

Road Transportation Safety Through Community Empowerment

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ABSTRACT

Some communities have limited access to road transport safety education programs. Not all communities are actively involved in efforts to empower road transportation safety and have the perception that the risk of accidents is something that cannot be avoided. Community empowerment regarding road transportation safety includes 4 stages (preparation, provision of pre-test, community empowerment phase, and provision of pre-test) with community results on road transportation safety. 60 people from PAUD Teachers and Transportation Service Employees were participants for 2 days with 7 topics. The majority of participants consisted of teachers (83.3%), women (90%), bachelor's degrees (60%), and over 46 years of age (51.5%). Pre-test 7 topics still below 30%. The first day's activities were phase 1 to phase 4 and the second day was phase 5 to phase 7. Post-test 7 topics were above 75%. 7 topics have increased above 50%. The improvements that occur can be the beginning of realizing road transportation safety for society.

ARTICLE INFO

Article History :

Submitted/Received 5 Jan 2024

First Revised 8 Jan 2024

Accepted 9 Jan 2024

First Available online 30 Jan 2024

Publication Date 31 Jan 2024

Keyword :

Road

Transportation

Safety

Community Empowerment

INTRODUCTION

Road transportation is the backbone of modern society's mobility which plays a crucial role in supporting economic, social and cultural activities (Tarigan et al., 2021). Road transportation plays a fundamental role in shaping the social and economic structure of a society (Zhu et al., 2022). The rapid growth in the number of motor vehicles and urbanization have had a significant impact on the road transport system. The increasing abundance of motorized vehicles has created serious challenges regarding traffic congestion, increased risk of accidents, loss of productivity, and people's quality of life (Din et al., 2022). Road user safety and environmental sustainability are major concerns amidst the increasing risk of accidents and the negative impact of pollution. Technological developments and new mobility trends are bringing dynamic changes in the road transportation paradigm (Ntakiyimana et al., 2022). The mobility of people and goods through the road transportation system is the foundation for economic growth, inter-regional connectivity and community integration. So many aspects are involved which are essential for designing sustainable policies and innovative solutions (Li & Managi, 2021). Insufficient road infrastructure, lack of safety, and air pollution are critical issues that require serious attention (Alonso de Armiño et al., 2022).

Road transportation safety is a crucial aspect that impacts thousands of lives every year. Road transport systems pose serious risks to road users. Traffic accidents have a profound impact on society (Johansen et al., 2021). These accidents are caused by human error, poor road conditions, or other factors. Economic losses, psychological trauma and loss of life are a tragic picture of insecurity in road transportation (Vesela et al., 2022). Road transportation safety is not only a necessity, but also a shared responsibility of society, government and other stakeholders (Luo et al., 2021). Road transportation safety involves various aspects that can impact road users, both drivers, pedestrians and cyclists. Factors such as excess speed, violation of traffic rules, and unsafe driver behavior can cause collisions, injuries, and death (Chen et al., 2021). Damaged or inadequate road infrastructure can cause accidents and increase the risk of accidents such as potholes on the road, unclear traffic signs, or the absence of safe sidewalks (Johansen et al., 2021). Many drivers do not obey traffic rules such as using cell phones while driving, exceeding the speed limit, or not using seat belts. Drivers who drive while intoxicated or are affected by dangerous substances can cause serious accidents (Shaik et al., 2021). Pedestrians and cyclists are vulnerable to accidents due to the lack of adequate infrastructure such as sidewalks and safe bicycle lanes. Use of in-vehicle technology, such as cell phones or entertainment systems, can cause driver distraction, increasing the risk of accidents. Lack of awareness of the importance of traffic safety and lack of related education can result in unsafe driver behavior. There is a safety gap between road users such as pedestrians and cyclists. Extreme weather conditions can increase the risk of accidents if not anticipated appropriately (Luo et al., 2021).

