



Original Research

Effectiveness of Health Education Role Play Method and Audio-Visual Methods of Skills First Aid Syncope Among Senior High-School Students

Berlian Yuli Saputri*, Aesthetica Islamy^{ID} and Anis Murniati

College of Health Utama Abdi Husada Tulungagung, Tulungagung, East Java, Indonesia

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CORRESPONDING AUTHOR

Berlian Yuli Saputri
berlian.ysaputri@stikestulungagung.ac.id
College of Health Utama
Abdi Husada Tulungagung,
Tulungagung, East Java,
Indonesia

ABSTRACT

Introduction: Delays and errors in providing first aid to victims experiencing syncope can significantly increase the risk of complications and even mortality. Syncope requires immediate, appropriate intervention, making first aid skills essential for students. This study aimed to compare the effectiveness of the roleplay method and the audiovisual method in improving students' skills in providing first aid for syncope.

Method: This study employed a quasi-experimental design with a nonequivalent group posttest-only approach. The population consisted of all 442 students in Class X at SMAN 1 Kedungwaru, Tulungagung, Indonesia. Using purposive sampling with specific inclusion and exclusion criteria, 71 students were recruited. Participants were divided into two groups: the roleplay group (n = 35, Class X-1) and the audiovisual group (n = 36, Class X-2). The independent variable was the health education method, while the dependent variable was the level of syncope first aid skills. Data were collected using an observation checklist, with a Content Validity Index (CVI) of 0.86, confirming its validity. Data analysis was performed using the Mann-Whitney U test.

Results: The demographic characteristics showed comparable distributions between groups. In the roleplay group, 49% (n = 17) of students demonstrated good skills, whereas in the audiovisual group, the majority 47% (n = 17) achieved only moderate skill levels. The Mann-Whitney test yielded a p-value of 0.001 (< 0.05), indicating a significant difference between the two methods.

Conclusion: Roleplay is more effective than audiovisual because respondents have the opportunity to practice directly so they learn and see more clearly.

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1. INTRODUCTION

Syncope, characterized by a temporary loss of consciousness, is a common occurrence among students. It is often experienced during physical activities, such as flag ceremonies or sports events. Several factors, including fatigue, exposure to direct sunlight, dehydration, and

standing for prolonged periods, can cause syncope by leading to insufficient blood flow to the brain (Arifin et al., 2024; Kurniati, 2015). Although syncope is commonly observed among younger populations, it can also occur in adults, especially as age increases (Williams et al., 2018).

According to the World Health Organization (WHO), the incidence of syncope is highest in the 15–19-year age group, and its prevalence may increase with age. The global prevalence of syncope is reported to be 34% (Williams et al., 2018). A study in England found that the average treatment period for syncope was 61 days. Additionally, research by Kundre Ns. (2018) identified that the highest prevalence of syncope occurs among individuals aged 15–44 years, with a rate of 44.8%.

In Indonesia, data from the Ministry of Health (2018) revealed that 35% of students experience syncope while engaged in school activities (Yunus et al., 2022). Specifically, in East Java, 9% of students reported experiencing syncope during school activities, and a similar trend was noted in 2017, when 10% of students fainted during activities such as flag ceremonies (Dinkes Jatim, 2018). For instance, in Tulungagung Regency in 2018, at least 20 students collapsed during the National Education Day ceremony, due to factors such as extreme heat, fatigue, and dehydration, further exacerbated by a delayed ceremony (Maryati, 2018).

Syncope, commonly referred to as fainting, is a sudden and transient loss of consciousness caused by inadequate cerebral perfusion (Williams et al., 2018). The condition presents with a spectrum of manifestations, beginning with prodromal or mild symptoms such as fatigue, dizziness, blurred vision, nausea, and cold sweats, and progressing in some cases to more severe complications such as cardiovascular disturbances, prolonged unconsciousness, or recurrent episodes (Kurniati, 2015). In the most critical scenarios, syncope can be life-threatening, particularly if blood flow to the brainstem is severely compromised, which may result in cardiorespiratory arrest and sudden death. Beyond the immediate health risks, syncope episodes in children and adolescents occurring within the school environment can also trigger panic, injury from falls, and significant psychological distress for peers and educators.

