

ADOLESCENT-PARENT COMMUNICATION ON SEXUAL AND REPRODUCTIVE HEALTH IN RURAL NEPAL: A CROSS-SECTIONAL STUDY

Rajesh Karki^{1*}, Sujata Thapa², Maheshor Kaphle³

¹ Central Department of Public Health, Institute of Medicine, Tribhuvan University, Nepal

² Department of Public Health, Yeti Health Science Academy, Purbanchal University, Nepal

³ Department of Public Health, People's Dental College and Hospital, Tribhuvan University, Nepal

Corresponding Author: karkirajesh2022@gmail.com

ARTICLE INFO

Article History:

Received: 12th,
November 2024

Revised:

From 28th, November
2024

Accepted: 11th, April
2025

This is an open access
article under the CC BY-
NC-SA license
<https://creativecommons.org/licenses/by-nc-sa/4.0/>

ABSTRACT

Background: Effective communication between adolescents and their parents plays a crucial role in fostering healthy sexual and reproductive behaviors. Despite its importance, communication remains limited in Nepal. **Purpose:** This study aims to assess the prevalence and determinants of adolescent-parent communication on sexual and reproductive health (SRH) topics in rural Nepal. **Methods:** A cross-sectional study was conducted among 319 adolescents selected from 604 adolescents in the Jhimruk Rural Municipality, Nepal, in 2023. Participants were randomly selected using the lottery method. Data was collected using a self-administered structured questionnaire. Descriptive statistics were employed for categorical variables, while multivariate logistic regression identified factors influencing adolescent-parent communication on SRH. Statistical significance was set at $p < 0.05$, and the analyses were performed using SPSS version 26. **Results:** Most respondents (79.9%) were below 18 years of age, with a mean age of 15.80 years (SD ± 1.63). Most (93.4%) had good knowledge of SRH. However, the prevalence of adolescent-parent communication on sexual and reproductive health topics was only 58.6%, with only 4.7% communicating frequently on different SRH topics. The major reasons for not communicating included shame (41.6%) and cultural unacceptability (30.4%). Significant factors associated with adolescent-parent communication included respondents' age, sex, ethnicity, boyfriend/girlfriend status, knowledge of SRH, parental living status, and parental education and occupation. **Conclusion:** Although the adolescents demonstrated good SRH knowledge, the substantial gap in parent-adolescent communication underscores the need for targeted interventions. Strategies should focus on empowering adolescents to initiate conversations with parents and educate both parties about the significance of open dialogue in SRH.

Keywords: adolescents, communication, prevalence, sexual and reproductive health

INTRODUCTION

The World Health Organization (WHO) defines adolescents as individuals aged 10–19 years (Yibrehu & Mbwele, 2020), a period marked by physical, cognitive, behavioral, and psychosocial changes, including increased autonomy, identity formation, and self-esteem (Dagnachew Adam *et al.*, 2020). Globally, adolescents account for 1.2 billion people, with over 80% living in low- and middle-income countries (Bhatta *et al.*, 2021), making them the fastest-growing population in resource-limited nations (Yibrehu & Mbwele, 2020).

Adolescents are among the most vulnerable to various sexual and reproductive health (SRH) challenges (Singh *et al.*, 2023), including unintended pregnancies, HIV, other sexually transmitted infections (STIs), and unsafe abortions (Bhatta *et al.*, 2021). Many die prematurely from preventable or treatable causes such as accidents, suicide, violence, pregnancy complications, and reproductive illnesses. According to the WHO, 1.3 million young people die annually from preventable causes (Melese *et al.*, 2024). Globally, two million adolescents are affected by STIs, making them the second leading cause of death in this age group, while complications from pregnancy and childbirth are the leading cause of death among adolescent girls aged 15–19 years (Bhatta *et al.*, 2021). Each year, an estimated 15 million adolescents marry before age 18, with 90% of births among 15–19-year-olds occurring within marriage (Usonwu *et al.*, 2021). Unsafe abortions account for 25–30% of adolescent pregnancies worldwide (Yibrehu & Mbwele, 2020). Ensuring access to SRH services is crucial for mitigating these risks (Bhatta *et al.*, 2021).

Nepal, a resource-poor South Asian country, with six million adolescents (24% of the population), faces challenges in adolescent reproductive health. Seventeen percent of girls aged 15–19 are mothers or pregnant, and only 14.2% of currently married adolescents use modern contraceptives (Ministry of Health and Population [Nepal], 2023; Singh *et al.*, 2023). The average age who experienced first sexual experiences among youth and adolescent is 17.5 years in Nepal, and nearly three among five of them use condoms. They also faced common risky sexual behaviors such as having multiple

partners, intercourse with commercial sex workers, and uneven condom use (Bhatta *et al.*, 2021). Due to growing desire for freedom and autonomy during the adolescent and youth adulthood from their family, and peer relationship influences them to involve such activities (Bekele *et al.*, 2022). Nepal's national adolescent SRH program offers a range of services, including counseling, education, health promotion, obstetrics, family planning, general health, safe abortion, school health education, and gender-based violence management. These services are available at primary health care centers, health posts, and district hospitals (Tiwari *et al.*, 2022). Despite government efforts to enhance access sexual and reproductive health services access in Nepal is insufficient (Ministry of Health and Population [Nepal], 2023; Singh *et al.*, 2023). Youth and adolescents may face multiple barriers to identifying the information on sexual and reproductive issues since the issues are preventable (Bekele *et al.*, 2022). In this situation, the family plays a pivotal role in protection of adolescent health and caring for them from various health risks (Bekele *et al.*, 2022). Parents are responsible for caring and protecting their children's understanding of sexual and reproductive health matters (Bhatta *et al.*, 2021). They significantly shape their children's attitudes and behaviors, including those related to sexual and reproductive health, making them a valuable source of SRH information (Bhatta *et al.*, 2021).

