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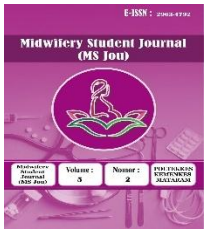

RAKA Animated Video Education and Adolescent Girls' Knowledge of Vaginal Discharge

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ABSTRACT

Knowledge of physiological and pathological vaginal discharge is important for adolescent reproductive health. This one-group pretest–posttest study examined changes in knowledge following RAKA animated video education among 33 purposively selected Grade 10 girls at SMAN 1 Kediri, drawn from a population of 286. The intervention comprised three sessions over one week. Knowledge was assessed using a questionnaire before and after the intervention and analyzed using a paired t-test. Mean scores increased from 15.97 (SD 3.575) to 18.91 (SD 3.440), a statistically significant difference ($p < 0.001$). The internet was the most frequently reported source of information (36.4%). RAKA video education was associated with improved knowledge of vaginal discharge, although controlled studies are needed to establish causality.

Keywords: RAKA Video; Animated Education; Vaginal Discharge; Knowledge; Adolescent Girls

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INTRODUCTION

Adolescence involves physical, psychological, and reproductive maturation. One reproductive health concern among adolescent girls is vaginal discharge (fluor albus), which may be physiological or pathological. Physiological discharge is typically clear or whitish and not accompanied by a strong odor or discomfort. Abnormal discharge may be yellowish or greenish and accompanied by unpleasant odor, itching, burning, or other symptoms that warrant assessment (Ibisa, 2023).

International and Indonesian research reports that vaginal discharge is common, but published percentages refer to different populations, ages, definitions, and recall periods (Zulfani & Juliansyah, 2021; Maysaroh & Mariza, 2021). Because these denominators are not consistently stated in the original background sources, the figures should not be combined into a single prevalence estimate. Local reproductive-health services in West Nusa Tenggara report vaginal discharge among the concerns presented by adolescent girls.

Preliminary information from the Kediri Community Health Center in 2025 reported 15–30 adolescents with vaginal discharge complaints among 50 adolescent visitors; the range is reproduced as recorded and its exact numerator requires confirmation. In a preliminary assessment conducted at SMAN 1 Kediri, six of ten girls reported physiological discharge, two reported symptoms described as pathological discharge, and two reported no discharge. These observations indicate a local need for clearer education on normal changes, warning signs, and appropriate help-seeking.

Limited knowledge can prevent students from distinguishing normal discharge from warning signs, identifying appropriate genital hygiene practices, and seeking healthcare when needed.

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The source cites related studies in which education delivered using animated videos improved adolescents' knowledge of vaginal discharge (Fitria et al., 2025; Julyartha et al., 2022; Rahma, 2024). Audio and visual presentation may help organize information in a form that is accessible to school-age learners.

RAKA (Remaja Cegah Keputihan Melalui Animasi; Adolescents Prevent Vaginal Discharge through Animation) is an animated educational video used to explain physiological versus pathological vaginal discharge, possible causes, routine genital hygiene, and warning symptoms requiring consultation. Its visual presentation combines information about prevention with guidance on when to seek health advice. Although previous studies have evaluated animated reproductive-health education, evidence on this locally developed video for Grade 10 girls at SMAN 1 Kediri was limited. This study compared students' knowledge scores before and after three RAKA sessions delivered over one week.

METHODS

A quantitative, single-arm one-group pretest–posttest design was used at SMAN 1 Kediri, West Lombok Regency. The school population included 286 female students; 33 Grade 10 students were recruited by purposive sampling. No comparison group was used. The analysis therefore describes within-participant changes and does not establish the independent causal effect of RAKA education.

Participants completed a knowledge questionnaire before and after education using the RAKA animated video, presented on an LCD screen in three sessions over one week. The program addressed normal and abnormal discharge, symptoms, prevention and appropriate hygiene, as described in the original research rationale. Data were edited, coded, scored, tabulated and analyzed in SPSS. The original analytical plan mentions the Shapiro–Wilk normality test, a paired-samples t-test for normally distributed scores, and a Wilcoxon test otherwise. The reported final result is a paired t-test with $p < 0.001$; the original normality output and paired t statistic were not supplied.

The source provides aggregate questionnaire scores but does not document the number of items, the maximum possible score, instrument validity and reliability coefficients, the length of each of the three video sessions, or the exact posttest interval. These details must be inserted from the original study records before final journal submission; no values were assumed.