The Role-Playing Method is a teaching technique that emphasizes interactive learning, where participants demonstrate their knowledge and skills directly. This method is highly effective because it increases engagement and allows students to understand the material more deeply (Yuliastuti, 2018). However, this method can be time-consuming and requires significant preparation. On the other hand, the

Audio-Visual Method uses multimedia elements—visual and auditory stimuli—to facilitate learning, providing a comprehensive, engaging, and multisensory educational experience. Due to lack the hands-on, practical application of skills offered by role-playing, the Audio-Visual Method is very effective in conveying information (Wirabumi, 2018).

Integrating syncope education into school health programs aligns with broader goals of preventive care and health promotion (Yuliastuti, 2018). By strengthening the capacity of teachers and students to respond effectively, schools can significantly reduce the risks of delayed intervention, minimize potential complications, and improve the overall outcomes for individuals who experience syncope. Ultimately, such preparedness underscores the importance of collaboration between healthcare providers, educators, and families in creating safe learning environments that prioritise both the physical well-being and the psychosocial resilience of students. Therefore, this research will reveal which method is more effective or has a greater impact on student skills.

Given the high prevalence of syncope in high school and its potentially dangerous risks, we conducted this study to compare the effectiveness of Role-Playing and Audio-Visual Methods in improving first aid skills for handling syncope in Class X MIA students at public senior high school (in Indonesia, it is commonly called SMAN) 1 Kedungwaru, Tulungagung, Indonesia. This study aims to contribute to improving students' ability to handle syncope emergencies by providing health education that combines theoretical knowledge and practical skills. This minimizes the risk of worse outcomes if syncope is treated immediately.

2. METHODS

2.1 Research Design

The research design used in this study is a quasi-experimental design with a Nonequivalent Group Posttest-Only Comparison Group Design (Sugiyono, 2018). This design is chosen because it allows for comparing the effectiveness of two different health education methods (Roleplay and Audio-Visual) on syncope first aid skills in students. The study involves two experimental groups: one group receives health education using the Roleplay Method, while the second group receives the same health education content through the Audio-Visual Method. After

the treatment, a post-test is conducted to assess the skills of the students in providing syncope first aid. The material taught is the same for both groups, with the only difference being the method of delivery.

2.2 Population, Sample and Sampling

The population for this study consists of all Class X students at SMAN 1 Kedungwaru in Tulungagung, Indonesia, totalling 442 students across 12 classes. Due to logistical constraints and the nature of the research, purposive sampling was employed. Purposive sampling is chosen because it allows the researcher to select specific classes that meet predefined criteria (such as their willingness to participate, availability, and relevance to the study). This method ensures that the sample is representative of the population relevant to the research objectives, even though it may not be fully random.

The sample consists of 71 students from two Class X: Class X-1 (35 students) and Class X-2 (36 students). These groups were selected based on their relevance to the research. There are 2 groups in this research: roleplay (group 1) and audio visual (group 2). Both were exposed to the health education interventions using Roleplay Method in group 1 and Audio-Visual method in group 2.

2.3 Variable

In this study, the independent variables are the teaching methods used: the Roleplay Method and the Audio-Visual Method. These methods serve as the interventions whose effectiveness is being compared. The dependent variable is the students' syncope first aid skills, which will be measured by their ability to demonstrate correct first aid procedures after receiving the health education (Zatihulwani et al., 2022).

2.4 Instruments

The instruments used for data collection in this research are observation sheets designed to assess syncope first aid skills. The observation sheets contain a series of criteria based on established first aid procedures for managing syncope. Each sheet will evaluate the students' ability to correctly perform the necessary actions when dealing with a syncope episode, such as positioning the patient, checking vital signs, and calling for help if necessary.

The instruments used in this research were developed based on standard first aid guidelines for syncope, ensuring that the observed skills are

consistent with best practices in emergency care. The observation sheets were validated through expert review to ensure their accuracy in measuring the relevant skills. The Content Validity Index (CVI) from the validation process was 0.86, indicating the instrument is valid and suitable for assessing practical skills.

2.5 Procedure

The data collection procedure involves providing the observation sheets to students who meet the researcher's inclusion criteria. Inclusion criteria include: students in Class X MIA at SMAN 1 Kedungwaru, and students who have no prior training in syncope first aid. Exclusion criteria include: students who have previously participated in first aid training and students with medical conditions that may prevent them from demonstrating first aid skills.

After obtaining informed consent, the students participated in health education sessions using either the Roleplay or Audio-Visual method, depending on the group they were assigned to. After the intervention, a post-test using the observation sheet was administered to assess their syncope first aid skills. According to Notoatmodjo (2020), skill mastery is divided into three categories based on percentage scores: Good, Moderate, and Less. The Good category (76%–100%) reflects a high level of competence, in which individuals are able to consistently demonstrate the expected skills accurately, effectively, and with minimal supervision. This category suggests that the training or education provided has been successful in equipping participants with the necessary knowledge and practical ability to apply these skills in real-life settings.

