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RESEARCH ARTICLE

Knowledge, attitude and practice regarding sexual and reproductive health rights among married adolescents in urban slums of Bangladesh: A cross-sectional survey

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ABSTRACT

Background: Adolescents, especially married adolescents living within urban slum communities, encounter significant difficulties in obtaining and exercising their sexual and reproductive health rights (SRHR). This study aimed to determine the knowledge, attitude, and practice of SRHR and its associated factors among married adolescents living in urban slums.

Methods: A cross-sectional survey of 500 married adolescent girls living in slums of Dhaka and Gazipur city, Bangladesh, was conducted in the health and demography surveillance system areas of icddr,b. We interviewed them using a pretested questionnaire to assess their knowledge, attitude, and practice of SRHR. Data on their sociodemographic variables, such as household asset items, age, and education, were collected. Principal component analysis was used to create wealth indices.

Results: Knowledge of self-care during menstruation and the oral contraceptive pill was almost universal, though knowledge of condoms, abortion, danger signs of pregnancy and sexually transmitted infections was low. They (70%) agreed that young people should have access to menstruation-related hygiene facilities, contraception and sex education, though there was less agreement regarding abortion being a woman's right. The use of antenatal care and institutional-level delivery was also low. Age, years of schooling and prior pregnancy were positively associated with their knowledge levels. Important attitudinal and practice variations were noted between regions, Gazipur being the most disadvantaged.

Conclusion: There are important gaps in knowledge and practice in SRH service-seeking in this slum population. Heterogeneity in the slum population must be recognised to design services that reach the most disadvantaged group.

Keywords: *married adolescents, sexual and reproductive health rights, urban, slums, Bangladesh*

INTRODUCTION

Adolescents, who make up 16% of the global population, encounter significant difficulties in obtaining and exercising their sexual and reproductive health rights (SRHR).[1] The challenges faced in low- and middle-income countries (LMICs) are especially significant, and studies have begun to examine the complex inter-relating factors that impact adolescent SRHR across urban and rural settings. Limited access to information, weak socio-legal processes, health system failings, and cultural norms frequently impede the realisation of these rights, particularly for adolescent girls.[2, 3, 4, 5, 6] Greater understanding is needed across countries and sub-national settings in order to design effective, context-congruent policies and solutions to enhance the realisation of adolescent SRHR.

Available evidence indicates that the current situation in Bangladesh reflects many of these global challenges. Despite progress in enhancing maternal and child

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HIGHLIGHTS

1. A high-quality survey was nested within the existing Health and Demographic Surveillance System of icddr,b in three urban slums.
2. Knowledge level on abortion, danger signs of pregnancy and sexually transmitted infections are very poor among married adolescent women.
3. Practice of antenatal care and institutional delivery is low in urban slum.
4. A significant number of respondents agreed that young people should have access to sexual and reproductive sex education.

health, there are still notable deficiencies in adolescent SRHR.[7] According to a comprehensive review of available evidence, the rate of contraceptive use among married women in Bangladesh is 59.5%, and there is a persistent unmet need, including among young women.[8] In addition, child marriage rates in Bangladesh are among the highest in the world, with large numbers of girls being married before the age of 16.[7] Marriage at a young age often results in early parenthood, particularly among those with limited education, which can have knock-on negative effects on the health, education, and socio-economic standing of both mother and child.[7] These findings highlight the connection between SRHR issues and wider developmental challenges.

Previous research on SRHR among adolescents in Bangladesh has usefully examined topics such as knowledge of contraception,[9] management of menstrual hygiene,[10] and understanding of reproductive health.[11, 12] Although these studies offer valuable insights, they do not fully capture the distinct challenges faced by adolescents who are already navigating marriage and pregnancy. Furthermore, research has more commonly focused on rural rather than urban populations. This study was designed to address this gap in the literature, focusing on the knowledge, attitude and practice of sexual and reproductive health rights among pregnant and married adolescents living in urban slums, a context that brings additional challenges. The study aimed to determine the knowledge, attitudes and practices related to SRHR and associated factors among the urban slum married female adolescent population.

