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ORIGINAL ARTICLE

EDUCATION USING ANIMATED VIDEOS AND ROLE PLAY: ATTITUDES TOWARD SEXUAL VIOLENCE PREVENTION AMONG ADOLESCENTS WITH INTELLECTUAL DISABILITIES

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ABSTRACT

Adolescents with intellectual disabilities are particularly vulnerable to sexual violence, highlighting the need for accessible prevention education. This study examined the association between education using animated videos combined with role play and attitudes toward sexual violence prevention among adolescents with intellectual disabilities. A quasi-experimental study pretest–posttest control group design was employed, involving 66 adolescents aged 12–19 years from two special schools in Yogyakarta. Allocation occurred at the school level, with one school assigned to each study group. Attitudes were measured using a 22-item instrument encompassing three domains: recognize, resist, and report. After adjusting for pretest attitude scores and intellectual disability classification, the intervention group demonstrated significantly higher posttest attitude scores than the control group (adjusted mean difference = 4.092, 95% CI [2.724, 5.460], $p < .001$; partial $\eta^2 = .366$). Education incorporating animated videos and role play was associated with improved attitudes toward sexual violence prevention among adolescents with intellectual disabilities. Although this combined approach appears effective, the individual contributions of animated videos and role play cannot be isolated, as both components were delivered simultaneously. Further research involving multiple schools per study group and longer follow-up periods is necessary to assess the generalizability and sustainability of these findings.

Keywords: *Adolescents with intellectual disabilities; attitudes; sexual violence prevention education*

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BACKGROUND

One of the targets of the fifth Sustainable Development Goals (SDGs) target 5.2 is to eliminate all forms of violence against all women and girls (UNESCO, 2018). Sexual violence is defined as any sexual act, attempt to commit a sexual act, comment, or suggestion of sexual behavior that is involuntary or otherwise, including forced sexual intercourse (WHO & PAHO, 2012). In most countries, more than 25% of women and over 10% of men report experiencing sexual violence during childhood (OAK Foundation et al., 2019). The prevalence of sexual violence ranges from 3.1% to 22.5% in boys and 11.2% to 35.6% in girls (Kloppen et al., 2016). According to UNICEF (2022), children with intellectual disabilities are five times more likely to be victims of sexual abuse. Intellectual disabilities are characterized by an IQ below 70 (Satryawan & Kusmiati, 2021). The risk of abuse is heightened because adolescents with intellectual disabilities experience cognitive barriers (Fisher et al., 2016). The highest prevalence of sexual harassment correlates with the severity of intellectual disability: severe at 67%, moderate at 34.3%, and mild at 24.3% (Tomsa et al., 2021). In Indonesia, data from the Online Information System for the Protection of Women and Children (Sistem Informasi Online Perlindungan

Perempuan dan Anak (SIMFONI PPA)), indicated that in 2021 there were 987 cases of violence against children with disabilities. The data also reveal that sexual violence was the most common type, with 591 victims (Kementerian PPPA, 2022).

Sexual violence among adolescents can lead to a range of adverse outcomes, including anxiety, aggressive behavior, paranoia, post-traumatic stress disorder, depression, increased suicide attempts, dissociative disorders, low self-esteem, substance abuse, genital injury and pain, deviant sexual behavior, fear of people or places, sleep disorders, aggression, social withdrawal, somatization, and decreased academic performance (Permatasari & Adi, 2017). According to previous research, adolescents with disabilities who experience sexual violence may suffer psychological, physical, and social consequences (Paskalia, 2019). Many studies on the prevention of sexual violence have primarily focused on increasing knowledge rather than fostering changes in attitudes (Lu et al., 2022). Various factors can influence attitudes toward sexual violence prevention, including sex, age, knowledge, exposure to sources of sexual information, parenting styles, and disability classification (Alimoradi et al., 2017; Byrne, 2018; Mahmudah et al., 2016; Settheekul et al., 2018; Tomsa et al., 2021). Attitude is defined as an evaluation or response toward an object or situation and encompass cognitive, affective, and conative components (Azwar, 2011). Therefore, changes in attitude toward sexual violence prevention involve not only acquiring information but also developing appropriate emotional and behavioral responses to potentially unsafe situations. For adolescents with intellectual disabilities, preventing sexual violence requires more than knowledge; they must also be able to respond effectively to threatening situations by, for example, screaming for help, running to a safe place, and reporting the incident to a trusted adult (Nuraini et al., 2022).

Sexual health education is essential for increasing knowledge and shaping attitudes toward the prevention of sexual violence, particularly because inadequate sexual and reproductive health literacy remains common among Indonesian adolescents (Tampubolon et al., 2026). In sexual education, adolescents must develop the ability to recognize behaviors exhibited by perpetrators of sexual harassment, such as inappropriate touching that can lead to sexual harassment (Erlinda, 2016). The knowledge gained from health education can be used to foster positive attitudinal changes that help prevent sexual violence among adolescents (Nuraini et al., 2022). Sexual education programs have also proven effective in improving sexual knowledge, decision-making abilities, attitudes, and interpersonal skills in individuals with intellectual disabilities (Schwartz & Robertson, 2019). These findings underscore the importance of an educational approach that addresses not only knowledge but also the development of appropriate responses to potentially unsafe situations. Accordingly, the theoretical framework of this study is based on the concepts of attitude and personal safety skills for preventing sexual violence. Personal safety skills consisting of recognize, resist, and report were used as the practical framework for the intervention. These skills involve recognizing behaviors or situations that may lead to sexual violence, resisting or escaping from potentially harmful situations, and reporting incidents to a trusted adult (Kim, 2016). The intervention was designed to translate these skills into concrete learning experiences through animated videos and role play.

