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Factors Related to Health Service Utilization among Adolescent Girls in Urban Slums of Jaipur, India

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Abstract

Objective: This study aimed to determine the factors associated with health-care service utilization among adolescent girls in urban slums in Jaipur, India. **Material and Methods:** A cross-sectional study of 417 adolescent girls was conducted. Descriptive statistics, Chi-square, and bivariate and multivariate logistic regression were used to analyze the data and determine the factors associated with healthcare service utilization. **Findings:** Only 48.2% of girls with health problems visited health-care facilities for treatment. About 68.6% delayed treatment by 3 or more days after the onset of symptoms, and 85.6% first tried remedies available at home. Girl's education (adjusted odds ratio [AOR] = 2.7; 95% confidence interval [CI] = 0.65– 8.57), mother's education (AOR = 3.43; 95% CI = 1.2– 9.96), father's income (AOR = 2.2; 95% CI = 0.76– 5.32), mother's income (AOR = 3.67; 95% CI = 1.03– 11.18), and counseling by field health workers (AOR = 3.23; 95% CI = 1.18– 7.89) were factors significantly associated with utilization of health services. Girls cited parental neglect of their health, insufficient funds, lack of privacy, and inconvenient assessment times at health facilities as major barriers. **Conclusion:** The findings from the study show that the utilization of facility-based health services among adolescent girls is low, and there is a significant postponement in visiting health facilities after the onset of symptoms. There is a need to create community-level awareness, improve outreach by field health workers, ensure privacy in health-care facilities, and improve facility-based health service utilization among adolescent girls.

Keywords: Adolescent girls, Adolescent health, Health service utilization, Urban slums

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Introduction

Adolescent girls suffer disproportionately from health and social risks in many parts of the world due to prevailing gender and social norms and androcentric worldviews. A report from the United Nations Children's Fund (UNICEF), UN Women, and Plan International shows that 5.5 million more girls between the ages of 15 and 19 were out of school than boys at the primary level and 25.1% of these girls were neither employed nor in training compared to only 10.0% of boys.[1] Further, report from UNICEF highlights that 21.0% of young women (20–24 years) were married as children, negatively impacting their physical and social well-being.[2] India is home to around 120 million adolescent girls.[3] Many girls face several challenges which have long-term adverse effects, including child marriage, malnutrition, gender-based violence, lack of awareness on health issues, and neglect of their health.[4] The findings from National Family Health survey show that 25.4% of young women (aged 20–24 years) were married before the age of 18 years and 3.7% girls in the age group of 15–19 years had either already become mother or were pregnant at the time of the survey.[4] The survey also finds that 54.1% of adolescent girls in the age group of 15–19 in India were anemic.[4]

As per the Census 2011, 31.1% of the country's population lives in urban areas and 17.4% of total urban population lives in slum areas.[3] Post-independence, the primary focus of Government of India was on strengthening health services in the rural areas, as availability and accessibility of health services in the rural areas were considered big challenge.[5] However, there is growing recognition that health services in the urban areas specially for the poor and the people residing in the slums need to be improved.[6] As the proportion of the population residing in urban areas increasing, the issue of urban health is gaining more attention.

Studies have shown that adolescent girls in urban slums suffer from health complications due to unhygienic living conditions, poverty, inadequate health services, and lack of basic amenities.[7,8] It is also important to note that adolescent girls are not a homogenous group, and there are differences depending on the caste, education level, and economic status.[8] Several studies have been done on determinants of health-seeking behavior and access to health-care services among adolescent girls and women in the rural areas.[6,9] However, studies on factors related to adolescent girl's utilization of health services, in urban slum setting, are very few. Some studies, which have been done on adolescent girls in urban slums, are primarily focused on assessing the nutritional status and menstrual hygiene.[9,10]

In 2014, Ministry of Health and Family Welfare, India, launched Rashtriya Kishor Swasthya Karyakram (RKSK) to provide quality health services to adolescent in the country.[11] However, the initiative is primarily focused on adolescent in rural areas with coverage of only 1–2 facilities such as district hospital and subdistrict hospitals in the district headquarters/urban areas and does not give sufficient attention to address the health needs of adolescent girls in urban slums.[11] This study was undertaken

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to highlight the health issues faced by adolescent girls in urban slums and understand the variations and barriers in health service utilization among them. The findings from the study will support health planners and policymakers in improving utilization of health-care services among adolescent girls in urban slums.