Healthy sexual and reproductive health behaviors can be improved through effective communication between adolescents and parents. Adolescents who openly discuss SRH issues with their parents are more likely to make informed decisions regarding the use of reproductive services, postponement of sexual activity, protection from risky sexual behavior, and promotion of healthy sexual socialization (Bekele *et al.*, 2022). Studies on HIV/AIDS interventions have demonstrated that such communication improves condom use skills and self-confidence among youths (Kusheta *et al.*, 2019). Conversely, limited communication between parents and adolescents regarding sexual and reproductive health can result in misinformation, misunderstandings, and hesitation to seek assistance (Melese *et al.*, 2024). To achieve the United Nations 'goal of universal access to sexual and reproductive

healthcare, it is essential to involve adolescents and their parents, particularly in low-income and middle-income countries (Kusheta *et al.*, 2019).

Despite its significance, previous studies have revealed a concerning low prevalence of adolescent-parent communication in SRH globally and in Nepal. For instance, a systematic and meta-analysis in Ethiopia reported an overall pooled rate of 40.70% (Eshete & Shewasinad, 2020). In Nigeria, the prevalence was 56.9% (Aliyu & Aransiola, 2023); in Tanzania, 26.7% (Millanzi *et al.*, 2023); and in Laos, 21.3% (Vongsavanh *et al.*, 2020). In Nepal, the situation is similar. A study conducted in Pokhara found only 18.1% of adolescents communicated with their parents about SRH topics (Tripathi & Risal, 2023), while another study reported an overall prevalence of 55.9% (Tuladhar & Shrestha, 2021). These findings underscore the significant gap in SRH communication, leaving many adolescents without reliable information or support (Gautam *et al.*, 2023).

Furthermore, societal stigma and deeply ingrained cultural norms often hinder open family discussions about SRH, although parental consent is frequently required for adolescents to access related services (Singh *et al.*, 2023). Existing research on adolescent-parent communication and its impact on SRH service utilization in Nepal is limited, hindering the development of effective strategies to improve adolescent SRH outcomes (Bhatta *et al.*, 2021). The existing limited research on adolescent-parent communication on SRH has primarily focused on parent-initiated communication, neglecting the crucial role of adolescents in initiating these discussions. This research gap underscores the need to explore adolescents' agency and willingness to engage in these conversations, as their active participation significantly influences their knowledge, attitudes, and ultimately, their sexual and reproductive health outcomes. Furthermore, previous studies in Nepal have not adequately investigated the role of sociodemographic factors in shaping the dynamics of adolescent-parent communication on SRH. This study uniquely focuses on adolescent-initiated communication within the context of rural Nepal, specifically in Jhimruk Rural Municipality. To the best of our knowledge, this is the first study of its kind in

this area. Therefore, this study aimed to identify the prevalence and determinants of adolescent-parent communication regarding sexual and reproductive health topics.

METHOD

Study Design and Population

A cross-sectional study was conducted among school-going adolescents aged 10-19 years in Jhimruk Rural Municipality, Lumbini Province, Nepal. Data collection involved the selection of two government secondary-level schools based on convenience and the rural nature of the area.

Sample Size Determination and Sampling Technique

The sample size was calculated using the following formula: $n = Z^2pq/d^2$. Assuming a prevalence (p) of adolescent-parent communication on sexual and reproductive health of 0.29, based on a previous study (Shiferaw *et al.*, 2014), a Z value of 1.96, a significance level of 0.05, and an acceptable sampling error (d) of 0.05, the initial sample size (n) was determined to be 316.4. We rounded this to a final sample size of 319 for our study. To ensure a representative sample and to provide each student with an equal opportunity to participate, a simple random sampling method was employed. A complete list of students enrolled in grades 8-12 was obtained from the attendance records of both selected schools. Each student's name was assigned a unique code to maintain anonymity. These codes were written on separate pieces of paper and shuffled thoroughly in a container. A total of 319 codes were randomly drawn from a pool of 604 to select the study participants. Following selection, student information corresponding to the drawn codes was obtained to verify their date of birth and ensure that they fell within the 10- to 19-year age range. School records were consulted for cross-verification if students were unsure about their birth date. Students outside this target age group were excluded from studying. Data collection method A structured questionnaire was developed based on a comprehensive review of the existing literature to encompass all relevant variables. The questionnaire was initially drafted in English and was subsequently translated into Nepali for the survey. To ensure content validity, three subject matter experts

rigorously evaluated the questionnaire for its comprehensiveness in addressing the study's constructs (Karki *et al.*, 2024). Additionally, construct validity was examined by analyzing Pearson's correlation coefficients, where the obtained correlation coefficient for each item was compared against a critical value to determine significance. To establish reliability, a pilot test was conducted with a 10% sample of the target population, which had characteristics similar to those of the main study group. The questionnaire demonstrated good internal consistency, with a Cronbach's alpha coefficient of 0.7 (Karki *et al.*, 2023). Data collection was carried out using a self-administered questionnaire from April 11 to 17, 2023. The participants were provided with clear instructions and supervised during questionnaire completion to ensure accurate responses.

