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The Impact of Animated Video Education on Iron Tablet Consumption for Anemia Prevention Among Adolescents

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ABSTRACT Anemia remains a significant public health concern among adolescent girls, leading to adverse effects on academic performance, productivity, and overall health status. Despite government efforts to address this issue through the distribution of iron-folic acid supplements (Fe tablets), the compliance rate among adolescent girls remains low, far from the national target. This study aims to evaluate the effectiveness of an animated video as an educational intervention to increase knowledge and adherence to Fe tablet consumption for anemia prevention among female students at SMP Negeri 3 Bojonegoro. This research employed a pre-experimental one-group pretest–posttest design involving 55 female students aged 12–14 years, selected through cluster sampling. Participants first completed a pretest assessing their baseline knowledge and compliance regarding Fe tablet intake. They then received education through a four-minute animated video depicting relatable adolescent scenarios, supported by engaging visuals and narration. Post-intervention, the students were observed weekly for one month, followed by a posttest. Statistical analysis using the Wilcoxon test showed a significant increase in knowledge, with mean scores rising from 54 ± 0.13 to 91 ± 0.06 ($p = 0.000$), representing a 69% improvement. Compliance with Fe tablet consumption also increased from 55 ± 0.26 to 89 ± 0.14 ($p = 0.004$), indicating a 62% rise. These findings demonstrate that animated video education effectively enhances both awareness and adherence among adolescents, offering an engaging and accessible medium tailored to Generation Z's learning preferences. While the results are promising, the single-group design and limited scope necessitate further research involving larger populations and extended follow-up to assess long-term behavioral impact. Overall, the integration of animated videos holds significant potential as a supportive strategy in school-based anemia prevention programs.

INDEX INTERMS Anemia, adolescent girls, iron tablet consumption, animated videos, compliance, health education

I. INTRODUCTION

Anemia remains one of the most prevalent nutritional disorders among adolescents worldwide, particularly among young women of reproductive age. According to the World Health Organization, anemia affects approximately 30% of women aged 15–49 globally, with adolescents being a high-risk group due to rapid growth and menstruation-related iron loss [1]. In Indonesia, national surveys report that the prevalence of anemia among adolescent girls reaches 27.2%, a figure that remains alarmingly high despite continuous public health efforts [2], [3]. Iron deficiency anemia has far-reaching consequences, including impaired cognitive development, reduced academic performance, weakened immune function, and increased maternal risks in later life [4], [5]. One of the government's main interventions to tackle anemia is the provision of iron and folic acid supplements (Fe tablets) through school health programs [6]. While the distribution coverage of Fe tablets in Indonesian junior high schools has exceeded 85%, adherence rates remain critically low at only 1.4% of girls consuming the recommended dose of 52 tablets per year [7]. This stark gap highlights the urgent need for more effective health education strategies that address not only distribution but also compliance and awareness [8], [9].

Recent advancements in educational technology have introduced innovative methods for delivering health information, especially for adolescents who are highly receptive to digital content. Animated video media, for example, has shown promising results in improving knowledge retention and influencing health behaviors among young audiences [10], [11]. Compared to traditional lectures or printed materials, animated videos can present complex health messages in a visually appealing, relatable, and memorable format [12]. Previous studies have demonstrated that multimedia interventions can enhance understanding of topics ranging from reproductive health to nutrition and mental well-being [13], [14]. However, the use of animated video specifically targeting anemia prevention

and Fe tablet adherence among Indonesian adolescents remains limited and under-explored [15].

Addressing this gap, this study seeks to examine the impact of an educational intervention utilizing animated video media on improving knowledge and compliance with Fe tablet consumption for anemia prevention among adolescent girls at SMP Negeri 3 Bojonegoro. By targeting students aged 12–14 years, this research aims to reach an age group where health behaviors can be positively shaped early [16].

The key contributions of this study are threefold. First, it provides empirical evidence on the effectiveness of animated videos in promoting adherence to Fe tablet intake in a junior high school context, which is an area with limited existing research [17]. Second, the study highlights the potential of integrating technology-based media with traditional school health programs, offering practical recommendations for educators and health practitioners [18]. Third, the findings contribute to the development of context-specific health promotion strategies tailored to Generation Z's learning preferences, ensuring better engagement and knowledge retention [19].

