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IMPLEMENTATION OF DIGITAL FLIPCHART (LEBAD) IN REPRODUCTIVE HEALTH EDUCATION FOR ADOLESCENTS WITH DISABILITIES

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ABSTRACT
Adolescents with disabilities face limited access to reproductive health education due to communication barriers, insufficient inclusive learning materials, and a lack of confidence among educators and health workers in addressing sensitive topics. The Digital Flipchart (LEBAD) was developed as an innovative educational medium to support inclusive reproductive health education through accessible digital content tailored for diverse disability groups. This study aimed to describe the implementation and perceptions of teachers and health workers toward the Digital Flipchart (LEBAD) as a medium for reproductive health education among adolescents with disabilities in Bantul District, Yogyakarta. A descriptive qualitative design was employed. The study was conducted from January to August 2025 across 20 special schools (SLB) and several community health centers. Forty participants—comprising SLB teachers and community health workers—were recruited using purposive sampling with maximum variation technique, ensuring representation from different types of disabilities, educational levels, and institutional backgrounds. Data were collected through in-depth interviews, participatory observation, and written feedback. Thematic analysis followed Miles and Huberman's framework, with validation conducted through triangulation, member checking, and peer debriefing. The findings revealed several main themes: (1) LEBAD as a relevant and beneficial innovation—teachers and health workers found it attractive, easy to use, and contextually appropriate; (2) Improved educator capacity and confidence—participants reported greater ease and readiness in teaching reproductive health; (3) Technical and logistical aspects—some noted environmental and scheduling constraints; (4) Need for content and accessibility development—participants recommended adding more interactive and disability-specific features; and (5) Sustainability and collaboration—both groups emphasised the importance of continuing the program through cross-sector partnerships between schools and health facilities. LEBAD was reported to increase students' understanding of puberty, personal hygiene, and self-protection, while empowering teachers and health workers to deliver inclusive and engaging reproductive health education. The Digital Flipchart (LEBAD) is an effective, educational, and inclusive innovation that strengthens reproductive health literacy among adolescents with disabilities and enhances the competence of educators and health workers. Sustainable implementation requires continued training, content adaptation for various disabilities, and institutional collaboration between the education and health sectors.

Keywords: adolescent health; digital education; disability; inclusive media; reproductive health; teacher empowerment

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INTRODUCTION

According to data from the Social Service Office (Dinas Sosial) of the Special Region of Yogyakarta (DIY), there are currently 25,050 persons with disabilities in the region, consisting of 13,589 males and 11,461 females. A study conducted by the Indonesian Association of Women with Disabilities (HWDI) involving 102 female respondents aged 13–18 years and 19–24 years revealed a high level of vulnerability to violence, including sexual violence, experienced by women with disabilities both in public and private settings, such as violence by partners (boyfriends or husbands). The study found that women with disabilities in Indonesia have low levels of knowledge regarding reproductive health and sexuality.

In 2018, the prevalence of sexual harassment among women with disabilities in Indonesia reached 69%, and this figure increased to 79% in 2019. The rising number of sexual violence cases among people with disabilities is not balanced with adequate government policies and protection mechanisms. Although the Law of the Republic of Indonesia No. 8 of 2016 on the Rights of Persons with Disabilities guarantees rights to social rehabilitation, social security, empowerment, and protection, its implementation in promoting and protecting the reproductive rights of persons with disabilities remains limited.

Discrimination concerning reproductive rights and access to information persists, particularly for individuals with disabilities who have minimal access to reproductive health and sexuality education. Limited access to health services—such as counseling, reproductive health guidance, and communication support—combined with inadequate communication skills among health professionals, especially when dealing with the deaf and individuals with intellectual disabilities, contributes to this gap. Persons with disabilities often do not receive sufficient access to reproductive health counseling, myth clarification, advocacy, and peer counseling.

Government attention to these issues remains minimal. Interviews with local officials, including those from the Youth Resilience Division, revealed that there is no specific budget allocation for reproductive health programs for adolescents with disabilities. A 2019 study on the Implementation of the Regional Regulation in Bantul District regarding the Fulfillment of the Rights of Persons with Disabilities in Adolescent Reproductive Health showed that promotive and preventive efforts have not been fully achieved. Factors such as the content of the regulation, the characteristics and capacity of implementers, their disposition, and environmental conditions have led to suboptimal implementation. The primary institutional partner for this innovation is the Health Office of Bantul District, Special Region of Yogyakarta (DIY).

