



Assessing the Role of Knowledge and Information Sources in the Utilization of Reproductive Health Services Among Adolescents with Disabilities

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ABSTRACT

Introduction: Adolescents with disabilities frequently encounter physical, social, and informational obstacles in accessing reproductive health services. Their limited understanding of reproductive health exacerbated by a lack of accessible and reliable information makes them more vulnerable and less likely to use available services. Exclusion from comprehensive health education further contributes to misinformation and a poor awareness of their rights and needs. . This study aimed to investigate the correlation between knowledge, information sources, and the utilization of reproductive health services.

Method: This study is a quantitative research using a cross-sectional design. It was conducted at Sentra Terpadu Inten Soeweno, Cibinong. A total sampling technique was employed, resulting in 93 adolescent respondents with disabilities. The independent variables in this study are knowledge and information sources about reproductive health, while the dependent variable is the utilization of reproductive health services. The instrument used is the PwDs (Persons with Disabilities) Questionnaire. Univariate analysis was carried out descriptively. Multivariable logistic regression was performed to analyze the correlation of knowledge and information sources on the utilization of reproductive health services. The analysis was conducted using SPSS software version 27

Result: The majority of respondents were female adolescents aged 16–19 years with hearing impairments. Multivariate analysis showed that having good knowledge (OR = 12.62, 95% CI: 5.46–41.36) and receiving information about reproductive health from disability associations (OR = 5.35, 95% CI: 0.96–28.86) had a significant correlation on the utilization of reproductive health services among adolescents with disabilities.

Conclusion: These findings highlight the importance of improving reproductive health education and ensuring accessible information to support informed decision-making and promote equitable health service utilization within this vulnerable population.

Keywords: adolescent with disabilities, information sources, knowledge, reproductive health services

INTRODUCTION

Reproductive health is an essential aspect of human rights and significantly influences an individual's overall well-being, especially during adolescence, a key developmental stage characterized by major biological, psychological, and social changes. Ensuring comprehensive reproductive health during adolescence not only addresses immediate physical health needs but also lays the foundation for long-term health outcomes. Adolescents with access to accurate information, preventive services, and supportive care are less likely to experience unintended pregnancies, sexually transmitted infections (STIs), and reproductive health complications later in life^{1,2}.

Reproductive health plays a vital role not only in physical well-being but also in shaping adolescents' educational outcomes and economic opportunities. Access to reproductive health services and education enables informed decision-making, delays early pregnancy, and supports continued schooling factors that enhance future employment prospects and financial independence. For vulnerable groups such as girls, adolescents with disabilities, and those from low-income backgrounds, ensuring reproductive health rights is essential for advancing equity and inclusive development².

Recognizing the strong relationship between reproductive health and broader development outcomes, global initiatives such as the Sustainable Development Goals (SDGs) identify adolescent reproductive health as a key element of sustainable development. SDG 3 advocates for universal access to essential health services, including those related to sexual and reproductive health, while SDG 5 promotes gender equality by ensuring that all individuals particularly women and girls are empowered to exercise their reproductive rights³. These global commitments emphasize the need for inclusive, equitable, and rights based approaches that respond to the diverse

realities of adolescents, especially those experiencing multiple forms of marginalization. By placing adolescent reproductive health at the center of global development efforts, the international community aims to build healthier, more educated, and economically empowered societies⁴. In reality, efforts to achieve the targets of the SDGs, particularly those related to health and gender equality, face numerous challenges. Adolescents with disabilities often face multiple layers of discrimination stemming from both their age and their disability status⁵. Prevailing societal myths and stigmas, such as the belief that individuals with disabilities are asexual or incapable of engaging in intimate relationships, contribute to their exclusion from reproductive health discourse and services^{6,7}.

As such, comprehensive access to information and reproductive health services is essential to support adolescents in making informed and responsible decisions regarding their sexual and reproductive well-being⁸. Despite its importance, equitable access to reproductive health information and services remains a significant challenge, particularly for adolescents with disabilities².