Materials and Methods

Study Design

This cross-sectional study was conducted using mixed methods. Jaipur, the capital city of Rajasthan, India, was selected for this study. The urban population of Jaipur was 3,471,847 at the time of the study. About 22.4% of this population, 777,694 people, reside in slums districts.[3] Adolescent girls aged 10–19 years constitute 8.8% of the total urban population, and approximately 68,438 adolescent girls live in urban slums.[3,12] The sample size for the study was 420 adolescent girls with a 95.0% confidence level, a 5.0% error margin, and estimated 10.0% non-response rate. Respondents were selected using a two-stage cluster sampling technique. Each slum was considered a cluster, and adolescent girls in slums were the primary sampling units. A list of 222 urban slums in Jaipur was obtained from the National Urban Health Mission. Of the 222 clusters, 20 clusters were chosen at random. Within each slum, 21 girls were selected through random sampling from a list of girls aged 10–19 years. Of the 420 adolescent girls contacted, 417 agreed to participate in the study.

The study was designed using the Andersen Healthcare Utilization Model to examine the factors that affect the utilization of health-care services among adolescent girls in Jaipur's urban slum.[13] This model was used as it adopt systems approach to study the different factors that affect the use of health-care services, such as socioeconomic, environmental, and individual factors. As per the model, the factors that influence the utilization of health-care services can be divided into three categories – the first is the predisposing characteristics which include demographic factors. The second is need characteristics which include nature of health problems and its severity. The third category is the enabling factors, which hinder or facilitate access to health services.

Measurement Variables

Dependent variable

The dependent variable in the study was the type of treatment availed in the case of illness, that is, home based or facility based. Furthermore, facility-based treatment was divided into services availed from public or private health facilities.

When questioned about their illnesses, the girls were instructed to exclude minor health issues such as headache, slight weakness, mild cold, and minor pain during menstruation, which generally do not require medical advice or treatment. Facility-based services were defined as consultation with a service provider at a private or public health facility. Home-based treatment was defined as either taking rest, using medication available at home, or consulting a pharmacist.

Independent variables

The independent variables were finalized after review of similar studies undertaken in India and in the other countries. The independent variables were divided into three categories. The first was predisposing factors, which included variables – age, castes (schedule caste [SC], scheduled tribe [ST], other backward classes [OBCs], and general population), education, and migration status. The second was need related factors, which included variables – type of health problem, and severity of symptoms. The third was enabling factors which included variables – employment status, income level, and outreach by field health workers.

Tools and Data Collection

Quantitative information from the girls was collected using a structured questionnaire. Seven focus group discussions (FGDs) with 12 girls each were conducted to collect in-depth qualitative information. Interview tools were field tested with 20 adolescent girls, of varying education status and age, in two different slums, and based on the feedback received, tools were modified.

A two-person team of female interviewers collected the data. Both the interviewers were trained investigators and 5% of interviews were redone to check the correctness of data collected. The structured questionnaire was filled out using KoboCollect, an Android platform application. The data were collected from April 2018 to December 2018.

Data Analysis

Quantitative data were analyzed using SPSS version 26 for Windows. Descriptive statistics were used to analyze the percentages and frequencies of the dependent and independent variables. Chi-square and binary logistic regressions were used to determine the association between the dependent and independent variables. Multivariate logistic regression was applied to identify significant facility-based health service utilization predictors.