Adolescents with intellectual disabilities may benefit from concrete and engaging educational media. Audio-visual media can facilitate comprehension of the content and support the learning process. The use of video has been reported to improve knowledge, perceptions, attitudes, and behaviors among adolescents with intellectual disabilities regarding the messages conveyed (Hanifa et al., 2023).

Role play can complement audiovisual media by providing opportunities to apply information in simulated scenarios. It enables adolescents with intellectual disabilities to actively engage and practice appropriate responses to situations involving sexual violence prevention (Kim, 2016).

However, evidence remains limited regarding the combined effect of animated videos and role play on attitudes toward sexual violence prevention, particularly concerning the personal safety skills of recognizing, resisting, and reporting, among Indonesian adolescents with mild-to-moderate intellectual disabilities. Addressing this gap is crucial because educational interventions must be tailored to the learning needs of adolescents with intellectual disabilities and should support the development of practical protective responses. This study therefore contributes early evidence on a structured and accessible educational approach that nurses, together with special-school teachers, can use to strengthen sexual violence prevention attitudes among adolescents with intellectual disabilities in Indonesia.

The primary objective of this study was to determine the effect of an educational intervention combining animated videos and role play on attitudes toward sexual violence prevention among adolescents with intellectual disabilities. The secondary objective was to examine the associations between age, sex, prior exposure to sexual violence prevention information, parenting style, and level of intellectual disability with sexual violence prevention attitudes.

METHOD

Study design

This study employed a quantitative quasi-experimental design with a pretest-posttest control group. This study was conducted in two special schools (*Sekolah Luar Biasa*, SLB) for students with intellectual disabilities in Yogyakarta, Indonesia, between April and May 2024. The participating schools were SLB Negeri 1 Bantul and SLB Tunas Bhakti Pleret. These schools are approximately 20.5 km apart and did not share educational activities during the study period.

Allocation to the intervention or control condition was performed at the school level by another member of the research team using a simple randomization procedure (wheel of names). This randomization only determined which of the two schools would serve as the intervention group; individual students were not randomized, which is why the study is classified as quasi-experimental. SLB Negeri 1 Bantul was assigned to the intervention group, while SLB Tunas Bhakti Pleret was assigned to the control group.

Sample

The participants were adolescents aged 12 to 19 years, enrolled in the two participating special schools. Participants were recruited using consecutive sampling, whereby all students in the two schools who met the eligibility criteria during the recruitment period and agreed to participate were enrolled. Parents or guardians provided informed consent, adolescents gave verbal assent after receiving an explanation adapted to their level of understanding, and parents or guardians also completed the parenting questionnaire.

The required sample size was calculated a priori using the formula described by Lemeshow (1990), as cited in Dahlan (2014), with a two-sided significance level of 5%, 80% statistical power, and a 1:1 allocation ratio. The calculation was based on the between-group difference in change scores for knowledge of sexual violence prevention reported by Darma et al. (2021), which were 21.72 (SD = 19.77) in the intervention group and 7.74 (SD = 16.247) in the control group. These scores were reported on a scale with observed values ranging from 0 to 100. The pooled standard deviation was 18.09, corresponding to a standardized mean difference (Cohen's d) of approximately 0.77. Based on these parameters, the minimum required sample size was approximately 27 participants per group. An additional 10% was included to account for potential missing data or participant dropout, resulting in a target of 30 participants per group (60 participants in total). The final sample comprised 66 participants, including 35 in the intervention group and 31 in the control group.

The inclusion criteria were as follows: (1) chronological age between 12 and 19 years; (2) willingness of both the adolescent and their parent or guardian to participate; (3) having a parent or guardian residing in the same household; (4) a documented classification of mild or moderate intellectual disability in school medical records; and (5) ability to communicate verbally. Adolescents with documented multiple disabilities, including physical, sensory, or other mental disabilities, were excluded.

The classification of intellectual disability was based on information documented in the students' school medical records at the time of recruitment. However, the specific diagnostic instrument, assessor, and date of diagnosis could not be independently verified by the research team. Therefore, the study relied on the classifications recorded in the available school records to determine eligibility.

Instrument

The instruments used in this study were a demographic questionnaire, a sexual violence prevention attitude questionnaire, and the Indonesian version of the Parenting Style Dimensions Questionnaire (PSDQ).

The study utilized a sexual violence prevention attitude questionnaire developed by Adiani (2020), based on the *Personal Safety Skills* framework. The questionnaire encompasses three domains: *recognize, resist,* and *report*. The original instrument was validated with 30 typically developing children aged 10 years or older, yielding 23 valid items from the initial 33 items. The instrument demonstrated strong internal consistency, with a Cronbach's alpha = 0.840.

In the present study, the instrument's construct validity and internal consistency were assessed among 67 adolescents with intellectual disabilities, aged 12 to 19 years, at SLB Negeri 1 Yogyakarta and SLB Negeri 2 Yogyakarta. Of the 23 items evaluated, one item (original item 21) was excluded because its item–total correlation coefficient (r = 0.223) fell below the predetermined threshold (r = 0.2404). Consequently, the final questionnaire comprised 22 items, with original items 22 and 23 renumbered as items 21 and 22, respectively. The internal consistency of the final 22-item questionnaire was assessed using Cronbach's alpha, which yielded a coefficient of 0.805 among the 67 participants.