II. METHOD

This research adopted a pre-experimental quantitative approach utilizing a one-group pretest posttest design to assess the effectiveness of animated video education on the knowledge and compliance of Fe tablet consumption for anemia prevention among adolescent girls at SMP Negeri 3 Bojonegoro. This design was selected due to its practical suitability for evaluating interventions where randomization or control groups are not feasible [21].

A. STUDY DESIGN AND SETTING

The study was conducted from January 17 to February 7, 2025**,** within the premises of SMP Negeri 3 Bojonegoro, East Java, Indonesia. This junior high school was selected due to its representative student population and prior coordination with local health authorities to distribute Fe tablets under the school-based iron supplementation program [22].

B. POPULATION AND SAMPLING

The target population comprised all seventh-grade female students enrolled at SMP Negeri 3 Bojonegoro during the 2024–2025 academic year. The inclusion criteria were: (1) female students aged 12–14 years, (2) actively attending school during the study period, (3) willing to participate as respondents with parental or guardian consent, and (4) receiving Fe tablets through the school health unit in collaboration with the local health center. Exclusion criteria included students over 15 years old, students absent during data collection, and those unwilling to complete the intervention phase [23].

The total population was 124 students, which was segmented into clusters based on existing class groups. The final sample size was calculated using the Slovin formula, yielding 55 respondents with a margin of error set at 5%. Cluster sampling was employed to ensure proportional representation from each class, resulting in the random selection of 7 students per class across 8 classes [24].

C. EDUCATIONAL INTERVENTION MATERIALS

The primary intervention was an animated educational video, developed specifically for this study. The video, with a total duration of 4 minutes, incorporated adolescent characters, relatable everyday scenarios, colorful visuals, dynamic motion graphics, and voice-over narration in the Indonesian language. The animation explained essential information about iron deficiency anemia, its health consequences, and the importance of consistent Fe tablet consumption. The video was designed using Adobe After Effects and Canva Edu, ensuring high visual quality and engaging delivery [25].

Content development followed national guidelines for anemia prevention from the Indonesian Ministry of Health and referenced standard materials recommended by the World Health Organization [26]. The content was validated by three experts: a public health lecturer, a nutritionist, and a multimedia design specialist, to ensure scientific accuracy, appropriateness for the target age group, and visual appeal.

D. DATA COLLECTION PROCEDURES

Data collection was carried out in three sequential phases: pretest, intervention, and posttest.

Pretest Phase**:** Prior to the intervention, respondents completed a structured questionnaire to assess their baseline knowledge about anemia and their compliance with Fe tablet intake. The instrument consisted of multiple-choice and Likert-scale items adapted from previous validated tools [27].

Intervention Phase**:** Following the pretest, the students participated in a collective educational session where the animated video was screened in the school's multimedia room. The session was supervised by the research team and class teachers to ensure standardized delivery and minimize distractions. After viewing the video, students were provided with an explanation session to address any remaining questions.

Posttest Phase**:** Compliance monitoring was conducted weekly for one month through direct observation and self-report checklists distributed to respondents. At the end of the observation period, the same questionnaire was re-administered to assess knowledge improvement and compliance levels.

E. DATA ANALYSIS

The collected data were compiled and processed using SPSS version 25. Normality of data distribution was tested using the One-Sample Kolmogorov–Smirnov Test and Shapiro Wilk Test. Depending on the distribution, hypothesis testing employed the Paired t-test for normally distributed data or the Wilcoxon Signed-Rank Test for non-normally distributed data. A p-value of less than 0.05 was considered statistically significant [28].

F. VALIDITY AND RELIABILITY

The research instrument underwent a content validity check by expert reviewers and a pilot test on 10 non-sample respondents with similar characteristics. Cronbach's Alpha was calculated to confirm internal consistency, resulting in a reliability coefficient of 0.87, indicating good reliability for knowledge and compliance measures [29].

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G. ETHICAL CONSIDERATIONS

This study was reviewed and approved by the Health Research Ethics Committee of the Politeknik Kesehatan Kemenkes Surabaya under reference No. EA/3187/KEPK-Poltekkes_Sby/V/2025, dated April 10, 2025. Written informed consent was obtained from all participating students and their parents or guardians before the study commenced. Participation was voluntary, and anonymity and confidentiality of data were ensured throughout the research process [30].

