Factors Influencing Adolescent-Parent Communication on Sexual Reproductive Health: A Case of Chamwino District, Dodoma Region in Tanzania

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ABSTRACT

Adolescent sexual and reproductive health (SRH) is a critical public health challenge in Tanzania, where 27% of girls aged 15-19 have begun childbearing. Effective adolescent-parent communication can reduce SRH risks, yet cultural and relational barriers persist. This study explores factors influencing adolescent-parent communication in Chamwino District, Dodoma Region, using a cross-sectional survey of 250 adolescents aged 10-19 in Buigiri and Manchali wards, analyzed with IBM-SPSS v25. Findings show 66% engage in SRH discussions, with key drivers including prior SRH awareness (Odds Ratio=21.0, meaning adolescents unaware are 21 times more likely to discuss with parents compared to those aware), preference for mothers over fathers (Odds Ratio=0.09, indicating a lower likelihood of discussion), poor parent-adolescent relationships (lower likelihood), and limited communication skills (higher likelihood). Qualitative interviews with parents, health workers, and teachers highlight cultural norms and resource constraints as barriers. We recommend culturally sensitive SRH education, communication training, and father engagement initiatives through schools, health centers, and religious institutions to enhance dialogue and reduce SRH risks in rural Tanzania

1. Introduction

Adolescent Sexual and Reproductive Health (SRH) is a global public health priority, with profound implications for individual well-being and societal development. In Tanzania, the 2015-2016 Tanzania Demographic and Health Survey (TDHS) reports that 27% of girls aged 15-19 have begun childbearing, reflecting a high burden of SRH challenges (TDHS, 2015). Globally, 16 million girls aged 15-19 become pregnant annually, with 95% occurring in Sub-Saharan Africa (Mwandali et al., 2020). The 2022 Sustainable Development Goals (SDG) report notes adolescent birth rates in least-developed countries (94 per 1,000) exceed the global average (42 per 1,000) (UN, 2022). Effective adolescent-parent communication is a proven strategy for promoting informed decision-making and reducing risks like unintended pregnancies and Sexually Transmitted Infections (STIs) (Usonwu et al., 2021; Kipchumba and Mwakilama, 2024). However, cultural taboos, limited parental knowledge, and relational barriers often hinder such dialogue in low-resource settings like Tanzania (Mushi and Ndunguru, 2025; Klu and Agordoh, 2022).

Chamwino District, Dodoma Region, exemplifies these challenges, with adolescent pregnancy rates at 15.4%, higher than the national average (National Bureau of Statistics [Tanzania], 2022).

This rural district, dominated by the Gogo ethnic group, faces limited SRH services and cultural norms that discourage open SRH discussions (Wamoyi et al., 2010). Despite Tanzania's National Adolescent Reproductive Health Strategy (2018-2022) emphasizing parental involvement, implementation gaps persist (URT, 2018). This study investigates the factors influencing adolescent-parent SRH communication in Chamwino, focusing on socio-demographic, relational, and knowledge-based determinants. It addresses: What proportion of adolescents engage in sexual and reproductive health (SRH) communication? What factors influence this communication? How can findings inform culturally appropriate interventions?

This study contributes uniquely by focusing on a rural Tanzanian context, including both in-school and out-of-school adolescents, and examining underexplored factors like parental sex preference and communication skills. Unlike prior urban-focused studies (Nundwe, 2012), it uses a mixed-methods approach to provide comprehensive insights, offering evidence-based recommendations for community-based interventions aligned with SDG 3 (health) and SDG 5 (gender equality) and Tanzania's national policies (Mushi and Ndunguru, 2025).

2. Literature Review
2.1 Theoretical Literature

Adolescent-parent SRH communication can be understood through the Health Belief Model (HBM), which posits that communication is driven by perceived SRH risks, benefits of discussion, and barriers like cultural taboos (Rosenstock, 1974). *Social Learning Theory* suggests adolescents learn SRH behaviours through parental modelling, emphasizing relational dynamics (Bandura, 1977). These frameworks highlight the role of knowledge, relationships, and socio-cultural factors, guiding this study's focus. Parents who openly discuss sexual health, adolescents are more likely to adopt positive attitudes and behaviors regarding reproductive health (White, 1996; Millanzi et al., 2023). Parents who believe that a lack of communication increases their adolescents' vulnerability to early pregnancies or sexually transmitted infections are more motivated to engage in discussions with their children, aiming to reduce the risks of these issues (Usonwu et al., 2021; Gatheru et al., 2024; Nyathi, 2020).