The questionnaire used a dichotomous response format ("agree" or "disagree"). For favorable items, "agree" was scored as 1 and "disagree" as 0, while unfavorable items were reverse-scored. Total scores ranged from 0 to 22, with higher scores indicating more positive attitudes toward sexual violence prevention. The 22 items covered the *recognize* (9 items), *resist* (7 items), and *report* (6 items) domains.

The internal consistency of the final 22-item questionnaire was assessed using posttest responses from 66 participants in the main study. The Cronbach's alpha coefficient was 0.773, indicating acceptable internal consistency.

Parenting style was assessed using the 32-item Parenting Styles and Dimensions Questionnaire–Short Version (PSDQ-SF), based on the instrument developed by Robinson et al. (1995) and previously utilized in an Indonesian study by Evelyn and Savitri (2015). The questionnaire comprises three dimensions: authoritative (15 items), authoritarian (12 items), and permissive (5 items), with responses rated on a five-point Likert scale ranging from 1 (never) to 5 (always). Evelyn and Savitri (2015) assessed item validity using corrected item-total correlations, adopting a reference threshold of 0.20. Although two items (items 3 and 23) fell below this threshold, they were retained. The reported Cronbach's alpha coefficients were 0.881 for authoritative, 0.724 for authoritarian, and 0.680 for permissive parenting. In the present study, the mean score for each dimension was calculated by dividing the total score by the number of items, and the highest mean score was used to classify the respondent's dominant parenting style. The three parenting-style categories were retained for the descriptive analysis presented in Table 1.

Intervention

The intervention consisted of animated videos and role-playing activities designed to improve attitudes toward sexual violence prevention among adolescents with intellectual disabilities. The animated videos, were developed by the researchers, covered five topics: puberty, body boundaries, identification of inappropriate behaviors and relationships, identification of sexual violence situations, and coping strategies for dealing with sexual violence. The video materials were developed with reference to previous literature (Adiani, 2020; Haryana et al., 2018; Hermawan, 2020; Liou, 2014; Warraitch et al., 2021). The total duration of the animated videos was approximately 13 minutes, delivered across three sessions, each followed by approximately 25 minutes of discussion and question-and-answer activities.

The role-play scenario and script were developed by the researcher with reference to Kim (2016). The role play focused on coping strategies for situations involving sexual violence and was conducted for 30 minutes in small groups. Group members rotated roles, allowing each participant the opportunity to perform a part in the scenario. The combination of animated videos and role play was designed to provide complementary learning experiences: the animated videos introduced and illustrated the key concepts, while the role play offered participants the chance to practice appropriate responses to potentially unsafe situations.

The intervention was delivered by a nursing lecturer with relevant expertise in adolescent sexuality, assisted by research assistants and teachers from special schools (Sekolah Luar Biasa [SLB]) during role-play activities. No formal facilitator training was conducted prior to the intervention. The educator used a teaching module and three researcher-developed animated videos lasting approximately 4 minutes and 30 seconds, 4 minutes and 17 seconds, and 4 minutes and 16 seconds, respectively. Research assistants

and SLB teachers provided individualized assistance to participants based on their needs. The educational materials were reviewed by experts with relevant qualifications and experience. The expert criteria included a minimum of a master's degree and at least two years of professional experience; teachers of students with intellectual disabilities were required to have at least two years of work experience. The videos and role-play scenarios were reviewed by SLB teachers and a media expert but were not pilot-tested with adolescents with intellectual disabilities. No modifications were made to the intervention after implementation began. Attendance was recorded at every session to document participant attendance; however, no formal intervention fidelity assessment was conducted.

The intervention was delivered in four sessions over two weeks, with two sessions conducted each week. The first three sessions included an animated video presentation covering all educational topics, followed by discussion and question-and-answer activities. The fourth session consisted of a 30-minute role-play activity focused on coping strategies for situations involving sexual violence. The intervention group was divided into small groups of approximately 5–6 participants, each accompanied by a facilitator.

The control group did not receive the study intervention during the study period and continued to participate in regular school activities, including Science, Religious Education, Physical Education, and Personal Development. The specific content, frequency, and duration of any sexual violence prevention education delivered through these subjects were not separately documented. Therefore, the educational dosage received by the control group could not be quantified. The research team did not provide any additional or structured sexual violence prevention education to the control group. After completion of the posttest assessment, participants in the control group received the animated video and role-play intervention.

Data collection

Data collection was conducted after obtaining ethical approval and institutional permission. Parents or guardians, as well as eligible adolescents, were informed about the study's objectives, procedures, potential benefits, and their right to participate. Written informed consent was obtained from the parents or guardians prior to data collection. The adolescents gave verbal assent after the study was explained to them in simple language and were informed that they could stop participating at any time without consequences.

Pretest data were collected from participants in both groups before the intervention began. Research assistants explained the questionnaire completion procedure using standardized instructions and accompanied participants throughout the administration of the questionnaire. Pretest data collection took place over two days. When participants required assistance, the questionnaire was read aloud and research assistants recorded their verbal responses. Different research assistants administered the pretest and posttest. The research assistants who administered the posttest were not involved in delivering the intervention and were not informed which school had been assigned to the intervention group. However, because each group was located in a different school, complete blinding of these assessors cannot be guaranteed. Participants and intervention providers were not blinded. These procedures aimed to facilitate participants' understanding of the questionnaire and ensure consistent data collection.

