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Research Article | Journal of Public Health International | ISSN: 2641-4538 | Freely Available Online

Adolescent-Parent Communication on Sexual and Reproductive Health and its Associated Factors among Higher Secondary School Students of Tokha Municipality, Kathmandu, Nepal

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Keywords:

Adolescent, Parent, Communication, Sexual and Reproductive Health, Kathmandu

Received: Oct 02, 2022

Accepted: Oct 18, 2022

Published: Nov 04, 2022

Editor:

Sasho Stoleski, Ss. Cyril and Methodius University, Faculty of Medicine Skopje, Macedonia

DOI: 10.14302/issn.2641-4538.jphi-22-4332

Abstract

Introduction

Physical, psychological, and emotional growth are among the changes that define the adolescent stage. As compared to other age groups, adolescents are more vulnerable to sexual and reproductive health issues. Parents can become protective and influencing factors for their children to prevent risky sexual behavior. This study aims to assess adolescent-parent communication on sexual and reproductive health and its associated factors.

Methods

A descriptive cross-sectional study was conducted among 212 adolescents aged 15–19 in higher secondary schools of Tokha Municipality. A self-administered structured modified questionnaire to assess the communication used the Weighted Topics Measure of Family Sexual Communication (WTM) tool with a simple random sampling technique of data collection. We performed descriptive statistical analysis and chi-square tests to analyze data and assess the association between variables. Data quality was assured through careful questionnaire design, pretesting, and training.

Results

The study found that about 75.9% of adolescents had communicated on SRH topics with their parents and majority of respondents communicate with their mother (62.73%) rather than father Only 56.1%, 50.1%, 55.2%, and 50.5% of adolescents communicated about choosing a life partner, menstruation, physical and psychological changes during adolescence, and the physical growth and development

of reproductive organs, respectively, while topics like using birth controls, when to start having sex, pregnancy, how to handle sexual pressure from a partner, STI and HIV/AIDs, about condoms, and abortion had never communicated by 61.3%, 86.6%, 69.3%, 85.8%, 72.2%, 78.8%, and 82.5% of adolescents, respectively. Adolescent -parent communication on sexual and reproductive health was significantly associated with the level of knowledge regarding sexual and reproductive health (p = 0.01). Similarly, there was a significant association with the perceived parenting style (p =0.04), living arrangements (p=0.01), and adolescent-parent communication

Conclusion

It concluded that adolescent-parent communication on SRH issues is not satisfactory. Creating an adolescent-friendly environment at home and conducting awareness programs with the help of the local government of the respective schools would help to increase adolescent-parent communication.

Introduction

Individuals between the ages of 10 and 19 are considered adolescents, which is the process of growing up and involves changes in one's physical, sexual, psychological, and social development. These natural changes among adolescents put their health and well-being at high risk [1]. Adolescents make up 16% of the world's population, or about 1.3 billion worldwide [2]. Globally, around 1.2 million adolescents aged 10–19 years die each year, with over 3,000 adolescents aged 10–19 years dying every day from primary preventable causes. In low- and middle-income nations, more than two-thirds of these deaths took place. The major cause of death for adolescent girls aged 10–19 was maternal mortality [3].

In Nepal, there are over 6.0 million adolescents or 24% of the total population. Among them, 75% of married women were married before the age of 19, and 16% were before the age of 15 [4]. Adolescents are more vulnerable populations than other age groups, with many sexual and reproductive health concerns such as gender inequality, sexual coercion, early marriage, polygamy, female genital mutilation, unplanned pregnancies, closely spaced pregnancies, abortion, and sexually transmitted infections like HIV/AIDS [5]. Sexual and reproductive health is a key source of concern. The majority of adolescents are protected under the Convention on the Rights of the Child as minors up to the age of 18. However, their vulnerabilities and needs are frequently neglected, and they lack adequate awareness and understanding of these. Therefore, the chances of getting STIs, teenage pregnancy, and unsafe abortions are significantly greater among adolescents [6].