Measurement of Variables

The prevalence was determined by calculating the proportion of adolescents who reported any level of communication (either rare or frequent) on SRH topics with their parents. Responses were dichotomized as 'yes' (indicating any form of communication) and 'no' (indicating no communication). Socio-demographic characteristics and SRH knowledge were also assessed. SRH knowledge was measured using four knowledge-based questions, with a score above the mean of 3.91 (SD \pm 0.4) indicating adequate SRH knowledge (Dagnachew Adam *et al.*, 2020).

RESULT

Table 1. Socio-demographic characteristics of the respondents (n=319)

Variables	Category	n	%
Age (years)	Age (Mean, SD) years	15.8 \pm 1.63	
	<18	255	79.9
	\geq 18	64	20.1
Sex	Male	168	52.7
	Female	151	47.3
Ethnicity	Brahmin/Chhetri	201	63.0
	Jana Jati	93	29.2
	Dalit	25	7.8
Religion	Hinduism	310	97.2
	Buddhism	9	2.8
Living status of parents	Together	283	88.7
	Separated	36	11.3
Family type	Nuclear	205	63.9
	Joint	114	35.5

Statistical Analysis

The data was coded and entered into the Statistical Package for the Social Sciences (SPSS) Version 26 for analysis. Descriptive analysis was conducted to calculate frequencies, percentages, mean, median, and standard deviation. The Chi-square test was used to assess the association between adolescent-parent communication status (dependent variable) and socio-demographic variables/level of knowledge (independent variables). Variables showing significant associations in univariate analysis were included in multiple logistic regression to estimate adjusted odds ratios (AORs) with 95% confidence intervals (CI). The model adjusted for potential confounders, including age and sex, ensuring no multicollinearity. Statistical significance was set at $p < 0.05$.

Ethical Clearance

Ethical approval was obtained from the Institutional Review Committee of the Yeti Health Science Academy (Ref. No. 079-80). Written informed consent was obtained from all participants aged 18 years or older. For participants under 18 years of age, written informed consent was obtained from their parents. The study's purpose, procedures, and benefits of the study were explained to all participants and/or their parents before obtaining consent. Participants were assured of the confidentiality of their data and informed of their right to withdraw from the study at any time without penalty.

Continuation of Table 1. Socio-demographic characteristics of the respondents (n=319)

Variables	Category	n	%
Education of father	Unable to read and write	38	11.9
	Able to read and write (no formal education)	79	24.8
	Basic level education (grades 1-8)	127	39.8
	Secondary level education (Grades 9-12)	51	16.0
	University education	24	7.5
Education of mother	Unable to read and write	34	10.7
	Able to read and write (no formal education)	119	37.3
	Basic level education (grades 1-8)	112	35.1
	Secondary level education (Grades 9-12)	38	11.9
	University education	16	5.0
Occupation of father	Unemployed	101	31.7
	Foreign employment	92	28.8
	Farmer	51	16.0
	Government service	46	14.4
	Works in private sector, own business, labor	29	9.1
Occupation of mother	Homemaker	171	53.6
	Farmer	55	17.2
	Foreign employment	42	13.2
	Government service	37	11.6
	Works in private sector, own business, labor	14	4.4
Having boy/girlfriend	Yes	261	81.8
	No	58	18.2
Living arrangement	With both parents	268	83.5
	With a single parent (either father or mother only)	48	15.0
	Alone	3	0.9

The majority of the respondents (79.9%, n = 255) were aged below 18 years, with a mean age of 15.80 years (SD \pm 1.63). Additionally, the majority (52.7%, n = 168) were male, belonged to the Brahmin/Chhetri in the ethnic group (63.0%, n = 201), adhered to the Hindu religion (97.2%, n = 310), resided in households where parents lived together (88.7%, n = 283), and belonged to a nuclear family type (63.9%, n = 205). Regarding parental education, a significant proportion had

fathers with a basic-level education (39.8%, n = 127), while mothers were able to read and write but lacked formal education (37.3%, n = 119). Moreover, the majority of respondents' fathers were unemployed (31.7%, n = 101) and mothers were homemakers (53.6%, n = 171). It is noteworthy that a substantial portion of the respondents (81.8%, n = 261) reported being in a relationship and living with both parents (83.5%, n = 268) (Table 1).

Table 2. Level of communication regarding sexual and reproductive health topics (n = 188)

Communication topics	Rarely	Sometimes	Often
	n (%)	n (%)	n (%)
Communication about choosing a life partner	62(33.0)	109(58.0)	17(9.0)
Communication about birth control	114(60.6)	72(38.3)	2(1.1)
Communication about physical and psychological changes	95(50.5)	91(48.4)	2(1.1)
Communication about menstruation	110(58.5)	37(19.7)	41(21.8)
Communication on puberty	134(71.3)	50(26.6)	4(2.1)
Communication about when to start your sex life	125(66.5)	51(27.1)	12(6.4)
Communication on how to handle sexual pressure	164(87.2)	16(8.5)	8(4.3)
Communication about sexual intercourse	137(72.9)	51(27.1)	0

Continuation of Table 2. Level of communication regarding sexual and reproductive health topics (n = 188)