The intervention group began receiving the intervention one day after completing the pretest. The intervention was delivered over two weeks, with two sessions conducted each week. Meanwhile, the control group continued its regular school activities without any additional sexual violence prevention education from the research team.

Posttest attitude data were collected one week after the completion of the intervention in the intervention group. In the control group, posttest data were collected at a corresponding time point, following the same period of regular school activities. Research assistants accompanied participants during posttest administration and provided the same questionnaire administration procedures used during the pretest.

Data analysis

Data were analyzed using SPSS (Statistical Package for the Social Sciences). Descriptive statistics summarized participant characteristics and study variables. The normality of continuous variables was assessed using the Shapiro–Wilk test, and homogeneity of variance was assessed using Levene's test.

The primary analysis employed analysis of covariance (ANCOVA) to compare posttest sexual violence prevention attitude scores between the intervention and control groups, adjusting for pretest attitude scores and intellectual disability classification (mild or moderate). The posttest attitude score was specified as the dependent variable, with study group and intellectual disability classification as fixed factors, and pretest attitude score as a continuous covariate. The model initially included the main effects of study group and intellectual disability classification, adjusting for pretest attitude score. The intervention effect was assessed using the adjusted mean difference in posttest scores, along with corresponding 95% confidence intervals (CIs) and p-values. Before interpreting the ANCOVA results, the model assumptions were thoroughly assessed. Linearity was examined using scatterplots of pretest and posttest attitude scores. The homogeneity of regression slopes was tested by examining the interactions between pretest scores and study group, as well as between pretest scores and intellectual disability classification. Residual normality was evaluated through histograms, normal Q–Q plots, and the Shapiro–Wilk test. Homogeneity of error variances was assessed using Levene's test. Multicollinearity was examined by analyzing tolerance and variance inflation factor (VIF) values, while potentially influential observations were identified using standardized residuals, studentized deleted residuals, Cook's distance, and leverage statistics. Because Levene's test indicated unequal error variances, HC3 heteroscedasticity-consistent standard errors were applied in sensitivity analyses. When the homogeneity of regression slopes assumption was violated, the model specification and interpretation of group effects were revised to include the relevant pretest-by-factor interactions. The potential clustering of participants within schools was also considered; however, since each study condition was assigned to a single school, intervention effects could not be fully disentangled from school-level differences.

Secondary analyses were conducted to examine associations between participant characteristics (age, sex, previous exposure to sexual violence prevention information, parenting style, and intellectual disability classification) and sexual violence prevention attitude scores. Statistical tests appropriate to the measurement level and distribution of the variables were employed. The Mann–Whitney U test was

used for comparisons between independent groups, while Spearman's rank correlation assessed associations involving ordinal or non-normally distributed variables, as appropriate. Baseline comparability between the groups was assessed using the Mann–Whitney U test for age and the chi-square test or Fisher's exact test for categorical variables. The Kruskal–Wallis test was used to compare change scores across the three parenting-style categories. Within-group changes in attitude scores from pretest to posttest were assessed using the Wilcoxon signed-rank test. This nonparametric test was applied consistently to both the intervention and control groups because the paired difference scores in neither group met the assumption of normality. All statistical tests were two-sided, and p-values less than 0.05 were considered statistically significant.

Ethical considerations

This study received ethical approval from the Research Ethics Committee of the Faculty of Medicine, Public Health, and Nursing, at Universitas Gadjah Mada (FK-KMK UGM), Ref. No. KE/FK/0408/EC/2024. Written informed consent was obtained from the parents or guardians, and verbal assent was obtained from the adolescents prior to participation. The study was conducted in accordance with the principles of beneficence, respect for human dignity, and justice (Suiraoka et al., 2019).

RESULT

Participant flow

As shown in Figure 1, 71 participants completed the pretest, including 40 in the intervention group and 31 in the control group. Five participants in the intervention group did not complete the posttest because they were absent during posttest data collection, whereas all 31 participants in the control group completed both assessments. A complete-case analysis was performed, excluding the five intervention-group participants with missing posttest data. Consequently, 66 participants (35 in the intervention group and 31 in the control group) were included in the final analysis.

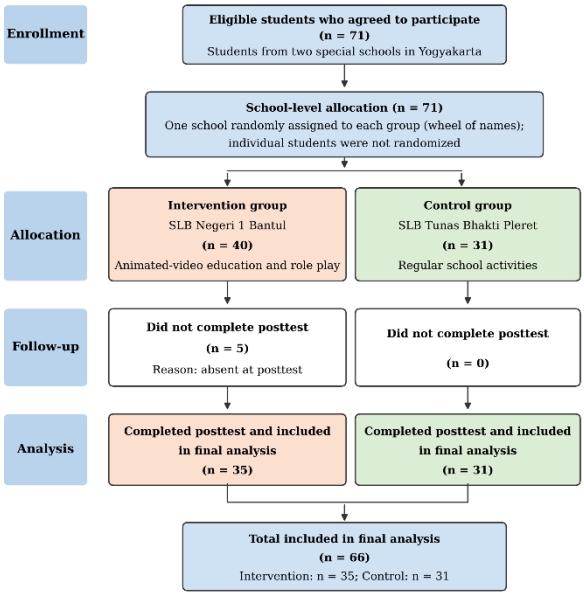


Figure 1. Participant flow diagram (allocation by school)