Road transportation safety is not only the responsibility of the government and related institutions, but also the collective rights and obligations of every individual in society (Chen et al., 2021). Active participation is encouraged and public awareness is increased about the importance of road safety to create a safer environment for every road user (Ozali & Saribanon, 2021). Road transportation safety is seen as a shared responsibility and it is hoped that the community can jointly contribute to creating safer roads for all (Luo et al., 2021). Community empowerment regarding road transportation safety plays a key role in establishing a safe and responsible traffic culture (Veronika et al., 2022). Community empowerment not only includes increasing knowledge about traffic rules, but also involving the community in efforts to prevent and manage the risk of accidents. Improving driving skills, using safety equipment, and increasing awareness of the surrounding environment are the main focus in efforts to empower the community for road transportation safety (Firman, 2021). Community empowerment has great potential to create significant positive changes in road transportation safety culture.

Community empowerment is the main foundation in efforts to create communities that are independent, empowered (Wartono et al., 2021), and actively participate in decision making that affects their lives (Nurwulan, 2022). The concept of community empowerment emphasizes the importance of providing

knowledge, skills and resources to individuals and groups in a community (Salam, 2018), so they are able to manage their lives more effectively (Atmaja et al., 2022). Empowerment is not just the provision of assistance, but also a process that allows people to have control over their own destiny (Ubaidillah et al., 2021). Community empowerment is the key in responding to various changes and overcoming emerging problems (Saeful et al., 2020). There is respect for community diversity and promotes inclusiveness and social justice. Community empowerment brings the concepts of human rights, democratic participation and sustainable development into one unity (Ilfroh & Ervina, 2022), ensuring that every member of society has fair access to opportunities and resources (Firman, 2021). Community empowerment aims to provide greater control to the community over their independent lives and improve overall welfare (Yandri et al., 2021). Community empowerment is not a simple process and requires collaboration between the government, non-government organizations (Nisa et al., 2022), the private sector and society itself (Nuraini, 2022). Community empowerment aims to create an environment for every individual who has an active role in development and positive change in their community (Endah, 2020).

Community empowerment in road transportation safety can face a number of problems that require attention and resolution (Rahmat & Mirnawati, 2020). There are still some people who don't understand the risks and consequences of unsafe driving behavior (Johansen et al., 2021). Different levels of education in society can create gaps in understanding traffic rules and driving safety practices (Chen et al., 2021). Communities with low levels of education may need different communication approaches to improve their understanding (Johansen et al., 2021). Some communities may have limited access to traffic safety education programs, such as defensive driving training or technical knowledge regarding vehicle safety (Tarigan et al., 2021). The community needs a safe environment to actively participate in safety empowerment (Ozali & Saribanon, 2021). Not all people are actively involved in efforts to empower road transportation safety. Some people have the perception that the risk of accidents is something that cannot be avoided. Areas with high traffic accident rates have big challenges in changing unsafe driving behavior and culture. Community empowerment requires adequate support and resources, including funds for training, information campaigns, and infrastructure improvements (Shaik et al., 2021). This lack of support can be an obstacle in achieving better transportation safety (Vesela et al., 2022). Overcoming these problems requires collaborative efforts between government, non-government organizations, local communities and the private sector to design effective and sustainable community empowerment programs. Road transportation safety with community empowerment implemented in Cirebon City, West Java Province is a step towards forming a society that is more resilient, responsive, and capable of creating positive changes regarding road transportation safety. Community empowerment is expected to improve road safety, create a safer transportation environment, and ensure that every trip on the highway is a safe and comfortable trip for everyone.

METHOD

Community empowerment regarding road transportation safety includes 4 stages with community outcomes on road transportation safety. The preparation stage involves creating a community activity plan with partners to carry out community empowerment activities regarding road transportation safety. The pre-test stage was carried out to determine the initial abilities of participants who had been selected in previous observations. This pre-test is a simulation to determine the participants' mastery of the topic. The community empowerment stage is carried out by providing education and training according to topics in theory and practice regarding road transport safety from competent sources. The post-test stage was given to participants in the form of a short and simple test to test their mastery of road transportation safety after going through a series of previous stages. This is done to find out the progress of community service that has been carried out (FIGURE 1).



