







Utilization of Adolescent Reproductive Health Service in Junior High School in Semarang City

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Abstract. Background: Access to and utilization of reproductive health services by adolescents are key factors in preventing sexual reproductive health problems. However, the level of service utilization still varies between studies. The purpose of this study was to analyze the level of utilization of sexual reproductive health services in junior high schools in Semarang City. **Methods:** This was an analytical study with a cross-sectional design involving 81 students. Respondents were selected using simple random sampling in grades VIII and IX. Data collection was conducted after respondents provided written consent. Data were analyzed univariately and bivariately using SPSS version 25 software, with $p < 0.05$ considered significant. **Results:** Of the total respondents, the rate of utilization of reproductive health services in schools was 16 (19.8%). Most respondents were 14 years old (59.3%), female (49 or 60.5%), lived with their parents (80 or 98.8%), and had no family members who were health workers (75 or 92.6%). The source of information came from teachers at school (54 or 66.7%), and 47 (58%) did not know that reproductive health services for adolescents were available at school. Knowing the location of services is a factor that influences the utilization of reproductive health services at school. The utilization of reproductive health services for adolescents in junior high schools in Semarang City is still low and is a predictive factor in the utilization of reproductive health services. Therefore, information and socialization are needed to inform adolescents that reproductive health services are available at school.

Keywords: Reproductive health, service utilization, adolescents.

1 Introduction

Adolescents aged 10 to 19 years are estimated to reach approximately 1.3 billion people, or about 16% of the global population. In Indonesia, approximately 17% (46 million people) are adolescents. The large proportion of this age group indicates that adolescents play a strategic role in the global demographic structure. Therefore, optimal attention and investment in the health and well-being of adolescents is crucial, given their significant contribution to achieving sustainable development goals and global

health.[1] In line with this large proportion, adolescence is a complex and multidimensional period of development. Adolescent development encompasses physical, cognitive, emotional, and social changes that occur simultaneously. Puberty triggers rapid growth, changes in body proportions, and the development of abstract thinking and emotional regulation skills. This entire process is heavily influenced by the interaction of biological, social, emotional, and environmental factors.[2] Puberty is an important developmental stage that marks the transition from childhood to adulthood, marked by striking changes in unique biological, psychological, and social aspects.[3]. In biological changes, hormone activation triggers the development of sexual characteristics because the release of gonadotropin hormone (GnRH) increases.[4–6], thus placing teenagers in a high-risk life[3].

In this context, sexual and reproductive health (SRH) maintenance is an important component in ensuring that adolescents' growth and development processes proceed optimally. Maintaining sexual and reproductive health (SRH) is crucial to ensuring this development proceeds appropriately.[7] Currently, the level of access to quality reproductive health services, especially for adolescents, is still low.[3, 8].

These limitations in access are inseparable from the various obstacles faced by adolescents in utilizing sexual and reproductive health services. Many adolescents avoid health services because of stigma, fear, and negative attitudes from health care providers.[9]. The obstacles experienced by adolescents in accessing sexual and reproductive health services are the result of a complex interaction between cultural norms, economic constraints, and limitations of the health system.[9–11]. Social stigma and prevailing cultural norms often make sexual and reproductive health issues difficult to discuss openly, leading adolescents to receive misinformation and hesitate to seek needed services.[9, 12, 13]. In addition, economic barriers such as poverty and inadequate transportation facilities further limit adolescents' ability to access health services.[9, 14] This situation is exacerbated by the limited availability of youth-friendly services and a shortage of trained health workers, which ultimately results in low service utilization and poor health status of adolescents.[9, 15, 16].

Faced with these various obstacles, schools are seen as one of the strategic settings for reaching adolescents in a systematic and sustainable manner. Reproductive health education in schools will be more effective if implemented sustainably and comprehensively. In addition to knowledge, it is crucial to instill values, positive attitudes, and life skills. Teachers play a key role in integrating and cultivating reproductive health education in school.[17] School health services are a strategic, promotive and preventive effort for adolescents. Adolescents receive health education, counseling, and routine checkups through these services. Adolescents are also actively involved in program implementation and decision-making. These services foster healthy living skills and youth empowerment. Schools serve as supportive environments that fulfill adolescents' rights to holistic health services.[18].