METHODS

Study area and data collection

The study was conducted in informal settlements (slums) of Dhaka North, Dhaka South and Gazipur City Corporations between February 19, 2022 and March 28, 2022. The study was conducted within the areas where icddr,b operates a high-quality Health and Demographic Surveillance System, visiting around 35,000 households quarterly. This meant that research field staff were already known in the areas, had established good relationships with residents and achieved high response rates. To meet the objectives of this study, a focused survey was designed and fielded within a sub-sample of the health and demographic surveillance system (HDSS) households.

Sample size

The sample size for the survey was determined by estimating the pregnancy rate among married adolescent girls. Based on prior research findings, we assumed that this prevalence was 31%,[13] and calculated the sample size that would be needed to estimate the prevalence with a 95% confidence level, 5% precision (margin of error), with a 10% non-response and a design effect of 1.5. The calculated sample size was 543 adolescent married women. We then distributed the sample across the three city corporation areas within the HDSS using the probability proportional to the size of each area to ensure representativeness.

Sample selection

Eligible respondents were married girls aged 12-19 years. We chose the lower age of 12 since the likelihood of finding a married adolescent girl below 12 was extremely small. For selecting the participants, we have used the list of married girls aged 12-19 years from HDSS households as the sampling frame. In the list, we included the married adolescent girls regardless of their pregnancy status. To avoid potential biases, from the list of married adolescent girls, 543 participants were randomly selected.

Data collection

Using a semi-structured questionnaire, data were collected from the participants who gave consent to

participate in the study (less than 18 years married adolescents were anticipated minors). The semi-structured questionnaire was developed based on previous SRHR study questionnaires in this country's context. Before collecting data, the questionnaire had been pre-tested in a similar set-up. Data were collected for this survey using a digital data collection interface on Android tablets. To ensure the data quality, a supervisor revisited 5% of the respondents chosen randomly within two days of data collection by the data collector. Later, the data collector and supervisor addressed any inconsistencies in the collected data. Our field research team conducted three consecutive visits before reporting a non-respondent; some non-respondents had migrated out.

Ethical consideration

Ethical approval and favourable scientific review were granted via the icddr,b IRB process. Informed written consent from each participant preceding data collection was obtained from each subject before enrollment in the study. Before the interview, the purpose of the study, the anticipated duration of the interview, confidentiality, and the right to withdraw at any phase of the study were clearly explained to each participant.

Data analysis

Following data cleaning, basic exploration, plausibility, and consistency checking, we produced univariate statistics for key outcome variables relating to knowledge, sources of information, and practices on menstruation, family planning and contraceptive methods, pregnancy and adolescent pregnancy, abortion, sexually transmitted diseases, and attitudes towards SRHR.

In addition to the primary variables, we computed two composite variables: Knowledge of SRHR (Knowledgeable “1”, Not-knowledgeable “0”) and Attitude towards SRHR (Favourable “1”, Not favourable “0”). To calculate the overall knowledge of SRH, eighteen (18) specific questions relating to menstrual hygiene, contraception, pregnancy, sexually transmitted infections, and abortion were scored. We scored "1" for those who provided the correct answer and "0" for those who did not. We set a cut-off value based on the total mean score, classifying those who scored more than the mean as "knowledgeable on SRH" and those who scored less as "not-knowledgeable on SRH." Similarly, we used a five-point Likert scale to score six (6) specific questions that captured attitudes towards gender and SRHR issues. We scored "4" for those who reported ‘strongly agree’ with the attitude questions and "0" for those who reported ‘strongly disagree’. We calculated the total score for the 6 questions, identifying those who scored more than the mean as having a "favourable attitude" towards SRH rights issues and those who scored less than the mean as having an "unfavourable attitude."