According to the World Health Organization (WHO), over 15% of the global population lives with some form of disability, and many within this group experience significant barriers in accessing healthcare services, including reproductive health⁹. Adolescents with disabilities often experience limited access to reproductive health information due to inadequate formats such as the lack of materials in Braille, sign language, or easy to read versions¹⁰.

Modern sources of information such as digital media, the internet, peer groups, teachers, and non-governmental organizations (NGOs) play a crucial role in delivering reproductive health education. However, adolescents with disabilities frequently encounter disparities in

accessing these resources. Digital platforms may not be optimized for screen readers, videos may lack subtitles or sign language interpretation, and online content may be too complex for those with intellectual disabilities¹¹. Additionally, peer groups and teachers may lack the training or awareness needed to support inclusive communication, while NGOs working in this area often have limited reach¹².

The lack of comprehensive studies and empirical data regarding the accessibility of reproductive health services for adolescents with disabilities indicates a critical gap in existing research. In response, this study aims to assess adolescents with disabilities in terms of their knowledge and sources of information related to reproductive health, as well as to examine how they utilize available health services. The findings are expected to provide valuable insights for shaping inclusive, rights-based policies and for designing reproductive health programs that are better aligned with the specific and diverse needs of this population group.

METHODS

Study site and design

We conducted a cross-sectional study among adolescents with disabilities at Sentra Terpadu Inten Soeweno, Cibinong in Desember 2024. The questionnaire used in this study was adapted through persons with disabilities (PwDs)¹³. This questionnaire assesses knowledge and source of information about sexual and reproductive health services. Data was collected at a single point in time, with each respondent completing the questionnaire. In this study, the independent variables were knowledge and source information about reproductive health. The dependent variable was utilization of reproductive health services. This study hypothesized that knowledge and information sources about

reproductive health would correlate the utilization of reproductive health services.

This study was conducted with observing confidentiality and obtaining written permission and was registered in the Ethic Committee Universitas Padjadjaran with th

Subjects

The subject of this research are adolescents with disabilities who are aged 10-19 years old. The sample was obtained using a total sampling technique, resulting in a total of 93 adolescents with disabilities. All subjects are willing and has already signed the consent in this research.

Statistic analysis

The data were analysed using the Statistical Package for Social Sciences (SPSS) version 22.0 for Windows. Data entry was used to process the data, which was then coded according to categories so that it could be analyzed. The univariate data analysis was presented descriptively with frequencies, percentages to describe a sociodemographic characteristic of respondents. Multivariable analysis used logistic regression was performed to identify the correlation knowledge and information sources about reproductive health on the utilization of reproductive health services among adolescents with disabilities. The results were expressed as Odd Ratio (OR) and 95% confidence interval (CI). P Value 0.05 denoted a significant association between the dependent and independent variables.

RESULT

A total of 93 adolescents completed the questionnaire and were include in the study. The socio-demographic data are summarised in Table 1. There was a higher number of female respondents with a frequency of (59.1%) compared to male respondents. Majority of the respondents were aged category 16-19 years old (73.12%), had high education (73.1%), unemployed (97.8%) with low family income (95.7%). Most of the respondents belonged to the sundanese ethnic group

(49.6%), followed Islam (95.7%), not married (97.8%), and had health insurance (54.84%). Most respondents had hearing impairments (51.61%) with severe severity (51.61%). Most respondents had disabilities since birth (68.82%). Nearly all respondents were less than 30 minutes from the nearest healthcare facility (90.32%).