Communication topics	Rarely	Sometimes	Often
	n (%)	n (%)	n (%)
Communication about the pregnancy	165(87.8)	16(8.5)	7(3.7)
Communication about unwanted pregnancy	161(85.6)	27(14.4)	0
Communication on abortion	150(79.8)	38(20.2)	0
Communication about STIs and HIV/AIDS	130(69.1)	45(23.9)	13(6.9)

Of the total respondents, more than half (58.6%, n = 188) reported communicating with their parents about sexual and reproductive health topics. However, only 4.7% of them did so frequently, while the majority (68.6%) communicated rarely with their parents about different SRH topics. Notably, the participants' communication frequency varied when discussing specific SRH topics. For instance, communication about selecting a life partner was identified as occurring rarely (33.0%),

sometimes (58.0%), or often (9.0%). Similarly, communication about birth control ranged from rare (60.6%) to frequent (1.1%). Furthermore, the majority of respondents reported that they rarely communicated about various SRH topics, such as menstruation and puberty, when to start a sexual relationship, handling sexual pressure, engaging in sexual activity, pregnancy, unintended pregnancy, abortion, and STIs/HIV/AIDS (Table 2).

Table 3. Reasons why respondents avoid communicating with parents about sexual and reproductive health topics (n=131)

Communication topics	Shame	Culturally unacceptable	Parents lack knowledge	Parents are too busy	Difficult and embarrassment
	n (%)	n (%)	n (%)	n (%)	n (%)
Menstruation	82(62.6)	18(13.7)	3(2.3)	4(3.1)	24(18.3)
Puberty	50(38.2)	28(21.4)	1(0.8)	4(3.1)	47(35.9)
Sexual intercourse	36(27.5)	54(41.2)	6(4.6)	0(0.0)	35(26.7)
Unwanted pregnancy	28(21.4)	75(57.3)	4(3.1)	4(3.1)	16(12.2)
Abortion	65(49.6)	34(26.0)	4(3.1)	4(3.1)	24(18.3)
STIs and HIV/AIDS	66(50.4)	30(22.9)	16(12.2)	4(3.1)	15(11.5)

Table 3 presents the findings regarding the reasons for not communicating with parents about SRH. We asked the respondents for specific reasons why they did not communicate

about each SRH topic. We found that the majority (41.6%) of respondents felt ashamed, followed by cultural unacceptability (30.4%), and difficulty and embarrassment (20.5%).

Table 4. Respondents' knowledge about sexual and reproductive health (n=319)

Variables	Category	Correct Responses	
		n	%
Definition of sexual health	Sexual health is a state of physical, emotional, mental, and social well-being in relation to sexuality.	298	92.8
Importance of sexual health	It includes a stronger immune system, better heart health (possibly lowering the risk of heart disease), improved self-esteem, and decreased depression and anxiety.	314	97.8
Definition of reproductive health	Reproductive health is a state of complete physical, mental, and social well-being in all matters relating to the reproductive system.	317	98.8
Importance of reproductive health	It aims to improve sexual well-being and protect individuals from sexually transmitted diseases.	317	98.8
Level of knowledge	Good knowledge	298	93.4
	Poor knowledge	21	6.6

Among the total respondents, 97.6% correctly identified the definitions and importance of reproductive and sexual health.

When assessing the level of knowledge based on the scores obtained, the majority (93.4%, n = 298) demonstrated good knowledge (Table 4).

Table 5. Factors associated with adolescent-parent communication on sexual and reproductive topics (n=319)

