

Safety Riding Training To Improve Traffic Compliance Among Students at SMAN 1 Nglames

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ABSTRACT

Background: The increasing use of motorcycles among underage high school students, combined with low traffic discipline, has become a significant concern. **Objective:** This study aimed to examine the effectiveness of a safety riding video intervention in improving traffic discipline among early adolescents. An experimental method with a post-test only control design was employed, involving 30 tenth-grade students of SMAN 1 Nglames, Madiun, who were divided into experimental and control groups. Traffic discipline was measured using a 15-item safety riding scale based on the Theory of Planned Behavior. The experimental group received a safety riding educational video, while the control group received no intervention. The results of the independent samples t-test showed no significant difference between the two groups (Sig. 2-tailed = 0.625 > 0.05). **Conclusion:** These findings indicate that the video-based safety riding intervention did not significantly improve students' traffic discipline. Further research with broader samples and varied intervention strategies is recommended.

Keywords: Safety Riding Training, Traffic Compliance, Student

ABSTRAK

Latar Belakang: Peningkatan penggunaan sepeda motor di kalangan siswa SMA di bawah umur, dikombinasikan dengan rendahnya disiplin lalu lintas, telah menjadi masalah yang serius. **Tujuan:** Studi ini bertujuan untuk menguji efektivitas intervensi video keselamatan berkendara dalam meningkatkan disiplin lalu lintas di kalangan remaja awal. Metode eksperimental dengan desain kontrol post-test saja digunakan, melibatkan 30 siswa kelas X SMA Negeri 1 Nglames, Madiun, yang dibagi menjadi kelompok eksperimen dan kelompok kontrol. Disiplin lalu lintas diukur menggunakan skala keselamatan berkendara berisikan 15 item berdasarkan Teori Perilaku yang Direncanakan. Kelompok eksperimen menerima video edukasi keselamatan berkendara, sementara kelompok kontrol tidak menerima intervensi. **Hasil:** Hasil uji t sampel independen menunjukkan tidak ada perbedaan yang signifikan antara kedua kelompok (Sig. 2-tailed = 0.625 > 0.05). Temuan ini menunjukkan bahwa intervensi keselamatan berkendara berbasis video tidak secara signifikan meningkatkan disiplin lalu lintas siswa. Penelitian lebih lanjut dengan sampel yang lebih luas dan strategi intervensi yang bervariasi direkomendasikan.

Kata Kunci: Pelatihan Safety Riding, Kapatuhan Berlalu lintas, Siswa.

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Introduction

Inadequate public transportation in Indonesia has led people to choose motorcycles as their daily means of transportation, both for work and for traveling from one place to another. In addition to being a means of transportation, motorcycles are also influenced by the public perception that owning a motorcycle reflects one's social status in society (Sadono, 2016). This is evidenced by the increasing number of motorcycles from year to year (Sadono, 2016). According to data from the Indonesian National Police Traffic Corps, as of February 9, 2023, there were 127,976,339 motor vehicles, or 87% of the total number of private vehicles. Other factors influencing the increase in the use of two-wheeled motorcycles, according to Handayani, D., Ophelia, R. O., & Hartono, W. (2017) are: fuel prices (unpredictable fuel prices make people prefer to buy fuel-efficient means of transportation), the length of time needed to reach their destination (this is also influenced by traffic congestion in big cities), and the high cost of public transportation, which is not balanced by safety and comfort for users.

The increasing number of motor vehicles is not matched by the level of public discipline in terms of traffic order, resulting in many traffic violations committed by the public. These violations can be attributed to a lack of education and knowledge regarding traffic regulations, low awareness of traffic order, insufficient awareness of compliance with traffic laws, and low public discipline. Data from the National Police Criminal Information Center from January 1 to May 14, 2024, recorded 564,838 traffic violations. The types of violations committed include: not wearing a helmet, violating traffic signs and road markings, driving while using a cell phone, and carrying more than two passengers. Other violations committed by road users, according Sadono (2016) include cutting in line, driving in a zigzag pattern, speeding, disregarding traffic signs, and violating signs prohibiting turns. The consequences of traffic violations can include material damage and loss of life (death).