FIGURE 1. Community Empowerment Model

The material consists of road transportation safety topics. Each topic has 3 questions for pre-test and post-test, so there are a total of 21 questions. Multiple choice (A, B, C, D) are answers that can be selected accompanied by an answer key for each question. If the answer is correct you will be given a score of 1, but if it is wrong you will be given a score of 0. The percentage value will be obtained from the results of the correct answer by dividing the number of questions and then multiplying by 100. The difference between the pre-test and post-test results is grouped into 4 categories, namely Not Good (1%-25%), Poor (26%-50%), Good Enough (51%-75%), and Very Good (76%-100%).

RESULT AND DISCUSSION

Community empowerment is carried out in partnership with the Cirebon City Transportation Service, West Java Province. The Transportation Service selected and selected empowerment participants who came from Pendidikan Anak Usia Dini (PAUD) Teachers and Cirebon City Transportation Service Employees. The location for the activity was held at the Cirebon City Transportation Service with a joint committee and resource persons from the Politeknik Keselamatan Transportasi Jalan (PKTJ) Tegal and the Cirebon City Transportation Service. The activity location consists of indoors for delivering theoretical material and outdoors for practice. The activity was carried out for 2 days with 7 topics regarding road transportation safety (TABLE 1).

TABLE 1. Road Transportation Safety Topics

No	Topic	Material
1	Traffic and Road Transport Regulations	Problems, hierarchy, guidance, use and equipment of roads, vehicles, permits, safety
2	Pedestrian Characteristics	Safety principles, vulnerable road users, strategies, facilities
3	Driving Procedures	Preparation for driving, procedures, compliance and prohibitions
4	Procedures for Using Public Transportation	Public transport, plans and permits, services, payment, use
5	Procedures for Traffic at Level Crossings	Level crossings, signs, procedures
6	Emergency Response	First aid, principles, steps, evidence, accident discovery behavior, fire incidents
7	Traffic Awareness at an Early Age	Roads, vehicles, signs, markings, zoss, lights, walking and crossing, driving equipment, driving etiquette

There were 60 participants in community empowerment for road transportation safety. The majority of participants consisted of teachers (83.3%), female (90%), had a bachelor's degree (60%), and were over 46 years old (51.5%) (FIGURE 2). All participants and committees carried out community empowerment activities at the Cirebon City Transportation Service from 09 May 2023 to 10 May 2023. The resource persons consisted of 3 people from the Politeknik Keselamatan Transportasi Jalan (PKTJ) and 2 people from the Cirebon City Transportation Service. The implementation committee consists of 4 people from the PKTJ and 2 people from the Cirebon City Transportation Service. 3 authors (Joko Siswanto, Suprpto Hadi, and Ramadhan Dwi Prasetyo) are part of the resource persons and 1 author (Bagus Ikapraja) is part of the community empowerment activity committee.

