	84 (14.8)	13.7	74.2 (p < 0.001)
	Peer	Mesosystem	1 (0.2)	5 (0.9)	0.7	4.0 (p = 0.046)

	Teacher	Mesosystem	127 (22.3)	162 (28.5)	6.2	10.3 (p = 0.002)
	Religious leader	Mesosystem	28 (4.9)	41 (7.2)	2.3	8.9 (p = 0.003)
	Community leader	Mesosystem	8 (1.4)	14 (2.5)	1.1	2.0 (p = 0.157)
	Healthcare worker	Mesosystem	86 (15.1)	265 (46.6)	31.5	173.2 (p < 0.001)
	Internet	Mesosystem	2 (0.4)	33 (5.8)	5.4	31.0 (p < 0.001)
	Book/Recording	Mesosystem	1 (0.2)	280 (49.2)	49	277.0 (p < 0.001)
Topic 7: Pregnancy, HIV, and STIs	Biological parents	Microsystem	25 (4.4)	111 (19.5)	15.1	71.1 (p < 0.001)
	Siblings	Microsystem	3 (0.5)	16 (2.8)	2.3	11.3 (p = 0.001)
	Guardians	Microsystem	0 (0.0)	19 (3.3)	3.3	19.0 (p < 0.001)
	Friend/Confidant	Mesosystem	30 (5.3)	59 (10.4)	5.1	15.9 (p < 0.001)
	Peer	Mesosystem	1 (0.2)	6 (1.1)	0.9	5.0 (p = 0.025)
	Teacher	Mesosystem	154 (27.1)	172 (30.2)	3.1	3.9 (p = 0.06)
	Religious leader	Mesosystem	23 (4.0)	31 (5.5)	1.5	2.7 (p = 0.103)
	Community leader	Mesosystem	43 (7.6)	18 (3.2)	-4.4	12.8 (p = 0.001)
	Healthcare worker	Mesosystem	92 (16.2)	269 (47.3)	31.1	171.2 (p < 0.001)
	Internet	Mesosystem	4 (0.7)	33 (5.8)	5.1	27.1 (p < 0.001)
	Book/Recording	Mesosystem	1 (0.2)	278 (48.9)	48.7	275.0 (p < 0.001)
Topic 8: Sexual lifecycle and response	Biological parents	Microsystem	2 (0.4)	48 (8.4)	8	46.0 (p < 0.001)
	Siblings	Microsystem	3 (0.5)	34 (6.0)	5.5	29.1 (p < 0.001)
	Guardians	Microsystem	20 (3.5)	1 (0.2)	-3.3	19.0 (p < 0.001)

Friend/Confidant	Micro/Meso	21 (3.7)	47 (8.3)	4.6	14.7 (p < 0.001)
Peer	Micro/Meso	19 (3.3)	15 (2.6)	-0.7	0.5 (p = 0.480)
Teacher	Mesosystem	56 (9.8)	106 (18.6)	8.8	34.7 (p < 0.001)
Religious leader	Mesosystem	1 (0.2)	5 (0.9)	0.7	2.7 (p = 0.103)
Community leader	Mesosystem	55 (9.7)	6 (1.1)	-8.6	43.7 (p < 0.001)
Healthcare worker	Mesosystem	6 (1.1)	39 (6.9)	5.8	29.4 (p < 0.001)
Internet	Exosystem	2 (0.4)	33 (5.8)	5.4	31.0 (p < 0.001)
Book/Recording	Formal	1 (0.2)	274 (48.2)	48	271.0 (p < 0.001)

Low-preference sources, including siblings, community leaders, the internet, peers, and guardians, recorded relatively small differences, reflecting lower overall demand.

Table 3 illustrates the notable differences between the sources of sexuality information young people actually accessed and those they preferred.