Sexual and reproductive health is concerned with the growth of life and personal relationships. It is the state of one's physical, emotional, and social well-being in all matters involving the reproductive system [7]. Communication between adolescents and their parents is essential for improving sexual and reproductive health consequences for adolescents. Adolescent- Parents can influence their children's sexual development by modeling healthy sexual conduct and teaching them how to make wise decisions for themselves. By talking to or educating their children about sexuality, parents can support their children in reducing sexual risk-taking behaviors. Parents are one of the most important safeguards for the health of adolescents. They have a significant influence on the attitudes and actions their kids take concerning their health, especially SRH. Protecting their children from harm is mostly dependent on parental guidance and information about sexuality-related risks, including the development of attitudes and values around sexuality and the decrease of risky behaviors. They could be a useful source of SRH information for their children [8].

Parent-adolescent discussions in Nepal regarding their sexuality have generated controversy. Most parents don't feel comfortable talking to their kids about sexual health but rather concentrate on safe topics. Cultural taboos, shame, poor communication abilities, embarrassment, fear of parents, their lack of responsiveness, their unwillingness to accept young people due to a lack of understanding, sociocultural norms, and their conviction that talking about such topics encourages premarital sex are just a few things that

hinder parent-child interaction [9]. The level of adolescents' education, their living arrangements, and the educational status of their parents are further obstacles that prevent communication between parents and adolescents. Because of these barriers, many adolescents discuss sexual and reproductive health issues with their peers, who may or may not be knowledgeable about these concerns. They ultimately receive fragmented information. Due to this misinformation, adolescents may be more susceptible to unsafe abortions, unprotected intercourse, unintended pregnancies, and other sexually transmitted infections [10]. Healthy communication between parents and adolescents leads to the prevention and reduction of sexually risk-taking behavior among adolescents. It also helps to change the overall attitudes of the children towards health, behavior, values, and beliefs, including SRH [8]. The main objective of this study was to assess adolescent-parent communication on sexual and reproductive health and its associated factors among higher secondary school students.

Methods

Study Design

The study design was cross-sectional as it did not fulfill the criteria of a true experimental research design. Moreover, the data collection was carried out only once among the respondents. No intervention programs were provided during the conduction of the study among the respondents.

Study Area

The study was conducted in Tokha Municipality, Kathmandu. Adolescents in this municipality have socio-economically diverse characteristics. This municipality consists of 24 higher secondary schools. This data shows that the adolescent population in this municipality is huge.

Study Population

The population consisted of students aged 15–19 years from higher secondary schools in Tokha municipality. As compared to other groups, adolescents are more prone to SRH issues, and they have the desire to keep trying new things that make them vulnerable to SRH issues.

Sample Size

The total sample size for this study was 228. This was calculated by taking 16% prevalence of Adolescent-Parent Communication on Sexual and Reproductive Health which was previously recorded in the study.

The required sample size was determined by using the following formula.

$n=z2pq/d2$

Where,

Degree of confidence (CI) = 95%, Z value at 95% of CI (z) = 1.96

Prevalence (p) = 0.16

q = 1-p = 0.84

Allowable error (d) = 5% = 0.05

Now,

Sample size (n) = z2pq/d2

= (1.96)2*0.16*0.84/(0.05)2

= 3.8416*0.16*0.84 / 0.0025

= 206.5~207

Adding a 10% non-responsive rate (207+10% of 207), the actual sample size for the study was 227.7~228. However, we were able to collect only 212 samples. The remaining 16 respondents refused to participate in the study.

Sampling Technique

The study area of Tokha municipality, Kathmandu, was selected by using the simple random sampling technique. For the study, the study area was divided into north, south, east, and west directions. A list of schools located in each direction was made. Then one school from each direction was selected for the research study by lottery method. On the day of data collection, the roll numbers (student ID numbers) of the present students were listed from which an equal proportion of students were chosen from each section of grades 11 and 12 for the research study through the lottery method from the

respective college.