Moderate category (56%–75%) indicates that individuals have acquired a partial mastery of the expected skills. In this range, participants may demonstrate some correct steps or procedures, but their performance may lack consistency, precision, or confidence. Further reinforcement, practice, and guidance are typically required to strengthen their abilities and ensure that they are able to apply the skills appropriately in various situations. This level highlights the need for ongoing training, feedback, and experiential learning opportunities.

Less category ($\leq 55\%$) represents a low level of competency, where individuals are unable to adequately demonstrate the skills, even with assistance or repeated attempts. At this stage, significant educational intervention is needed to

build foundational knowledge and practical ability. A low skill level may reflect limited exposure to the material, inadequate teaching strategies, or insufficient practice opportunities. Addressing this category requires structured remedial efforts, such as intensified training, simulation exercises, and continuous mentoring, to gradually elevate participants' proficiency.

Categorizing skills into these three levels not only facilitates systematic evaluation but also provides educators, trainers, and health professionals with practical benchmarks to design targeted interventions. For example, learners in the good category may be prepared for independent application and leadership roles in peer training, while those in the Moderate and Less categories require progressively more structured guidance and support. In the context of health education—such as first aid for syncope—these classifications are especially valuable for identifying readiness, tailoring educational methods, and ensuring that school personnel, including teachers and students, are adequately prepared to respond to emergencies.

2.6 Data Analysis

Data in this study were analyzed using non-parametric statistical methods, specifically the Mann–Whitney U Test, which is appropriate when comparing two independent groups with ordinal data or data that do not meet the assumptions of normality (Notoatmodjo, 2020). This test was selected to determine whether there is a statistically significant difference in the effectiveness of the two health education methods under investigation, namely the Roleplay method and the Audio-Visual method, in improving syncope first aid skills among students.

The analysis involves calculating a p-value to test the null hypothesis (H_0), which states that there is no difference in the effectiveness of the two methods. Conversely, the alternative hypothesis (H_1) posits that there is a significant difference between the two interventions. The threshold of statistical significance in this study is set at $\alpha = 0.05$. Thus, if the obtained p-value is less than 0.05, the null hypothesis will be rejected, indicating that the difference observed between the two methods is statistically significant and unlikely to be due to chance alone. This outcome would support the conclusion that one method is more effective than the other in enhancing students' syncope first aid skills.

On the other hand, if the p-value is greater than or equal to 0.05, the null hypothesis will be accepted, suggesting that there is no statistically significant difference in the effectiveness of the Roleplay and Audio-Visual methods. Such a result would imply that both educational strategies are equally effective in improving the targeted skills, and that selection of the method could be based on contextual factors such as resources, time availability, or learner preference. The results will provide valuable evidence for educators and health professionals in determining which educational method, if any, offers superior benefits for training students in syncope first aid.

2.7 Ethical Clearance

Before conducting the research, the researcher obtained approval from the relevant ethical review board or institution to ensure that the study meets ethical standards. The ethical review process confirmed that the research was conducted following ethical guidelines, including obtaining informed consent from participants and ensuring their confidentiality and privacy. The ethical certificate number is 53a/K-STIKesHAH/EC/II/2023.

3. RESULTS

Based on the table 1, it can be explained that of the 71 respondents, the majority of respondents were 16 years old, namely 52 respondents (73%). Furthermore, the majority of respondents were female, namely 42 respondents (59%) and 36 respondents never received information (51%).

Table 2 shows that respondents who given health education using almost a roleplay method half of the respondents have good skills with a total of 17 respondents (49%). Meanwhile, respondents who received health education using audiovisual methods is almost half 17 of the respondents had moderate skills respondents (47%).

Based on the Mann–Whitney U statistical test about differences in the effectiveness of health education in helping The first result of syncope was that p was 0.001 smaller than the value of the level of significance (α) is 0.05 ($0.001 < 0.05$) then H_1 accepted and H_0 rejected so there is a difference in effectiveness health education roleplay method and audiovisual method on syncope first aid skills among senior high school students at SMAN 1 Kedungwaru class X MIA 2023, Tulungagung, Indonesia.