Traffic violations are not only committed by adults but also by minors. A current phenomenon is that many parents provide their children with motorcycles even though they are not yet of age. These habits are then seen as a source of pride for parents whose children can ride motorcycles on their own, even though they are not yet legally permitted to do so. The role and awareness of parents are crucial in changing this perspective, as parents are also held responsible for their children's actions in the event of a traffic violation. Traffic violations among children occur due to a lack of mental readiness (unstable mental state), negligence, insufficient knowledge of traffic signs, and carelessness while driving.

In this study, researchers focused on high school students who drive themselves to school. Although Article 77 paragraph (1) of the Traffic and Road Transportation Law states that "everyone who drives a motor vehicle on the road must have a driver's license (SIM). In accordance with the type of motor vehicle being driven," there are still many children under the age of 17 who ride motorcycles. This means they do not yet have an Identity Card (KTP), which is one of the requirements for obtaining a SIM. The common occurrence in society of underage children riding motorcycles leads to accidents and traffic violations. Sadono (2016) states that the causes of traffic violations committed by underage children include a lack of knowledge about traffic regulations, drivers only complying when there are officers present, and the existence of a lenient system when issued a ticket. Another factor is the influence of families who intentionally allow their underage children to ride motorcycles, as well as the need for schools to enforce stricter rules regarding students bringing motorcycles to school. Another issue observed in the field is that these children do not bring their motorcycles to the school premises but leave them in areas around the school. Schools should be firm in addressing this phenomenon to reduce cases of underage children riding motorcycles. The final factor is peer influence and the children's environment, which stems from imitating the behavior of their peers in their surroundings (both residential and school environments). There is a perception that teenagers who cannot ride motorcycles are considered outdated and uncool. This factor is what motivates underage children to learn to ride motorcycles.

Although these minors have been proven to have committed traffic violations, the police still find it difficult to impose sanctions on them. According to a study conducted by Nugroho & Pujiono (2022), the factors hindering the enforcement of traffic laws against minors include the social psychology of children, such as many children being reluctant to provide statements, insufficient guidance from parents regarding the dangers of traffic violations, the absence of diversion programs, discrepancies in statements provided by witnesses and defendants, and the determination of who is at fault. This aligns with research conducted by Handono (2021) in a journal titled "Enforcement of Traffic Violations by Minors," "that addressing traffic violations by minors faces challenges due to a lack of traffic discipline, insufficient socialization of the law,

inconsistent law enforcement, selective enforcement of the law, and cultural, legal, and overly lenient sanctions. Under Article 69 of the SPPA Law, children under the age of 14 may only be subject to certain measures, meaning that traffic violations committed by children under 14 should not be subject to criminal penalties or fines. The actions that can be taken are returning the child to their parents or handing them over to a rehabilitation institution. Thus, with this regulation, children under 14 feel exempt from the law, even if they commit a legal violation (driving without a driver's license). According to one student from SMAN 1 Nglames, they ride motorcycles to school every day without wearing helmets. They also mentioned that some of them do not have a driver's license (SIM) even though they are of legal age to obtain one.

The results from Merdiaty (2025) is the study show the subjects' understanding of safe driving, their awareness of traffic, and their level of compliance with traffic regulations. Although police officers have tried to enforce the principles of safe driving, in reality, many people have not internalized safe driving behavior. Woratanarat, et al (2013) with the research "Safety riding program and motorcycle-related injuries in Thailand" is safety riding training was effective in reducing injuries. These training programs differ from those in other developed countries but display comparable effects. Hazard perception skills might be a key for success. The other research Tunnicliff (2012) with jurnal "Understanding the factors influencing safe and unsafe motorcycle rider intentions," show that safer driving intentions are most consistently predicted by perceived behavioral control (PBC), while riskier intentions are predicted by attitudes and sensation seeking. Perceived behavioral control (PBC) is able to explain a greater proportion of variance for intentions to engage in risky behavior.

One way to enhance traffic awareness among minors is by implementing "safety riding." Safety riding, or road safety, according to Manurung et al. (2019) is an activity that prioritizes safety, both personal safety and the safety of other road users. Manurung et al. (2019) explains that safety riding is an effort aimed at minimizing hazards, thereby creating a safe environment for other road users, and understanding prevention and mitigation measures in traffic. Safety riding is a comfortable attitude demonstrated while driving, thereby reducing the risk of traffic accidents. Syukri et al. (2021) explain that factors influencing safe riding include age, gender, occupation, education, and income level.