Based on these findings, there is an urgent need to strengthen government programs aimed at protecting and fulfilling the reproductive health rights of adolescents with disabilities. Collaboration among the government, schools, and families plays a crucial role in ensuring that adolescents with disabilities receive proper information regarding reproductive health.

To facilitate teachers and schools in providing reproductive health education to students with disabilities, an innovative and practical educational tool is needed. Therefore, the proposed innovation is the development of the Digital Flipchart (LEBAD) on Reproductive Health for Adolescents with Disabilities (KRR Disabilitas). This innovation is included under the B1 scheme of the 2025 Matching Fund Program. The Digital Flipchart (LEBAD) will be developed as an interactive medium equipped with engaging visual elements and accompanying audio, making it accessible for teachers, parents, and caregivers. The media can be used for education, counseling, and guidance related to reproductive health for adolescents with disabilities.

The Digital Flipchart “LEBAD” KRR Disabilitas contains several key materials, including Puberty, Physical and Psychological Changes, Private Body Boundaries, Protection from Sexual Harassment, and Risks of Premarital Sexual Activity. This innovation aims to enhance reproductive health knowledge among adolescents with disabilities and improve teachers’ and caregivers’ capacity to deliver accurate and inclusive reproductive health education and counseling.

METHOD

This study employed a qualitative descriptive approach to explore the implementation process and participants’ perceptions of the Digital Flipchart (LEBAD) as an educational medium for reproductive health among adolescents with disabilities. The research was conducted August 2025 in several special schools (Sekolah Luar Biasa/SLB) and community health centers (puskesmas) located in Bantul District, Special Region of Yogyakarta (DIY). Participants consisted of SLB teachers and community health workers who were directly involved in the training and

implementation of the LEBAD program. The study used a purposive sampling technique with a maximum variation approach. This technique was chosen to ensure that participants represented diverse backgrounds—covering different types of disabilities (such as hearing, visual, and intellectual impairments), educational levels (elementary to senior high special schools), and professional roles (teachers, midwives, and health promotion officers).

Purposive sampling allowed the researcher to intentionally select individuals with direct experience and relevant knowledge of the phenomenon being studied, thus providing rich and comprehensive data. Sampling continued until data saturation was reached, meaning no new themes or information emerged from subsequent interviews. In total, 40 participants were included in the study. Data were collected through in-depth interviews, participatory observation, and document analysis of written feedback and suggestions provided by the participants. The primary instrument in this research was the researcher, supported by an interview guide and an observation checklist. Data were analyzed thematically, following the stages of data reduction, data display, and conclusion drawing as proposed by Miles and Huberman. Data credibility was ensured through source triangulation, member checking, and peer debriefing to validate the findings. All participants provided written informed consent, and confidentiality was maintained throughout the research process.

RESULT

The implementation of the *LEBAD* program was carried out over eight months (January–August 2025) across 20 Special Schools (Sekolah Luar Biasa/SLB) in Bantul District, involving 200 special education teachers as the primary participants and facilitators for adolescents with disabilities. The program was conducted in several stages, including preparation, coordination, pilot testing, implementation, evaluation, and reporting. The pilot test was conducted at *SLB Bangun Putra Kasihan* with 10 teachers, focusing on assessing the content feasibility, ease of use, and accessibility of the digital media. The results showed that LEBAD was easy to use, engaging, and suitable for students with disabilities, particularly for those who are hearing-impaired and students with mild intellectual disabilities.

During the full implementation phase, teachers received training and mentoring from the research team in collaboration with the Bantul District Health Office. Teachers utilized the LEBAD media during classroom activities and individual counseling sessions. Each session incorporated visuals, simple text, and audio features accessible through barcode scanning, enabling adolescents with disabilities to better comprehend the educational material. Based on in-depth interviews and field observations, several major themes emerged:

a. Accessibility and Ease of Use

Teachers and students perceived LEBAD as visually appealing and user-friendly for individuals with disabilities. The audio feature supported students with visual impairments, while large illustrated visuals and clear text were beneficial for hearing-impaired and intellectually disabled students.

"*The students were more focused because the visuals were interesting and they could also listen to the material. It made understanding easier*." (SLB Teacher)

b. Improved Understanding of Reproductive Health

Following the implementation of LEBAD, students demonstrated better comprehension of topics such as puberty, personal hygiene, and sexual harassment prevention. Teachers observed that students became more open and confident in discussing bodily changes.