Table 3. Average Preferred Sources of Sexuality Information Across the Eight Key Topics

Source	Average Actual %	Average Preferred %	Difference (%)	Preference Level	McNemar χ^2 (p-value)
Book / Recording	21	59.9	38.9	High Preference	2041.0 (p < 0.001)
Healthcare worker	10.5	31.6	21.1	High Preference	517.5 (p < 0.001)
Biological parents	5.6	23.9	18.3	High Preference	486.3 (p < 0.001)
Friend / Confidant	7.4	21.6	14.2	Medium Preference	584.4 (p < 0.001)
Teacher	12.7	20.6	7.9	Medium Preference	398.5 (p < 0.001)
Religious leader	9.1	14	4.9	Medium Preference	184.0 (p < 0.001)
Siblings	4.5	11.3	6.8	Low Preference	242.0 (p < 0.001)
Community leader	3.7	5.3	1.6	Low Preference	122.5 (p < 0.001)
Internet	1.3	6.5	5.2	Low Preference	293.5 (p < 0.001)
Peer	0.9	3.5	2.6	Low Preference	92.0 (p < 0.001)
Guardians	1.9	3.8	1.9	Low Preference	91.5 (p < 0.001)

Books and recordings were the most preferred source, with 59.9% of respondents indicating a preference, compared to only 21% who actually used them, resulting in a 38.9% difference (McNemar $\chi^2 = 2041.0$, p < 0.001), indicating a high preference. Healthcare workers were also highly preferred, with 31.6% of respondents favouring them over 10.5% actual usage, a 21.1% difference ($\chi^2 = 517.5$, p < 0.001). Similarly, biological parents were preferred by 23.9%, yet only 5.6% of young people accessed them, reflecting an 18.3% gap ($\chi^2 = 486.3$, p < 0.001).

Friends or confidants (actual 7.4%, preferred 21.6%, difference 14.2%, $\chi^2 = 584.4$, p < 0.001), teachers (12.7% vs. 20.6%, difference 7.9%, $\chi^2 = 398.5$, p < 0.001), and religious leaders (9.1% vs. 14%, difference 4.9%, $\chi^2 = 184.0$, p < 0.001) were moderately preferred sources. In contrast, siblings (4.5% vs. 11.3%, difference 6.8%, $\chi^2 = 242.0$, p < 0.001), community leaders (3.7% vs. 5.3%, difference 1.6%, $\chi^2 = 122.5$, p < 0.001), internet (1.3% vs. 6.5%, difference 5.2%, $\chi^2 = 293.5$, p < 0.001), peers (0.9% vs. 3.5%, difference 2.6%, $\chi^2 = 92.0$, p < 0.001), and guardians (1.9% vs. 3.8%, difference 1.9%, $\chi^2 = 91.5$, p < 0.001) were the least preferred.

Table 4 indicates that all eight sexuality topics, young people consistently preferred formal and trusted sources, yet these were among the least accessed in practice.

Table 4: Top Three Preferred Sources of Sexuality Information Compared with Actual Sources by Topic

Topic	Top 3 Preferred Sources	Preferred %	Actual %
Healthy relationships	Book/Recording	48.9	0.4
	Biological parents	35.7	14.2
	Friend/Confidant	24.1	4
Values and rights	Book/Recording	48.5	0.4
	Biological parents	25.7	7.4
	Friend/Confidant	25.7	0
Gender equality and equity	Friend/Confidant	14.4	7.6
	Siblings	14.1	10.7
	Biological parents	13.9	0.4
Violence prevention and staying safe	Book/Recording	48.7	0.2
	Religious leader	25.1	4.4
	Friend/Confidant	21.7	12.3
Communication, negotiation, and decision-making	Book/Recording	48.9	0.2
	Friend/Confidant	25	11.1
	Teacher	20.9	9.3
Human body and development	Book/Recording	49.2	0.2
	Healthcare worker	46.6	15.1
	Teacher	28.5	22.3
Pregnancy, HIV, and STIs	Book/Recording	48.9	0.2
	Healthcare worker	47.3	16.2
	Teacher	30.2	27.1
Sexual lifecycle and response	Book/Recording	48.2	0.2
	Teacher	18.6	9.8
	Biological parents	8.4	0.4

Books and audio recordings emerged as the most preferred sources across most topics, including healthy relationships (48.9%), values and rights (48.5%), violence prevention (48.7%), communication and decision-making (48.9%), human body and development (49.2%), pregnancy, HIV and STIs (48.9%), and sexual

lifecycle and response (48.2%). However, their actual use remained extremely low (0.2–0.4%), indicating a substantial unmet need for structured and self-directed learning materials.