Tools and Techniques for Data Collection

There were four phases to the data collection tool. Part I: It comprises socio-demographic variables in which respondents answered a questionnaire aimed to collect information on the adolescent's details (age, sex, grade, ethnicity, and religion), parental factors (Mother's Educational Status, Father's Educational Status, Father's Occupation, and Mother's Occupation), and living arrangement of respondents. Part II: Use of Divya and Manikandan designed the parenting style questionnaire (2013). It has 30 items, and for each, respondents selected one of five options: strongly agree, agree, neither agree nor disagree, disagree and strongly disagree. 5,4,3,2 and 1 were used to score the various items. Part III: The questionnaire's knowledge-related questions, which were designed to assess adolescents' understanding of the principal sexual and reproductive health topics, were answered by the respondents. Part IV: Adolescent parent communication on a variety of topics was evaluated using the Weighted Topics Measure of Family Sexual Communication. It comprises 11 questions on a scale of 0 to 44 to measure the level of communication between the parent and adolescent regarding various aspects of sexual and reproductive health. For the data collection, the self-administered technique was used.

Data Management, Analysis, and Interpretation Procedures

Each question was coded by labeling, compiling, and organizing by using numbers to represent response categories. The questionnaires were examined by examining all the answers to one question or variable at a time or by examining all the responses given to all questions by one respondent at a time. After examining the questionnaires, the collected data was entered and cleaned in Epidata v4.6 and then exported to SPSS v26 software for analysis. Descriptive statistics were used for the quantitative data, and the final result of the study was presented in the form of numbers and tables. The Chi-square test was used to test the association between the independent and dependent variables.

The Validity and Reliability of The Study

Validity was maintained by searching for relevant literature. The validity of the instruments was maintained through reviewing different literature related to the topic. An intensive review of the literature was carried out. Consultation with faculties as well as the research supervisor was conducted to maintain the validity. Pretesting of the instrument at 10% of the sample population from similar schools and similar respondents was done. Additionally, the content validity ratio (CVR=0.89) and content validity index (CVI=0.78) indicated the confirmation of content validity. The consistency and accuracy of the collected data were checked on the same day to avoid missing information or incomplete information

Inclusive Criteria and Exclusive Criteria

Adolescents aged 15–19 years from selected schools or colleges in Tokha Municipality who are interested and willing to participate in the study were considered to meet the inclusive criteria.Out of selected college/school students in Tokha Municipality, aged below 15 and above 19 years were considered as exclusive criteria.

Ethical Consideration

Ethical approval was obtained from the Institutional Review Committee of the Nepal Institute of Health Sciences (Ref no. 13/078) before the initiation of the study. Before conducting the study, informed consent was taken from the respondents. Consent from the parents of the respondents who are below 18 years was taken by informing and providing the consent form to the respondents beforehand to pass the information regarding the data collection. An approval letter was taken from the respective schools/colleges and the health and education section of Tokha municipality. The purpose and objectives of the study were explained in detail to the respondents. Finally, the confidentiality of the respondents was maintained, no identity was revealed, and the collected data was used only for the study purpose.

Time Frame of the Study

Table 1. Socio-demographic and parental factors of the respondents

Socio-demographic factors (n =212)	Frequency	Percentage %
Age		
15-17	127	60
18-19	85	40
Gender		
Male	92	43.4
Female	120	56.6
Ethnicity		
Brahmin/Chhetri	92	43.4
Dalit	12	5.7
Newar	29	13.7
Janajati	75	35.4
Muslim	4	1.9
Religion		
Hindu	164	77.4
Buddhist	26	12.3
Muslim	3	1.4
Christian	19	9
Parental factors (n =212)	Frequency	Percentage %
Marital status of parents		
Together	199	93.9
Separated	8	3.8
Divorced	5	2.4
Mother's education		
Illiterate	57	26.9
Literate	155	73.1
Read and write	40	18.9
Primary level (1-5)	42	19.8
Lower sec. level (6-8)	23	1.8
Sec. level (9-10)	36	17
Higher sec. level (11-12)	9	4.2
Bachelor and above	5	2.4