An important independent variable, the wealth quintile of the participants, was calculated for the HDSS-enrolled households. During the baseline data collection phase of the HDSS, we collected information about the enlisted households' assets (18 items), including their roof, wall, floor, land ownership, etc. We then conducted principal component analysis to generate a composite asset score for each enlisted household in the HDSS. As we used the icddr,b HDSS as a sampling frame in our study, an asset score for each participant was available.

Bivariate statistical analysis (chi-square test) was performed to explore the association between key outcome variables and sociodemographic characteristics. Multivariate logistic regression was then used to obtain odds ratios and their 95% confidence intervals while controlling for confounding factors. In the final analysis, 82 cases with missing data in socio-demographic variables (husband education, household asset information) were not included. Data analysis was performed using Stata 15.

RESULTS

Sample characteristics

Our field research team successfully interviewed 500 adolescent married women (pregnant and non-pregnant), with an overall high response rate. Most respondents (74%) were aged 18-19, with only a small fraction (4.6%) aged 13-15. Most had some education,

TABLE 1 Socio-demographic characteristics of adolescent married women by slum locations

Socio-demographic characteristics	Dhaka North n=245 (%)	Dhaka South n=158 (%)	Gazipur n=97 (%)	Total n=500 (%)
Age (years)				
13 – 15	4.9	6.3	1.0	4.6
16 – 17	24.9	19.0	16.5	21.4
18 – 19	70.2	74.7	82.5	74.0
Year of schooling				
No education	1.6	3.8	19.6	5.8
1-5	44.5	38.0	37.1	41.0
6-10	48.6	56.4	42.3	49.8
10+	5.3	1.9	1.0	3.4
Working status				
Not working	83.3	94.3	85.6	87.2
Working	16.7	5.7	14.4	12.8
Ever been pregnant				
Yes	62.4	73.4	67.0	66.8
Wealth index	n=205	n=127	n=86	n=418
Lowest	35.1	6.3	29.1	25.1
Second	21.0	19.7	16.3	19.6
Middle	10.2	14.2	31.4	15.8
Fourth	12.7	24.4	15.1	16.7
Highest	21.0	35.4	8.1	22.7
Husband education	n=198	n=132	n=87	n=417
No education	25.8	28.0	36.8	28.8
1 – 5	39.9	35.6	35.6	37.6
6 – 10	30.8	25.8	20.7	27.1
10+	3.5	10.6	6.9	6.5

with around half having 6-10 years of schooling and 6% having no education. The vast majority (87%) were not working, and 67% had been pregnant at least once. Dhaka South contains more households in the upper wealth quintiles than Dhaka North and Gazipur **(TABLE 1)**.

Knowledge and attitudes towards SRHR

Knowledge levels varied considerably across different aspects of SRHR. Knowledge of self-care during menstruation was reported by 95% of respondents, and 95% of respondents could identify at least one method of contraception. Among contraceptive methods, the oral pill was most commonly identified (91% of respondents), followed by injection (66%) and condoms (59%). Only 10% of respondents could correctly identify the fertile period during the menstrual cycle. Respondents were much more likely to mention family members as their source of information about contraception (82%) than NGO health workers (18%) or the government Urban Primary Health Centres (5%). 73% of respondents had heard of abortion. Knowledge of danger signs during pregnancy was lower, with 53% of respondents reporting one or more such signs. Knowledge of sexually transmitted infections (STIs) was even lower, with just 26% of respondents reporting that they had heard of STIs. Of these, 56% were unable to name any specific STI. HIV/AIDS was the most commonly named STI, but only 22 respondents could spontaneously mention it.

The majority reported that they "Strongly agree" or "Agree" that young people should have access to menstruation-related information and hygiene facilities (85%), contraception facilities (71%), comprehensive sex education (86%) and that both men and women are affected by sexual violence (59%). However, more than half of the women stated that they "Strongly disagree" or "Disagree" that abortion is a woman's right and that a young mother can make the decision to have an abortion **(TABLE 2)**.