"They used to be shy, but now they start asking questions about menstruation or wet dreams." (Female SLB Teacher)

c. Teachers' Role as Facilitators

Teachers expressed that the digital media greatly supported their teaching process, as it was previously difficult to find materials appropriate for students with disabilities. Training and

mentoring from the Poltekkes team and Health Office also strengthened their ability to conduct basic counseling.
"We used to struggle to find suitable teaching materials. With LEBAD, teachers can easily adapt the content to students' conditions." (SLB Negeri Bantul Teacher)

d. Implementation Barriers
Several challenges were identified, including the limited availability of digital devices (tablets/smartphones) in schools, unstable internet connections, and the need for adaptation among senior teachers who were less familiar with digital tools. These issues were addressed through offline media options and additional technical training.

e. Impact on Students and Parents
Students exhibited positive behavioral changes, such as maintaining personal hygiene and understanding bodily boundaries. Parents also reported that their children became more assertive in rejecting inappropriate physical contact.
"My child now often says, 'that's not allowed,' if someone touches their body inappropriately." (Parent of a student with an intellectual disability)

DISCUSSION
The implementation of the *LEBAD* as an educational medium for reproductive health among adolescents with disabilities received highly positive responses from two main groups of participants: health workers and special school (SLB) teachers. Based on interviews, observations, and written feedback, several major themes emerged that reflect participants' perceptions, benefits, and expectations regarding the future development of this program.

1. LEBAD as a Relevant and Beneficial Innovation
Both health workers and SLB teachers viewed LEBAD as a useful, engaging, and easy-to-understand educational tool, beneficial for both educators and students with disabilities. Expressions such as *"very useful," "interesting," "enriching,"* and *"the material is excellent"* were consistently mentioned across both groups.
LEBAD was perceived as a solution to the real challenges in the field, where educators and health professionals have long struggled to find materials appropriate for students with disabilities. Teachers acknowledged that prior to LEBAD, reproductive health topics were often considered taboo and difficult to explain.
"This activity truly inspires us as SLB teachers in teaching reproductive health to children with disabilities, since there has never been an appropriate medium before." (SLB Teacher, Bantul)
Health workers also emphasized that LEBAD facilitates counseling and health education activities, especially for groups with limited communication abilities.
"This media is very helpful for education in health centers and adolescent health posts, especially for children with disabilities." (Community Health Worker)
Both groups agreed that this digital innovation was contextually relevant and highly applicable, making it suitable for wider use in schools and health facilities.

2. Increased Capacity and Confidence Among Educators
The training and mentoring activities related to LEBAD significantly enhanced the knowledge, skills, and confidence of both SLB teachers and health workers. Teachers reported being more comfortable discussing reproductive health topics, which were previously avoided due to their sensitive nature. The presence of visual aids and simplified language in LEBAD helped them communicate more effectively.
"The material is easy to understand and can be applied directly to the students. They pay more attention when there are pictures." (SLB Teacher, Sewon)
Similarly, health workers noted that the program expanded their educational competence and that LEBAD was effective as a counseling aid, particularly in small group discussions. The training not

only improved digital literacy, but also strengthened cross-disability communication skills among educators.

3. Technical and Implementation Quality Aspects
Both teachers and health workers provided constructive feedback regarding technical aspects of the program. Some noted issues such as unclear microphone sound, hot room conditions, and sessions scheduled during the midday heat with limited breaks.
"The event and material were good, but the room was hot and the schedule was too late. It would be better to hold it in the morning for better focus." (SLB Teacher, Imogiri)
These comments highlight that technical quality and environmental comfort significantly influence the effectiveness of training. Organizers are encouraged to optimize scheduling, room conditions, and supporting facilities for future activities. Participants also suggested extending training duration and incorporating more hands-on practice sessions, as group roleplay and demonstrations were found helpful for mastering delivery techniques.
"The training was very useful, but it would be better if each group had a session to practice using the media." (SLB Teacher, Bantul).

4. Content Development and Accessibility Needs
Participants from both groups offered constructive criticism for improving content and accessibility. Some recommended that LEBAD be made more interactive by adding motion videos, educational games, or supporting illustrations in each narration.
"It would be better if every narration in the video was accompanied by pictures so that students with disabilities can understand more easily." (Health Worker, Sewon)
Furthermore, participants suggested developing specific versions of LEBAD tailored for the visually impaired, hearing impaired, and autistic students, ensuring the medium becomes fully inclusive and accessible for all types of disabilities.
"Accessibility and relevant materials should be expanded because disabilities vary in type." (SLB Teacher, Pleret)
In terms of distribution, participants expressed strong enthusiasm for wider access—suggesting LEBAD be shared via digital links, YouTube channels, or printed formats. Comments such as *"Please provide flipcharts to health centers"* and *"Please share the link so we can use it in schools"* reflected the high interest in adopting the media for continuous educational use.