Ethical Considerations

The ethical guidelines developed by the Indian Institute of Health Management Research (IIHMR) University were fully complied with, and approval for the study was obtained from the IIHMR University Ethics Committee (IIHMR/PHD2017/6). The purpose of the study was explained to the girls, and their explicit consent was obtained beforehand. In the case of minor adolescents, consent was obtained from their parents also. The confidentiality and privacy of the respondents were fully protected.

Results

Sociodemographic Characteristics

Table 1 shows the sociodemographic characteristics of the 417 respondents who participated in the study. A total of 214 girls (51.3%) were between the ages of 15 and 19, and the remaining 203 girls (48.7%) were between the ages of 10 and 14. About 47.0% of respondents belonged to SC/ST communities, and girls from OBC communities constituted 41.7% of the total respondents. Around a quarter of the total respondents (24.2%) were out of school, and 21 (5.0%) did not attend school. The majority of respondents (94.2%) were unmarried.

Health Problems and Type of Treatment Provided

Table 2 shows health problems and the type of treatment used by the respondents. Approximately two-thirds (63.7%) of the

respondents had some illness (excluding minor ailments) during the past year, while the remaining had an illness in the previous 1–2 years. About 47.4% of girls had reproductive health-related problems such as menstrual problems (31.7%) or reproductive tract infections (RTIs)/sexually transmitted infections (STIs) (15.7%), and 52.6% of respondents had other health-related issues. About 48.2% of respondents had visited a health facility for treatment. It is concerning that nearly half (51.8%) of the respondents had either not looked for treatment or tried home-based remedies. Even among the respondents who used facility-based treatment, 68.6% had visited the facility 3 or more days after the onset of symptoms. Most of them (85.6%) had first tried home-based treatments before visiting the health facility. About 57.7% of respondents did not feel comfortable sharing their problems with service providers.

Difference in Health Service Utilization Depending on the Socioeconomic Factors

Table 3 shows the association between health service utilization and independent variables. About 64.7% of the girls who studied above the 8th class used facility-based treatment compared to 37.2% of girls who left school before the 8th class ($P < 0.001$). The respondents' caste (SC and ST, OBC, and general) did not influence the type of health services available ($P = 0.086$). Parents' education also significantly impacted the kind of health services availed (mother's education, $P < 0.001$; father's education, $P = 0.002$). Similarly, the type of employment and income level influenced the type of treatment availed (mother's income, $P < 0.001$; father's income, $P = 0.007$). Counseling by field health workers also had a significant relationship with health service utilization ($P < 0.001$).

Determinants of the Utilization of Health Services (Multivariate Logistic Regression)

The independent variables that were significantly associated with health service utilization in the Chi-square and binary logistic regression tests were included in the final model. These included girls' age and education, parents' education, employment and income, health problems, and outreach by field workers. Multivariate logistic regression with the backward Wald method was applied, and eight independent variables emerged as the key predictors of health service utilization. The result is presented in Table 4.

Adolescent girls whose mothers were self-employed or working at salaried positions used health facility services around 3 times more than girls whose mothers worked as labor or housewife (adjusted odds ratio [AOR] = 2.85; 95% confidence interval [CI] = 1.12–6.9). The impact of nature of employment was also seen in the case of fathers' employment (AOR = 1.99; 95% CI = 0.83–4.8). The parents' income significantly influenced the utilization of services from health facilities. Girls whose fathers were earning more than Rs. 7501/month utilized health services twice as much (AOR = 2.2; 95% CI = 0.76–5.32). The income level of mothers had a significant impact on facility-based health service utilization (AOR = 3.67; 95% CI = 1.03–11.18). The education level of girls (AOR = 2.7; 95% CI = 0.65–8.57) and their mother (AOR = 3.43; 95% CI = 1.2–9.96) also significantly impacted the type of treatment availed. The girls counseled by field health workers at

Table 1: Sociodemographic characteristics.