Healthcare workers were also highly preferred, particularly for human body and development (46.6%) and pregnancy, HIV, and STI-related information (47.3%), yet actual engagement was much lower (15.1% and 16.2%, respectively). Similarly, teachers were important sources for human body and development and pregnancy-related topics, but gaps remained between preferred and actual use.

Family-based sources, especially biological parents, were consistently valued for topics such as healthy relationships, values and rights, and communication and decision-making. Despite this preference, actual communication with parents was limited, highlighting barriers related to comfort, cultural norms, and communication skills. Friends and confidants were also preferred across several topics, reflecting the importance of relational trust and accessibility.

Drivers of source preference for sexuality information among young people

Both qualitative and quantitative findings highlight consistent patterns in young people's preferences for sources of sexuality information. Quantitative data reveal notable gaps between the sources young people currently access and those they prefer. Tables 2 and 3 show that books and recordings emerged as the most preferred source (59.9%) despite limited actual use (21%), representing the largest difference (38.9%). Similarly, healthcare workers (31.6% preferred vs. 10.5% actual) and biological parents (23.9% preferred vs. 5.6% actual) were highly desired, emphasizing the importance of credible and trusted sources in young people's sexual health education. Medium-preference sources included friends or confidants (21.6%), teachers (20.6%), and religious leaders (14%), while siblings, community leaders, internet, peers, and guardians showed relatively smaller differences, reflecting lower demand (Tables 3 and 4). Qualitative findings provide insight into why certain sources are preferred, with three overarching themes emerging: trust and relatability, perceived expertise and structure, and privacy and self-directed learning.

Trust and Relatability emerged as a central theme for preferring particular sources of sexuality information. Young people consistently valued sources that offered empathy, confidentiality, and contextual understanding. Parents, particularly mothers, were highly preferred for topics such as healthy relationships and gender equity because of their lived experience and ability to provide relatable guidance.

One participant noted, "I should get this information from my mother because they know what they went through when they were my age." (FGD Bugombe, Female, 18–24).

Similarly, male participants highlighted the credibility of parental guidance for gender equity and rights, reflecting the experiential knowledge parents can share: "I would prefer to get this information from my parents... because they have gone through the same." (FGD Busanga, Male, 18–24).

Close relatives, such as aunts, were also trusted for their accessibility and familiarity: "Still my auntie... because she is the one that I mostly associate with." (FGD Busanga, Female, 18–24).

Healthcare workers were valued for their neutrality and professional approach, especially in sensitive discussions: "A counsellor at the health facility will not have that feeling, because that is their job." (FGD

Bugombe, Female, 18–24).

Parents were additionally preferred for communication and decision-making guidance, due to their understanding of individual circumstances: “But I would prefer to get it from my parent because they understand me better.” (FGD Busanga, Female, 18–24)

Perceived Expertise and Structured Guidance were also important themes in determining the drivers of preference of sexuality information sources. Expertise and structured information were crucial in shaping preferences, particularly for topics requiring technical or nuanced knowledge, such as human body development, sexual lifecycle, and pregnancy, HIV, and STIs. Young people emphasized the practical guidance and reliability offered by healthcare workers and formal sources: “I would prefer to get it from a health worker who will give me facts about what I am suffering from, medication, and how I can prevent the same illness.” (FGD Bugombe, Male, 15–17).

Books and recordings were highlighted for their structured and comprehensive content, enabling learners to engage with complex topics confidently: “I would prefer books because they usually contain well-explained and accurate information that I can trust.” (FGD Busanga, Female, 15–17).

Parents and close relatives were similarly valued for contextual explanations: “I would prefer to get it from my mother or my auntie because they can explain things in detail.” (FGD Busanga, Female, 18–24).

