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Empowering Students in Drug-Emergency Preparedness through the Think-Pair-Share Learning Model in Samarinda

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ABSTRACT

Drug use is a problem for today's youth. Several factors contribute to this, including biological, psychological, and social development. One way to address this is by improving adolescents' cognitive skills through the Think-Pair-Share model. In this health program, the team combined TPS with BLS practices. The sample for this activity was 30 students from SMA N 3 Samarinda. The results showed an increase in their knowledge, attitudes, actions, skills, and values related to substance use with a p-value <0.05, and then re-practicing emergency techniques. Furthermore, respondents felt comfortable discussing and enjoyed this health promotion model. Health promotion employs innovative strategies to foster critical thinking, boost confidence, and promote active listening, making it more engaging for today's youth. Furthermore, the Think-Pair-Share model, combined with training, can be used to optimize the acquisition of new knowledge. In addition, various learning models are needed to make health information enjoyable, especially for adolescents.

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INTRODUCTION

Drugs are a leading cause of death among young people. In the United States, they are the third leading cause of death among adolescents. A record 5.3% of 15–16-year-olds used marijuana in 2021. Similar trends are observed not only in the United States but also in Asia and Africa. Generally, adolescent drug addiction is predominant among school students (Bell & Hadland, 2024; Executive Summary World Drugs Report, 2023; Hsiung et al., 2022; Johnston et al., 2022; UNODC, 2023).

Based on the Indonesian Drugs Report for 2022, the drug addiction rate in Indonesia, according to data for the 15-64 age range, is 187,513,456 people. Additionally, in 2023, the prevalence of adolescent substance use was 6.450. East Kalimantan province, in 2021, is ranked 10th for substance use cases, with 436 cases, and the higher prevalence most being marijuana users at 2,105 cases. More specifically, in the provincial capital, Samarinda City, in 2020, it was revealed that users of crystal methamphetamine were caught red-handed carrying 55.86 grams, while in 2021, it was 64.07 grams and 16.45 grams of synthetic tobacco. From year to year, there has been an increase in drug abuse in Samarinda City (Aprianto, Dwi Riski dan Utomo, 2022; Badan Narkotika Nasional (BNN), 2021, 2022; Susanti et al., 2024).

Adolescents, by their very nature, are in a critical phase and period. This is compounded by changes in the body and brain that are developing. Several factors have been shown to stimulate adolescents to engage in risky behaviors during brain development (Badan Narkotika Nasional (BNN), 2022). In addition, socio-ecological factors contribute to drug use in adolescence, such as demographic status, support (family, peers, and neighborhood), school environment, easy access to drugs, economic problems, and community environment factors (Aprianto, Dwi Riski dan Utomo, 2022; Susanti et al., 2024). One preventive measure, particularly relevant to the characteristics of adolescents, is health education to enhance knowledge and cognitive skills (Badan Narkotika Nasional (BNN), 2022; Lukman et al., 2021)

Health promotion is one of the strategies to empower individuals or groups to improve their health conditions (Caron et al., 2024). In health promotion activities, health education and promotion professionals must consider the setting-based approach. Various types of setting-based approaches are employed in current practice (Stock, 2022). In several literacy programs, TPS (Student-Based Social Learning) has been demonstrated as an effective learning method for improving students' knowledge in various areas, including speaking skills and study skills (Endang et al., 2023; Pengpid et al., 2025; Steinfeld & Torregrossa, 2023).

The TPS (Think, Pair, Share) learning method was created by Frank Lyman of the University of Maryland in 1981. In this method, students' learning focus is divided into three parts: responding to issues/themes posed by the instructor, discussing them in small groups, and sharing the discussion conclusions with the larger group (Guenther & Abbott, 2024; Sarnoto et al., 2024). In part of the think, the audience could write their opinion or respond to the issue, whereas the benefit of the writing method is improving critical thinking (Agung et al., 2025). For a pair session, the audience explores their think in a small group or peer group, and check their opinion, ask questions too (Guenther & Abbott, 2024). The last is the share part, not only learning by themselves, but also learning from others (Abdelkader & Arabia, 2022).

Education plays a crucial role in promoting healthy activities (Aprianto, Dwi Riski dan Utomo, 2022). The key to improving adolescent cognitive development depends on the method used (Hsiung et al., 2022). Unfortunately, TPS utilization is a concern in the learning study, which focuses on studying

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literacy, as is the case in the realm of nursing science. However, the TPS learning model is used to empower students in drug emergencies, specifically within the nursing community health program.