The results of a study conducted by Puspoprojo & Laila (2021) show that there is a significant correlation between knowledge and safety riding behavior. In line with the research conducted by Permatasi et al. (2022) there is a significant relationship between age, knowledge, safety riding behavior, and traffic compliance among motorcyclists in Dusun 04 Teguhan, Madiun. The results of the research by Izmi and Rusmiatai 2022, in jurnal faktor-faktor yang berhubungan dengan safety riding (2022) reveal that safety riding behavior is related to knowledge and family support. In line with research conducted by Puspoprojo and Laila (2021), there is a meaningful relationship between knowledge and safe riding behavior. Based on the above description, the researcher used safe riding intervention by providing educational videos related to traffic regulations and the consequences of traffic violations to improve traffic discipline behavior among early adolescents.

Previous studies Yasin, S. Z. A., Haerani, H., & Anwar, (2026) generally only examined the relationship between knowledge, age, family support, and safe riding behavior. These studies were correlational and did not directly test the effectiveness of educational interventions. In addition, there are still limited experimental studies targeting high school students as a high-risk group and using video media as an educational tool to improve knowledge and attitudes towards safe riding. This, the research gap lies in the lack of experimental studies, limited focus on high school students, and minimal use of educational videos as a form of intervention.

This study contributes theoretically by testing the effectiveness of safety riding interventions, not just the relationship between variables. Methodologically, this study uses a post-test only control design to compare the intervention and control groups. Practically, the results can be used as a basis for developing video-based safety riding education in schools. Contextually, this study focuses on high school students as a group that is prone to traffic violations.

Material and Method

Participants

This study involved 30 research subjects who were students of SMAN 1 Nglames, using purposive sampling technique. This was because the researcher needed participants with specific characteristics relevant to the

research objectives. The criteria for subjects used in this study were high school students who already rode motorcycles.

Procedure

The model used in this study is the Posttest-Only Control Design, which means that this experimental study consists of two groups, each selected randomly. The first group receives treatment/intervention or is the experimental group, while the other group does not receive treatment or is the control group. The Posttest-Only Control Design model can be described as follows:

Experimental Group: R - X - P1

R	X	P1
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Control Group: R - - P2

R	-	P2
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Description:

R: the group was randomly divided into two groups

X: treatment (driving safety video) P1: group that received treatment

P2: group that did not receive treatment

The treatment given by the researcher to the subjects was a 21-minute educational video on driving safety. The experimental group watched or understood the video first before filling out the questionnaire scale that had been distributed. Meanwhile, the other group (control group) filled out the questionnaire scale that had been distributed directly.

Data Collection

This study uses one scale instrument, namely safety riding or driving safety, developed by Ema Komala Apriliani (2017), which consists of 15 items, including 7 favorable items (items 1, 2, 3, 4, 6, 7, and 11) and 8 unfavorable items (items 5, 8, 9, 10, 14, 12, 13, and 15). This study was conducted offline, where the researcher directly administered the scale to students at SMA Negeri 1 Nglames.

Data Analysis

The data analysis used was a normality test, hypothesis testing with the independent sample t-test technique, which was analyzed using SPSS software version 21.

Result

The implementation of this study was based on a post-test only control design, in which there were two groups: the first group received treatment (experimental group), while the second group did not receive treatment (control group). The number of subjects participating in the study was 30 students from SMAN 1 Nglames, divided into two groups: the experimental group consisted of 15 students, and the control group consisted of 15 students.