Table 1. Sociodemographic characteristics of adolescents with disabilities at Sentra Terpadu Inten Soeweno, Cibinong (n=93)

Variables	n	%
Age (years)		
10-12	5	5.8
13-15	20	21.51
16-19	68	73,12
Gender		
Male	38	40.9
Female	55	59,1
Educational attainment		
Primary	6	6.50
Secondary	19	20.4
Higher	68	73.1
Religion		
Christianity	4	4.30
Islam	89	95.70
Marital Status		
Not Married	91	97.80
Married	2	2.20
Ethnicity		
Batak	2	2.20
Betawi	8	8.60
Javanese	37	39.80
Sundanese	46	49,50
Occupation		
Unemployed	91	97.80
Employed	2	2.20
Family Income Status		
Low	89	95.70
Middle	4	4.30
Types of Disability		
Physical Disability	28	30.11
Intellectual Disability	9	9.68
Visual Impairment	2	2.15
Hearing Impairment	48	51.61
Speech Impairment	3	3.23

Variables	n	%
Multiple Disabilities	3	3,23
Severity of Disability		
Mild	48	51.61
Moderate	32	34.41
Severe	13	13.98
Duration of Disability		
Since Birth	64	68.82
Certain Age	29	31.18
Health Insurance Ownership		
Do Not Have	32	34.41
Have	51	54.84
Duration to nearest health facility		
<30 min	84	90.32
≥30 min	9	9.68

Table 2. The Influence of Knowledge and Information Sources on the Utilization of Reproductive Health Services Among Adolescents with Disabilities

Variables	Did Not Utilize Services		Utilized Services		OR	CI95%		p-value
	n	%	n	%		Lower Limit	Upper Limit	
Knowledge of Reproductive Health								
Poor	41	80.39	10	19.61	1.00			
Good	9	<u>21.42</u>	33	78.58	12.62	5.46	41.36	0.01*
Source of Information								
Friends	7	53.85	6	46.15	3.00	0.49	18.37	0.42
Health Worker	6	46.15	7	53.85	4.08	0.68	24.39	0.39
School	12	63.16	7	36.84	2.04	0.35	11.99	0.42
Disability Association	10	40.00	15	60.00	5.35	0.96	28.86	0.04*
Social Media	8	57.14	6	42.86	2.63		15.29	
Never	7	77.78	2	22.22	1.00	0.45		0.29

*p value < 0.005 indicated significant

Table 2 shows that the majority of all respondents did not utilize reproductive health services (53.76%), had poor levels of knowledge about reproductive health (80.39%). On the other hand, adolescents who accessed reproductive health services had a good level of knowledge (78.58%) and obtained their information from a Disability Association (60%).

According to the logistic regression results indicating that knowledge about reproductive health has a significant association with the utilization of reproductive health services. The findings show that the higher the level of knowledge among adolescents with disabilities, the greater their utilization of reproductive health services. Adolescents with disabilities who have a good level of knowledge are 12.62 times more likely to utilize reproductive health services compared to those with low knowledge. Meanwhile, the sources of information accessed by adolescents regarding reproductive health vary greatly. The findings indicate that information obtained from disability associations is significantly associated with the utilization of reproductive health services. Adolescents

who receive information from disability associations are 28.36 times more likely to utilize reproductive health services compared to those who do not receive information from any source.

DISCUSSION

Adolescence is typically understood as the period of growth and development between childhood and adulthood. It is marked by significant biological changes and social transformations that can shape a person's life trajectory. The concept of adolescence is especially relevant in discussions of sexual and reproductive health and rights, as certain aspects of these issues are unique to this stage of life¹⁴.

This study's findings reveal that most respondents were 16-19 years of age, a range that falls within late adolescence and marks the onset of the reproductive phase. At this stage of development, individuals typically exhibit biological maturity of the reproductive system and possess the physiological capacity for reproduction. Another study also indicated that children aged 16-19 are more likely to experience early marriage compared to those aged 15. Nonetheless, from

psychological and socio-emotional standpoints, adolescents may not yet be adequately equipped to navigate the potential consequences of sexual activity, including unintended pregnancy, sexually transmitted infections (STIs), and the complex responsibilities associated with parenthood^{15,16}.