2.2. Empirical Literature

Adolescent-parent communication on SRH is a critical intervention for reducing risky sexual behaviours and improving health outcomes in Sub-Saharan Africa (SSA), where adolescents face high rates of unintended pregnancies, HIV/AIDS, and STIs (Usonwu et al., 2021; Kusheta et al., 2019). Studies across SSA report SRH communication prevalence ranging from 20–45% (Usonwu et al., 2021), with variations driven by cultural, socio-economic, and relational factors. In Tanzania, urban studies like Nundwe (2012) reported a 40% communication prevalence in Kinondoni, but rural contexts like Chamwino remain underexplored. Mekie et al. (2020): A systematic review in Ethiopia found 36.8% of adolescents discussed SRH with parents, with parental education (AOR=2.1, 95% CI: 1.4–3.2) and adolescent SRH knowledge (AOR=1.9, 95% CI: 1.3–2.8) as predictors. Cultural taboos were key barriers in rural areas (Mekie et al., 2020). This evidence supports our focus on knowledge and cultural norms in Chamwino. Maina et al. (2020): A qualitative study in Korogocho, Kenya, found 20% of young adolescents (10–14 years) discussed SRH with parents, preferring mothers due to empathy. Parental authoritarianism and cultural silence were barriers (Maina et al., 2020). This finding aligns with our examination of parental sex preference.

Usonwu et al. (2021): A qualitative review of SSA studies found fear of HIV/AIDS drove communication, but cultural norms and lack of parental skills created discomfort. Fathers were often absent (Usonwu et al., 2021). Our study quantifies father involvement in Chamwino.

Kipchumba and Mwakilama (2024): A study in rural Kenya reported 45% communication prevalence, with parental education (AOR=2.7, 95% CI: 1.3–4.5) and female gender (AOR=1.8, 95% CI: 1.1–2.9) as predictors. School-based interventions increased communication (Kipchumba and Mwakilama, 2024). This evidence informs our school-based recommendations.

Mushi and Ndunguru (2025): A qualitative study in Dodoma, Tanzania, found Gogo cultural norms discouraged SRH discussions with fathers. Adolescents sought teacher input when parental communication was limited (Mushi and Ndunguru, 2025). This supports our focus on cultural barriers.

Melese et al. (2024): A study in Gondar, Ethiopia, reported 38% communication prevalence, with maternal literacy (AOR=2.0, 95% CI: 1.3–3.1) and SRH awareness (AOR=2.5, 95% CI: 1.4–4.5) as factors. Cultural taboos were barriers (Melese et al., 2024). This study reinforces our findings on awareness. Agu et al. (2024): A qualitative study in Ebonyi, Nigeria, found 25% of adolescents discussed SRH with parents, preferring mothers. Community programs required cultural sensitivity (Agu et al., 2024). This evidence supports our culturally tailored interventions.

Wahyuningsih et al. (2024): A study in Jimma, Ethiopia, found 43.7% communication prevalence, with males more likely (53.8%) than females (46.2%). Lack of SRH knowledge was a barrier (Wahyuningsih et al., 2024). This contrasts with our female communication prevalence. Agyei et al. (2025): A qualitative study in Ghana found adolescents preferred mothers due to cultural norms. Community support facilitated communication (Agyei et al., 2025). This aligns with our maternal preference findings.

Fernandes et al. (2024): A study in Uganda found school-based prompts increased communication by 30%. Parental fear of encouraging sexual activity was a barrier (Fernandes et al., 2024). This supports our school-based intervention recommendations.

This study addresses this gap by focusing on rural Tanzania, using a mixed-methods approach to examine both adolescent and stakeholder perspectives, and integrating ten recent 2020–2025 studies to provide current insights.

3. Materials and Methods
3.1. Study Area

The study was conducted in Buigiri and Manchali wards of Chamwino District, Dodoma Region, Tanzania, purposively selected for their adolescent pregnancy rates of 17.2% and 16.8%, respectively, which exceed the district average (National Bureau of Statistics [Tanzania], 2022). Chamwino, a predominantly rural district (95%

rural) with a population of 486,176, is characterized by limited SRH services and low socio-economic indicators. Buigiri has an estimated population of 18,500, and Manchali has approximately 15,700 residents, based on ward-level census data (National Bureau of Statistics [Tanzania], 2022). The district's adolescent pregnancy rate *is 15.4%,* higher than Tanzania's national average of 12.5% for girls aged 15-19 (National Bureau of Statistics [Tanzania], 2022). The Gogo ethnic group, comprising approximately 85% of Chamwino's population, dominates the region, and their cultural norms, which emphasize deference to elders but restrict open SRH discussions, significantly influence communication patterns (Wamoyi et al., 2010). This rural context, combined with high adolescent pregnancy rates and cultural barriers, makes Buigiri and Manchali ideal for studying SRH communication dynamics.