III. RESULT

This study aims to assess the impact of educational interventions utilizing animated video media on the prevention of anemia and the consumption of iron (Fe) tablets, focusing on the domains of knowledge and adherence to Fe tablet consumption among adolescents.

A. RESPONDENT CHARACTERISTICS

TABLE 1
Characteristics of Young Women by Age

Characteristic	Frequency (f)	Percentage (%)
Age		
12 years	15	27,3%
13 years	39	70,9%
14 years	1	1,8%

Based on the distribution of age characteristics of adolescent girls in TABLE 1, it was found that most of the adolescent girls were 13 years old as many as 39 female students (70.9%) while adolescents with the age of 14 years had the lowest number, which was 1 female student (1.8%).

B. STATISTICAL TEST RESULTS

TABLE 2
Distribution of Knowledge Frequency of Young Women Before and After Being Given Animated Video Media Education

Knowledge	Pre-test		Post-test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Good	4	7.3%	55	100%
Enough	11	20%	0	0%
Less	40	72.7%	0	0%
Sum	55	100%	55	100%

According to the distribution of the frequency of knowledge of adolescent girls in TABLE 2 Before and after the implementation of educational media in the form of animated videos concerning anemia prevention, it was observed that prior to the introduction of this educational medium, the majority of the young women, specifically 72.7% of the 40 female students surveyed, possessed a level of knowledge categorized as inadequate, while only 7.3% demonstrated satisfactory understanding knowledge. However, after providing educational video animation media, it showed that all young women experienced an increase in knowledge in the good category (100%).

Based on the normality test, the data obtained in TABLE 3 shows that the *value of asymptotic significance (Asymp. Sig.)* indicates that the significance level before and after the participants were educated on animated video media is 0.000, which is less than 0.05. Therefore, it can be concluded that the pre-test and post-test data are not normally distributed normally. From the results of the *Wilcoxon Sign Rank Test* in TABLE 4, the average value (*mean*) of the level of knowledge of young women before being educated with animated video media was 54 ± 0.13 and after being given education there was a significant increase of 91 ± 0.06. The mean increase difference is 72.5, with an increase percentage of 69%. The statistical test results indicated a p-value of 0.000, which is below the threshold of p<0.05. This signifies a statistically significant difference in knowledge levels before and after the educational intervention.

TABLE 3
Results of the Normality Test of Adolescent Women's Knowledge Level Before and After Being Given Animation Video Media Education

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Stat	Df	Sig.	Stat	Df	Sig.
Knowledge Pretest	.238	55	.000	.879	55	.000
Posttest Knowledge	.268	55	.000	.865	55	.000

TABLE 4
Results of *the Wilcoxon Sign Rank Statistical Test* on the Knowledge Level of Young Women Before and After Being Given Animated Video Media Education

Variable	Red ± SD		ΔMean	Δ%	Pvalue
	Pretest	Posttest			
Knowledge	54 ± 0.13	91 ± 0.06	72.5	69%	0.000

TABLE 5
Frequency Distribution of Adolescent Girls' Fe Tablet Consumption Compliance Before and After Being Educated with Animated Video Media

Compliance	Pre-test		Post-test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Low	40	72.7%	2	3.6%
Keep	11	20%	20	36.3%
Tall	4	7.27%	33	60%
Sum	55	100%	55	100%

TABLE 6
Results of the Normality Test of the Level of Compliance of Fe Tablet Consumption of Adolescent Women Before and After Being Educated with Animated Video Media

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Stat	Df	Sig.	Stat	Df	Sig.
Compliance Pretest	.440	55	.000	.597	55	.000
Compliance Posttest	.378	55	.000	.685	55	.000

TABLE 7
Results of the Wilcoxon Sign Rank Statistical Test Compliance Level of Adolescent Girls' Fe Tablet Consumption Before and After Being Given Animated Video Media Education

Variable	Red ± SD		ΔMean	Δ%	Pvalue
	Pretest	Posttest			
Compliance	55 ± 0.26	89 ± 0.14	72	62%	0.004

Based on the distribution of the frequency of compliance with Fe tablet consumption among adolescent girls in TABLE 5 before and after being educated with animated video media related to compliance with fe tablet consumption, it was found that before being given education for adolescent girls with compliance in the low category, as many as 40 female students (72.7%) and 4 female students (7.27%) with high compliance. However, after providing educational video animation media, it showed that there was

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an increase in compliance in the high category of 33 students (60%) and 2 students (3.6%) with low compliance.