Father's education		
Illiterate	34	16
Literate	178	84
Read and write	25	11.8
Primary level (1-5)	41	19.3
Lower sec. level (6-8)	35	16.5
Sec. level (9-10)	46	21.7
Higher sec. level (11-12)	20	9.4
Bachelor and above	11	5.2
Occupation of father		
Unemployed	13	6.1
Agriculture	65	30.7
Government/civil service	23	10.8
Private service/NGO/INGO	11	5.2
Business	44	2.08
Labor	22	10.4
Foreign employment	34	16
Occupation of mother		
Housemaker	57	26.9
Agriculture	94	44.3
Government/civil service	9	4.2
Private service/NGO/INGO	11	5.2
Business	27	12.7
Labor	5	2.4
Foreign employment	9	4.2

Table 2. Status of communication on SRH topics

Status of communication on SRH topics (n = 212)	**Frequency**	**Percentage %**
No communication	51	24.1
Communication	161	75.9
Total	212	100.0
Level of communication regarding SRH topics (n = 161)	**Frequency**	**Percentage %**
Rarely	100	47.2
Sometimes	50	23.6
Often	11	5.2
Total	161	100.0
To whom communication regarding SRH topics (n = 161)	**Frequency**	**Percentage %**
With Father	60	37.27
With Mother	101	62.73
Male communication regarding SRH topics (n = 65)	**Frequency**	**Percentage %**
With Father	30	46.16
With Mother	35	53.84
Female communication regarding SRH topics (n = 96)	**Frequency**	**Percentage %**
With Father	30	31.25
With Mother	66	68.75

Table 3. Communication on different SRH topics

Communication on different SRH topics (n = 212	Frequency	Percentage %
Communication on choosing a life partner		
Never	93	43.9
Rarely	31	14.6
Sometimes	58	27.4
Often	13	6.1
Always	17	8.0
Communication on birth control		
Never	130	61.3
Rarely	31	14.6
Sometimes	33	15.6
Often	7	3.3
Always	11	5.2
Communication on condom		
Never	167	78.8
Rarely	15	7.1
Sometimes	21	9.9
Often	3	1.4
Always	6	2.8
Communication about physical and psychological changes		
Never	95	44.8
Rarely	14	6.6
Sometimes	46	21.7
Often	41	19.3
Always	16	7.5
Communication on reproductive organ growth and development		
Never	105	49.5
Rarely	24	11.3
Sometimes	46	21.7
Often	20	9.4
Always	17	8

Communication on when to start sex		
Never	183	86.6
Rarely	17	8
Sometimes	11	5.2
Often	1	0.5
Communication on how to handle sexual pressure from a partner		
Never	182	85.8
Rarely	13	6.1
Sometimes	14	6.6
Often	2	0.9
Always	1	0.5
Communication about pregnancy		
Never	147	69.3
Rarely	27	12.7
Sometimes	22	10.4
Often	9	4.2
Always	7	3.3
Communication about menstruation		
Never	104	49.1
Rarely	9	4.2
Sometimes	42	19.8
Often	29	13.7
Always	28	13.2
Communication on STI and HIV/AIDs		
Never	153	72.2
Rarely	18	8.5
Sometimes	22	10.4
Often	11	5.2
Always	8	3.8
Communication on Abortion		
Never	175	82.5
Rarely	13	6.1
Sometimes	14	6.6
Often	7	3.3
Always	3	1.4

Table 4. Association of independent variables with adolescent-parent communication on sexual and reproductive health