Demographic characteristics	*Frequency*	*Percent*
Age-wise participants		
10–14 years	203	48.7
15–19 years	214	51.3
Total	417	100.0
Caste-wise participants		
SC and ST	196	47.0
OBC	174	41.7
General	47	11.3
Total	417	100
Education		
5th class or less	46	11.0
6th–10th class	299	71.7
Higher than 10th class	72	17.3
Total	417	100
Current schooling status		
In-school	295	70.7
Out of school	101	24.2
Never went to school	21	5.0
Total	417	100
Marital status		
Unmarried	393	94.2
Married or marriage has been fixed	24	5.8
Total	417	100

Table 2: Illness and type of treatment availed

Illness and treatment used	*Frequency*	*Percent*
Most recent illness among respondents		
Past month	33	7.8
Past 1–3 months	79	18.9
Past 4–6 months	70	16.7
Past 7–12 months	85	20.3
Past 1–2 years	151	36.3
Total	417	100.0
Cause of most recent illness		
Fever	79	18.9
Diarrhea, malaria, anemia, and dengue	136	32.8
Menstrual problem	132	31.7
RTI/STI	65	15.7
Others	4	1.0
Total	417	100.0
Source of treatment		
No treatment taken	165	39.6
Home remedies or medicine from pharmacy	51	12.3
Visited health facility	201	48.2
Total	417	100.0
Type of health facility visited		
Government	99	49.3
Private	102	50.7
Total	201	100
Reason for selecting the particular facility for treatment		
Convenience (distance and timing)	85	42.5
Quality of service	69	34.3
Female service provider	46	23.1
Total	201	100
Visit to health facility after the onset of symptoms		
Same day	4	2.0
1–2 days	59	29.4
3–5 days	103	51.2
6–10 days	35	17.4
Total	201	100.0
Treatment before visiting the health facility		
Nothing	24	11.9
Home remedies or medicine from pharmacy	172	85.6
Do not remember	5	2.5
Total	201	100.0
Felt comfortable in sharing the problem with service provider		
Yes	85	42.3
No	116	57.7
Total	201	100.0

RTI: Reproductive tract infection, STI: Sexually transmitted infection

Table 3: Association between health service utilization and independent variables (Chi-square and binary logistic regression)

Variables	*Home-based remedies No. (%)*	*Facility-based treatment (%)*	*Unadjusted OR (95% CI)*	*p-value*
Predisposing factors				
Girl's age				
10–14 years	149 (73.4%)	54 (26.6%)	1	0.003
15–19 years	67 (31.3%)	147 (68.7%)	2.135 (1.136–4.799)	
Girl's education				
8th class or less	157 (62.8%)	93 (37.2%)	1	<0.001
More than 8th class	59 (35.3%)	108 (64.7%)	3.297 (1.470–9.214)	
Mother's education				
8th class or less	208 (56.4%)	161 (43.6%)	1	<0.001
More than 8th class	8 (16.7%)	40 (83.3%)	3.771 (1.345–10.573)	
Father's education				
8th class or less	157 (59.7%)	106 (40.3%)	1	0.002
More than 8th class	59 (38.3%)	95 (61.7%)	1.837 (0.612–4.857)	
Castes				
SC and ST	114 (57.9%)	83 (42.1%)	1	0.086
General or OBC	102 (46.4%)	118 (53.6%)	1.148 (0.861–3.989)	
Migration				
Migrated in the past 2 years	59 (54.6%)	49 (45.4%)	1	0.110
Not migrated	157 (50.8%)	152 (49.2%)	0.981 (0.555–2.105)	
Enabling factors				
Mother's employment				
Labor or housewife	173 (60.3%)	114 (39.7%)	1	<0.001
Salaried or self-employed	43 (33.1%)	87 (66.9%)	3.073 (1.869–7.002)	
Father's employment				
Labor or unemployed	107 (71.3%)	43 (28.7%)	1	0.013
Salaried or self-employed	109 (40.8%)	158 (59.2%)	2.299 (1.942–5.605)	
Girl's income				
Rs. 7500 or less	167 (52.0%)	154 (48.0%)	1	0.864
Rs. 7501 or more	49 (51.0%)	47 (49.0%)	0.817 (0.471–2.197)	
Mother's income				
Rs. 7500 or less	201 (58.9%)	140 (41.1%)	1	<0.001
Rs. 7501 or more	15 (19.7%)	61 (80.3%)	4.238 (1.447–12.703)	
Father's income				
Rs. 7500 or less	162 (57.0%)	122 (43.0%)	1	0.007
Rs. 7501 or more	54 (40.6%)	79 (59.4%)	2.525 (1.075–5.928)	
Outreach by field workers				
No	143 (80.8%)	34 (19.2%)	1	<0.001
Yes	73 (30.4%)	167 (69.6%)	3.450 (1.679–8.685)	
Need factors				
Health problem				
General health problem	130 (57.3%)	97 (42.7%)	1	0.048
Reproductive health problem	86 (45.3%)	104 (54.7%)	1.466 (0.761–3.884)	
Severity of symptoms				
Mild	94 (70.1%)	40 (29.9%)	1	0.073
Severe	122 (43.1%)	161 (56.9%)	1.457 (0.516–3.063)	