Variables	Coef	SE Coef	Adolescent-parent communication on SRH topics			
			Unadjusted Odds Ratio (OR) (95%CI)	P-Value*	Adjusted Odds Ratio (AOR) (95% CI)	P-Value*
Age of respondents¹						
<18 years	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
≥18 years	0.450	0.324	2.03 (1.12 - 3.70)	0.020	1.57 (0.83 - 2.96)	0.164
Sex of respondents²						
Male	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
Female	0.625	0.246	2.10 (1.33 - 3.31)	0.002	1.87 (1.15 - 3.03)	0.011
Ethnicity³						
Brahmin/Chhetri	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
Dalit	-1.187	0.491	0.31 (0.12 - 0.82)	0.017	0.30 (0.12 - 0.81)	0.016
Jana Jati	1.817	0.341	6.68 (3.43 - 13.01)	<0.001	6.16 (3.07 - 12.36)	<0.001
Living status of parents³						
Separated	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
Together	1.114	0.392	3.80 (1.80 - 8.03)	<0.001	3.05 (1.41 - 6.57)	0.004
Education of mother³						
University education	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
Unable to read and write	-0.175	0.710	0.70 (0.18 - 2.66)	0.598	0.84 (0.21 - 3.38)	0.805
Read and write (no formal education)	-0.238	0.658	0.99 (0.30 - 3.30)	0.985	1.27 (0.35 - 4.61)	0.717
Basic level (grades 1-8)	-1.212	0.650	0.21 (0.06 - 0.69)	0.010	0.30 (0.08 - 1.07)	0.062
Secondary (grades 9-12)	-0.798	0.670	0.41 (0.11 - 1.51)	0.181	0.45 (0.12 - 1.68)	0.234
Education of father³						
University education	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
Unable to read and write	-1.722	0.707	0.16 (0.04 - 0.62)	0.008	0.18 (0.05 - 0.71)	0.015
Read and write (no formal education)	-0.874	0.699	0.37 (0.10 - 1.37)	0.136	0.42 (0.11 - 1.64)	0.212
Basic level (grades 1-8)	-2.140	0.653	0.11 (0.03 - 0.37)	<0.001	0.12 (0.03 - 0.42)	0.001
Secondary (grades 9-12)	-0.996	0.697	0.34 (0.09 - 1.32)	0.121	0.37 (0.09 - 1.45)	0.153
Occupation of father³						
Unemployed	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
Farmer	0.473	0.368	1.48 (0.73 - 2.30)	0.272	1.60 (0.78 - 3.30)	0.199
Government service	2.228	0.567	7.78 (2.59 - 23.36)	<0.001	9.28 (3.05 - 28.23)	<0.001
Works in private sector, own business, labor	1.619	0.598	4.63 (1.50 - 14.30)	0.008	5.05 (1.56 - 16.31)	0.007
Foreign employment	-0.971	0.309	0.34 (0.19 - 0.62)	<0.001	0.38 (0.21 - 0.69)	0.002
Occupation of mother³						
Homemaker	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
Farmer	0.258	0.329	1.14 (0.62 - 2.11)	0.677	1.29 (0.68 - 2.47)	0.433
Government service	1.894	0.560	6.76 (2.29 - 19.91)	0.001	6.64 (2.22 - 19.92)	0.001
Works in private sector, own business, labor	0.314	0.588	1.47 (0.47 - 4.58)	0.502	1.37 (0.43 - 4.34)	0.594
Foreign employment	-0.327	0.353	0.75 (0.38 - 1.47)	0.393	0.72 (0.36 - 1.44)	0.355
Having boyfriend/girlfriend³						
No	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
Yes	0.958	0.331	1.85 (1.04 - 3.28)	0.036	2.61 (1.36 - 4.99)	0.004
Level of knowledge³						
Poor	-	-	1.00 (Ref.)	-	1.00 (Ref.)	-
Good	0.975	0.475	2.00 (0.82 - 4.91)	0.127	2.70 (1.04 - 6.73)	0.040

¹AOR adjusted for sex. ²AOR adjusted for age. ³AOR adjusted for age and sex.

*p-values < 0.05 are considered statistically significant.

(Ref.) denotes reference category.

Abbreviations: Coef: Coefficient; SE: Standard error.

Multiple logistic regression was used to assess the association between socio-demographic variables, knowledge level, and adolescent-parent communication status (Table 5). The model demonstrated a good fit, as indicated by the Hosmer-Lemeshow test ($p > 0.05$). The results revealed several significant predictors of adolescent-parent communication regarding sexual SRH. Adolescents aged 18 years and older had approximately twice the odds of communicating with their parents about SRH compared to younger adolescents (OR = 2.03, 95% CI: 1.12–3.70). Similarly, females were significantly more likely to communicate with their parents than males (AOR = 1.87, 95% CI: 1.15–3.03). Ethnicity played a significant role, with adolescents from the Jana Jati group being over six times more likely to have communicated with their parents (AOR = 6.16, 95% CI: 3.07–12.36). Parental living status also influenced communication. Adolescents whose parents were living together were approximately three times more likely to have communicated with them (AOR = 3.05, 95% CI: 1.41–6.57). Parental education showed an inverse relationship with adolescent-parent communication. Adolescents whose fathers had basic-level education (AOR = 0.12, 95% CI: 0.03–0.42) or were illiterate (AOR = 0.18, 95% CI: 0.05–0.71) had significantly lower odds of communication compared to those with higher education. However, maternal education levels (basic and secondary) were not significantly associated with communication. Parental occupation was strongly associated with adolescent-parent communication. Adolescents whose fathers worked in government service were over nine times more likely to have communicated with their parents (AOR = 9.28, 95% CI: 3.05–28.23), while those whose mothers were employed in government service were over six times more likely (AOR = 6.64, 95% CI: 2.22–19.92). Conversely, adolescents whose fathers were employed abroad had lower odds of communication (AOR = 0.38, 95% CI: 0.21–0.69). Relationship status and knowledge level were both positively associated with communication. Adolescents who had a boyfriend or girlfriend were more than twice as likely to have communicated with their parents (AOR = 2.61, 95% CI: 1.36–4.99). Similarly, adolescents with good knowledge of sexual and reproductive health were more than twice as likely to have communicated (AOR = 2.70, 95% CI: 1.04–6.73).

DISCUSSION

While numerous studies have addressed sexual and reproductive health issues in Nepal, a noticeable gap exists in research focusing on communication, despite its significant role. The study employed a cross-sectional design involving adolescent students, predominantly Hindu, and belonging to the Brahmin/Chhetri ethnic group. Most fathers had a basic education, and most adolescents lived with their families. A similar study conducted in Kailali, Nepal (Bhatta *et al.*, 2021), yielded comparable results, except for the noteworthy difference in the higher number of female participants, possibly attributed to variations in sample size and study settings.

Our findings indicate that 58.6% of respondents engaged in communication with their parents on SRH topics, aligning with the existing literature that underscores the prevalence of adolescents communicating with their parents on various SRH issues (Gautam *et al.*, 2023; Masresha *et al.*, 2019). This finding suggests enhancing awareness and willingness among adolescents to discuss SRH topics with their parents. However, the prevalence was found to be low from previous study (Sagnia *et al.*, 2020; Tripathi & Risal, 2023), which may be due to differences in study areas and socio-demographic characteristics of participants. Context-specific intervention and further research need to be implemented to identify the underlying factors.