Independent variable (n = 212).	Status of Communication		Chi-square value	df	p-value
	Communication	No communication			
Grade					
11	76 (71.7%)	30 (28.3%)	2.091	1	0.14
12	85 (80.2%)	21 (19.8%)			
Gender					
Female	65 (70.7%)	27 (29.3%)	2.491	1	0.11
Male	96 (80%)	24 (20%)			
Religion					
Hindu	128 (78%)	36 (22%)	1.757	1	0.18
Others	33 (68.8%)	15 (31.3%)			
Ethnicity					
Brahmin/Chhetri	73 (79.3%)	19 (20.7%)	1.031	1	0.31
Others	88 (73.3%)	32 (26.7%)			
Mother's education					
Literate	118 (76.1%)	37 (23.9%)	0.011	1	0.91
Illiterate	43 (75.4%)	14 (24.6%)			
Father's education					
Literate	137 (77%)	37 (23%)	0.636	1	0.42
Illiterate	24(70.6%)	14 (29.4%)			
Living arrangements					
With parents or guardian	153(78.1%)	43(21.9%)	6.376	1	0.01*
With others	8(50%)	8(50%)			
Perceived Parenting style					
Good parenting	98(81%)	23(19%)	3.932	1	0.04*
Bad parenting	63(69.2%)	28(30.8%)			
Knowledge on SRH					
Adequate knowledge	73(68.9%)	33(31.1%)	5.809	1	0.01*
Inadequate knowledge	88(83%)	18(17%)			

* Significant at $p < 0.05$

The study was conducted from 14th November 2021 to 7th July 2022.

Operational Definitions

Adolescent Parent Communication

It refers to the communication between an adolescent and their biological parent, stepparent, or foster parent, including older siblings and local guardians regarding sexual and reproductive health topics. Communication had assessed by using the questionnaire developed by Weighted Topics Measure of Family Sexual Communication [11], which consists of 11 questions with the scale "Never, Rarely, Sometimes, Often, Always" ranging from 0 to 44.

Perceived Parenting Style

It refers to the perception of the respondents regarding the parenting style as measured by using the PSS questionnaire designed by Divya and Manikandan (2013). It has 30 items, and for each, respondents selected one of five options: strongly agree, agree, neither agree nor disagree, disagree and strongly disagree. 5,4,3,2 and 1 had used to score the various items [12].

Knowledge Regarding Different Sexual and Reproductive Health Topics

It refers to the respondent's knowledge of sexual and reproductive health. It includes multiple responses regarding different SRH components. Each correct response carries one point. Total responses regarding knowledge carry a 105 score. The median score is 52.5. Respondents who obtained a median score of equal to or above the median score were considered to have adequate knowledge of those selected topics.

Results

Socio-Demographic and Parental Factors of The Respondents

Among 212 respondents, sixty percent (60%) were 15-17 years forty percent (40 %) were 18-19 years respectively. The female respondents were more than the male respondents. More than half of the respondents, nearly fifty-seven percent (56.6%), were female, and forty-three percent (43.4%) were male, respectively. Regarding ethnicity, most of the respondents (43.4%) were from Brahmin/Chhetri ethnic backgrounds, followed by Dalits (5.7%), Newars 13.7%, Janajati 35.4%, and Muslims 1.9%, respectively. Most of the respondents (76.4%) followed the Hindu religion, followed by Buddhists (12.3%), Muslims (1.4%), and Christians (9%), respectively.

Similarly, the study found that the majority of the parents (93.9%) were together, while 3.8% were separated, and 2.4% were divorced. Regarding education, the majority of respondents' mothers (73.1%) were literate, and nearly twenty-seven percent (26.9%) were illiterate. Among mothers in the literate group, 18.9% were able to read and write, while 19.8% received primary-level education. Likewise, 10.8% were lower secondary level, 17% were secondary level, 4.2 % were higher secondary level, and 2.4% received bachelors and above-level education, respectively. Similarly, the majority of respondents' fathers (84%) were literate, while 16% were illiterate. Among fathers in the literate group, 11.8% were able to read and write, while 19.3% received primary-level education. Likewise, 16.5% were lower secondary level, 21.7% were secondary level, 9.4% were higher secondary level, and 5.2% received bachelors and above-level education, respectively. Most of the respondents' fathers (93.9%) were employed and engaged in different sectors. For example, 30.7% were in agriculture, 10.8% were in government/civil service, 5.2% were in private service/NGO/INGO, 20.8 % were engaged in business, 10.4% were in labor, and 16% were foreign employers. Similarly, the majority of mothers, 26.9%, were housemakers while 4.2% were engaged in government/civil service, 5.2% were in private service/ NGO/INGO, 12.7 % had engaged in business, 2.4 percent were labor, and 4.2% were foreign employers. (Table 1).