Age was significantly associated with knowledge of SRHR, with the proportion of 'knowledgeable' individuals being 22% among 13-15-year-olds, 43% among 16-17-year-olds, and 55% among 18-19-year-olds (P=0.001). Education and prior pregnancy were also both strongly associated with being knowledgeable. From a geographical perspective, the level of knowledge among our adolescent married women in Gazipur was lower (41% categorised as knowledgeable) compared to those in Dhaka North (57%) and Dhaka South (49%)

TABLE 2 Adolescent married women's attitudes towards sexual and reproductive health rights (n=500)

Variables	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Young people should have access to menstruation information and hygiene facility	40.6	44.2	4.2	2.4	8.6
Young people should have access to contraception facility	27.0	44.4	14.8	5.6	8.2
Abortion is a woman's right	11.8	17.6	19.6	31.6	19.4
Young mother can take the decision of abortion	15.2	12.4	16.4	37.6	18.4
Both men and women are affected by sexual violence	14.8	44.4	20.6	8.8	11.4
All young people should have access to comprehensive sex education	36.2	50.0	9.0	2.4	2.4

(*P*=0.02). In contrast, there was no evidence of differences in knowledge between women in households within different wealth quintiles, nor between women who were working and not working **(TABLE 3)**.

TABLE 3 Knowledge of, and attitude towards, sexual and reproductive health rights by socio-demographic characteristics

Characteristics	% Knowledgeable	*P*[a]	% Favourable attitude	*P*[a]
Age (Years)				
13 - 15	21.7	0.001	43.5	0.48
16 - 17	43.0		53.3	
18 - 19	55.4		56.0	
Years of schooling				
No education	51.7	<0.001	55.2	0.11
1-5	41.5		51.7	
6-10	56.6		55.4	
10+	88.2		82.4	
Work status				
Not working	50.5	0.39	54.5	0.60
Working	56.3		57.8	
Ever been pregnant				
Yes	58.7	<0.001	51.8	0.06
No	36.1		60.8	
Wealth Index				
Lowest	49.5	0.09	58.1	0.70
Second	65.9		59.8	
Middle	47.0		48.5	
Third	52.9		55.7	
Highest	47.4		56.8	
Husband Education				
No Education	39.2	0.02	51. 7	0.89
1-5	55.4		54.8	
6-10	56.6		56.6	
10+	55.6		55.6	
City Corporation				
Dhaka North	56.7	0.03	57.7	0.24
Dhaka South	48.7		55.2	
Gazipur	41.2		47.4	

[a]Chi square test

The attitude towards SRHR did not differ significantly across any of the sociodemographic subgroups. The only noteworthy differential was that among adolescents with 10+ years of schooling, 82% were categorised as having a favourable attitude compared to around 50% in the other educational categories. However, this difference was not statistically significant. Adolescent girls aged 18-19 had significantly higher odds of being knowledgeable about SRHR (aOR=3.36; 95% CI 1.11, 10.11; *P*=0.03) than those aged 13-15. The model also suggests that having been pregnant is associated with being knowledgeable and that residents of Gazipur were less likely to be knowledgeable than those in Dhaka North **(TABLE 4)**.

Use of SRH services

Overall, 79% of respondents who had been pregnant reported seeking antenatal care (ANC), and just 52% reported having an institutional delivery. Ever use of contraception was a little higher, at over 80%, and did not vary across knowledge or attitude categories. In contrast, the use of ANC was significantly higher (86%) among those categorised as 'knowledgeable'. Older adolescents aged 18-19 were more likely to report use of ANC than younger respondents. Education level was also significantly associated with ANC utilisation. Geographic differences were also evident **(TABLE 5)**.

DISCUSSION.