However, empirical evidence on the use of reproductive health services in Indonesia is still very limited, and no specific services provided in schools have been identified. Regarding the utilization of reproductive health services in Indonesia, no specific data has been found regarding the services provided in schools. The utilization of health services among adolescents shows significant variation, ranging from 41.8% to

41.8%.[19], 52.2%[20], 52.3%[21], 84.7%[22]. Inhibiting factors for the utilization of services at community health centers are caused by process factors in terms of service time and psychosocial factors.[23]Existing research on the utilization of services at community health centers (Puskesmas), the utilization of the Youth Information and Counseling Center (PIK-R), and the utilization of Youth Care Health Services (PKPR), however, does not provide sufficient information on where the services are provided.

Given the limited empirical evidence available, this study aims to explore the use of integrated reproductive health services in schools and the factors that influence them among junior high school students in Semarang, Central Java, Indonesia. The placement of schools as the main context of the study is expected to provide significant empirical contributions to the development and strengthening of school-based adolescent reproductive health service policies and programs, both at the local and national levels. Therefore, this study aims to analyze the utilization of reproductive health services in schools and the factors influencing them among junior high school students in Semarang City, Central Java, Indonesia.

2 Methods

2.1 Study settings

This research was conducted in Semarang City, the capital of Central Java Province, Indonesia. Located on the north coast of Java Island, Semarang is one of the largest and most important cities in Indonesia, with an area of 373.70 km² and accounting for 1.15% of the total land area of Central Java Province.

2.2 Study Design and Sampling

This study used a quantitative research method, with a cross-sectional research design. The study population was 81 students in grades VIII and IX enrolled in the odd semester of the 2025-2026 academic year at public junior high schools in Semarang City. Inclusion criteria included: School Health Services (UKS) and Guidance and Counseling (BK) at the school were still active and provided reproductive health services to their students, and students were willing to participate as respondents in this study.

2.3 Data Collection Tools and Procedure

The questionnaire used in this study was semi-structured. The main questions asked of students included: age, gender, residence with parents, presence of family members as health workers, sources of information about reproductive health, knowledge of reproductive health services at school, and service utilization.

2.4 Terms and Operational Definitions

Utilization of reproductive health services in schools

Students who sought out and utilized reproductive health services at school, either through the school health center (UKS) or the guidance counseling center (BK). This was measured using a dichotomous response (yes or no) asking whether students had utilized reproductive health services at school.

2.5 Data Processing and Analysis

After all students completed the questionnaire, the questionnaire was checked for completeness. The data was then processed and analyzed using SPSS version 25. Univariate analysis was presented in the form of frequency distributions and percentages, while bivariate analysis used a test of the relationship between the dependent and independent variables. The statistical test used Chi-Square, if a variable with a p-value <0.05 is considered to have a significant relationship.

3 Results

3.1 Characteristics

All 81 respondents completed the questionnaire, with a 100% response rate. Among the respondents, the majority were 14 years old (59.3%). Approximately 49 (60.5%) were female. Most respondents lived with their parents (80 (98.8%). Most (75 (92.6%) did not have any family members who were health workers (Table 1).

Table 1. Characteristics of Public Junior High School Students, Semarang City, Central Java, Indonesia

Characteristics	Category	Frequency	Percentage
Age	13 years old	14	17.3
	14 years	48	59.3
	15 years	18	22.2
	16 years	1	1.2
Gender	Man	32	39.5
	Woman	49	60.5
Living with parents	Yes	80	98.8
	No	1	1.2
There are family members of health workers	Yes	6	7.4
	No	75	92.6

3.2 Information sources, service locations and service utilization

Of the 81 respondents, 54 (66.7%) received information about reproductive health from teachers at school. Most respondents (47 (58%)) were unaware that reproductive health

services were available at school. Only 16 (19.8%) respondents used the reproductive health services available at school (Table 2).

Table 2. Information sources, service locations and service utilization in State Junior High Schools, Semarang City, Central Java, Indonesia

Characteristics	Category	Frequency	Percentage
Resources	Teachers at school	54	66.7
	Parent	4	4.9
	Health workers	9	11.1
	Internet	14	17.3
Service location	Know	34	42
	Do not know	47	58
Utilization of services	Yes	16	19.8
	No	65	80.2