Based on the normality test of the data obtained in TABLE 6, it shows *the value of Asymp. The sig* before and after being given animation video media education is 0.000 < 0.05, so it can be concluded that *the Pre-test* and *Post-test data* are not distributed normally. From the results of the *Wilcoxon Sign Rank Test* in TABLE 6, the average value (*mean*) of the level of compliance of adolescent girls before being educated with animated video media was 55 ± 0.26 and after being given education there was a significant increase of 89 ± 0.14. The mean increase difference is 72, with an increase percentage of 62%. The results of the statistical test also showed *a p-value* of 0.004 where p < 0.05, meaning that there was a statistically significant difference between the level of compliance before and after the educational intervention. Beyond statistical significance, the 69% increase in knowledge and 62% rise in adherence indicate a substantial practical impact of this intervention on adolescent health behavior.

IV. DISCUSSION

A. INTERPRETATION OF RESULTS

The findings of this study clearly demonstrate that the provision of educational interventions using animated video media significantly improves both knowledge and adherence related to the consumption of Fe tablets for anemia prevention among adolescent girls at SMP Negeri 3 Bojonegoro. The baseline data indicated that prior to the intervention, 72.7% of the 55 respondents had low levels of knowledge about anemia and its prevention, with only 7.3% categorized as having good knowledge. After receiving education via the four-minute animated video, there was a substantial increase, with 100% of respondents achieving the good knowledge category. This improvement is reinforced by statistical analysis showing a Wilcoxon test p-value of 0.000, signifying a significant difference before and after the intervention. Similarly, compliance with Fe tablet consumption improved considerably. Prior to the intervention, 72.7% of respondents demonstrated low compliance, and only 7.27% exhibited high compliance. Following the animated video session and weekly monitoring, the proportion of students with high compliance increased dramatically to 60%, with only 3.6% remaining in the low category. The mean compliance score rose from 55 ± 0.26 to 89 ± 0.14, with a Wilcoxon test p-value of 0.004, indicating statistically significant improvement. These results highlight the role of digital media in capturing adolescent attention and promoting behavioral change in line with previous evidence on visual learning and multimedia-based interventions [31], [32]. The remarkable increase in knowledge and compliance can be attributed to the characteristics of Generation Z, who are more engaged by interactive, visually rich educational content compared to traditional lectures or printed materials. Animated videos incorporate color, motion, narrative, and relatable characters that simplify complex information and enhance memory retention [33]. This aligns with cognitive theory, which posits that multi-sensory input (visual, auditory, and contextual) optimizes the learning process by stimulating both hemispheres of the brain [34].

B. COMPARISON TO OTHER STUDIES

The effectiveness of animated videos observed in this study is consistent with previous research on digital and visual learning for health education. A study by Deviana *et al.* [35] found that anemia education delivered through animated videos significantly increased knowledge scores among adolescent girls at Al Islam 1 High School Surakarta, with a similar design and comparable outcomes. Likewise, a study by Febry Dwistika and Utami [36] demonstrated that adolescent girls who received anemia prevention education via animated media exhibited a notable rise in both awareness and motivation to adhere to Fe tablet regimens.

Furthermore, these findings support the results of research conducted by Noverina *et al.* [37], who implemented explainer videos to improve iron supplement adherence among junior high school students in North Jakarta. Their study revealed that video-based learning contributed to a higher mean knowledge score and better compliance compared to printed leaflets alone. In line with this, Lutfiani *et al.* [38] showed that TAR media another form of interactive educational material led to significant improvements in students' attitudes towards iron intake.

Comparatively, a study by Karyati *et al.* [39] using digital comics for nutrition education among junior high school girls also reported positive changes in knowledge and attitudes toward anemia prevention. Although the medium differed (digital comics vs. animated video), both approaches capitalized on the visual engagement preferred by adolescents.