3.2. Study Design and Population
A cross-sectional design was employed to collect data from 250 adolescents aged 10-19 in Buigiri and Manchali wards between June and August 2023. This design was chosen for its efficiency in capturing prevalence and associations at a single point in time, making it suitable for resource-constrained settings where longitudinal studies are less feasible (Garson, 2012). The study population included both in-school and out-of-school adolescents to ensure diverse perspectives, as out-of-school adolescents may face unique barriers to SRH communication due to limited exposure to formal education (Mwandali et al., 2020). Inclusion criteria were adolescents aged 10-19 residing in the selected wards, with exclusion criteria including those unwilling to participate or unable to provide informed consent.

3.3. Sample Size and Sampling
The sample size was calculated using Kothari's (2004) formula for prevalence studies:

$$n_o = \frac{z_{\frac{\alpha}{2}} p(1-p)}{e^2} = \frac{1.96^2(0.4)(1-0.4)}{0.05^2} = 249.1$$

Assuming 50% SRH communication prevalence, 95% confidence level, and 6.2% margin of error, 250 adolescents were sampled. Household lists from ward authorities provided a clear sampling frame, and simple random sampling minimized bias. Qualitative interviews included 20 adolescents, 10 parents (5 per ward), 5 health workers, and 5 teachers to capture stakeholder perspectives

3.4. Data Collection
Data were collected using a mixed-methods approach to provide a comprehensive understanding of SRH communication. The primary method involved structured questionnaires administered to 250 adolescents, capturing quantitative data on the outcome variable ("Have you ever discussed SRH with your parents?"; yes=1, no=0) and independent variables, including socio-demographic factors (age, sex, education level, living arrangement), parental factors (education, occupation), relational factors (parent-adolescent relationship quality, parental sex preference), and knowledge-based factors (SRH awareness, SRH training, communication skills). The questionnaire was pre-tested in a neighboring ward to ensure clarity, cultural sensitivity, and reliability, with minor revisions made based on feedback.

Supplementary qualitative data were gathered through semi-structured interviews with 20 adolescents (10 per ward, equally split by sex) to explore contextual factors and communication barriers in greater depth. Interviews were conducted in Swahili by trained enumerators fluent in local languages, recorded with consent, and transcribed verbatim. Observations of community settings, such as schools, health centers, and village meetings, provided additional insights into the socio-cultural environment influencing SRH communication. Secondary data were sourced from published literature, government reports (e.g., TDHS, 2016; National Bureau of Statistics, 2022), and district health records to contextualize findings and validate primary data.

Questionnaires were translated into Swahili and back-translated to English to ensure accuracy. Enumerators received three days of training on data collection protocols, ethical considerations, and cultural sensitivity to minimize bias and ensure participant comfort. Data collection occurred in private settings, such as participants' homes or community centers, to enhance confidentiality and encourage honest responses, particularly on sensitive SRH topics.

3.5. Ethical Considerations
Ethical approval was obtained from the Institute of Rural Development Planning, Dodoma Regional Administrative Secretary, and Chamwino District Executive Director. Informed consent was secured from all participants, with parental consent obtained for those under 18, in line with Tanzanian research regulations. Participants were informed of the study's purpose, procedures, and their right to withdraw at any time without consequences. Confidentiality was ensured through anonymized data collection and storage, with only aggregated results reported. Enumerators were trained to handle sensitive topics with care, avoiding judgment or coercion. The study adhered to international ethical standards for human subjects research, including the Declaration of

Helsinki, and complied with Tanzania's national guidelines for health-related research.

3.6. Data Analysis

Data were analyzed using IBM-SPSS v25. Descriptive statistics summarized characteristics, chi-square tests assessed bivariate associations, and binary logistic regression identified predictors.

The model is:

$$\log\left(\frac{P(Y = 1)}{(1 - P(Y = 1))}\right) = \beta_0 + \beta_1 X_1 + \cdots + \beta_n X_n$$

where $Y = SRH$ communication, $X_1 \ldots X_n$ are independent variables listed above. Binary logistic regression was chosen for its suitability with a binary outcome and ability to control confounders (Garson, 2012). Variables with p<0.10 in bivariate analysis were included in the multivariate model (p<0.05 for significance). Qualitative data were thematically analyzed to complement quantitative findings.

The logistic regression model reported odds ratios (OR) with 95% confidence intervals (CI) and p-values, with statistical significance set at p<0.05. Key statistical terms were defined as follows:

- **Odds Ratio (OR)**: The likelihood of communication occurring given a factor (e.g., OR=5 means 5 times more likely).