The study began with the experimental group being given a 21-minute educational video on safety riding, which covered traffic regulations, the consequences of traffic violations, and safety riding rules. Meanwhile, the control group did not receive any treatment. After the intervention, both groups were immediately given a post-test to measure the differences or comparisons in knowledge and attitudes toward safety riding. Before conducting further analysis to compare the scores of the two groups, a normality test

was first conducted to determine whether the data from each group was normally distributed. The results of the Shapiro-Wilk test showed that:

Table.1
Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Eksperimen	,21	15	,05	,87	15	,03
	6	8	0		4	

Based on the output, it can be seen that the significance values in the Kolmogorov Smornov (Sig. 0.18) and Shapiro Wilk (Sig. 0.027) columns are > 0.05 . Therefore, it can be concluded that the data is normally distributed. Based on the table above, it shows that the data is normally distributed. Because the data is normally distributed, the analysis is continued with parametric statistical tests. In this study, an independent sample t-test was used to compare the mean post-test scores between the experimental group and the control group. The results of the independent sample t-test show that:

Table 2.
Independent Sample T-test

F	Sig
2.718	.110

The results of the Independent Sample T-test indicate that the Significance (Sig.) of the experimental group and the control group is 0.110. Where 0.10 is greater than 0.05 ($0.110 > 0.05$), which means that there is no difference between the average scores of the experimental group and the control group.

Based on the results of the post-test score average calculation, the experimental group that was given educational videos showed a higher average score than the control group that did not receive the treatment. However, the average difference between the two groups did not show a statistically significant difference. This is evidenced by a significance value of 0.110, which is greater than 0.05 ($0.110 > 0.05$), so it can be concluded that although there is a difference in the average scores between the experimental group and the control group, the difference is not strong enough to be considered statistically significant.

Discussion

Based on the results of a survey conducted on 30 subjects categorized as high school students, the data shows that 22 subjects were aged 15 and 16 years old, and 8 subjects were aged 17 years old. The 30 subjects were randomly divided into two groups: 15 subjects in the experimental group (who received the intervention) and 15 subjects in the control group (who did not receive the intervention). It was found that before the intervention, some students had already violated traffic rules and safety riding regulations, such as not wearing helmets while riding and not having a driver's license, as some subjects were not yet old enough to obtain a driver's license. According to Sasambe (2016), there are several examples of traffic violations, such as not having a driver's license or vehicle registration, driving against traffic, using a cell phone while driving, driving an unroadworthy vehicle, not wearing a helmet, and turning without signaling. This aligns with research conducted by Barus, M.N et al. (2024), which, based on direct observation, showed that there were several cases of traffic violations, including failing to obey traffic signs, not wearing helmets, not displaying vehicle plates, and driving against traffic.

Santrock (2002) states that several factors influencing traffic violations include self-identity, peer influence, environmental conditions, male perspective, parental role, encouragement from others, seeking thrills, stress, pressure, and self-awareness. Research conducted by Fitriana, I.N (2023) states that the main factors causing teenagers to commit traffic violations include internal factors (themselves) and external factors (parents, social circles, and a sense of prestige or consumerism). The results of research by Yasin, S. Z. A., Haerani, H., & Anwar (2023) also show that teenagers' attitudes toward traffic violations on the road indicate that most students have high traffic violation scores. Despite having a high level of knowledge, their tendency to violate rules remains high because teenagers have a tendency to break regulations. One of the

intervention subjects admitted that he did not wear a helmet while riding because the distance between his home and school was relatively short.

Based on the intervention in the form of educational videos on safe riding conducted by the researcher, the researcher found that there was no significant difference between the group of students who were given the safe riding video and the group of students who were not given the safe riding video. This shows that the knowledge of safe riding among students at SMAN 1 Nglames is already quite good. The provision of educational videos on safe riding aims to encourage students who ride motor vehicles to and from school to continue to obey traffic regulations so that the number of accidents, especially among minors, can be reduced.

The intervention was not effective because the method provided in the intervention should have been behavioral. Changes in adolescents' safety riding behavior should be implemented comprehensively by addressing the three main components of the Theory of Planned Behavior (TPB), namely attitude, subjective norms, and perceived behavioral control. These three factors play a crucial role in shaping adolescents' intentions to engage in safe riding practices, as supported by the findings of Alia and Efendi (2026).

Conclusion

It can be concluded that safety riding interventions do not influence students' knowledge of traffic discipline at SMAN 1 Nglames, Madiun, so other factors need to be analyzed in greater depth for further research.

Author contribution statement

Author HWW contribute to study design, data collection, and statistical analysis, author YS contributes to study design, data collection, statistical analysis, and manuscript preparation, atuthor NES contributes to data collection and manuscript preparation, author DES contributes to manuscript preparation and funds collection, RCF contributes funds collection.

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