least once were 3 times more likely to avail facility-based treatment (AOR = 3.23; 95% CI = 1.18–7.89) than the girls who were never counseled.

Qualitative Feedback

During the FGDs, girls shared that they depended primarily on their friends, mothers, and elder sisters as sources of information related to reproductive health due to trust and comfort levels. Several girls said that they were aware of health workers in the area, and some had received information from them on different health issues. However, they generally do not feel comfortable in sharing their health concerns with them.

School-going girls (class 8–12) shared that they did not receive significant sexual and reproductive health information in school, except for some discussion about menstruation and sanitary pads. They also believed that providing such information in schools, especially in coeducational schools, would be challenging.

The girls shared that if they feel unwell or fall sick, the first response from family members is that they will get well on their own or treated with home remedies. If the pain or symptoms appear serious, family members prefer to get the medicine from the pharmacy. In most cases, they visit health facilities only after waiting for a few days.

Several girls shared that the timing of availability of doctors in public health facilities was inconvenient, mostly around 8 am–12 pm. This means that they would need to miss out on school or work to meet the doctor at the health facility. Although public health facilities in the city are supposed to provide services in the evening, doctors are mostly absent during the evening hours. Another critical concern for girls was overcrowded public health facilities and the lack of privacy during interactions (including discussions and examinations). Girls also shared that though services are supposed to be free in public health facilities, they still need to spend money on medicine or testing, which adds to financial strain.

Table 4: Determinants of health service utilization among adolescent girls

Variables	*Categories*	*Adjusted odds ratio*	*95% confidence interval*	
			Lower	*Upper*
Predisposing factors				
Girl's age	10–14 years	1		
	15–19 years	1.716	0.926	4.814
Girl's education	8th class or less	1		
	9th class or higher	2.696	0.652	8.572
Mother's education	8th class or less	1		
	9th class or higher	3.426	1.200	9.957
Enabling factors				
Father's employment	Labor or unemployed	1		
	Salaried or self-employed	1.994	0.829	4.795
Mother's employment	Labor or housewife	1		
	Salaried or self-employed	2.845	1.124	6.897
Father's income	Rs. 7500 or less	1		
	Rs. 7501 or more	2.199	0.755	5.318
Mother's income	Rs. 7500 or less	1		
	Rs. 7501 or more	3.672	1.029	11.183
Ever counseled by field health workers	No	1		
	Yes	3.296	1.177	7.887

Discussion on the Findings

In this study, we have analyzed the factors associated with health service utilization among adolescent girls in urban slums of Jaipur city, India. The finding show that girls' age, education, and mother's education were significant predisposing factors associated with the utilization of health services. Besides that, father's employment, income, mother's employment, income, and counseling by field workers were significant enabling factors associated with health service utilization.