3.3 Utilization of reproductive health services in schools and factors that influence it

Based on bivariate analysis of the relationship between factors influencing the utilization of reproductive health services at school, it was found that: Compared to the 13-14 year age group, the 15-16 year age group had a higher chance (COR=1.415; 95% CI: 0.357-5.604) of utilizing reproductive health services at school. Compared to male gender, female gender had a higher chance (COR=0.440; 95% CI: 0.128-1.512) of utilizing reproductive health services at school. Compared to adolescents who live with their parents, adolescents who do not live with their parents have a higher chance (COR=0.800; 95% CI: 0.717-0.893) of utilizing reproductive health services at school. Compared to adolescents who do not have a healthy family, adolescents who have a healthy family have a higher chance (COR=0.800; 95% CI: 0.087-7.368) of utilizing reproductive health services at school. Compared to adolescents who received formal information, adolescents who received informal information had a higher chance (COR=0.824; 95% CI: 0.230-2.952) of utilizing reproductive health services at school. Compared to adolescents who did not know the location of services, adolescents who knew the location of services had a higher chance (COR=4.017; 95% CI: 1.243-12.983) of utilizing reproductive health services at school (table 3).

Table 3. Factors influencing the utilization of reproductive health services in Public Junior High Schools, Semarang City, Central Java, Indonesia

Variables	Utilization		COR (95%CI)	P-value
	Yes (%)	No (%)		
Age				0.751
13-14 years	13 (21)	49 (79)	1	

Variables	Utilization		COR (95%CI)	P-value
	Yes (%)	No (%)		
15-16 years	3 (15.8)	16 (84.2)	1.415 (0.357-5.604)	
Gender				0.299
Man	4 (12.5)	28 (87.5)	1	
Woman	12 (24.5)	37 (75.5)	0.440 (0.128-1.512)	
Living with parents				1,000
Yes	16 (20)	64 (80)	1	
No	0 (0)	1 (100)	0.800 (0.717-0.893)	
There are family members who are in health				1,000
Yes	1 (16.7)	5 (83.3)	0.800 (0.087-7.368)	
No	15 (20)	60 (80)	1	
Resources				0.746
Formal (Teachers at schools and health workers)	12 (19)	51 (81)	1	
Informal (Parents and the internet)	4 (22.2)	14 (77.8)	0.824 (0.230-2.952)	
Service location				0.032
Know	11 (32.4)	23 (67.6)	4,017 (1,243-12,983)	
Do not know	5 (10.6)	42 (89.4)	1	

4 Discussion

Overall, utilization of adolescent reproductive health services in junior high schools in Semarang City reached 19.8%. This study aligns with research conducted in Eastern Ethiopia, which showed 23.5%.[24]Northeastern Ethiopia 24.5%[25], Southern Ethiopia 39.5%[26], Northern Uganda 42%[27]and Southern Ethiopia 44.2%[28]This is likely due to similarities in respondents to the study conducted on adolescents aged 10-19. However, this figure is lower than the 68.1% in the Amhara study, Ethiopia.[8], in Northern Nigeria 86% in urban areas and 56% in rural areas[29], respondents in utilizing reproductive health services. This difference is likely due to differences in population; this study was conducted on junior high school students, while previous studies included high school students and married young women.

This study showed that 42% of adolescents were aware of service locations. This figure is slightly lower than that of a study conducted in Northeastern Ethiopia, which showed 67%.[25]. Knowing where to find services is a factor that influences the utilization of reproductive health services in schools. Adolescents who are 4.017 times more likely to use services (COR=4.017; 95% CI: 1.243-12.983) compared to adolescents who do not know. This is in line with research conducted in Northern Uganda.[27], Northeastern Ethiopia[25]and Kampala Uganda[30].

The relationship between knowing where services are available and utilizing adolescent reproductive health services in schools can improve health outcomes, as adolescents are more likely to utilize them effectively. This is consistent with other research in Western Ethiopia.[31], Selangor Malaysia[32]and Godawari, Nepal[33]adolescents who are aware of reproductive health services are more likely to use them.

This study has several limitations, including the use of a cross-sectional design that does not allow for identification of causal relationships, the use of self-reported data, which could potentially introduce bias, and the limited sample size, which makes in-depth analysis of reproductive health service utilization less than optimal. Nevertheless, the findings provide significant information for efforts to develop adolescent reproductive health services in schools, particularly in promoting adolescent reproductive health services so that all students are aware of them and they are easily accessible.

5 Conclusion and Recommendations

The utilization of reproductive health services available in schools for junior high school students is inadequate to improve adolescent health. Promotion and outreach on the availability of services in schools need to be increased so that adolescents can utilize them effectively to improve their knowledge and healthy reproductive health behaviors.

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