Table 1. Demographic characteristics of participants

Age	n	%
15 years	19	27
16 years	52	73
Total	71	100
Gender		%
Male	29	41
Female	42	59
Total	71	100
Previous information		%
Once	35	49
Never	36	51
Total	71	100

Table 2. Analysis of research data

Group Category	Skills Criteria							
	Good		Moderate		Less		Total	
	F	%	F	%	F	%	F	%
Roleplay	17	49	13	37	5	14	35	100
Audio visual	5	14	17	47	14	39	36	100
p value	0,001							

4. DISCUSSION

This study was conducted to compare the effectiveness of the roleplay method and the audiovisual method in health education on syncope first aid skills among students of SMAN 1 Kedungwaru, class X MIA, Tulungagung, Indonesia. The demographic findings provide an overview of the distribution of skill levels achieved by the participants after the intervention. A higher proportion of respondents in the roleplay group demonstrated good skill levels (49%), indicating that nearly half of the students were able to perform syncope first aid procedures correctly and consistently after receiving training through interactive roleplay sessions. In contrast, the majority of respondents in the audiovisual group (47%) demonstrated moderate skill levels, suggesting that although the audiovisual method contributed to improved understanding, it was less effective in enabling students to consistently translate knowledge into practical skills.

Based on this outcome, the null hypothesis (H_0), which states that there is no difference in effectiveness between the two methods, was rejected. Conversely, the alternative hypothesis (H_1), which proposes that a difference does exist, was accepted. The results emphasize the superiority of the roleplay method as a health

education strategy for skill acquisition. Roleplay provides students with direct, hands-on practice, immediate feedback, and opportunities for active participation, all of which are critical in mastering psychomotor skills such as first aid. While audiovisual methods can effectively convey theoretical knowledge and increase awareness, they may not adequately engage learners in active skill performance, thereby limiting their practical competence. This study confirms that there is a statistically significant difference in the effectiveness of roleplay and audiovisual methods in improving students' syncope first aid skills.

These findings align with previous research highlighting the importance of experiential and interactive teaching methods in health education (Islamy et al., 2022). By directly involving students in simulated emergency scenarios, roleplay enhances not only knowledge retention but also confidence and readiness to apply first aid skills in real-life situations. Accordingly, health education or education is a process consisting of input and output. Input/output of Health Education consists of targets, materials/methods, aids/media while the output is in the form of changes in knowledge, attitudes and behavior of the target (Notoatmodjo, 2022). According to Islamy et al. (2022), health education can bring about changes in the target's attitudes and behavior (behavioral investment).

Therefore, the roleplay method may be considered a more effective educational approach for teaching syncope first aid in school settings, where prompt and appropriate first responses can significantly impact student safety and outcomes.

Based on the instrument, it was observed that students in the roleplay group demonstrated significant improvement in performing these skills compared to the audiovisual group. Before the intervention, the majority of students in both groups had limited or no knowledge and skill in handling syncope cases. After the intervention, the roleplay group showed higher accuracy, confidence, and completeness in executing each step, particularly in positioning the patient and recognizing the signs of syncope. The improvement in skills was assessed using an observation checklist that measured key components of first aid for syncope, including: Assessing the safety of the scene, checking consciousness, Positioning the patient correctly, Performing initial management (e.g., elevating the legs), Calling for help or referring appropriately (Suartini & Supardi, 2020).

These findings are in line with Ernani & Syarifuddin (2016), who stated that roleplay provides direct opportunities for participants to demonstrate actions, reinforcing both knowledge and motor skills. Through practice and repetition, students are able to build muscle memory and deeper understanding, leading to better retention and skill application. It was in line with a previous study conducted by Sutejo & Sulistiyawati (2019), who conducted a study at SMAN 1 Ngaglik Sleman, Indonesia, to evaluate the impact of different health education methods on students' knowledge levels. Their research compared the effectiveness of audiovisual media with simulation-based approaches and revealed that both methods were able to increase students' knowledge. However, the study found a significant difference between the two groups, with the simulation method yielding superior outcomes. The authors explained that simulation, which involves active practice, role enactment, and direct involvement of learners, creates a more interactive and engaging learning environment compared to passive exposure to audiovisual materials.