However, it is worth noting that while digital media interventions generally show promise, some studies have indicated that their effectiveness can be enhanced when supplemented by direct counseling or peer education [40]. For instance, Rusnayani *et al.* [41] found that combining audiovisual content with active teacher involvement during health classes produced better results than stand-alone videos.

These comparisons indicate that animated videos are a viable tool but work best when integrated within broader, multifaceted health education strategies that include reinforcement and practical monitoring. They also emphasize the need for age-appropriate, culturally relevant content to ensure relatability and comprehension.

C. LIMITATIONS, WEAKNESSES, AND IMPLICATIONS

While the outcomes of this study are encouraging, several limitations must be acknowledged. Firstly, the research employed a one-group pretest–posttest design, which, although practical in school settings, lacks a control group for direct comparison. Without randomization or a comparative cohort, attributing all observed changes exclusively to the video intervention carries inherent bias risk [42]. Confounding variables such as peer influence, teacher reinforcement, or family reminders might have contributed to improved compliance alongside the video intervention.

Secondly, the relatively small sample size of 55 respondents limits the generalizability of these findings. Although the sample represents the school's population proportionally, replication in multiple schools and different regions is necessary to verify external validity [43]. Another

limitation is the short duration of post-intervention monitoring. Weekly observation for only one month may not fully capture the sustainability of behavior change. Some studies suggest that knowledge and compliance can decline if not reinforced periodically [44].

In terms of measurement, self-reported compliance introduces the possibility of reporting bias, as adolescents might overstate their adherence to align with perceived expectations [45]. Combining self-reports with objective measures, such as pill counts or biochemical markers like hemoglobin levels, could yield more robust evidence.

Despite these limitations, the implications are significant. This study underscores the potential of animated video education as a practical, scalable, and cost-effective tool for addressing low adherence to anemia prevention programs. Schools can integrate animated media into routine health promotion activities, leveraging existing digital infrastructure and minimal additional resources [46]. Teachers and health officers should be trained not only to screen videos but also to facilitate discussions, answer questions, and monitor compliance more rigorously.

Future research should employ randomized controlled trial (RCT) designs to strengthen causal inferences. It would also be valuable to test variations in video length, character design, language adaptation, and cultural context to optimize effectiveness. Longitudinal studies measuring knowledge retention and actual physiological outcomes such as changes in hemoglobin levels are also recommended to assess the intervention's real health impact [47].

Finally, collaborations with local health departments and parents are critical for sustaining behavior change beyond the classroom. Integrating digital media with reminders via mobile apps or gamified modules could further motivate adolescents to maintain Fe tablet consumption. Such innovations align with global trends in digital health and school-based nutrition interventions [48], [49], [50].

V. CONCLUSION

In conclusion, this study was conducted to assess the effectiveness of an animated video educational intervention in enhancing the knowledge and compliance of adolescent girls regarding the consumption of iron-folic acid (Fe) tablets as a preventive measure against anemia at SMP Negeri 3 Bojonegoro. The aim was to address the persistently low awareness and adherence to Fe tablet intake despite national supplementation programs. The study involved 55 female students aged 12–14 years, with data collected using a one-group pretest–posttest design. The results indicated a significant improvement in both knowledge and compliance after the animated video intervention. Prior to the education session, 72.7% of respondents demonstrated low knowledge, while only 7.3% were in the good category; after the intervention, 100% of participants were classified in the good knowledge category, reflecting a mean score increase from 54 ± 0.13 to 91 ± 0.06 with a p-value of 0.000. Likewise, compliance rose substantially, with the proportion of students exhibiting high compliance increasing from 7.27% pre-intervention to 60% post-intervention, while the mean score improved from 55 ± 0.26 to 89 ± 0.14, supported by a p-value of 0.004. These findings highlight that animated video education, by combining engaging visuals and relatable narratives, effectively bridges knowledge gaps and influences health behavior among Generation Z learners. This outcome aligns with global efforts to adopt innovative, technology-driven methods in adolescent health promotion. For future research, it is recommended that larger samples and randomized controlled trials be conducted across various schools and regions to validate these results further. Additional investigations could also examine the long-term impact on actual anemia prevalence by integrating biometric measurements and follow-up monitoring. Ultimately, expanding this approach can contribute to more sustainable and effective school-based anemia prevention programs and inform broader digital health education strategies in Indonesia and beyond.