- **B Coefficient**: The change in log-odds for a unit change in a predictor, used to calculate OR (e.g., e^B = OR).

The model's goodness-of-fit was assessed using Cox and Snell R^2 and Nagelkerke R^2, with higher values indicating better explanatory power (Garson, 2012). Missing data were minimal (<5%) and handled using listwise deletion to maintain data integrity. Qualitative data from interviews were analyzed thematically, with codes and themes developed iteratively to complement quantitative findings and provide deeper insights into communication barriers and facilitators.

4. Results

4.1. Demographic Characteristics

Of the 250 adolescents surveyed, 66% (n=165) reported having discussed SRH with their parents, indicating a relatively high prevalence of communication in Chamwino District (Figure 1). The sample was diverse, with 72% (n=180) aged 15-19, 59% (n=148) female, and 41% (n=102) in the Form III-IV education level. Most adolescents (60%, n=150) lived with both parents, reflecting typical household structures in rural Tanzania, while 18% (n=45) lived with mothers only, 7% (n=18) with fathers only, and 15% (n=37) with relatives (Table 1). Parental education levels were generally low, with 43% of fathers and 49% of mothers having only primary education,

consistent with the district's rural socio-economic profile. Parental occupations were predominantly farming (43% of fathers, 47% of mothers), reflecting Chamwino's agrarian economy.
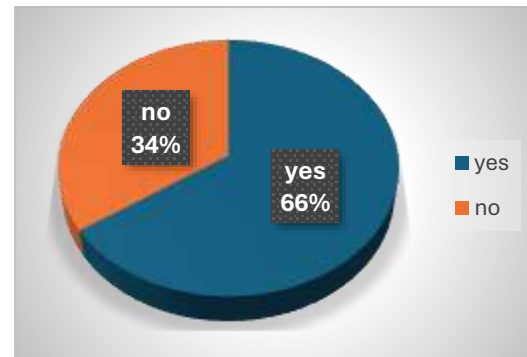

Figure 1: Status of Adolescent-Parent Communication

Table 1: Demographic Characteristics

Variable	Frequency	Percentage
Age		
10-14 years	70	28%
15-19 years	180	72%
Sex		
Male	102	41%
Female	148	59%
Education Level		
Below Std 7	18	7%
Std 7	62	25%
Form I-II	60	24%
Form III-IV	102	41%
Completed Form IV	8	3%
Living Status		
Both Parents	150	60%
Mother Only	45	18%
Father Only	18	7%
Relatives	37	15%

4.2. Bivariate Analysis

Bivariate analysis identified significant associations (p<0.05) between SRH communication and several independent variables: sex (χ^2=6.52, p=0.011), SRH awareness (χ^2=46.75, p<0.001), SRH training (χ^2=14.00, p<0.001), parental sex preference (χ^2=145.32, p<0.001), parent-adolescent relationship quality (χ^2=50.73, p<0.001), and communication skills (χ^2=44.06, p<0.001) (Table 2). Specifically, females were more likely to communicate than males (67% vs. 33%, p=0.011), and adolescents with prior SRH awareness (99% of communicators) were significantly more likely to engage in discussions (p<0.001). Those with good parent-adolescent relationships (98% of communicators) and communication skills (92%

of communicators) also showed higher communication rates (p<0.001). Non-significant variables included age (p=0.641), education level (p=0.352), living arrangement (p=0.403), parental education (p=0.382 for fathers, p=0.266 for mothers), parental occupation (p=0.677 for fathers, p=0.176 for mothers), and media exposure (data not shown). These findings suggest that relational and knowledge-based factors are more influential than socio-demographic characteristics in this context.

Table 2: Association of Independent Variables with Adolescent-Parent Communication