Puberty marks a transformative phase in adolescence, characterized by the emergence of sexual desires, the capacity for intimacy, and the biological potential for reproduction. While this transition can be complex and demanding for both adolescents and their caregivers, it is a vital part of self-identity development and can foster emotional bonding, personal fulfillment, and deeper interpersonal relationships. Despite having equal sexual and reproductive rights, adolescents with disabilities frequently face systemic and social barriers that hinder their ability to fully exercise and attain those rights^{17,18}.

The three reported worldwide are physical disability, visual impairment, and hearing disability¹⁹. In our study, the most prevalent domains were hearing impairment and physical disability. Our findings are consistent with studies conducted globally, where hearing impairment was the most commonly reported²⁰.

This study found that the majority of respondents came from low-income families, had health insurance, and lived relatively close to health facilities. However, most of them still did not utilize reproductive health services. This finding suggests that the presence of these factors does not automatically guarantee service utilization, and that there are other barriers influencing adolescents' behavior in accessing reproductive health care.

Socioeconomic and structural factors play a crucial role in determining the utilization of reproductive health services among adolescents with disabilities. Family income, for instance, significantly affects the ability to access services. Families with limited economic

resources often prioritize basic necessities over healthcare-related expenses, such as transportation, additional treatments, or assistive devices²¹. Furthermore, adolescents from low-income households may have limited access to relevant health information or struggle to reach disability-friendly health facilities.

Health insurance coverage should, in theory, facilitate access by reducing direct costs and broadening the range of available services. However, in this context, insurance ownership was not consistently associated with increased service utilization, possibly due to limited service coverage, low health literacy, or negative experiences within the healthcare system²². Meanwhile, although most respondents lived relatively near health facilities, physical proximity alone is not a sufficient indicator of accessibility. For adolescents with disabilities, factors such as the availability of appropriate transportation, infrastructure that accommodates their needs, and the attitudes of healthcare providers are critical in determining actual access.

Overall, these findings highlight that while factors such as family income, health insurance, and distance to facilities are important, service utilization is shaped by more complex dynamics. Therefore, more comprehensive interventions are needed to address the multidimensional barriers faced by adolescents with disabilities in accessing reproductive health services equitably.

This study reveals that the majority of adolescents with disabilities do not utilize reproductive health services, largely due to limited knowledge. Knowledge was found to be significantly associated with the utilization of these services. This study shows that adolescents with disabilities who have good knowledge are 12.62 times more likely to utilize reproductive health services compared to adolescents who have low knowledge. This is in line with a study conducted in Malaysia which also highlighted that adolescents' knowledge of

sexual and reproductive health (SRH) services is closely linked to their use of these services. The low level of awareness among participating adolescents may indicate a lack of adequate knowledge. According to the World Health Organization's conceptual framework, it is essential to raise adolescents' awareness and strengthen their understanding of SRH services to enhance their utilization²³.

Supporting evidence from previous studies indicates that many adolescents are unaware of the availability of reproductive health services, which hinders their access²⁴. A lack of understanding regarding puberty and reproductive processes contributes to fear and uncertainty about seeking such care²³.

Furthermore, personal barriers such as fear, shame, and embarrassment have been identified as common reasons why both male and female adolescents avoid accessing reproductive health services. Conversely, encouragement and emotional support from peers, parents, and community members have been shown to facilitate access. In line with these findings, the present study found that the majority of respondents reported receiving information about reproductive health services primarily through school-based education.

This study shows that the source of information has a significant relationship to the utilization of reproductive health services. The findings obtained that information obtained from disability associations has a 28.36 times greater possibility of utilizing reproductive health services compared to adolescents who do not get information sources. This is consistent with other studies, which have identified sources of information as a key predictor for adolescents in accessing and utilizing reproductive health services.²⁵

Adolescents with disabilities often face limited access to general information. Accurate and easily understandable sources of information are essential to enhance their understanding of reproductive health, including their rights,

potential risks, and the services available to them. Credible sources of information, such as schools, organization, healthcare professionals, can help dispel myths and misinformation that are commonly circulated within the community. Without adequate sources of information, adolescents with disabilities are less likely to be aware of the services available to them, may not understand the importance of utilizing such services, and are consequently more vulnerable to preventable reproductive health risks.