Our study explored SRH topics for communication with parents such as puberty, menstruation, imitation of sexual relationships, handling sexual pressure, engaging in sexual activities, pregnancy, unintended pregnancy, and abortion. The majority of participants did not communicate these SRH topics due to feelings of shame and embarrassment. These findings suggest that cultural norms and societal taboos still play a role in obstructing open discussion. This lack of communication can have significant consequences, including inadequate knowledge about SRH, increased risk of unintended pregnancies, unsafe sexual practices, and exposure to sexually transmitted infections. It may also contribute to mental health issues such as anxiety or fear associated with these topics. Similar findings were observed in a study conducted in Sankhu, Nepal (Tuladhar & Shrestha, 2021), where topics such

as menstruation, pubertal changes, birth control, relationships with the opposite sex, abortion, and sexually transmitted infections were rarely discussed by parents. Similarly, a qualitative study conducted in South Africa found that adolescents avoided open discussion because of embarrassment and shame (Motsomi *et al.*, 2016). These findings suggest the need for culturally sensitive educational intervention programs that help to address these barriers.

This study revealed that most (94.3%) of respondents had good knowledge about sexual and reproductive health, which is consistent with previous study (Munika *et al.*, 2023). This high level of knowledge indicates the effectiveness of the existing educational program. But the gap between knowledge and practice remains a concern. Girls were more likely to communicate with parents than boys, which is consistent with other studies (Habte *et al.*, 2019; Maina *et al.*, 2020; Yalew *et al.*, 2020). This difference may be due to societal expectations and norms that either motivate or demotivate open discussion.

Moreover, respondents from the Jana Jati ethnic group demonstrated higher odds of parental communication than those from Brahmin/Chhetri and Dalit ethnicities, corroborating the results reported by Bhatta *et al.* (2021). This finding suggests that planners should focus on those communities where the practice is low, considering ethnic group differences. Parental education also plays a role in adopting better practices for parent-adolescent communication, with parents having tertiary level education engaging more regularly in parental communication. This pattern was also observed in another study (Rimamnunra *et al.*, 2022). This suggests the importance of parental education in shaping the attitudes and practices related to SRH.

An increased likelihood of parental communication was associated with occupational attributes such as private sector jobs and self-employment, which is consistent with a previous study (Singh *et al.*, 2023). Furthermore, respondents mother working in Government services had higher odds of communication, as reported in a study conducted in Tanzania (Millanzi *et al.*, 2023). This finding highlights the role socioeconomic status may play in influencing SRH communication.

Having boyfriends or girlfriends was identified as a factor positively associated with increased communication with parents, as found in a study among secondary and preparatory school students in Agaro town, Jimma Zone, Southwest Ethiopia (Abdissa & Sileshi, 2021). This suggests that adolescents who are more engaged in romantic relationships may feel a greater need to discuss SRH topics because of increased sexual activity, concerns about pregnancy or STIs, or simply a desire to share experiences with a trusted adult. Additionally, respondents with good knowledge were more likely to communicate with their parents, aligning with previous research (Dagnachew Adam *et al.*, 2020; Feyissa *et al.*, 2020; Tripathi & Risal, 2023). This indicates that knowledge can empower adolescents to initiate conversations about SRH with their parents by providing them with confidence and vocabulary to address these sensitive issues.

The generalizability of the study may be limited due to its cross-sectional design and focus on Jhimruk Rural Municipality, Nepal. While respondents were selected through random sampling within the chosen schools, convenience sampling of the two schools themselves could introduce potential selection bias. Additionally, the use of self-administered questionnaires may have influenced participant responses, potentially leading to a response bias.

Despite these limitations, this study provides valuable new evidence on adolescent-initiated communication regarding sexual and reproductive health with parents. It identifies potential barriers and factors influencing this communication, which can inform the planning and strengthening of ongoing adolescent sexual and reproductive health programs at both the local municipal and national levels. Additionally, these findings contribute to global literature and offer valuable insights for international researchers and policymakers aiming to improve SRH outcomes in adolescents.

CONCLUSION

Adolescents in Jhimruk Rural Municipality have a high level of sexual and reproductive health knowledge; however, a large proportion of them do not have open

communication with their parents on these very important issues. The results of this study showed that cultural norms, parental education, and occupation are major determinants of communication. This gap needs to be bridged by comprehensive educational programs for adolescents and for the adolescents' parents. Open dialogue and tackling social taboos can improve adolescent health outcomes and wellbeing.

SUGGESTION

To improve adolescent sexual and reproductive health outcomes in Nepal, future research should use qualitative research methods to dive deeper understanding of cultural and societal factors that limit open communication between adolescents and their parents. Use of a longitudinal study design can monitor changes in communication patterns and evaluate the long-term impact of interventions. Furthermore, larger-scale research can offer a more complete picture of the underlying reasons for this communication gap. Addressing these factors may empowers adolescent to make informed decisions about their sexual and reproductive health.

ACKNOWLEDGMENT

The authors would like to thank all the respondents for their valuable participation in the study.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DECLARATION OF ARTIFICIAL INTELLIGENCE (AI)

The authors acknowledge using ChatGPT and Grammarly for language refinement and grammar checking in preparing this manuscript. All AI-generated content was rigorously reviewed, edited, and validated to ensure accuracy and originality. The full responsibility for the final content of the manuscript rests with the authors.