In violence prevention and safety, young people emphasized the complementary roles of family and healthcare workers, appreciating both trust and professional expertise: “I prefer to get this information from my parents because they are the ones I stay with and they are the ones that I can trust... But I would also like to get the information from healthcare workers because they have information and expertise on health.” (FGD Bugombe, Male, 18–24)

Privacy, Emotional Comfort, and Self-directed Learning were important themes in determining preference for a particular source. Privacy and emotional comfort strongly influenced the appeal of books and recordings, particularly for topics that are difficult to discuss face-to-face. Participants described the freedom to explore sexuality information without fear of embarrassment: “Listening to recordings or reading allows me to learn in private without feeling shy about asking someone.” (FGD Bugombe, Male, 18–24).

Flexibility in engagement was another key advantage of media-based sources. Books and recordings allowed learners to progress at their own pace and revisit content as needed, supporting deeper understanding: “With books or audio recordings, I can go back and review what I didn’t understand until it becomes clear.” (FGD Busanga, Female, 18–24). These qualities also explain the high preference for books and recordings across all eight sexuality topics, from healthy relationships to sexual lifecycle and response, as reflected in the quantitative gaps between actual and preferred use (Tables 3 and 4).

Discussion

This study examined the actual and preferred sources of sexuality information among young people in Uganda’s island communities and explored the drivers behind their preferences. By comparing where young

people currently obtain information with where they would ideally access it, the study provides evidence to inform inclusive, youth-responsive, and equitable sexuality information and education interventions in underserved and high-risk settings (19). It addresses a notable gap in the literature, as few studies assess mismatches between actual and preferred sources across multiple sexuality topics and link these to young people's informational, motivational, and behavioral needs (6,17,30).

A central finding is the persistent mismatch between information access and young people's preferred sources across all the sexuality information topics. Across nearly all sources, preferred percentages exceeded actual use, with McNemar tests confirming that these differences were statistically significant. This indicates that the challenge is not merely the availability of sexuality information but its alignment with young people's preferences and perceived relevance (1,5).

The largest observed gap was for books and recordings, which were highly preferred but rarely accessed. Structured, media-based resources provide complete, comprehensive, and retrievable content, enabling adolescents to review information privately and repeatedly. These sources align with the information component of the IMB framework, reducing the risk of misinformation commonly associated with peer-based sources (4,31). Qualitative narratives further emphasized that privacy, emotional comfort, and reduced fear of judgment drive preferences for self-directed learning. These findings resonate with prior studies demonstrating that embarrassment and social stigma hinder interpersonal discussions about sexuality (32–34).

From a bioecological perspective, young people rely heavily on microsystem actors such as parents and siblings. Although parents were consistently preferred, communication gaps were evident, reflecting social norms and cultural taboos that limit open discussions about sexual health (35–39). The strong preference for parents indicates that young people value familial guidance and desire more meaningful engagement. Extended kin, such as aunts, were also prioritized, highlighting the potential of culturally embedded mentorship networks that go beyond the nuclear family. These findings extend previous research emphasizing the importance of familial involvement in sexuality information while recognizing the structural and cultural constraints that inhibit dialogue (40–43).

Teachers and healthcare workers were highly preferred, reflecting young people's desire for authoritative, professional information. Healthcare workers were valued not only for accurate content but also for guidance on practical skills, such as condom negotiation and HIV/STI prevention, aligning with the behavioral skills component of the IMB framework (32,44,45). Despite this preference, low actual engagement with these sources suggests structural barriers, including limited youth-friendly services, workforce shortages, and accessibility challenges commonly reported in rural African contexts and far-to-reach communities, such as islands (46–48).

Community leaders were occasionally cited more frequently as actual sources than preferred, suggesting a top-down dissemination model that does not fully resonate with the preferences of young people. This underscores the need for participatory strategies that center youth voices while integrating culturally relevant community guidance. High preference for internet-based platforms and media-based resources highlights young people's growing autonomy, privacy needs, and self-directed learning orientation (49,50). While these

platforms can expand access, concerns about information quality emphasize the importance of curated, credible content that complements interpersonal guidance.