This study explored the knowledge, attitude, and practice related to different domains of SRHR among married adolescent girls in urban slums in Dhaka and Gazipur cities and sought to identify any important differentials and correlates of SRHR among this relatively under-researched section of the population.

The study's strengths include being nested within an established HDSS, which meant high levels of familiarity and trust among respondents, leading to a high response rate and skilled data collectors, giving confidence in the quality of the data. The study's cross-sectional nature inevitably means there will be some recall error, and causal relationships cannot be determined (for instance, between knowledge and practice variables). In addition, the survey was powered to estimate an overall prevalence rate, and some of the resulting sub-groups were small, meaning there was low power to detect differences (for example, between educational groups).

Knowledge levels varied considerably across different aspects of SRHR. Knowledge of self-care during menstruation and the oral contraceptive pill was almost universal, while knowledge of condoms, abortion and danger signs of pregnancy was much lower. Most women sought care from private hospitals/clinics during pregnancy; some went to UPHC clinics and less to government hospitals. Mothers not going to any facility during pregnancy mentioned that they felt no reason to visit facilities and financial limitations.

TABLE 4 Factors associated with knowledge of sexual and reproductive health rights: results of multivariate logistic regression

Variables	Adjusted odds ratio (95% confidence interval)
Age (years)	
13 – 15	1
16 – 17	2.60 (0.82 – 8.27)
18 – 19	3.36 (1.11 – 10.11)
Year of schooling	
No education	1
1-5	0.23 (0.08 – 0.6)
6-10	0.35 0.12 – 1.04
10+	3.49 (0.31 – 39.12)
Working status	
Not working	1
Working	1.53 (0.75 – 3.11)
Ever been pregnant	
Yes	1
No	0.31 (0.18 – 0.54)
Wealth index	
Lowest	1
Second	2.09 (1.03 – 4.26)
Middle	1.32 (0.63 – 2.75)
Third	1.24 0.59 – 2.59)
Highest	1.06 (0.53 – 2.15)
Husband education	
No education	1
1-5	1.94 (1.08 – 3.47)
6-10	1.72 (0.91 – 3.26)
10+	2.89 (1.00 – 8.34)
City corporation	
Dhaka North	1
Dhaka South	0.69 (0.39 – 1.21)
Gazipur	0.51 (0.27 – 0.97)

Knowledge of STIs was extremely low, with just 26% of respondents reporting that they had heard of STIs. There was evidence that higher age, more years of schooling and prior pregnancy were all positively associated with being knowledgeable about SRHR. In terms of attitudes to SRHR, over 70% of respondents agreed that young people should have access to menstruation-related hygiene facilities, contraception and sex education. There was less agreement and more uncertainty among respondents in relation to abortion being a woman's right and the notion that both men and women are affected by sexual violence. Our findings suggest that these adolescent girls gain most of their information and ideas about SRHR from family members and that government and NGO services currently play a very limited role in raising awareness and understanding. In terms of the use of SRH services, reported levels of contraception use were higher than levels of ANC use (among those who had been pregnant). Our study findings also align with other studies, where it was found that higher knowledge, favourable attitudes, and good practice for SRHR are significantly associated with higher age and higher education.[14, 15, 16]

We found important variation across geographic areas in knowledge, attitude, and practice. Adolescent girls in Gazipur stood out as having less education, lower levels of knowledge, less favourable attitudes, and less likely to access ANC during pregnancy compared to Dhaka North and Dhaka South.