In terms of recent illnesses, the findings show that 47.4% of the girls had reproductive health-related problems, including problems related to menstruation and RTI/STI. About 52.6% of the respondents had general health problems such as fever, weakness, malaria, dengue, and more. The prevalence of RTI/STI reported by respondents was 15.7%, similar to the findings from a study conducted in Meerut, India, in which 16.4% of the adolescent girls had RTI.[14] About 48.2% of the respondents visited health facilities, while 51.8%, a significant number of respondents, had either bought medicine from pharmacy or tried home remedies. Among the respondents who visited health facilities, 50.7% visited private health facilities, and the remaining visited public health facilities. The utilization of public health facilities services was slightly higher at 23.7% compared to the study in Meerut, India, in which only 14.3% of the girls availed treatment from government facilities.[14] The utilization of facility-based services was lower than that was observed in studies in Chandigarh, India (64.2%), Mandalay in Myanmar (67.4%), and 79.5% in Gondar in Ethiopia.[9,15,16] It is concerning that in the case of reproductive health problems, treatment was delayed for longer after the onset of symptoms when compared to other general health problems. In the case of reproductive health problems, a higher percentage of respondents tried alternative treatment before visiting health facilities because of concerns related to lack of privacy and overcrowded health facilities.

The findings show that a significant number of respondents either took medicines that were available at home or from the local pharmacy (86.3%) before visiting the health facility. This highlights the need for health education. Adolescent girls and their family members need to use the health services at the early stages of illness. In addition, 42.1% of the girls from SC and ST castes visited health facilities in the case of illness, compared to 53.6% of girls from OBC, and general communities, which show caste-based inequality in utilization of facility-based health services. This also calls for giving more focus on creating awareness among girls and their parents from SC and ST communities about the need of early treatment and availability of health care services. There was lack of studies focusing on adolescent girls that provide caste-wise variations in utilization of health services and our study contributes in creating evidence based on challenges faced by girls from marginalized communities.

The results from multivariate logistics regression show that utilization of the health services was by affected by the three predisposing factors, that is, girls' age, education, and mother's education. The studies undertaken in urban slum of Chandigarh and Mumbai in India and in Asgede-Tsimbla district of North Ethiopia also found that education status of girls and their mother's was significantly associated with utilization of health services among adolescent girls.[15,17,18] The studies done by Oliver *et al*. (1999) and Gothankar *et al*. (2015) also found that older adolescent girls had utilized health services in higher percentage and age has significant association with utilization of health-care services.[19,20] Parent's employment and income were also found to be important predictor of utilization of health services among adolescent girls. Different studies have highlighted the significant association between income level and utilization of health services from health facilities.[21-23] During the FGDs, girls also highlighted cost associated with visiting health-care facilities, including expenditure incurred toward travel, service provider's fees, and medicine as major hindrance in utilization of facility health-care services. The counseling by health care workers was also an important predicator of utilization of health-care services as it helped in creating awareness among girls and their parents about the availability of health-care services and symptoms related with different health issues.[24] Studies done by Santhya *et al*. (2014) and Renzaho *et al*. (2017) too found positive relationship among awareness about health issues, availability of health-care services, and utilization of health-care services.[11,25]

Conclusion

The majority of the adolescent girls did not use services from health facilities during their most recent illness. Adolescent girls who used facility-based services first tried home-based treatments and visited health facilities only after the problems persisted. The findings from the study show that education, individual/household income, and counseling by health workers were important factors associated with the utilization of facilities health services. Girls also highlighted that family's neglect of their education and health and the lack of privacy in health facilities were key barriers to treatment. There is a need to engage policymakers, service providers, and parents to address financial barriers, improve the availability and quality of services, provide access to education, and create an enabling environment for the girls to utilize health facility services. The scaling-up of RKSK initiative to cover all the facilities in urban areas, training of service providers, and ensuring

respectful services will help in addressing the concerns related to availability of quality services in the public health facilities in urban areas.

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