RESULTS

Table 1. Reported sources of information about vaginal discharge (n = 33)

Information source	n	%
Television	4	12.1
Internet	12	36.4
Printed media	2	6.1
Health education/counseling	7	21.2
Family	8	24.2
Total	33	100.0

Most participants reported the internet as their source of information (12/33, 36.4%), followed by family (8/33, 24.2%) and health education sessions (7/33, 21.2%). The family percentage was recalculated from the source count (8/33) because the manuscript printed 24.8%, causing percentages to exceed 100%.

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Table 2. Knowledge scores before and after RAKA animated video education

Assessment	n	Minimum	Maximum	Mean	SD
Pretest	33	10	24	15.97	3.575
Posttest	33	12	24	18.91	3.440

The mean knowledge score increased by 2.94 points (15.97 at baseline to 18.91 at posttest). A statistically significant paired difference was reported ($p < 0.001$). As the source does not provide the paired t statistic, degrees of freedom, variability of paired differences, or a confidence interval, those quantities have not been calculated or fabricated.

DISCUSSION

The internet was the main source of information about vaginal discharge among respondents. This is consistent with reports that adolescent girls commonly seek reproductive-health information through digital channels (Meidiastuti et al., 2022; Syafitri et al., 2023; Eduwan, 2022). Although online sources increase access, their quality and accuracy vary. School-based education offers an opportunity to provide consistent and appropriate information about genital health.

Before the video sessions, the mean knowledge score was 15.97, with scores ranging from 10 to 24. The source discussion attributes gaps in knowledge partly to limited reproductive-health teaching and difficulty distinguishing physiological discharge from signs of infection. Other reports also identified incomplete knowledge about discharge, risk factors, prevention, and appropriate management (Maysaroh & Mariza, 2021; Andriani et al., 2020; Destariyani et al., 2023). Adolescents need accurate guidance on warning signs, hygiene, and the circumstances in which professional assessment is appropriate.

After the RAKA sessions, the mean score increased to 18.91 and the observed minimum rose to 12. Animated video can combine speech, text, images, and movement, potentially helping students visualize concepts that are difficult to explain through text alone. Similar improvements following audiovisual reproductive-health education have been described by Julyartha and colleagues (2022), Yuniza and Dewinda (2024), and Zulfa and colleagues (2025).

The paired analysis indicated a statistically significant pre–post difference ($p < 0.001$). This result provides evidence of change in the studied sample but does not establish that the video alone caused the improvement. Testing effects, classroom activities, and outside exposure to information may also have contributed. The absence of a control group, the non-probability sample, and the short observation period limit generalizability. The final publication should identify the test selected based on the original assumption-check output, rather than report alternatives as if both were applied.

As a practical educational approach, RAKA is repeatable and can be delivered with standard school audiovisual equipment. Students may revisit explanations and illustrations of normal discharge, abnormal symptoms, and preventive genital hygiene. Future evaluations could document the video content, instrument properties, retention of learning, and actual preventive practices, using a comparison group where feasible.

Health education on vaginal discharge needs to distinguish normal physiological changes from possible indications of infection or another health problem. Adolescents may incorrectly interpret any discharge as a disease, or conversely assume that persistent malodor, irritation, or unusual color is normal. The source describes the importance of recognizing these differences, understanding possible risk factors, and deciding when to seek professional assistance. Because symptoms may have different causes, an educational video should avoid suggesting that a student can establish a medical diagnosis from visual appearance alone.

Baseline scores in the present study ranged widely, from ten to 24, with a mean of 15.97. This variation may reflect different opportunities for learning through family members, classmates, online information, and school-based activities. Earlier reports cited in the source found similarly variable adolescent knowledge before health education. For example, Andriani and colleagues (2020) reported a mean baseline score of 12.77 in another educational setting, while the source manuscript also cites a pre-intervention mean of 13.4 from Fajariyah (2025). The scoring scales and instruments in these studies may differ, so numerical values should not be compared as if they were measured on identical questionnaires.

The RAKA intervention was delivered in three meetings over one week. Repetition across sessions may have offered opportunities for students to revisit ideas that were unfamiliar at baseline and to connect information with everyday situations. The source specifies that the video was shown with an LCD projector, allowing the content to be delivered consistently to a group. Animated health messages can combine audible narration with images that depict a process or illustrate symptoms. Still, without an assessment of individual viewing or engagement, the study cannot determine which presentation element contributed most to the change.