PROBLEM AND SOLUTIONS

Neurodevelopmental processes during adolescence contribute to the characteristics of adolescents during this stage of development. These processes alter cognition, sensitivity, and behavior. One behavior that requires attention is substance abuse. Some of the impacts of adolescent substance use include mental health problems, cognitive impairment, and prolonged substance use. Furthermore, this condition contributes to morbidity and mortality in adolescents and young adults. One way to address this is through peer support. The challenge for healthcare professionals is how to transfer knowledge about substance use while optimizing the role of peers (Bell & Hadland, 2024; Hamidullah et al., 2020).

The health promotion in this case utilizes the learning style, employing the Think, Pair, and Share model, which involves actual practice with basic life support practice to help adolescents improve their understanding and cognitive skills. Moreover, the skills of communication and exploration can be developed through this activity. The community nurse could collaborate with a school organization or another profession to handle a drug emergency in the school aggregate.

METHODS

We conducted a health promotion program using the TPS model with 30 students who were members of the Youth Red Cross (PMR) at SMA N 3 Samarinda (11th and 12th grade classes), as recommended by the school's head. The fourth evaluation model used for this term includes observation, discussion, evaluation, and learning lectures. In general, the activity was divided into two sessions: Session 1, which employed the TPS learning model plus learning lectures, and Session 2, which focused on Basic Life Support (BLS) practice. Each session included observation and evaluation—using an analysis approach with descriptive and pre-posttest comparisons.

RESULTS

The health promotion utilizes the TPS model, taking place on May 8, 2025, from 9:00 AM to 12:00 PM WIB. A total of 30 respondents participated in this activity, with two teachers serving as accompanying teachers. The characteristics of each respondent will be detailed below:

TABLE 1. The data demographic of students as respondents of the health promotion used the TPS model, 2025

Characteristic	Sex					
	Girls	%	Boys	%	Number	%
Age: (min=17; max=19, mean=17.6) (n=30)						
17 – 18	21	88%	4	67%	25	83%
19 – 20	3	12%	2	33%	5	17%
Total	24	100%	6	100%	30	100%
Grade school						
11th-grade class	21	88%	4	67%	25	83%
12th-grade class	3	12%	2	33%	5	17%
Total	24	100%	6	100%	30	100%

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Regarding the age of the respondents, the youngest is 17 years old, comprising 21 girls (88%) and three boys (12%). At the age of 19, the group consisted of 3 girls (12%) and two boys (33%). Dominant participant in 11th-grade class (83%), only five students from the 12th-grade class (17%). Selected participants are representative of the active participation of the Youth Red Cross (PMR) extracurricular study in SMA N 3 Samarinda.

TABLE 2. Pre-Post data of the TPS learning method for Drug Emergency

Variable	Mean Pre-Test	Mean Post-Test	t-value	p-value	Conclusion
Knowledge	80.67	100.00	7.36	< 0.0001	Highly significant improvement
Attitude	89.33	100.00	5.11	< 0.0001	Highly significant improvement
Action	97.33	100.00	2.12	0.043	Significant improvement
Skills	86.67	100.00	6.68	< 0.0001	Highly significant improvement
Value	91.33	100.00	4.71	< 0.001	Highly significant improvement

The analysis of the pre-test and post-test scores demonstrated a consistent improvement across all measured domains following the implementation of the health promotion intervention. The paired samples t-test revealed statistically significant differences between pre-test and post-test scores for Knowledge, Attitude, Action, Skills, and Value.

In the Knowledge domain, the mean score increased from 80.67 to 100, and this improvement was highly significant ($t = 7.36$, $p < 0.0001$), indicating a strong positive effect of the intervention on participants' cognitive understanding of the material.

The Attitude domain also showed a highly significant increase, with the mean score rising from 89.33 to 100 ($t = 5.11$, $p < 0.0001$). This suggests that the intervention was highly effective in enhancing participants' positive perceptions and motivation toward adopting the recommended health behaviours.

In the Action domain, mean scores improved from 97.33 to 100. Although the magnitude of change was smaller than in other domains, the difference remained statistically significant ($t = 2.12$, $p = 0.043$). This suggests that the intervention was effective in enhancing participants' readiness and behavioural intentions, despite their baseline action scores already being relatively high.

The Skills domain showed a highly significant improvement, with mean scores increasing from 86.67 to 100 ($t = 6.68$, $p < 0.0001$). This reflects a substantial enhancement in participants' ability to perform the practical components emphasized in the intervention.