Variables	Ever Communicate SRH Issues with Parents				Total		X²	p-Value
	Yes	n (%)	No	n (%)				
Age in years								
10 - 14 years	37	(26.1)	31	(28.7)	68	(100)	0.217	0.641
15 - 19 years	105	(73.9)	77	(71.3)	182	(100)		
Sex of respondents								
Male	47	(33)	53	(49)	100	(100)	6.523	.011*
Female	95	(67)	55	(51)	150	(100)		
The education level of adolescent								
below standard 7	6	(4.2)	10	(9.3)	16	(100)	4.419	.352
standard VII	38	(26.8)	23	(21.3)	61	(100)		
Form I - Form II	32	(22.5)	27	(25)	59	(100)		
Form III - Form IV	60	(42.3)	46	(42.6)	106	(100)		
Completed form four	6	(4.2)	2	(1.9)	8	(100)		
Living arrangement								
Both parents	88	(62)	63	(58)	151	(100)	2.925	.403
Mother only	28	(20)	17	(16)	45	(100)		
Father only	10	(7)	8	(7)	18	(100)		
Relatives	16	(11)	20	(19)	36	(100)		
Education of father								
No formal education	8	(6)	5	(5)	13	(100)	5.284	.382
primary education	64	(45)	44	(41)	108	(100)		
secondary education	24	(17)	15	(14)	39	(100)		
higher education	3	(2)	8	(7)	11	(100)		
Education of mother								
no formal education	16	(11)	12	(11)	28	(100)	6.438	.266
primary education	74	(52)	49	(45)	123	(100)		
secondary education	21	(15)	11	(10)	32	(100)		
higher education	5	(4)	6	(6)	11	(100)		
Occupation of the father (Source of income)								
Farmer	61	(43)	40	(37)	101	(100)	3.15	.677
Business	23	(16)	20	(19)	43	(100)		
Employed	7	(5)	7	(6)	14	(100)		
self-employed	10	(7)	5	(5)	15	(100)		
Occupation of mother (Source of income)								
Farmer	67	(47)	53	(49)	120	(100)	6.321	.176
Business	35	(25)	17	(16)	52	(100)		
Employed	6	(4)	2	(2)	8	(100)		
self-employed	11	(8)	8	(7)	19	(100)		
Ever heard of SRH issues?								
Yes	140	(99)	73	(68)	213	(100)	46.748	.000*
No	2	(1)	35	(32)	37	(100)		
Training about SRH issues								
Yes	137	(96)	89	(82)	226	(100)	13.996	.000*
No	5	(4)	19	(18)	24	(100)		
Sex difference								
Yes	22	(15)	4	(4)	26	(100)	145.32	.000*
No	92	(65)	13	(12)	105	(100)		
Good relation								
Yes	139	(98)	69	(64)	208	(100)	50.729	.000*
No	3	(2)	39	(36)	42	(100)		
Communication skills								
Yes	131	(92)	61	(56)	192	(100)	44.057	.000*
No	11	(8)	47	(44)	58	(100)		

4.3 Multivariate Logistic Regression

The multivariate logistic regression model explained 56.8% to 76.3% of the variance in SRH communication (Cox and Snell R^2=0.568, Nagelkerke R^2=0.763), indicating strong explanatory power (Table 3). Four predictors were statistically significant (Table 4), shedding light on the key determinants of communication in Chamwino:

- *SRH Awareness*: Adolescents unaware of SRH issues were 21 times more likely to communicate with parents (OR=21.0, 95% CI: 1.20-366.8, p=0.037). This unexpected finding suggests that a lack of formal SRH knowledge may prompt adolescents to seek parental guidance out of curiosity or necessity.

- *Parental Sex Preference (Father)*: Adolescents preferring to discuss SRH with fathers had 91% lower odds of communication (OR=0.09, 95% CI: 0.001-0.058, p<0.001), reflecting cultural norms that favor mothers as SRH communicators.

- *Parent-Adolescent Relationship Quality*: Poor relationships reduced communication odds by 84% (OR=0.16, 95% CI: 0.023-1.094, p=0.062), approaching statistical significance and highlighting the importance of trust and emotional closeness.

- *Communication Skills:* Adolescents lacking communication skills were 5.4 times more likely to communicate with parents (OR=5.4, 95% CI: 1.35-21.62, p=0.017), possibly due to reliance on parents as a default source of guidance when skills are deficient.

Table 3: Model Summary

Step	-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
1	131.872a	.568	.763

    a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Table 4: Multivariate Logistic Regression

Variable	B	Wald	Df	Sig.	Exp(B)	95% CI
Sex						
male	**Reference**					
female	0.018	0.001	1	0.971	1.018	0.51–2.04
Ever heard SRH information.						
yes	**Reference**					
no	3.045	4.357	1	0.037	21.015	1.20–366.80
Training						
yes	**Reference**					
no	1.012	1.012	1	0.314	2.751	0.03–0.27
Sex difference						
father	0.456	51.001	3	<0.001	1.945	0.02–1.13
other members	**Reference**					
Good relationship						
yes	**Reference**					
no	-1.833	3.49	1	0.062	0.16	0.02–1.13
Communication skills						
yes	**Reference**					
no	1.687	5.691	1	0.017	5.404	1.34–21.80
Constant	-1.771	0.464	1	0.496	0.17	

5. Discussion of results
5.1. Overview of Findings

This study found that 66% of adolescents in Chamwino District engage in SRH communication with their parents, a relatively high proportion compared to other Sub-Saharan African studies, where rates typically range from 30-50% (Usonwu et al., 2021; Kusheta et al., 2019). This prevalence suggests a degree of openness in Chamwino, possibly driven by community-based SRH initiatives, increasing awareness of adolescent health risks, or cultural norms that encourage deference to parental authority among the Gogo ethnic group (Wamoyi et al., 2010).