The source describes several earlier interventions involving adolescents. Julyartha and colleagues (2022) reported an increase in mean knowledge from 58.11 to 75.63 after video-based education, and Fitria and colleagues (2025) reported a change from 50.43 to 80.07. These findings are directionally consistent with the present study, but the designs, participants, test instruments, and timing of follow-up may not be comparable. Similarly, Rahmawati (2026), as cited in the source narrative, reported changes in knowledge, attitudes, and behavior following animated video education. These reports support further investigation of animation as an educational approach, not a universal causal conclusion.

A key educational advantage described in the original discussion is the possibility of replaying video content. When students encounter an unfamiliar term, a visual sequence can be paused or repeated. This may be particularly useful when discussing the distinction between physiological and pathological discharge, hygienic practices, and warning signs. The combination of auditory and visual information is consistent with multimedia learning principles, provided images and narration remain clear, accurate, and not overloaded with unnecessary details. The source invokes multimodal learning theory in this context.

Although the mean knowledge increased by 2.94 points, the reported posttest maximum remained 24. This may indicate that some students began with relatively high knowledge and had less room for improvement, while students with lower baseline knowledge may have gained more. The manuscript provides only aggregate summary data, so patterns of individual improvement or differential benefit by baseline score cannot be established. Reporting paired change scores, their variability, and a confidence interval would help readers judge both statistical and educational significance.

The paired t-test was reported as statistically significant, but the source does not include the test statistic, degrees of freedom, or confirmation that the distribution of paired differences was suitable for a parametric test. The Methods section mentions the Shapiro–Wilk assessment as well as Wilcoxon testing if normality assumptions were not met. A final submission should state the observed normality result and identify the exact test used in the output rather than presenting alternative analyses without rationale. The displayed p-value should be written as $p < 0.001$ rather than $p = 0.000$.

School-based implementation may be feasible because video can be presented to a classroom without requiring each student to own a device. Collaboration between teachers, midwives, and community health centers could help ensure that messages are both medically accurate and culturally appropriate. An appropriate follow-up evaluation would measure how long

knowledge gains persist, whether students recognize symptoms requiring clinical advice, and whether school education changes healthy daily practices. A controlled comparison group would reduce uncertainty from repeated questionnaire exposure and additional information obtained outside the intervention.

The research design and sample also place limits on interpretation. Participants were purposively selected from one school; thus, girls with different characteristics or from other schools may not respond in the same way. The absence of a control group means that history, maturation, and testing effects cannot be excluded. Because the study measured knowledge and not clinical outcomes, it does not demonstrate a reduction in vaginal infections. These limitations should accompany the encouraging pre–post findings in any publication.

The original manuscript places the educational activity within broader reproductive-health promotion. An appropriate school message can cover daily hygiene, avoidance of potentially irritating products, awareness of symptom changes, and seeking care rather than self-medicating when signs of infection occur. The video format may be particularly valuable for illustrating sensitive health information in a respectful way. Yet the knowledge questionnaire is the only reported outcome, and no claim can be made that students subsequently changed their behavior or that infection frequency decreased.

For interpretation of the numerical scores, the maximum possible questionnaire score and the definition of sufficient knowledge should be reported in the Methods section. The observed posttest mean of 18.91 may indicate a meaningful educational improvement, but its practical size depends on the range and difficulty of the items. The baseline and follow-up standard deviations, 3.575 and 3.440 respectively, show similar overall spread. A mean change of 2.94 points cannot be used to calculate a standardized paired effect size without the variability of within-person differences. Providing those data would make the results more informative for other schools.

An additional issue concerns the study location and characteristics of participating students. The source identifies Grade 10 girls at SMAN 1 Kediri as the sampled population, so the interpretation should remain specific to this group. Other adolescents, including those outside formal schooling or with limited access to audiovisual technology, may have different information needs. School programs could be adapted through participatory testing of video language, images, and comprehension before implementation in new settings.

CONCLUSION

Among 33 Grade 10 girls, mean knowledge scores regarding vaginal discharge increased from 15.97 to 18.91 after three RAKA video education sessions (reported $p < 0.001$). The findings show a short-term association between the educational activity and higher knowledge scores. A controlled study with documented instrument properties and follow-up is needed to establish causality and knowledge retention.

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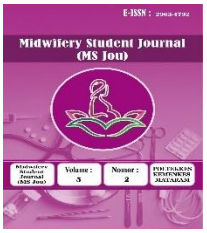

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