FUNDING SOURCE

No funding was received for this study.

AUTHOR CONTRIBUTION

Author Rajesh Karki contribution in conceptualization, methodology, formal analysis, and original draft Preparation. Author Sujata Thapa contribution in literature review, ethical approval and data collection. Author Maheshor Kaphle contribution in supervision, monitoring during data collection, editing, and reviewing the final manuscript. All authors reviewed and approved the final draft for submission.

REFERENCES

- Abdissa, D., & Sileshi, W. 2021. Parent-Adolescent Communication on Sexual and Reproductive Health Issues and Associated Factors Among Secondary and Preparatory School Students in Agaro town, Jimma Zone Southwest Ethiopia. *Research Square PREPRINT, Version 1*. <https://doi.org/10.21203/rs.3.rs-140401/v1>
- Aliyu, T. K., & Aransiola, J. O. 2023. Parent-Adolescent Communication About Reproductive Health Issues in Nigeria. *SAGE Open, 13(2)*, 21582440231166607. <https://doi.org/10.1177/21582440231166607>
- Bekele, D., Deksisa, A., Abera, W., & Megersa, G. J. R. H. 2022. Parental communication on sexual and reproductive health issues to their adolescents and affecting factors at Asella town, Ethiopia: a community-based, cross-sectional study. *Reproductive Health, 19(1)*, 114. <https://doi.org/10.1186/s12978-022-01408-8>
- Bhatta, B. R., Kiriya, J., Shibanuma, A., & Jimba, M. 2021. Parent-adolescent communication on sexual and reproductive health and the utilization of adolescent-friendly health services in Kailali, Nepal. *Plos one, 16(2)*, e0246917. <https://doi.org/10.1371/journal.pone.0246917>
- Dagnachew Adam, N., Demissie, G. D., & Gelagay, A. A. 2020. Parent-Adolescent Communication on Sexual and Reproductive Health Issues and

- Associated Factors among Preparatory and Secondary School Students of Dabat Town, Northwest Ethiopia. *Journal of Environmental and Public Health*, 2020(1), 4708091. <https://doi.org/10.1155/2020/4708091>
- Eshete, A., & Shewasinad, S. 2020. Adolescent-parent communication on sexual and reproductive health issues in Ethiopia: a systematic review and meta-analysis. *Ethiopian Journal of Health Sciences*, 30(5). <https://doi.org/10.4314/ejhs.v30i5.22>
- Feyissa, M., Adugna, H., Aferu, T., & Nigussie, T. 2020. Parent-Adolescent/Youth Sexual and Reproductive Health Communication: The Case of Secondary and Preparatory School Students in Fiche Town, Oromia Regional State, Ethiopia. *The Open Public Health Journal*, 13(1). <https://doi.org/10.2174/1874944502013010415>
- Gautam, A., Sharma, K., Dhakal, S., Dhakal, S., & Chand, A. 2023. Adolescent-parent communication on sexual and reproductive health and its associated factors among higher secondary school students of Tokha Municipality, Nepal: A cross-sectional study. *Journal of Public Health International*, 7(1). 11-20. <https://doi.org/10.20473/jphrecode.v7i1.39509>
- Habte, N. M., Melku, A. T., & Alemayehu, M. T. 2019. Parent-adolescent communication on sexual and reproductive health matters and associated factors among secondary and preparatory school students in robe town, bale zone, Southeast Ethiopia, 2017. *Journal of Public Health International*, 1(4), 1-15. <https://doi.org/10.14302/issn.2641-4538.jphi-19-2860>
- Karki, R., Bartoula, N., Kaphle, M., & Shah, S. K. 2023. Knowledge and practice of malaria prevention among residents of Ratuwamai Municipality, Nepal. *One Health Bulletin*, 3(1), 6. <https://doi.org/10.4103/2773-0344.374224>
- Karki, R., Timsina, A., Kaphle, M., & Sah, R. 2024. Prevalence and Factors of Social Anxiety Disorder Among Health Science Students in Kathmandu. *Iranian Journal of Health Sciences*, 12(2), 89-98. <https://doi.org/10.32598/ijhs.12.2.1029.1>
- Kusheta, S., Banacha, B., Habtu, Y., Helamo, D., & Yohannes, S. 2019. Adolescent-parent communication on sexual and reproductive health issues and its factors among secondary and preparatory school students in Hadiya Zone, Southern Ethiopia: institution based cross sectional study. *BMC pediatrics* 19, 9(2019), 1-11. <https://doi.org/10.1186/s12887-018-1388-0>
- Maina, B. W., Ushie, B. A., & Kabiru, C. W. 2020. Parent-child sexual and reproductive health communication among very young adolescents in Korogocho informal settlement in Nairobi, Kenya. *Reproductive health*, 17(1), 1-14. <https://doi.org/10.1186/s12978-020-00938-3>
- Masresha, S. A., Alen, G. D., Aberra, I. A., Dender, D. K., Mamo, Z. A., Girma, A. D., & Misgie, E. M. 2019. Parent-Adolescent Communication about Sexual and Reproductive Health and Its Association with Gender and Pre-Marital Sex Among Secondary and Preparatory School Students in Woldia Town, North East Ethiopia, 2019. *Research Square PREPRINT, Version 1*. <https://doi.org/10.21203/rs.2.17244/v1>
- Melese, M., Esubalew, D., Siyoum, T. M., Worku, Y. B., Azanaw, J., & Mengistie, B. A. 2024. Parent-adolescent communication on sexual and reproductive health issues and associated factors among secondary public-school students in Gondar town, northwest Ethiopia: an institution based cross-sectional study. *Frontiers in Public Health*, 12(2024), 1-11. <https://doi.org/10.3389/fpubh.2024.1342027>
- Millanzi, W. C., Osaki, K. M., & Kibusi, S. M. 2023. Parent-adolescent communication about sexual and reproductive health and its determinants among adolescents: Baseline findings from a Randomized Controlled Trial in Tanzania. *SAGE*