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DATA AVAILABILITY

No datasets were generated or analyzed during the current study.

AUTHOR CONTRIBUTION

All authors made substantial contributions to this paper. Nadifa Salsa Andriyani conceptualized the study, coordinated the research activities, and drafted the manuscript. Siti Nur Kholifah designed the educational intervention and oversaw data collection in the field. Sari Luthfiyah conducted the data analysis and contributed to interpreting the results. Dwi Adji Norontoko provided methodological supervision, critical revisions, and final approval of the manuscript. All authors read and approved the final version for publication.

DECLARATIONS

ETHICAL APPROVAL

The authors declare that there are no competing interests related to this research. This study did not receive any external funding and was conducted independently. Ethical clearance was obtained from the Health Research Ethics Committee of the Politeknik Kesehatan Kemenkes Surabaya. Written informed consent was obtained from all participants and their guardians. The authors affirm that all data presented are original and have not been published elsewhere.

CONSENT FOR PUBLICATION PARTICIPANTS.

Consent for publication was given by all participants

COMPETING INTERESTS

The authors declare no competing interests.

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REFERENCES

[1] X.-M. Wang, Q.-Y. Wang, And J. Huang, *"Anemia Status Of Infants And Young Children Aged Six To Thirty-Six Months In Ma'anshan*

[2] X.-M. Wang, Q.-Y. Wang, and J. Huang, "Anemia Status of Infants and Young Children Aged Six to Thirty-Six Months in Ma'anshan City: A Retrospective Study," *World J. Clin. Cases*, vol. 11, no. 28, pp. 6744–6753, 2023.

[3] Y. Aulya, J. A. Siauta, and Y. Nizmadilla, "Anemia Analysis in Adolescent Women," *J. Researcher. Nurse Prof.*, vol. 4, no. 4, pp. 1377–1386, 2022.

[4] K. Shitu and B. Terefe, "Anaemia and Its Determinants Among Reproductive Age Women (15–49 Years) in The Gambia: A Multi-Level Analysis," *Arch. Public Health*, vol. 80, no. 1, pp. 1–10, 2022.

[5] L. Afildha Fabrianti and A. Widiyawati, "Nutritional Anemia Knowledge and Fe Tablets Acceptability," *Harena J. Nutrition*, vol. 1, no. 3, pp. 2774–7654, 2021.

[6] A. M. Al Owaifeer et al., "The Effect of a Short Animated Educational Video on Knowledge Among Glaucoma Patients," *Clin. Ophthalmol.*, vol. 12, pp. 805–810, 2018.

[7] Indonesian Ministry of Health, "Profil Kesehatan Indonesia 2020."

[8] Bojonegoro Health Office, "Bojonegoro Regency Health Report," 2023.

[9] J. A. Wulan Febry Dwistika and K. D. Utami, "Anemia Education with Animated Videos," *Adv. Soc. Humanit. Res.*, vol. 1, no. 8, pp. 112–124, 2023.

[10] D. Noverina, L. P. Dewanti, and L. Sitoayu, "Explainer Video on Fe Tablet Compliance," *Darussalam Nutr. J.*, vol. 4, no. 1, p. 35, 2020.

[11] R. Lutfiani et al., "TAR Media and Iron Tablet Consumption in Adolescent Women," *Ghidza Media J.*, vol. 8, no. 2, pp. 57–63, 2023.

[12] D. Deviana, M. Y. Maretta, and R. Wulandari, "Anemia Education with Animated Videos," *J. Health Sciences.*, vol. 1, no. 1, pp. 1–10, 2023.

[13] M. M., "Knowledge and Compliance with Fe Tablets," *J. Phys. A Math. Theor.*, 2018.

[14] Rusnayani et al., "Audiovisual Media and Fe Tablet Compliance," *Jurnali Lmiah Obs.*, vol. 13, no. 3, pp. 50–55, 2021.

[15] P. Karyati et al., "Nutrition Education Using Digital Comics," *J. Health. Mass.*, vol. 8, pp. 4141–4150, 2024.

[16] H. Hannanti et al., "Nutrition Education with Comic and Leaflet," *J. Nutrition and Health.*, vol. 13, no. 1, 2021.