Participant characteristics

Table 1. Baseline characteristics of participants by study group (N=66)

	Groups						*p*
	Intervention (n=35)			Control (n=31)			
	f	%	Mean ±SD	f	%	Mean ±SD	
Age			16.7 ±1.78			16.58 ±1.74	.725[a]
Gender							.532[b]
Male	23	65.7		18	58.1		
Female	12	34.3		13	41.9		
Disability Classification							.015[b]
Mild	27	77.1		15	48.4		
Moderate	8	22.9		16	51.6		
Previous information exposure*							.162[b]
Yes	25	71.4		17	54.8		
Teacher/ At School	13	52.0		13	76.5		
Parents	10	40.0		5	29.4		
Friend	3	12.0		1	5.9		
Mass Media	2	8.0		1	5.9		
Professionals	4	16.0		1	5.9		
No	10	28.6		14	45.2		
Parenting							.744[c]
Authoritative	32	91.4		30	96.8		
Authoritarian	2	5.7		0	0.0		
Permissive	1	2.9		1	3.2		

*[a] Mann–Whitney U test. [b] Chi-square test for variables with adequate expected cell counts; Fisher's exact test was used for parenting-style distribution because some categories had sparse or zero counts. [c] Fisher's exact test for parenting-style distribution. *Multiple responses were allowed for sources of previous information. Percentages for information sources were calculated using the number of participants reporting previous information exposure as the denominator (n = 25 in the intervention group and n = 17 in the control group); because multiple responses were allowed, these percentages may sum to more than 100%.*

Table 1 presents the baseline characteristics of the participants. The two groups were comparable in all characteristics except intellectual disability classification, which differed significantly between groups (p = .015).

Table 2 presents the posttest response distribution for ten selected items from the sexual violence prevention attitude questionnaire across three personal safety skill domains: recognize, resist, and report. These items were selected because they represent key protective responses in each

domain (refusing touch, rejecting unwanted hugging or kissing, refusing to undress, shouting for help, and disclosing to trusted adults); the distribution of all 22 items is available from the corresponding author upon request. In the intervention group, 71.4% of participants agreed with the statement, "I refuse if other people want to touch my body" (item 5). In the resistance domain, 82.9% agreed with the statement, "I dare to shout 'HELP' if other people grab my body" (item 15). In the reporting domain, 82.9% of participants in the intervention group agreed with the statement, "I will report to my parents or teacher if a friend or other person touches my chest" (item 18). For item 21, which states, "I should not tell my parents or teacher if someone touches my body and the area around my underwear," 91.4% of participants in the intervention group disagreed with the statement, compared with 64.5% in the control group. Except for items 8 and 14, which showed similar distributions in both groups, the intervention group showed more favourable posttest response patterns than the control group in most of the selected items.

Table 2. Posttest response distribution for selected items of the sexual violence prevention attitude questionnaire in the control and intervention groups (N = 66)

No	Statement	Control				Intervention			
		D		A		D		A	
		f	%	f	%	f	%	f	%
Recognize									
5	I refuse if other people want to touch my body*	19	61.3	12	38.7	10	28.6	25	71.4
8	I want to be hugged by others if my mom and dad are not around	29	93.5	2	6.5	33	94.3	2	5.7
9	I am willing to be kissed and hugged by others if I am forced to	27	87.1	4	12.9	34	97.1	1	2.9
Resist									
12	I will obey others who want to hold my body	25	80.6	6	19.4	33	94.3	2	5.7
14	I will obey if someone else tells me to take off my shirt or pants	28	90.3	3	9.7	32	91.4	3	8.6
15	I dare to shout "HELP" if other people grab my body*	22	71	9	29	6	17.1	29	82.9
Report									
18	I will report to my parents or teacher if a friend or other person touches my chest*	13	41.9	18	58.1	6	17.1	29	82.9
20	I was embarrassed to tell my mom and dad if someone else wanted to kiss me	16	51.6	15	48.4	27	77.1	8	22.9
21	I should not tell my parents or teacher if someone touches my body and the area around my underwear	20	64.5	11	35.5	32	91.4	3	8.6
22	I feel ashamed to tell my teacher if someone wants to hug and kiss me	16	51.6	15	48.4	30	85.7	5	14.3

Note: D = Disagree; A = Agree. Items marked with an asterisk (*) are designated as favorable statements in the questionnaire.

Associations with participant characteristics

Table 3 examines the association between participant characteristics and changes in attitude scores (posttest minus pretest) across the combined sample. Spearman's rank correlation was used to assess the association between age and change in attitude scores, while the Mann–Whitney U test was applied to sex, previous exposure to information, and intellectual disability classification. The Kruskal–Wallis test was used to evaluate differences in change scores across the three parenting-style categories: authoritative, authoritarian, and permissive. No statistically significant differences in change scores were found across parenting-style categories (H = 2.763, df = 2, p = .251). Similarly, age (ρ = .019, p = .882), sex (p = .730), previous exposure to information (p = .753), and intellectual disability classification (p = .061) were not significantly associated with or different in change scores, according to the respective statistical tests. This analysis addresses a different question than Table 1: Table 1 compares the distribution of parenting-style categories between the intervention and control groups, whereas Table 3 examines differences in attitude-score changes across parenting-style categories. The parenting-style findings should be interpreted cautiously because only two participants were classified as authoritarian and two as permissive.