The study findings illustrate important gaps in knowledge among married adolescent girls living in slum areas and the need to increase the uptake of SRH services, particularly skilled maternity care, among this segment of the population. The findings suggest that neither government nor NGO services effectively reach these women. Increasing uptake of ANC is a priority, and during ANC, adolescent mothers should be counselled on having institutional delivery, especially in urban primary health care service delivery project (UPHCSDP) clinics for the urban poor. While this quantitative study documents the patterns and differentials in key SRHR, it cannot provide an in-depth understanding of the factors underlying these patterns nor confidently inform intervention strategies. We recommend further qualitative research, ideally combined with action research, to identify culturally appropriate and effective approaches to reaching this underserved population. Government and NGO services must develop ways of raising knowledge and supporting service uptake. Evidence from other similar contexts suggests that strategies that involve husbands and/or older members of the family and the use of digital technologies may be appropriate for this population and should be explored.[17, 18] In addition, the study participants had insufficient knowledge of STIs and transmission routes. The existing STI and abortion-related services of UPHCSDP need to be addressed to identify gaps in service provision so that these services can be made adolescent-friendly. Our findings also highlight the importance of recognising and responding to heterogeneity within the slum population and the need to deliver services that can reach those most disadvantaged, in this case, residents in Gazipur.

TABLE 5 **Use of sexual and reproductive health services by knowledge of sexual and reproductive health, attitude toward sexual and reproductive health rights, and socio-demographic factors**

Variables	Ever used contraception (n=500) (%)	*P*[a]	Ever used ANC[b] (n=334) (%)	*P*[a]
Knowledge of SRHR				
Not knowledgeable	82.4	0.72	68.6	<0.001
Knowledgeable	83.6		86.3	
Attitude toward SRHR				
Unfavourable	80.5	0.18	75.0	0.10
Favourable	85.0		82.7	
Age (years)				
13 – 15	69.6	0.16	72.7	<0.001
16 – 17	86.0		56.5	
18 – 19	83.0		83.5	
Years of schooling				
No education	100	0.09	52.6	0.01
1-5	82.9		76.5	
6-10	81.1		84.5	
10+	82.4		85.7	
Work status				
Not working	82.3	0.31	79.0	0.92
Working	87.5		80.0	
Ever been pregnant				
Yes	82.9	0.96	-	
No	83.1			
Wealth Index				
Lowest	81.9	0.22	72.9	0.19
Second	84.2		83.0	
Middle	90.9		75.0	
Third	80.0		90.0	
Highest	76.8		78.9	
Husband education				
No education	86.7	0.39	68.2	0.12
1-5	84.1		78.4	
6-10	81.4		83.8	
10+	74.1		86.7	
City corporation				
Dhaka North	81.2	0.002	83.8	<0.001
Dhaka South	78.5		85.6	
Gazipur	94.9		56.7	

[a]Chi-square test, [b]antenatal care

Conclusion

The findings of this study have implications for public health policies and SRHR programmes. However, given that this was a quantitative, cross-sectional survey in selected slums, caution is needed in generalising the findings and advocating specific solutions. Rather, our findings should be complemented by evidence from recent systematic reviews relating to interventional approaches[19, 20, 21] and local implementation research to design effective and sustainable approaches to improving SRHR among this under-served population. The high demand for more knowledge calls for targeted, culturally appropriate educational interventions. Given high school drop-out and early age at marriage for many, there is a particular need to explore avenues beyond the school setting. Additionally, interventions to improve the accessibility and quality of ANC and institutional delivery services in urban slums are needed. By carefully designing effective and appropriate approaches to addressing the unique barriers faced by this vulnerable population, we can enhance their health outcomes and contribute to the broader goals of reproductive rights in Bangladesh.

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Author contributions

Conception and design: SIS, HR. *Acquisition, analysis, and interpretation of data:* ART, SIS, HR. *Manuscript drafting and revising it critically:* ART, SIS, HR. *Approval of the final version of the manuscript:* ART, SIS, HR. *Guarantor of accuracy and integrity of the work:* SIS, HR.

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Conflict of interest

We do not have any conflict of interest.

Ethical approval

Ethical approval and favourable scientific review was granted via the icddr,b IRB process (Protocol # PR- 15045).

Data availability statement

We confirm that the data supporting the findings of the study will be shared upon reasonable request.

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