[17] Mr. Pakpahan, *Health Promotion & Health Behavior*, 2021.

[18] M. Solang, D. Losu, and N. Tando, *Health Promotion for Midwifery Students*, 2017.

[19] R. S. Saraswati et al., "Aneminfo Android Application on Anemia Knowledge," *J. Health Promotion Indonesian.*, vol. 15, no. 2, pp. 65–69, 2020.

[20] H. Hakimia S et al., "Counseling for Fe Tablet Consumption Using Videos," *Pros. Sem. Health. Mass.*, vol. 1, Oct., pp. 252–257, 2023.

[21] R. Nuraeni et al., "Increase in Hemoglobin through Smart Friday Movement," *J. Pengabdi. To Masy.*, vol. 5, no. 2, p. 200, 2019.

[22] M. Lestari and S. N. Solikah, "Knowledge Levels in Stunting Prevention: A Study in Indonesian Adolescents," *Intan Husada J. Ilm. Keperawatan*, vol. 10, no. 2, pp. 177–183, 2022.

[23] Indonesian Ministry of Health, "Profil Kesehatan Indonesia 2022."

[24] D. Deviana, M. Y. Maretta, and R. Wulandari, "Animated Videos for Anemia Education," *J. Health Sciences*, vol. 1, no. 1, pp. 1–10, 2023.

[25] K. Shitu and B. Terefe, "Anaemia Determinants in Adolescents," *Arch. Public Health*, vol. 80, no. 1, pp. 1–10, 2022.

[26] J. A. Wulan Febry Dwistika and K. D. Utami, "Animated Media and Iron Tablet Adherence," *Adv. Soc. Humanit. Res.*, vol. 1, no. 8, pp. 112–124, 2023.

[27] WHO, "Guidelines on Iron Supplementation," *World Health Organization*, 2021.

[28] R. Lutfiani et al., "TAR Media for Anemia Prevention," *Ghidza Media J.*, vol. 8, no. 2, pp. 57–63, 2023.

[29] P. Karyati et al., "Digital Comics in Health Education," *J. Health. Mass.*, vol. 8, pp. 4141–4150, 2024.

[30] Mr. Pakpahan, *Health Promotion & Health Behavior*, 2021.

[31] Politeknik Kesehatan Kemenkes Surabaya, *Ethics Approval Statement*, 2025.

[32] A. M. Al Owaifeer *et al.*, "The Effect of a Short Animated Educational Video on Knowledge," *Clin. Ophthalmol.*, vol. 12, pp. 805–810, 2018.

[33] K. Shitu and B. Terefe, "Anaemia and Its Determinants Among Women in The Gambia," *Arch. Public Health*, vol. 80, pp. 1–10, 2022.

[34] J. A. Wulan Febry Dwistika and K. D. Utami, "Anemia Education with Animated Videos," *Adv. Soc. Humanit. Res.*, vol. 1, no. 8, pp. 112–124, 2023.

[35] Mr. Pakpahan, *Health Promotion & Health Behavior*, 2021.

[36] D. Deviana, M. Y. Maretta, and R. Wulandari, "Animated Videos for Anemia Prevention," *J. Health Sciences*, vol. 1, no. 1, pp. 1–10, 2023.

[37] D. Noverina, L. P. Dewanti, and L. Sitoayu, "Explainer Video and Compliance with Fe Tablets," *Darussalam Nutr. J.*, vol. 4, no. 1, 2020.

[38] R. Lutfiani *et al.*, "TAR Media Administration on Iron Tablet Consumption," *Ghidza Media J.*, vol. 8, no. 2, pp. 57–63, 2023.

[39] P. Karyati *et al.*, "Digital Comics for Nutrition Education," *J. Health. Mass.*, vol. 8, pp. 4141–4150, 2024.

[40] Rusnayani, M. Syafar, and M. Rifai, "Audiovisual Media and Tablet Compliance," *Jurnali Lmiah Obs.*, vol. 13, no. 3, pp. 50–55, 2021.

[41] H. Hakimia S *et al.*, "Counseling for Fe Tablet Consumption Using Videos," *Pros. Sem. Health. Mass.*, vol. 1, Oct., pp. 252–257, 2023.