Table 3. Associations between participant characteristics and changes in attitude scores from pretest to posttest in the combined study sample (N = 66)

External variables	Statistic	*p-value*
Chronological Age	Spearman's ρ= .019	.882[a]
Gender	Z=-0.345	.730[b]
Previous exposure to information	Z=-0.315	.753[b]
Parenting	H=2.763	.251[c]
Disability classification	Z=-1.872	.061[b]

[a] Spearman's rank correlation. [b] Mann–Whitney U test for binary categorical variables. [c] Kruskal–Wallis test for parenting style with three observed categories. Change scores were calculated as posttest minus pretest scores. Chronological age was analyzed using Spearman's rank correlation; binary categorical variables were analyzed using the Mann–Whitney U test; parenting style was analyzed using the Kruskal–Wallis test. The authoritarian and permissive

categories each contained only two participants, so the parenting-style result should be interpreted cautiously. p < .05 was considered statistically significant.

Within-Group and unadjusted between-group comparisons

Table 4 shows the pretest and posttest attitude scores for each group. In the intervention group, the mean attitude score increased from 14.74 ± 3.95 at pretest to 19.60 ± 2.29 at posttest, with a mean change of 4.86 ± 3.18 (p < .001). In the control group, the mean score rose from 15.97 ± 4.07 to 16.58 ± 3.54, with a mean change of 0.61 ± 4.28 (p = .388).

Table 4. Within-group comparison of pretest and posttest sexual violence prevention attitude scores

Groups	Mean±SD		ΔMean ±SD	Z	p-value	*Effect Size (r)*
	Pretest	Posttest				
Intervention (n=35)	14.74 ±3.95	19.60 ±2.29	4.86 ±3.18	-5.169	<.001*	0.87
Control (n=31)	15.97 ±4.07	16.58 ±3.54	0.61 ±4.28	-0.864	.388*	0.18

**Wilcoxon signed-rank test was used for within-group comparisons. Values are presented as mean ± standard deviation (SD). Mean change was calculated as posttest minus pretest scores. Effect size was calculated as r = |Z|/√N, where Z is the standardized Wilcoxon test statistic and N is the number of non-zero paired differences (intervention group: N = 35; control group: N = 24, with 7 ties). All p-values are two-sided. p < .05 was considered statistically significant*

Table 5 presents the unadjusted comparison of change scores between the two study groups. The median change was 5 (range: 1–15) in the intervention group and 0 (range: −10 to 13) in the control group. Change scores differed significantly between groups (Mann–Whitney U = 188.000, Z = −4.575, p < .001), with an effect size of r = .56.

Table 5. Between-group comparison of changes in sexual violence prevention attitude scores

Groups	Median (range)	Mean ±SD	Mean rank	p- value	*Effect size (r)*
Intervention (n=35)	5 (1-15)	4.86 ±3.18	43.63	<.001*	0.56
Control (n=31)	0 (-10-13)	0.61 ±4.28	22.06		

Note: Change scores were calculated as posttest minus pretest scores. Between-group differences were assessed using the Mann–Whitney U test. Effect size was calculated as r = |Z|/√N, where Z = −4.575 and N = 66 (r = .56). The two-sided p-value is reported as p < .001.

Primary adjusted analysis

The primary analysis employed analysis of covariance (ANCOVA), with the posttest sexual violence prevention attitude score as the dependent variable, study group as the main factor, pretest attitude score as a continuous covariate, and intellectual disability classification as an additional categorical factor. The ANCOVA assumptions described in the Method were met, except for homogeneity of error variances (Levene's test, F(3, 62) = 3.006, p = .037); therefore, HC3 heteroskedasticity-consistent standard errors were applied in a sensitivity analysis. Because only one school was assigned to each study condition, intervention effects cannot be fully disentangled from school-level differences.

The adjusted ANCOVA showed a statistically significant difference in posttest attitude scores between the intervention and control groups after adjustment for pretest attitude and intellectual disability classification, F(1,62) = 35.736, p < .001, partial η² = .366. The adjusted mean posttest attitude score was 20.364 (SE = 0.486, 95% CI [19.392, 21.335]) in the intervention group and 16.272 (SE = 0.460, 95% CI [15.353, 17.191]) in the control group. The adjusted mean difference (intervention minus control) was 4.092 points (95% CI [2.724, 5.460], p < .001). Intellectual disability classification was also significantly associated with posttest attitude scores, F(1,62) = 6.459, p = .014, partial η² = .094. The overall model was statistically significant, F(3,62) = 15.909, p < .001, explaining 43.5% of the variance in posttest attitude scores (R^2 = .435; adjusted R^2 = .408). The ANCOVA results are summarized in Table 6, and the adjusted posttest means for each group are presented in Table 7.

In the HC3 sensitivity analysis, the group effect remained statistically significant (B = −4.092, HC3 robust SE = 0.741, t = −5.524, p < .001, 95% CI [−5.573, −2.611]). The negative coefficient reflects the model's group coding, with group 0 compared to the reference group 1. Expressed as intervention minus control, the estimated difference was 4.092 points (95% CI [2.611, 5.573]). Intellectual disability classification also remained statistically significant in the HC3 analysis (B = −1.905, HC3 robust SE = 0.703, t = −2.709, p = .009, 95% CI [−3.312, −0.499]). These findings indicate that the statistical significance of the group effect was maintained when HC3 robust standard errors were applied.