Living Arrangements and Perceived Parenting Style of The Respondents

Upon assessing the living arrangements of the respondents, the study revealed that the majority of

respondents (64.6%) were living with their both parents (father and mother), followed by living with their mother only (1.4%), living with their father only (3.3%), living with siblings (1.4%), living with friends (1.9%), living with relatives (21.7%) and living alone (5.7%) respectively. Upon assessing the parenting styles of the respondents, the study found that more than half of the respondents (57.08%) perceived an authoritative parenting style, followed by an authoritarian style (32.54%) and a permissive style (10.38%), respectively.

Knowledge Regarding Sexual and Reproductive Health Topics

Among 212 respondents, the majority of responses were recorded for pubertal changes (93.9%), menstruation (92.9%), child or forced marriage (91%), pregnancy (93.4%), abortion (57.5%), STI (80.2%), sexual violence (87.3%), and contraceptive devices (82.1) respectively. Upon assessing the level of knowledge, out of 212 respondents, half had an adequate level of knowledge, whereas 50% had an inadequate level.

Status of Communication on SRH Topics

The study revealed that most respondents, nearly seventy-six percent (75.9%), communicated on SRH topics with their parents, whereas twenty-four percent (24.1%) never communicated results with their parents on SRH topics. The study reveals that, out of 161 respondents, the majority of respondents (47.2%) rarely communicated on SRH topics, followed by sometimes (23.6%) and often (5.2%), respectively Majority of respondents communicate with their mother (62.73%) and both male and female students feel easy to communicate with mother rather than father regarding SRH topics (See table 2). The responses illustrated that more than half of the respondents (56.1%) communicated about choosing a life partner. A fair share of respondents (27.4%) sometimes talked, and a small handful of responses (6.1%) had recorded as often. Communication on using birth control was never done by the majority of the respondents (61.3%), while 15.6% of responders rarely talked, a fair share of respondents (15.6%) sometimes talked, and a small handful of responses (6.1%) had recorded as often. Communication about menstruation (50.1%), communication about physical and psychological changes (55.2%), and physical growth of reproductive organs and development (50.5%) had significantly discussed by the respondents with their parents. Topics such as communication on when to start having sex (86.6%), pregnancy (69.3%), how to handle sexual pressure from a partner (85.8%), STI and HIV/AIDs (72.2%), communication about condoms (78.8%) and abortion (82.5%) had never discussed. (See table 3).

Association of Independent Variables With Adolescent-Parent Communication on Sexual And Reproductive Health

Table 4 shows the association between independent variables and adolescent-parent communication regarding SRH. It is reported that adolescent-parent communication on SRH was significantly associated with the living arrangements of the respondents ($p = 0.01$), parenting style ($p = 0.04$), and level of knowledge regarding SRH ($p = 0.01$).

Table 4 shows the association between independent variables and adolescent-parent communication regarding SRH. It is reported that adolescent-parent communication on SRH was significantly associated with the living arrangements of the respondents ($p < 0.01$), parenting style ($p < 0.04$), and level of knowledge regarding SRH ($p < 0.01$).

Discussion

This study aimed to assess adolescent-parent communication on sexual and reproductive health and its associated factors among the students of higher secondary schools in Tokha Municipality. Overall adolescent-parent communication on sexual and reproductive health was found to be 75.9%, which was quite good compared to the previous study conducted on Kailali (43%) (9) and Sankhu (55.9%) (13), Nepal. More than half of the respondents (57.08%) had an authoritative parenting style, followed by an authoritarian (32.54%) and a permissive (10.38%), respectively, so it seems that the prevalence of authoritative parenting styles is high in the

community, which is a good style for communication. There is no previous study found on adolescent-parent communication regarding SRH with the study variable of parenting style. The present study also reported the association between parenting style and adolescent-parent communication regarding SRH. We can conclude that open communication between parents and their children could encourage and enable children to communicate with their parents regarding sexual and reproductive health issues, challenges, and problems.