Similarly, the Value domain exhibited a highly significant increase from 91.33 to 100 ($t = 4.71$, $p < 0.001$), indicating that participants experienced meaningful gains in internalizing and prioritizing health-related values after the intervention.

For BLS practice, a representative respondent (consisting of one female and one boy participant) who chose the participants themselves can follow the instructions and be a good practitioner.

DISCUSSION

All respondents in this community service program had received drug material during Student Orientation (MOS) in early years to become students here, including active members of the Youth Red Cross, with several activities to improve their knowledge, except for the drug-emergency TPS learning model, which combines BLS practice. All participants may have a valid point.

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TPS is utilized in several fields to enhance students' knowledge, from elementary school to high school, for various purposes. Based on a library research approach in 2021, the TPS enhances students' academic potential, resulting in improved learning outcomes from elementary to senior high school levels. Some advantages include improving critical thinking, study motivation, students' courage to express their opinions without shame or fear, preparing students who are competitive in the workforce, and improving in all lecture courses (Arlinah, 2021; Sarnoto et al., 2024; Siregar, 2021). The three Indonesian literacies above utilize the TPS model to some extent. However, all are based on a specific subject and are not primarily used for health promotion, with a greater focus on drug emergencies.

Educational intervention with engaging the video in a school setting has proved effective in increasing awareness and openness (Ferdiani & Kusmiati, 2025). The health promotion team played two videos during the activity: one during Session 1 in the presentation of learning, and the second during the practicum session, playing the BLS video before practice. To all activities in the TPS learning model, combine the BLS practice in the health promotion session, which has a similar final result to other health promotions that focus on drugs and premarital sex. If doing a combination for health promotion, utilization could enhance participants' understanding (Aggraeni & Abdurrahman, 2025).

The presenter combined the use of cognitive enhancement, utilizing the TPS model, with a demonstration of BLS management in drug overdose cases. It has relevance to some cases where adolescent substance use feels like a new challenge. This is linked to several types of drugs (ecstasy, amphetamines, and cocaine), which can cause various sensations. However, this has been shown to increase heart rate in users. Prolonged use of these drugs can lead to cardiac arrest, which is a serious risk. Based on that, BLS is a necessary preventive activity. The AHA (2020) explains the stages of optimizing BLS for laypeople, including danger, response, shout for help, circulation, and recovery position (AHA, 2020).

Drug use is primarily due to developmental processes during adolescence, particularly in adolescence. These developments include biological, psychological, and social factors, and all of these factors are linked to students being more vulnerable to becoming drug users. Crimes such as violence and bullying have been shown to occur when students use drugs (Putri, 2017). The responsibility to reduce drug use in adolescents lies with all parties, including clinicians. In clinical practice, five ways to address substance abuse in adolescents are: increasing knowledge, minimizing underlying biases about drug use, providing excellent treatment, and expanding motivational interviewing. Finally, building a community among adolescent drug users and their parents fosters a commitment to healthy living (Bell & Hadland, 2024).

To mitigate this situation, greater community awareness is needed. Collaboration with various parties, including schools, healthcare providers, local governments, and nonprofit organizations, is essential (Bastian Alexander Arif and Rahayu Rizki, 2022). Several related references have also noted the effectiveness of providing BLS information to adolescents, particularly high school students. In Germany, similar training has begun to be taught to adolescents aged 13-14. At this age, adolescents can perform BLS, including Cardiopulmonary Resuscitation (CPR), just as effectively as adults (Suleman, 2023).

The school provides more specific details about the Youth Red Cross extracurricular program, enabling students to collaborate with health professionals in an educational or clinical setting, or with other stakeholders who are crucial in minimizing risk behavior among adolescents, not just drug use.

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FIGURE 1. Think process

FIGURE 2. Pair process

FIGURE 3. Share process

FIGURE 4. BLS practice

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FIGURE 5. Handover of plaques

CONCLUSION

Overall, the findings indicate that the health promotion intervention was highly effective in improving cognitive, affective, behavioural, and value-based aspects among participants. All domains demonstrated statistically significant improvements. Although the increase in Action was smaller, it remained statistically meaningful, showing that the intervention contributed positively across all measured areas. Furthermore, the representative participants in the BLS practice found it enjoyable and followed the instructions.

Substance abuse is a major concern among teenagers, and there is a need for collaboration among several parties to reduce it. Family, school, peers, and clinicians are some of the support systems available. Meanwhile, upgrading and increasing knowledge related to drug use. Further, considering several learning methods, a choice must be made for a great strategy with several interesting options for adolescents. Hopefully, the health school agency will be approved as a community nurse frontline worker on the school's aggregate.

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