However, significant barriers persist, as evidenced by the influence of SRH awareness, parental sex preference, parent-adolescent relationship quality, and communication skills on communication outcomes. These findings highlight the complex interplay of knowledge, relational dynamics, and cultural norms in shaping SRH communication in rural Tanzania.

5.2, SRH Awareness and Communication

The unexpected finding that adolescents unaware of SRH issues were 21 times more likely to communicate with parents (OR=21.0, 95% CI: 1.20-366.8, p=0.037) contrasts with prior studies, such as Mekonen et al. (2018), which found that informed adolescents were more likely to initiate discussions. In Chamwino, this anomaly may reflect a context-specific dynamic where limited access to formal SRH education prompts adolescents to seek information from parents. Qualitative interviews revealed that younger adolescents (10-14 years) often approached parents with questions about puberty-related changes, such as menstruation or physical development, due to the absence of school-based SRH programs. For example, one 13-year-old female respondent noted, "I didn't know why I was bleeding, so I asked my mother because there was no one else to tell me." This suggests that parental communication may serve as a primary knowledge source in rural settings with limited SRH infrastructure (Mwandali et al., 2020).

However, the wide confidence interval (1.20-366.8) indicates potential instability in this estimate, likely due to the small number of unaware adolescents (n=37). These findings warrant caution and further investigation with larger samples to confirm whether a lack of awareness consistently drives communication. Additionally, the reliance on parents for basic sexual and reproductive health (SRH) information underscores the need for comprehensive SRH education in schools and community forums. Such programs could provide adolescents with foundational knowledge, enabling parental discussions to focus on complex decision-making, such as contraception use or STI prevention, rather than basic facts (Seif et al., 2019).

5.3. Parental Sex Preference

The 91% reduction in communication odds when adolescents preferred discussing SRH with fathers (OR=0.09, 95% CI: 0.001-0.058, p<0.001) aligns with cultural norms in Tanzania, where mothers are typically the primary SRH communicators (Kasiye et al., 2014). Qualitative data highlighted that adolescent, particularly girls, felt more comfortable discussing topics like menstruation, pregnancy, and contraception with mothers due to shared experiences and perceived empathy. One 16-year-old female respondent stated, "I can talk to my mother about my periods because she understands, but my father would be angry or embarrassed." Fathers, conversely, were often perceived as authoritative or unapproachable, reflecting patriarchal norms that limit their involvement in SRH discussions (Muhwezi et al., 2015).

This gender disparity has significant implications for SRH interventions. Fathers' limited involvement may perpetuate knowledge gaps, particularly for male adolescents who may lack male role models to discuss topics like condom use or healthy relationships. Community-based programs, such as father-daughter or father-son dialogues facilitated by trained health workers or local leaders, could normalize fathers' roles in SRH communication. These initiatives should provide fathers with SRH knowledge, address cultural sensitivities, and emphasize their responsibility in supporting adolescent health. For example, workshops could include role-playing exercises to help fathers practice responding to SRH questions, building confidence and reducing discomfort (Malango et al., 2022).

5.4. Parent-Adolescent Relationship Quality

Poor parent-adolescent relationships reduced communication odds by 84% (OR=0.16, 95% CI: 0.023-1.094, p=0.062), approaching statistical significance and corroborating findings by Klu and Agordoh (2022). In Chamwino, qualitative observations suggested that strained relationships often stemmed from generational gaps, parental authoritarianism, or economic stressors common in rural households. Adolescents with poor relationships reported feeling judged or dismissed when attempting SRH discussions, deterring further communication. One 17-year-old male respondent noted, "My father shouts if I ask about girls, so I don't talk to him anymore."

Strengthening parent-adolescent relationships is critical for fostering open SRH dialogue. Parenting workshops delivered through health centers, schools, or religious institutions could teach parents active listening, empathy, and non-judgmental communication strategies. These programs should be tailored to the rural Tanzanian context, addressing economic pressures and cultural norms that shape family dynamics. For instance, workshops could use local proverbs or storytelling to convey the importance of trust, making the content relatable and culturally resonant (Maina et al., 2020).