Majority of respondents communicate with their mother (62.73%) and both male and female students feel easy to communicate with mother rather than father. It demonstrated that mother can teach and guide on Sexual and Reproductive Health education at their home in Nepalese society as needed. Regarding the knowledge among 212 respondents in the present study, the majority of responses were recorded for pubertal changes (93.9%), menstruation (92.9%), child or forced marriage (91%), pregnancy (93.4%), abortion (57.5%), STI (80.2%), sexual violence (87.3%), and contraceptive devices (82.1) respectively. The previous study conducted in Ethiopia (14) reported that (74.4%) of the respondents had knowledge about STIs, followed by (74.2%) of the respondents about contraception methods and (72.8%) when the first menstrual period started. While comparing the present and the previous study, the knowledge among respondents was quite good in the present study conducted in the Tokha among higher secondary level students. The SRHR knowledge of different SRHR topics was good among the respondents in this study due to having various sources of information such as radio, television, the internet, and social media, as well as the changing and updated curriculum of the school regarding sexual education. Regarding the level of knowledge among the respondents (n=212) in the present study, 50% had adequate, whereas 50% had inadequate SRH knowledge. Therefore, comprehensive sexuality education, through clubs and peer groups, seems essential to organize health education sessions that will help improve SRH-related knowledge.

Correspondingly, more than half of the respondents (56.1%) communicated about choosing a life partner, followed by using birth controls (38.7%), communication about physical and psychological changes (55.2%), about physical growth of reproductive organs and development (50.5%), and communication about pregnancy (30.7%), communication on when to start having sex (13.4%), communication on how to handle sexual pressure from a partner (14.2%), communication on STI and HIV/AIDs (27.8%), communication about condoms (21.2%), and on abortion (17.5%). It showed that topics such as choosing a life partner, birth control, menstruation, physical and psychological changes, and communication on the physical growth of reproductive organs and development had significantly been discussed by the respondents with their parents. SRH topics such as communication on when to start having sex, how to handle sexual pressure from a partner, STI and HIV/AIDs, and communication about condoms had never been discussed by the majority of the respondents. But in the study conducted in Sanku, Nepal, menstruation was discussed a lot by 9.9%, followed by pubertal changes by 3.8%, and birth control by 2.8% (13). Also, relationships with the opposite sex, abortion, sexually transmitted infections, and fertilization had never been discussed with their parents by 80.8%, 70.4%, 59.6%, and 49.3%, respectively (13). Correspondingly, the cross-sectional study conducted in Kailali, Nepal, showed that 16.2% were communication on pubertal change, followed by menstruation (17.8%), safe sex (5.9%), unintended pregnancy (9.9%), contraceptive devices (10.1%), STI/HIV/AIDS (14.8%), and condoms (3.2%) (9). Similarly, the study conducted in Ethiopia reported that 46.6% were communicated on pubertal change, followed by premarital sex (32.5%), contraceptive devices (43.3%), STI/HIV/AIDS (56.1%), unintended pregnancy (49.2%) and condoms (25.3%). So we can conclude that there are quite good communication practices in the present study population. It may be because they have had good knowledge of different SRH topics. Living with the guardian also enables and encourages communication between parents. In Nepalese society, most parents don't

feel comfortable talking to their kids about sexual health but rather concentrate on safe topics. Cultural taboos, shame, poor communication abilities, embarrassment, fear of parents, their lack of responsiveness, their unwillingness to accept young people due to a lack of understanding, sociocultural norms, and their conviction that talking about such topics encourages premarital sex are just a few things that hinder parent-child interaction [9].