- Open*, 13(4), 21582440231216281. <https://doi.org/10.1177/21582440231216281>
- Ministry of Health and Population [Nepal]. 2023. Annual health report 2021/2022.
- Motsomi, K., Makanjee, C., Basera, T., & Nyasulu, P. 2016. Factors affecting effective communication about sexual and reproductive health issues between parents and adolescents in zandspruit informal settlement, Johannesburg, South Africa. *The Pan African Medical Journal*, 25(120). <https://doi.org/10.11604/pamj.2016.25.120.9208>
- Munikaar, S., Luitel, I., & Rashi, K. 2023. Knowledge and Utilization of Sexual and Reproductive Health Services Among Secondary Level Students of Bhaktapur, Nepal. *Medical Journal of Shree Birendra Hospital*, 22(1), 26-32.
- Rimamnunra, G., Anenga, U., Bitto, T., Areo, O., Ukpabi, D., Bako, I.,...Swende, T. 2022. Factors that Influence Parent-Adolescent Communication on Adolescent Reproductive Health in Benue State Nigeria. *Journal of BioMedical Research and Clinical Practice*, 5(1-2), 1-8.
- Sagnia, P. I., Gharoro, E. P., Isara, A. R., & Medicine, F. 2020. Adolescent-parent communication on sexual and reproductive health issues amongst secondary school students in Western Region 1 of The Gambia. *African Journal of Primary Health Care*, 12(1), 1-7. <https://doi.org/10.4102/phcfm.v12i1.2437>
- Shiferaw, K., Getahun, F., & Asres, G. 2014. Assessment of adolescents' communication on sexual and reproductive health matters with parents and associated factors among secondary and preparatory schools' students in Debremarkos town, North West Ethiopia. *Reproductive health*, 11(1), 1-10. <https://doi.org/10.1186/1742-4755-11-2>
- Singh, D. R., Shrestha, S., Karki, K., Sunuwar, D. R., Khadka, D. B., Maharjan, D., Sah, L. K., Simkhada, B., & Sah, R. K. 2023. Parental knowledge and communication with their adolescent on sexual and reproductive health issues in Nepal. *Plos one*. 18(7), e0289116. <https://doi.org/10.1371/journal.pone.0289116>
- Tiwari, A., Wu, W. J., Citrin, D., Bhatta, A., Bogati, B., Halliday, S., Goldberg, A., Khadka, S., Khatri, R., Kshetri, Y., Rayamazi, H. J., Sapkota, S., Saud, S., Thapa, A., Vreeman, R., & Maru, S. 2022. "Our mothers do not tell us": a qualitative study of adolescent girls' perspectives on sexual and reproductive health in rural Nepal. *Sexual and Reproductive Health Matters*, 29(2), 356–368. <https://doi.org/10.1080/26410397.2022.2068211>
- Tripathi, N., & Risal, B. 2023. Parent adolescent communication on sexual and reproductive health issues in Pokhara, Nepal. *Population Medicine*, 5(Supplement), A1164. <https://doi.org/10.18332/popmed/165040>
- Tuladhar, J. B., & Shrestha, A. 2021. Communication on sexual and reproductive health among school going adolescents and parents. *Journal of Chitwan Medical College*, 11(1), 68-72. <https://doi.org/10.54530/jcmc.294>
- Usonwu, I., Ahmad, R., & Curtis-Tyler, K. 2021. Parent-adolescent communication on adolescent sexual and reproductive health in sub-Saharan Africa: a qualitative review and thematic synthesis. *Reproductive health*, 18(202), 1-15. <https://doi.org/10.1186/s12978-021-01246-0>
- Vongsavanh, V., Lan, V. T. H., & Sychareun, V. 2020. Sexual and reproductive health communication between parents and high school adolescents in Vientiane Prefecture, Lao PDR. *Global health action*, 13(sup2), 1785145. <https://doi.org/10.1080/16549716.2020.1785145>
- Yalew, M., Adane, B., Kefale, B., Damtie, Y., Arefaynie, M., Wedajo, S., Bitew, A., & Wasihun, Y. 2020. Parent-young communication on sexual and reproductive health issues and its

association with sex and perceptions of young people in Ethiopia, 2020: a systematic review and meta-analysis. *Archives of Public Health*, 78(1), 1-11. <https://doi.org/10.1186/s13690-020-00515-x>

Yibrehu, M. S., & Mbwele, B. 2020. Parent-adolescent communication on sexual and reproductive health: the qualitative evidences from parents and students of Addis Ababa, Ethiopia. *Reproductive health*, 17(78), 1-9. <https://doi.org/10.1186/s12978-020-00927-6>