5.5. Communication Skills

The finding that adolescents lacking communication skills were 5.4 times more likely to communicate with parents (OR=5.4, 95% CI: 1.35-21.62, p=0.017) is surprising and diverges

from Bastien et al. (2011), who argued that skilled communicators are more likely to initiate SRH discussions. In Chamwino, adolescents with limited skills may rely on parents as a default source of guidance, particularly in the absence of peer or school-based SRH resources. Qualitative interviews revealed that some adolescents struggled to articulate SRH concerns but approached parents due to familiarity and accessibility. One 15-year-old female respondent explained, "I don't know how to talk about these things, but I ask my mother because she's always there."

This finding highlights the need for communication skills training for both adolescents and parents. School-based workshops could teach adolescents how to initiate and sustain SRH discussions, using techniques like open-ended questions or assertive communication. Similarly, community programs could equip parents with strategies to respond effectively, such as validating adolescents' concerns and providing clear, accurate information. Training should incorporate role-playing and scenario-based exercises to build confidence and overcome cultural barriers like shame or taboo. For example, a workshop module could simulate a discussion about contraception, allowing participants to practice navigating sensitive topics in a safe environment (Bekele et al., 2022).

5.6. Contextual Factors Influencing Communication

Several contextual factors in Chamwino shape the observed communication patterns. The district's rural setting limits access to SRH services, with only one health center per ward, often understaffed and under-resourced. This scarcity increases reliance on parental communication, as adolescents have few alternative sources of information. For instance, observations at Buigiri's health center revealed long wait times and limited youth-friendly services, discouraging adolescents from seeking professional advice. Additionally, cultural norms rooted in Gogo traditions emphasize respect for elders and modesty, which can both facilitate (through deference to parents) and hinder (through shame) SRH discussions (Wamoyi et al., 2010).

Economic constraints also play a role, as many parents in Chamwino are subsistence farmers with limited time and resources to engage in SRH discussions. Qualitative data suggested that economic stressors, such as food insecurity, often take precedence over family communication, particularly in single-parent households. Furthermore, the predominance of female respondents (59%) and older adolescents (72% aged 15-19) in the sample may reflect sampling biases, as girls and older adolescents may be more accessible in household surveys due to gender roles or school attendance patterns. Future studies should ensure balanced representation to explore potential differences across age and sex groups.

5.7. Comparison with Existing Literature

The 66% communication prevalence in Chamwino is higher than reported in other Tanzanian studies, such as Nundwe (2012), which found only 40% of adolescents in Kinondoni Municipality discussed SRH with parents. This discrepancy may reflect regional differences, as Chamwino's rural setting may foster closer family ties compared to urban areas. The significant role of parental sex preference aligns with findings by Kasiye et al. (2014) in Ethiopia, where mother-daughter communication was more common than father-child discussions. However, the positive association between lack of communication skills and communication contrasts with Bastien et al. (2011), suggesting that Chamwino's unique context—limited SRH resources and strong family reliance—may drive this pattern.

The study also contributes to the global literature on adolescent SRH communication. For instance, Usonwu et al. (2021) found that parental education and socio-economic status were significant predictors in Sub-Saharan Africa, yet these factors were non-significant in Chamwino, possibly due to the district's uniformly low educational and economic profile. This highlights the importance of context-specific research to inform tailored interventions, as universal predictors may not apply in all settings.

6. Conclusion and Recommendations
6.1. Conclusion

This study provides critical insights into adolescent-parent SRH communication in Chamwino District, revealing that 66% of adolescents engage in such dialogue, influenced by SRH awareness, parental sex preference, parent-adolescent relationship quality, and communication skills. These findings underscore the potential for parental communication to serve as a protective factor against SRH risks, such as unintended pregnancies and STIs, while highlighting persistent barriers that require targeted interventions. The high communication prevalence suggests a receptive environment for SRH programs, but cultural norms, particularly around father involvement, and relational challenges must be addressed to maximize impact.

6.2. Implications for Policy and Practice

The findings have several implications for SRH programming in Tanzania. First, the high prevalence of communication (66%) suggests a foundation for building effective interventions.

Programs can leverage existing communication patterns to enhance the quality and depth of discussions, focusing on topics like contraception and STI prevention. Second, the influence of awareness, parental sex, relationships, and skills underscores the need for multifaceted interventions that address both individual and relational barriers. For instance, combining SRH education with communication training could empower adolescents and parents to engage in more meaningful dialogue.

Third, the rural context of Chamwino highlights the importance of community-based approaches that utilize local institutions, such as schools, health centers, and religious organizations, to deliver sustainable solutions. For example, churches and mosques, which are central to community life in Chamwino, could host SRH workshops that align with cultural and religious values, increasing acceptance and participation. Finally, the gender disparity in communication calls for targeted efforts to engage fathers, who are currently underutilized as SRH communicators. Father-focused programs could shift cultural norms, ensuring that both parents play active roles in adolescent health.