The findings align closely with the IMB framework. Young people's preferences reflect a need for: (1) accurate information, delivered through books, recordings, and healthcare professionals; (2) motivation, influenced by trust, emotional safety, and perceived credibility of sources; and (3) behavioral skills, supported through interactions with healthcare workers and skill-based curricula that enable application of knowledge in real-life sexual decisions. The persistent misalignment between preferred and actual sources indicates that interventions must simultaneously address informational, motivational, and skills-related gaps. Self-directed media can satisfy informational needs, but effective programs should also provide interpersonal guidance to support skill-building, motivation, and confidence (51–54). This integrated approach ensures that young people not only acquire accurate knowledge but also feel empowered and equipped to act on it, a core principle of the IMB framework (Fisher, 1992).

This study makes several key contributions. First, it quantifies the gaps between actual and preferred sources across multiple content domains, highlighting unmet demand for credible and private learning channels. Second, it extends research into island communities, often underrepresented in adolescent health studies. Third, by integrating bioecological, social learning, and IMB frameworks, it provides a nuanced understanding of why mismatches occur, emphasizing that access alone does not guarantee acceptability or effective knowledge uptake. The findings underscore several practical priorities. Strengthening parent–child communication through caregiver training programs can enhance comfort and efficacy in discussing sexuality. Investments in structured print and media resources tailored to adolescents can provide reliable, reviewable information. Integrating self-directed and interpersonal learning, such as blended interventions combining books, recordings, and professional guidance, may optimize knowledge retention, motivation, and skill application.

Limitations include a cross-sectional design, which restricts causal inference, and reliance on self-reported data, potentially influenced by recall and social desirability biases. The focus on island communities may limit generalizability, although the findings offer valuable insights for similarly resource-constrained or geographically isolated settings.

Future research should explore how alignment between preferred sources and information delivery influences sexual and reproductive health outcomes over time, ideally through longitudinal designs. The role of extended family and culturally embedded mentorship networks warrants further examination, as does the effectiveness and usability of structured learning materials, including digital platforms. Comparative studies in diverse contexts could clarify whether the observed preference patterns are generalizable and inform scalable interventions.

Conclusion

This study demonstrates a clear mismatch between young people's actual and preferred sources of sexuality information among young people in Uganda's island communities. Young people strongly favor credible, private, and trusted sources, particularly books, recordings, healthcare workers, and biological parents, even

when these are underutilized. These findings align with bioecological and IMB frameworks, illustrating that young people's knowledge acquisition is shaped by interactions across family, institutional, and community systems. Policy and practice implications include strengthening family-based communication, expanding friendly approaches to parenting, and providing structured resources that complement interpersonal guidance.

By prioritizing young people-centered approaches that combine accuracy, trust, and skill-building, interventions can improve knowledge uptake and support informed sexual decision-making. Overall, aligning sexuality information delivery with young people’s preferences has the potential to enhance both the accessibility and effectiveness of sexuality information and education in underserved settings.

LIST OF ABBREVIATIONS

UNESCO	United Nations Educational, Scientific, and Cultural Organization
HIV	Human Immunodeficiency Virus
STIs	Sexually Transmitted Infections
IMB	Information–Motivation–Behavioral Skills
FGD	Focused Group Discussions
KII	Key Informant Interview

Declarations

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Authors’ contributions

Venantius Bbaale Kirwana conceptualized the study, collected and analysed the data, interpreted the results, and wrote the manuscript. Dr. Allen Kabagenyi, Dr. Patricia Ndugga, Dr. Cyprian Misinde, , Dr. Christian Kakuba, and Dr. Stephen Wandera contributed to writing, interpretation of results and proofreading the manuscript. All authors read and approved the final manuscript.

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Data Availability

The datasets used and/or analysed during the current study are available from the corresponding author upon reasonable request.

Ethics approval and consent to participate.

The surveys were conducted according to established ethical guidelines, and informed consent was obtained from the participants in the online surveys as well as the formative field work. The study was approved by the TASO Institutional Review Board, Uganda National Council of Science and Technology, permit number SS3785ES.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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