Table 6. ANCOVA of posttest sexual violence prevention attitude scores

Source	df	F	p	Partial η²
Pretest attitude	1	24.158	< .001	.280
Group	1	35.736	< .001	.366
Disability classification	1	6.459	.014	.094
Corrected model (R^2)	3	15.909	< .001	-
Error	62	-	-	-

Note. ANCOVA included pretest attitude score, study group, and intellectual disability classification. The overall model explained 43.5% of the variance in posttest attitude scores (R^2 = .435; adjusted R^2 = .408). Levene's test indicated unequal error variances, F(3,62) = 3.006, p = .037. The homogeneity of regression slopes assumption was supported because neither the group × pretest interaction (F(1,60) = 0.024, p = .876) nor the disability classification × pretest interaction (F(1,60) < 0.001, p = .982) was statistically significant.

Table 7. Adjusted posttest attitude scores by study group

Group	Adjusted Mean	SE	95% CI
Control	16.272	.460	15.353–17.191
Intervention	20.364	.486	19.392–21.335

Note: Adjusted means were controlled for pretest attitude and disability classification. The adjusted mean difference was 4.092 points (95% CI 2.724–5.460, p < .001)

DISCUSSION

The primary finding was that the intervention group demonstrated higher posttest attitudes toward sexual violence prevention than the control group, after adjusting for pretest attitudes and intellectual disability classification. The adjusted mean difference was 4.092 points (95% CI, 2.724–5.460), $F(1, 62) = 35.736$, $p < .001$, partial $\eta^2 = .366$. Consistent with this, the unadjusted analyses showed a significant within-group increase in attitude scores in the intervention group (mean change = 4.86, $p < .001$, $r = 0.87$) but not in the control group (mean change = 0.61, $p = .388$), and the change scores differed significantly between the groups ($r = .56$) (Tables 4 and 5). The small change in the control group suggests that regular school activities alone produced little change in attitudes during the study period, although the slightly higher pretest score in the control group left somewhat less room for improvement. Because the study was quasi-experimental and only one school was assigned to each condition, this result should be interpreted as an adjusted between-group difference rather than definitive evidence that the intervention alone caused the difference.

The participants were aged 12 to 19 years, an age range associated with puberty and the ongoing development of sexual awareness, identity, self-acceptance, and independence (Cahyaningsih, 2021; Sawyer et al., 2018). However, this study found no significant association between age and attitudes toward sexual violence prevention among adolescents with intellectual disabilities. This finding aligns with Chamidah (2022), who reported that age was not associated with changes in knowledge or behavior related to sexual violence prevention in this population. This suggests that age alone may not sufficiently explain variations in prevention attitudes among adolescents with intellectual disabilities.

The majority of respondents in this study were male. This contrasts with previous research indicating that female adolescents exhibit better attitudes and behaviors in preventing sexual violence (Rachmadhani & Zulaikha, 2023). Additionally, the results showed that gender was not significantly associated with attitudes toward preventing sexual violence. This finding differs from earlier studies, which reported that gender influences adolescents' risky sexual attitudes and behaviors, with males exhibiting higher levels of risk than females (Mahmudah et al., 2016). In the present study, teachers and schools were the most frequently reported sources of information about sexual violence prevention among participants who had previously received such information. This highlights the potential role of schools in providing accessible and developmentally appropriate sexual health education for adolescents with intellectual disabilities. However, the observational findings of the present study do not establish that schools are more effective than other information sources. Further research is needed to determine how different sources of information contribute to adolescents' attitudes toward sexual violence prevention (Solehati et al., 2022). Previous exposure to information was not significantly associated with attitudes toward preventing sexual violence. This study is in line with Laili (2020), who found no influence of prior information exposure on adolescents' attitudes toward sexual and reproductive health. Conversely, Coyne et al. (2018) reported that exposure to sexual media has a small but significant influence on adolescents' sexual behavior and attitudes related to the prevention of sexual violence.

Most parents in this study were classified as having an authoritative parenting style. Authoritative parenting may encourage open communication between parents and adolescents regarding sexuality and personal experiences, potentially making adolescents more comfortable discussing concerns related to sexual violence (Chamidah, 2022). Settheekul et al. (2018) also reported that parental involvement in monitoring adolescents was associated with their sexual attitudes and behaviors. However, the present study did not identify a statistically significant association between parenting style and attitudes toward sexual violence prevention. This finding should be interpreted with caution because approximately 94% of parents were classified as authoritative, resulting in limited variation in the exposure variable and reducing the study's ability to detect an association. Therefore, the nonsignificant result does not necessarily indicate that parenting style is unrelated to attitudes toward sexual violence prevention. Further research involving more diverse parenting styles and larger samples is needed to clarify this relationship.

In the unadjusted analysis, changes in sexual violence prevention attitude scores did not differ significantly by intellectual disability classification (Mann–Whitney $U = 371.500$, $Z = -1.872$, $p = .061$). However, in the primary ANCOVA, intellectual disability classification remained significantly associated with posttest attitude scores after adjusting for pretest attitude and study group, $F(1, 62) = 6.459$, $p = .014$, partial $\eta^2 = .094$. These findings pertain to different outcomes and analytical approaches: the unadjusted analysis compared change scores, whereas the ANCOVA examined posttest scores adjusted for baseline attitude and study group. Both findings should be interpreted cautiously due to baseline imbalance in disability classification and the study's school-level allocation.