In the present study, living arrangements (p = 0.01), parenting style (p = 0.04), and knowledge (p = 0.01) had a significant association with adolescent-parent communication on sexual and reproductive health. A similar study in Sankhu, Nepal [13], reported a significant association between age, gender, close parent, and adolescent-parent communication on SRH. The observed differences could be due to the present study being more recent and the fact that males felt more comfortable communicating about SRH topics than females. Similar research conducted in Woreta town, Northwest Ethiopia, was significantly associated with knowledge ($p<0.05$) [14]. But the study conducted in Vientiane reported that gender ($p<0.05$) was significantly associated with adolescent parent communication on SRH [15]. It may be due to cultural variations affecting parenting education and communication. Likewise, the study conducted in Ethiopia reported that the study grade ($p<0.05$) was significantly associated with adolescent parent communication on SRH [16] because the grade 12 students thought that they had enough knowledge as compared to 11, so they did not communicate with their parents.

Limitation of the Study

The study has not explored the factors from the parent's perspective. It is a cross-sectional study, and it was hard to imply a cause-effect relationship.

Conclusion

In conclusion, adolescent-parent communication on SRH issues is still not satisfactory. . Only more than half of the respondents communicated on SRH topics with their parents and majority of respondents communicate with their mother (62.73%) rather than father. More than half of the respondents communicated on SRH topics with their parents. Sexual and reproductive health topics such as choosing a life partner, menstruation, physical and psychological changes, the physical growth of reproductive organs, and development were well communicated by the respondents, in contrast to topics such as using birth controls, when to start having sex, pregnancy, how to handle sexual pressure from a partner, STI and HIV/AIDs, condoms, and abortion were never communicated by the respondents, respectively. Besides, adolescent-parent communication on sexual and reproductive health was significantly associated with the level of knowledge regarding sexual and reproductive health. Again, there was an association between parenting style, living arrangements, and adolescent-parent communication. The majority of respondents had lived with their parents and perceived an authoritative parenting style. Half of the respondents had adequate knowledge regarding sexual and reproductive health. Most respondents had enough knowledge on SRH topics, such as pubertal changes, menstruation, child/forced marriage, pregnancy, sexually transmitted infection, sexual violence, and contraceptive devices. However, the least number of respondents had enough knowledge on SRH topics like abortion. Therefore, creating an adolescent -friendly environment at home and conducting awareness programs with the help of the local government of the respective schools would help to increase adolescent-parent communication.

Abbreviations

WTM: Weighted Topics Measure of Family Sexual Communication

AIDS: Acquired Immune Deficiency Syndrome

HIV: Human Immune Deficiency Virus

STI: Sexually Transmitted Infection

SRH: Sexual and Reproductive Health

DF: Degrees of freedom

CI: Confidence Interval

SPSS: Statistical Package for the Social Sciences

PSS: Perceived Stress Scale

NGO/INGO: Non-governmental organization/ International non-governmental organization

Declarations

Ethical Approval and Consent to Participate

This study was approved by the Institutional Review Committee (IRC) of the Nepal Institute of Health Sciences (Ref no. 13/078). Written informed consent was obtained from the participants. Consent from the parents of the respondents aged less than 18 years was taken by informing them and providing the consent form to the respondents beforehand to pass the information for the data collection. An approval letter was also taken from the respective schools, colleges, and the health and education section of Tokha municipality.

Consent for Publication

Not Applicable

Availability of Data and Materials

Datasets used in the current study are available from the corresponding author on reasonable request.

Competing Interests

The authors declare that they have no competing interests.

Funding

This research did not receive any funding from any agency in the public, commercial, or not-for-profit sectors.

Authors' Contributions

AG made substantial contributions to the concept and design of the research, collected the data, acquired, analyzed, or interpreted the data, and drafted the article. KS made a central contribution in drafting the research article, revised it critically for important intellectual content, acquired, analyzed, or interpreted data, and approved the version to be published. SD and SD conceived and helped to design the research, contributed data collection and analysis tools, and supervised throughout the study. AC drafted the article and revised it critically for important intellectual content. All authors read and approved the final manuscript.

Acknowledgements

We would heartily extend our sincere gratitude to the Nepal Institute of Health Sciences, Purbanchal University, Kathmandu, Nepal. Furthermore, we would like to thank Mr. Pawan Neupane, Ms. Anita Shakya, Mr. Sudeep Okheda, Mr. Paban Prakash Oli, and Ms. Sabina Sapkota for helping us throughout our research journey.

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