The utilization of reproductive health services must be continuously promoted, particularly among adolescents with disabilities. Providing comprehensive education, especially through disability organizations, is essential to equip these adolescents with the knowledge and skills necessary to understand reproductive health. Such efforts will enable them to access and utilize relevant services effectively, fostering greater self-awareness and responsibility regarding their reproductive well-being.

This study is subject to several limitations. Notably, it did not account for other potential factors influencing the utilization of services, such as cultural norms, parental support, and related variables. Moreover, the sample was limited to participants from a single location, thereby restricting the generalizability of the findings to the wider adolescent population. Future research is warranted to conduct a more in-depth examination of the barriers to accessing sexual and reproductive health services among adolescents with disabilities

CONCLUSION

These findings highlight the importance of improving reproductive health education and ensuring accessible information to support informed decision-making and promote equitable health service utilization within this vulnerable population

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REFERENCES

1. Fekadu Wakasa B, Oljira L, Demena M, Demissie Regassa L, Binu Daga W. Risky sexual behavior and associated factors among sexually experienced secondary school students in Guduru, Ethiopia. *Prev Med Reports* . 2021;23:101398.
2. Matin BK, Williamson HJ, Karyani AK, Rezaei S, Soofi M, Soltani S. Barriers in access to healthcare for women with disabilities: a systematic review in qualitative studies. *BMC Womens Health*. 2021;21(1):1–23.
3. Le Blanc D. Towards Integration at Last? The Sustainable Development Goals as a Network of Targets. *Sustain Dev*. 2015;23(3):176–87.
4. Daher-Nashif S, Bawadi H. Women's health and well-being in the united nations sustainable development goals: A narrative review of achievements and gaps in the gulf states. *Int J Environ Res Public Health*. 2020;17(3):1–8.
5. Carter A, Strnadová I, Watfern C, Pebdani R, Bateson D, Loblinzk J, et al. The Sexual and Reproductive Health and Rights of Young People with Intellectual Disability: A Scoping Review. *Sex Res Soc Policy*. 2022;19(1):372–90.
6. Bohren MA, Corona MV, Odiase OJ, Wilson AN, Sudhinaraset M, Diamond-Smith N, et al. Strategies to reduce stigma and discrimination in sexual and reproductive healthcare settings: A mixed-methods systematic review. *Plos Glob Public Health*. 2022;2(6):1–27.
7. Engel DMC, Paul M, Chalasani S, Gonsalves L, Ross DA, Chandra-Mouli V, et al. A Package of Sexual and Reproductive Health and Rights Interventions—What Does It Mean for Adolescents? *Journal Adolescents Health*. 2019;65(6):41–50.
8. Liang M, Simelane S, Fortuny Fillo G, Chalasani S, Weny K, Salazar Canelos P, et al. The State of Adolescent Sexual and Reproductive Health. *Journal Adolescents Health*. 2019;65(6):3–15.
9. Liyanto E, Nuryana D, Cahyani RA, Utomo B, Magnani R. How well are Indonesia's urban poor being provided access to quality reproductive health services? *Plos One*. 2022;17(4):1–18.
10. Shiwakoti R, Gurung YB, Poudel RC, Neupane S, Thapa RK, Deuja S, et al. Factors affecting utilization of sexual and reproductive health services among women with disabilities- a mixed-method cross-sectional study from Ilam district, Nepal. *BMC Health Service Res*. 2021;21(1):1–19.
11. Velarde MR, Jagoe C, Cuculick J. Video Relay Interpretation and Overcoming Barriers in Health Care for Deaf Users: Scoping Review. *J Med Internet Res*. 2022;24(6):1–16.
12. Mathabela B, Madiba S, Modjadji P. Exploring Barriers to Accessing Sexual and Reproductive Health Services among Adolescents and Young People with Physical Disabilities in South Africa. *Int J Environ Res Public Health*. 2024;21(2).
13. Seidu AA, Malau-Aduli BS, McBain-Rigg K, Malau-Aduli