The reporting domain emphasized the importance of helping adolescents with intellectual disabilities recognize unsafe situations and communicate their concerns to trusted adults. At posttest, 41.9% of participants in the control group disagreed with the statement, "I will report to my parents or teacher if a friend or other person touches my chest," compared with 17.1% in the intervention group. For item 21, an unfavorable statement—"I should not tell my parents or teacher if someone touches my body and the area around my underwear," 91.4% of participants in the intervention group disagreed, compared with 64.5% in the control group. Disagreement with this statement represents a more favorable response, as it indicates a willingness to disclose inappropriate touching to a trusted adult. These descriptive findings suggest more favorable responses to selected reporting-related items in the intervention group. However, item-level response distributions should be interpreted cautiously and do not independently establish the intervention's effectiveness for each reporting behavior.

Reporting sexual violence can be particularly challenging for adolescents with intellectual disabilities for several reasons. Previous studies have described communication and memory difficulties when recounting events (Bae et al., 2017; McGilloway et al., 2020), fear of the consequences of disclosure (McGilloway et al., 2020), limited access to appropriate sexuality education (Schwartz & Robertson, 2019), and difficulties recognizing abuse and understanding the right to safety (McGilloway et al., 2020). These barriers highlight the need for responses that are respectful, patient,

nonjudgmental, and tailored to each adolescent's communication and support needs. Adolescents should not be blamed if they are unable to recognize, resist, or report abuse, and prevention should not be considered their sole responsibility.

This study implemented an intervention combining animated videos and role play over two weeks, delivered through four educational sessions covering five topics related to sexual violence prevention. Visual materials and structured practice can make safety information more accessible and give adolescents opportunities to rehearse protective responses in a supportive environment. Animated videos convey information both visually and audibly, which can make abstract safety concepts more concrete, and audiovisual media have been reported to improve knowledge and attitudes related to sexual violence prevention among adolescents with intellectual disabilities (Hanifa et al., 2023) and other adolescents (Anaemejeh et al., 2022; Yusuf et al., 2023). Role play based on realistic scenarios allows learners to rehearse recognizing, resisting, and reporting unsafe situations (Kim, 2016), and structured skills-based approaches are commonly used in sexuality education for people with intellectual disabilities (Hui, 2024). The more favorable responses to selected reporting-related items in the intervention group are consistent with these potential benefits. However, because both components were delivered together, this study cannot determine whether the observed improvement resulted primarily from the animated videos, the role play, or their combination. In addition, adolescents' ability to seek help depends on the availability of trusted adults and effective safeguarding systems, and further research should examine whether improved attitudes translate into sustained help-seeking and protective skills over time.

Several methodological considerations should be taken into account when interpreting these findings. First, responses to questions about sexual violence prevention may have been influenced by social desirability bias, whereby participants provided answers they perceived as socially desirable. The presence of interviewers or the manner in which questions were administered may also have influenced participants' responses. Second, completing the same questionnaire at both pretest and posttest may have produced testing effects, as participants could have become more familiar with the questions or anticipated expected responses. Contamination between groups is also possible if participants from the intervention and control groups shared information during the study. In addition, the intervention group's posttest mean score of 19.60 out of 22 suggests a relatively high level of performance, leaving less room for further improvement and raising the possibility of a ceiling effect. However, the group mean alone cannot confirm the presence of a ceiling effect; the distribution of scores and the proportion of participants achieving the maximum score would need to be examined. Finally, improvements in attitudes do not necessarily indicate that adolescents can consistently recognize, resist, or report sexual violence in real-life situations. Therefore, the findings should be interpreted as evidence of improvement in measured attitudes rather than as proof of sustained protective skills or behavior.

From an implementation perspective, animated videos and role play may be adaptable to special schools; however, their feasibility depends on session time, the availability of trained facilitators and audiovisual equipment, and teachers' confidence in discussing sensitive topics. Because this study did not evaluate feasibility or resource requirements, future studies should assess acceptability, implementation time, and integration into the school curriculum.

This study has several limitations. First, allocation was conducted at the school level with only one school per study condition, so the intervention effect cannot be fully separated from school-specific characteristics; in addition, the sample size calculation was based on a knowledge outcome (Darma et al., 2021) and did not account for clustering. Second, the posttest assessors were not informed of the group allocation, but complete blinding could not be ensured because each group was in a different school, and participants and intervention providers were not blinded. Third, intellectual disability classification was unequally distributed at baseline and was based on school records. Fourth, five participants in the intervention group did not complete the posttest, which may have introduced attrition bias. Finally, the one-week follow-up captured only short-term changes in attitudes, and recruitment from two special schools in Yogyakarta limits generalizability. Measurement-related issues (social desirability, testing effects, and a possible ceiling effect) are discussed above.

CONCLUSION AND RECOMMENDATION

Education using animated videos and role play was associated with a greater improvement in attitudes toward sexual violence prevention than regular school activities among adolescents with intellectual disabilities, after adjusting for pretest scores and disability classification. Age, sex, previous information exposure, and parenting style were not associated with attitude change. Because allocation was by school, the result cannot be interpreted as cause and effect.

Special schools (SLBs) are encouraged to integrate animated videos and role play into sexual violence prevention education, in collaboration with families, to strengthen students' ability to recognize, refuse, and report unsafe situations to trusted adults.

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