5. Sustainability and Cross-Sector Collaboration
Both health workers and teachers emphasized the importance of program sustainability and intersectoral collaboration. Many teachers proposed conducting activities directly in schools involving students with disabilities.
"It would be better to hold the activity directly in the school with student involvement, because if only teachers attend, students may not take it seriously." (SLB Teacher, Pajangan)
This finding suggests that the success of inclusive reproductive health education depends on active collaboration between schools and health centers. Health workers supported this idea, highlighting that school-based interventions can be more contextual and effective. Participants also recommended that this initiative be developed into a regular, policy-supported program under the coordination of the Health Office and Education Office, aligning with the principles of school-based health promotion and community participation.

6. Program Impact and Implications
Overall, the implementation of LEBAD demonstrated a positive impact on increasing knowledge, communication skills, and awareness of the importance of reproductive health education for adolescents with disabilities. Teachers became more confident in discussing topics such as puberty and self-protection, while health workers gained a new, effective medium for community education.

The program also fostered a more open dialogue within schools, where reproductive health issues are no longer considered taboo but rather an integral part of inclusive learning that promotes autonomy and protection for children with disabilities.

7. Synthesis and Key Implications

From the overall findings, the success of LEBAD can be attributed to three key components:

a. Quality and accessibility of the media, which make reproductive health materials easier to understand for teachers, students, and health workers;
b. Interactive and participatory training, which enhances participant competency and engagement; and
c. Sustained cross-sector collaboration, essential for expanding the program's impact at school and community health levels.

Participant feedback indicates that LEBAD is not only an educational innovation but also a strategic tool for strengthening inclusive health education movements at the local level. The positive reception of the Digital Flipchart (LEBAD) among teachers and health workers reflects the alignment of this innovation with the principles of inclusive education and the Universal Design for Learning (UDL) framework. UDL emphasizes providing multiple means of representation, engagement, and expression to ensure that all learners—including those with disabilities—can access and understand learning materials effectively (Meyer, 2014). This aligns with previous studies showing that digital media designed under UDL principles enhance accessibility and motivation among students with special needs (Zakariyah et al., 2024).

Training and mentoring activities serve as mastery experiences that strengthen self-efficacy, enabling teachers to discuss sensitive topics like reproductive health more openly. Similar findings were reported by Al-Zboon et al. who found that inclusive education training increased teachers' confidence and adaptability in delivering sensitive health content. Feedback regarding technical and environmental aspects—such as room temperature and equipment quality—also aligns with evidence that the learning environment significantly influences participant engagement and knowledge retention (Kim et al., 2021). The use of multimedia and clear visuals, as highlighted by participants, is supported by the Cognitive Theory of Multimedia Learning, which states that well-designed visual and verbal materials enhance understanding through dual-channel information processing (Mayer, 2014).

Furthermore, participants' recommendations for more accessible versions of LEBAD for students with visual or hearing impairments echo the findings of Tang et al. (2023), who emphasized the need for adaptive and multisensory educational media in promoting sexual and reproductive health among adolescents with disabilities. Similar results were also observed in an Indonesian study by Rachmawati et al., which highlighted the lack of inclusive reproductive health education materials in special schools. Sustainability and collaboration across sectors, as emphasized by participants, are crucial for ensuring program continuity. According to Rogers' Diffusion of Innovation Theory (2003), innovations are more likely to be adopted and maintained when perceived as advantageous, compatible with existing systems, and supported by institutional structures. The integration of LEBAD into school-based and community health programs therefore represents a strategic pathway toward long-term implementation. In sum, the findings demonstrate that the success of LEBAD is grounded in three interrelated aspects:

(1) accessible and contextually relevant educational media,
(2) participatory capacity-building for educators, and
(3) strong intersectoral collaboration.

These components collectively support the creation of an inclusive and sustainable framework for reproductive health education among adolescents with disabilities in Indonesia.

CONCLUSION

Feedback from both health workers and special school (SLB) teachers affirmed that the Digital Flipchart (LEBAD) is an effective, educational, and highly beneficial innovation for enhancing the capacity of educators and health professionals in delivering reproductive health education to adolescents with disabilities. Participants expressed strong interest in seeing the program continued, expanded, and further adapted to accommodate diverse types of disabilities. They also emphasized the importance of ongoing training and wider dissemination of the media across all special schools and community health centers. Sustained collaboration between schools and health facilities is recognized as the key foundation for ensuring the long-term success and sustainability of this inclusive health education initiative.

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