In the simulation group, students were able to experience realistic scenarios that demanded critical thinking, decision-making, and hands-on practice, thereby enhancing their comprehension and retention of health-related

information. This active learning process not only reinforced theoretical knowledge but also fostered confidence in applying the knowledge to practical situations, which is crucial in emergency response contexts such as first aid (Khasanah et al., 2024). By contrast, the audiovisual method tended to present information in a one-way, observational manner, which, while effective for raising awareness and delivering consistent messages, was less effective in building the psychomotor and affective domains of learning that are critical for skill performance. This evidence highlights the broader applicability of experiential teaching strategies in school-based health education programs, where fostering both knowledge and hands-on readiness is essential for ensuring students' ability to respond appropriately in emergency situations.

Indeed, the roleplay method plays a crucial role in developing procedural memory and increasing student engagement. During the research, it was observed that students in the roleplay group asked more questions, collaborated with peers, and corrected each other's actions during the practice session. In contrast, the audiovisual group, although exposed to the same information, did not have the opportunity to apply it practically, which limited their ability to internalize the procedure. Therefore, it can be concluded that health education using the roleplay method is more effective in improving syncope first aid skills compared to the audiovisual method. The opportunity to observe, imitate, and perform first aid directly enhances both understanding and retention. This supports the theory that experiential learning (learning by doing) is particularly effective in skill-based education.

This study has several limitations that should be acknowledged. First, the research was conducted at a single school (SMAN 1 Kedungwaru, Tulungagung, Indonesia), which may limit the generalizability of the findings to other student populations with different demographic or cultural characteristics. Second, the sample was restricted to class X MIA students, and therefore the results may not represent other grade levels or students in different educational tracks. Third, the assessment of syncope first aid skills relied on post-intervention evaluation at a single point in time. As such, the study was unable to capture long-term retention of skills or determine whether the improvements observed would be sustained over time. Fourth, the use of

observation checklists, although standardized, may have been subject to observer bias or variability in interpretation, potentially affecting the objectivity of the skill assessment.

Additionally, the study only compared two educational methods—roleplay and audiovisual—and did not examine other potentially effective approaches, such as blended learning, peer teaching, or repeated simulation practice. Finally, the study design did not control for external factors such as prior student exposure to first aid knowledge, learning styles, or motivation, which may have influenced the outcomes. Despite these limitations, the study provides valuable evidence on the relative effectiveness of roleplay and audiovisual methods in improving syncope first aid skills and highlights the importance of active, experiential learning in school-based health education.

5. CONCLUSION

This study found that roleplay is more effective than audiovisual methods in improving syncope first aid skills among high school students. The roleplay method allows participants to practice directly, engage actively, and visualize procedures more clearly, resulting in better skill acquisition compared to the relatively passive learning process of audiovisual media. These findings emphasize the importance of experiential learning strategies in health education, especially when the goal is to enhance practical competencies that require immediate and accurate responses, such as first aid for syncope. Despite these positive outcomes, the study is not without limitations. It was conducted in a single school with a limited sample size, which may restrict the generalizability of the findings. Additionally, the absence of a pretest–posttest design and follow-up assessments limited the ability to capture changes over time and the long-term retention of skills. Future research is recommended to involve larger and more diverse populations across multiple schools or regions to strengthen external validity. Employing pretest–posttest designs with long-term follow-ups would also provide valuable insights into skill retention and the sustained impact of different teaching methods. Moreover, exploring blended learning approaches that combine roleplay with audiovisual media may optimize both engagement and knowledge retention, offering a more comprehensive educational experience. Such strategies could be especially useful for

schools with limited resources or varying levels of teacher facilitation.

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7. FUNDING SOURCE

None.

8. AVAILABILITY OF DATA AND MATERIALS

All data underlying the findings are fully available.

9. AUTHORS' CONTRIBUTION

The author carried put all phases pertaining to this research study.

10. CONFLICT OF INTEREST

None.

11. REFERENCES

- Arifin, A., Yudha, E. K., & Haryanto, M. S. (2024). Impact of Telenursing Implementation on Diet Compliance and Blood Pressure in Patients with Hypertension. *Fundamental and Management Nursing Journal*, 7(1), 1–7. <https://doi.org/10.20473/fmnj.v7i1.49450>
- Dinkes Jatim. (2018). *Profill Kesehatan Jawa Timur Tahun 2017*. Dinas Kesehatan Provinsi Jawa Timur.
- Ernani, E., & Syarifuddin, A. (2016). Pengaruh Metode Role Playing Terhadap Keterampilan Berbicara Siswa Pada Mata Pelajaran Bahasa Indonesia Kelas V di Madrasah Ibtidaiyah Wathoniyah Palembang. *JIP Jurnal Ilmiah PGMI*, 2(1), 29–42. <https://doi.org/10.19109/jip.v2i1.1064>
- Islamy, A., Fitriani, E. T., & Farida, F. (2022). Pendidikan Kesehatan dengan Media Audio Visual AIDS Berpengaruh terhadap Sikap Siap Siaga Menghadapi Bencana Gempa Bumi dan Tanah Longsor. *Jurnal Keperawatan Jiwa*, 10(2), 431. <https://doi.org/10.26714/jkj.10.2.2022.431-436>
- Khasanah, U., Karyadi, K., Senjaningrum, A. P., & Sari, D. W. (2024). Remote Learning in Clinical Nursing Education: A Lesson