- AEO, Emeto TI. A mixed-methods study of the awareness and functionality of sexual and reproductive health services among persons with disability in Ghana. *Reprod Health*. 2023;20(1):1–22.
14. Baird S, Camfield L, Ghimire A, Hamad BA, Jones N, Pincock K, et al. Intersectionality as a Framework for Understanding Adolescent Vulnerabilities in Low and Middle Income Countries: Expanding Our Commitment to Leave No One Behind. *Eur J Dev Res*. 2021;33(5):1143–62.
 15. Fitria M, Laksono AD, Syahri IM, Wulandari RD, Matahari R, Astuti Y. Education role in early marriage prevention: evidence from Indonesia's rural areas. *BMC Public Health*. 2024;24(1).
 16. Mbizvo MT, Kasonda K, Muntalima NC, Rosen JG, Inambwae S, Namukonda ES, et al. Comprehensive sexuality education linked to sexual and reproductive health services reduces early and unintended pregnancies among in-school adolescent girls in Zambia. *BMC Public Health*. 2023;23(1):1–13.
 17. Houtrow A, Elias ER, Davis BE, Kuo DZ, Agrawal R, Davidson LF, et al. Promoting healthy sexuality for children and adolescents with disabilities. *Pediatrics*. 2021;148(1):1–14.
 18. Nguyen A. Challenges for Women with Disabilities Accessing Reproductive Health Care Around the World: A Scoping Review. *Sex Disability*. 2020;38(3):371–88.
 19. Mahmood S, Hameed W, Siddiqi S. Are women with disabilities less likely to utilize essential maternal and reproductive health services?—A secondary analysis of Pakistan Demographic Health Survey. *Plos One*. 2022;17(8):1–17.
 20. Olusanya BO, Smythe T, Ogbo FA, Nair MKC, Scher M, Davis AC. Global prevalence of developmental disabilities in children and adolescents: A systematic umbrella review. *Front Public Health*. 2023;11.
 21. Kazibwe J, Tran PB, Kaiser AH, Kasagga SP, Masiye F. The impact of health insurance on maternal and reproductive health service utilization and financial protection in low - and lower middle - income countries : a systematic review of the evidence. *BMC Health Serv Res*. 2024;1–20.
 22. Sidamo NB, Kerbo AA, Gidebo KD, Wado YD. Socio-Ecological Analysis of Barriers to Access and Utilization of Adolescent Sexual and Reproductive Health Services in Sub-Saharan Africa: A Qualitative Systematic Review. *Open Access J Contracept*. 2023;Volume 14:103–18.
 23. Othman S, Zin KS, Mohd Mydin FH, Jenn NC. Knowledge, utilization and barriers to primary care services for sexual and reproductive health among adolescents in secondary schools in selangor, Malaysia. *Malaysian Fam Physician*. 2019;14(1):10–7.
 24. Baigry MI, Ray R, Lindsay D, Kelly-Hanku A, Redman-MacLaren M. Barriers and enablers to young people accessing sexual and reproductive health services in Pacific Island Countries and Territories: A scoping review. *Plos One*. 2023;18(1):1-17
 25. Tadesse T, Dangisso MH, Abebo TA. Sexual and reproductive health rights knowledge and reproductive health services utilization among rural reproductive age women in Aleta Wondo District, Sidama zone,

Ethiopia: Community based cross-sectional study. *BMC Int Health*

Hum Rights. 2020;20(1):1–9.