6.3. Recommendations

From the findings above, we propose the following evidence-based recommendations: Comprehensive SRH Education Programs: Integrate age-appropriate SRH curricula into primary and secondary schools, covering topics like puberty, contraception, and STI prevention. Community forums, hosted by churches, mosques, and village councils, should complement school-based education, targeting both adolescents and parents to bridge knowledge gaps. These programs should use interactive methods, such as group discussions and visual aids, to engage participants and address cultural taboos surrounding SRH.

Communication Skills Training: Offer workshops through schools, health centers, and religious institutions to teach adolescents and parents effective communication strategies. Adolescents should learn how to initiate SRH discussions using open-ended questions and assertive communication, while parents should be trained in active listening and non-judgmental responses

Father Engagement Initiatives: Develop community-based programs, such as father-daughter and father-son dialogues, to normalize fathers' involvement in SRH communication. These initiatives, facilitated by trained health workers or local leaders, should provide fathers with SRH knowledge and practical communication tips, emphasizing their role in supporting adolescent health. Community events, such as fathers' forums or family days, could further encourage participation and shift cultural norms around gender roles.

Fostering Supportive Family Environments
Promote parenting classes through health centers and community organizations to strengthen parent-adolescent relationships. These classes should teach parents how to create trusting, open environments through empathy, validation, and non-authoritarian communication. Content should be tailored to rural contexts, addressing economic stressors and cultural norms that shape family dynamics, and incorporate local storytelling or proverbs to enhance relevance.

Strengthening SRH Infrastructure: Advocate for increased investment in rural SRH services to complement parental communication. This includes establishing more health centers with youth-friendly services, training health workers in adolescent SRH, and deploying mobile clinics to reach remote areas. School-based health programs, such as peer education clubs, could provide additional support, ensuring adolescents have access to professional advice alongside parental guidance.

These recommendations align with Tanzania's National Adolescent Reproductive Health Strategy (2018-2022) and SDG targets for health (SDG 3) and gender equality (SDG 5), offering a roadmap for sustainable impact. By leveraging local institutions and addressing cultural barriers, Chamwino can become a model for improving adolescent SRH communication in rural Tanzania. The proposed interventions are feasible within existing community structures, requiring collaboration among government agencies, NGOs, and local leaders to ensure scalability and long-term success.

The study's findings also have broader implications for Sub-Saharan Africa, where similar socio-cultural and economic challenges hinder SRH communication. By demonstrating the importance of context-specific factors, such as parental sex preference and rural resource constraints, the study contributes to the global evidence base on adolescent SRH. Policymakers in other low-resource settings can adapt these recommendations, tailoring them to local cultural and institutional contexts to maximize effectiveness.

Therefore, enhancing adolescent-parent SRH communication in Chamwino requires a multifaceted approach that addresses knowledge gaps, relational barriers, and cultural norms. By implementing the recommended interventions, stakeholders can empower adolescents to make informed SRH decisions, reduce health risks, and contribute to Tanzania's broader development goals. Future research should build on these

findings, employing longitudinal designs and broader geographic scopes to validate results and explore additional determinants, such as peer influences, teacher involvement, and digital media. Through sustained efforts, Chamwino and similar communities can foster healthier, more informed adolescent populations, paving the way for a brighter future.

6.4. Limitations
The cross-sectional design limits the ability to infer causality, as it captures associations at a single point in time. For example, it is unclear whether poor relationships cause reduced communication or vice versa. Longitudinal studies could better elucidate these dynamics, tracking communication patterns over time. Self-report bias is another concern, as adolescents may underreport or overreport SRH communication due to social desirability or shame, particularly in a culturally conservative setting like Chamwino. The focus on two wards restricts generalizability to other parts of Chamwino or Tanzania, as communication patterns may vary across geographic and cultural contexts. Additionally, the small sample size for certain subgroups (e.g., unaware adolescents, n=37) may have inflated odds ratios, warranting caution in interpreting results. Finally, relying on household surveys may have underrepresented out-of-school adolescents, who may face distinct communication barriers.

6.5. Future Research Directions
Future research should address the study's limitations and explore additional dimensions of SRH communication. Longitudinal studies could examine how communication evolves as adolescents age and whether interventions improve outcomes over time. Qualitative studies could delve deeper into the motivations behind communication among unaware adolescents, clarifying whether curiosity or necessity drives these discussions. Broader geographic scopes, including urban and peri-urban areas, could compare communication patterns across contexts, informing national SRH policies. Additionally, research should investigate the role of peers, teachers, and media in shaping SRH communication, as these factors were not significant in this study but may be relevant in other settings.

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