- Learned from The Pandemic Covid-19. *Fundamental and Management Nursing Journal*, 7(1), 42–50. <https://doi.org/10.20473/fmnj.v7i1.50424>
- Kundre Ns, R. M. (2018). Pengaruh Pendidikan Kesehatan dan Simulasi Terhadap Pengetahuan dan Keterampilan Pertolongan Pertama Pada Siswa yang Mengalami Sinkop di Sma 7 Manado. *JURNAL KEPERAWATAN*, Vol 6, No 2 (2018): *E-Journal Keperawatan*.
- Kurniati, Q. (2015). *Pengaruh Pendidikan Kesehatan Terhadap Tingkat Pengetahuan Guru Dalam Pemberian Pertolongan Pertama Pada Kasus Pingsan Di SD Muhammadiyah Tamantirto Yogyakarta*. Universitas Muhammadiyah Yogyakarta.
- Maryati, M. (2018). *20 Pelajar Pingsan Saat Upacara Hardiknas Di Tulungagung*. AntaraNews. <https://www.antaranews.com/berita/706406/20-pelajar-pingsan-saat-upacara-hardiknas-di-tulungagung>
- Notoatmodjo, S. (2020). *Metodologi Penelitian Kesehatan*. Rineka Cipta.
- Notoatmodjo, S. (2022). *Kesehatan Masyarakat: Ilmu dan Kiat*. Rineka Cipta.
- Suartini, E., & Supardi, K. (2020). Pengaruh Pendidikan Kesehatan Pertolongan Pertama Tersedak dengan Mobile Application dan Phantom pada Orang Tua di TK Taman Sukaria Terhadap Kemampuan Keluarga. *Jurnal Medikes (Media Informasi Kesehatan)*, 7(2), 411–422. <https://doi.org/10.36743/medikes.v7i2.231>
- Sugiyono, S. (2018). *Metode Penelitian Kuantitatif*. Alfabeta.
- Sutejo, & Sulistiyawati. (2019). Terapi Kelompok Terapeutik Remaja Menurunkan Sikap Agresif Siswa Di Sman 1 Ngaglik Sleman Daerah Istimewa Yogyakarta. *Konas Jiwa XVI Lampung*, 4(1), 183–189.
- Williams, B., Mancia, G., Spiering, W., Agabiti Rosei, E., Azizi, M., Burnier, M., Clement, D. L., Coca, A., de Simone, G., Dominiczak, A., Kahan, T., Mahfoud, F., Redon, J., Ruilope, L., Zanchetti, A., Kerins, M., Kjeldsen, S. E., Kreutz, R., Laurent, S., ... Brady, A. (2018). 2018 ESC/ESH Guidelines for the management of arterial hypertension. *European Heart Journal*, 39(33), 3021–3104. <https://doi.org/10.1093/eurheartj/ehy339>
- Wirabumi, R. (2018). Metode Pembelajaran Ceramah. *Annual Conference on Islamic Education and Thought (ACIET)*.
- Yuliastuti, I. (2018). The Influence of Supervision Nursing Unit Manager in Improving Performance Quality of Associate Nurse Performance. *Pagerwojo Community Health International Joint Conference*.
- Yunus, P., Damansyah, H., Talib, N. M., Karim, A. R., Djarumia, F., & Mutoneng, O. (2022). Knowledge Level of Adolescent Red Cross Students in First Aid for Syncope Handling. *Journal La Medihealthico*, 3(1), 66–71. <https://doi.org/10.37899/journallamedihhealthico.v3i1.624>
- Zatihulwani, E. Z., Rustanti, E., Puspita, S., & Bella, S. (2022). Factors Associated with Perceived Behavioral Control and Adolescents Smoking Behavior in a Rural Area of Indonesia. *Fundamental and Management Nursing Journal*, 5(1), 23–28. <https://doi.org/10.20473/fmnj.v5i1.39550>