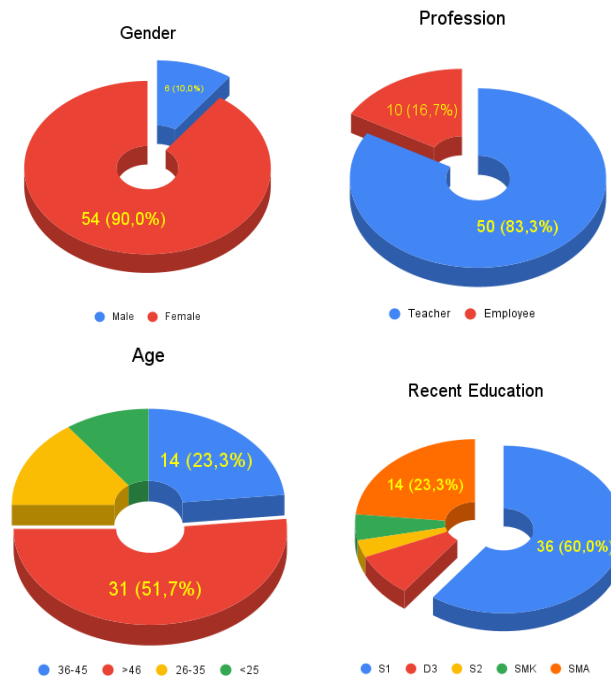


FIGURE 2. Community Empowerment Participants

Activity participants are given pre-test questions which must be filled in on the first day after the opening of the activity at the Cirebon City Transportation Service office yard. 60 participants simultaneously worked on pre-test questions for 30 minutes with a total of 21 questions (3 questions per topic). The pre-test results showed that participants' knowledge of 7 road transportation safety topics was still below 30%. The highest knowledge was about driving procedures (26.71%), while the lowest was about traffic and road transport (20.13%). Overall the pre-test results were 23.05% (FIGURE 3). Low knowledge is a big problem because the participants consist of PAUD teachers and Cirebon City Transportation Service employees. Teachers are educators who always educate students, so that teachers become the spearhead of students' knowledge about road transportation safety. Transportation Service employees are personnel who can guide and provide direction, so high knowledge about road transportation safety is an obligation that must be possessed.



FIGURE 3. Pre-test Result

Community empowerment regarding road transportation safety was carried out for 2 days (8 hours each day). The 7 phases are divided into 2, namely the first day, phase 1 to phase 4 and the second day, phase 5 to phase 7. 16 hours total time is used with a division of 10 hours for theory and 6 for practice (TABLE 2). Breaks are for 1 hour every day from 12:00 WIB to 13:00 WIB and 30 minutes each for initial and final registration each day. The total time used each day is 10 hours starting from 07:00 WIB to 17:00 WIB. The 60 participants were divided into 2 to deliver theory and 6 to carry out practice.

TABLE 2. Community Empowerment Phase

Day	Phase	Topic	Empowerment (Hours)	
			Theory	Practice
1	1	Traffic and Road Transport Regulations	2	0
	2	Pedestrian Characteristics	2	0
	3	Driving Procedures	1	1
	4	Procedures for Using Public Transportation	1	1
2	5	Procedures for Traffic at Level Crossings	1	1
	6	Emergency Response	1	1
	7	Traffic Awareness at an Early Age	2	2
Total			10	6
			16	

3 resource persons from PKTJ presented the topic of road transportation safety in theory, while 2 resource persons from the Cirebon City Transportation Service presented the topic in practice, assisted by 3 resource persons from PKTJ. The delivery of theory was divided into 2 rooms, each containing 30 participants, while the delivery of practice was outside the room (field) which was divided into 6 groups (10 participants in each group). The activity went smoothly and with extraordinary enthusiasm. There was interactive communication between resource persons and community empowerment participants. Activities are framed with 2-way communication which focuses more on participants' experiences and perceptions (FIGURE 4). This is a trigger to facilitate the absorption of knowledge for adult participants. An interesting thing that happened when doing the practice was that many participants apparently did not know and understand road transportation safety. Most participants still have wrong perceptions about road transportation safety, especially regarding the topic of driving procedures and traffic awareness at an early age.



FIGURE 4. Community Empowerment Activities

Activity participants are given post-test questions which must be filled in on the second day after completing phase 7 of the activity in the courtyard of the Cirebon City Transportation Service office. 60 participants simultaneously worked on post-test questions for 30 minutes with a total of 21 questions (3

questions per topic). The post-test results showed that participants' knowledge of 7 road transportation safety topics was above 75%. The highest knowledge was about procedures using public transportation (85.61%), while the lowest was about Procedures for Traffic at Level Crossings (78.13%). Overall the post-test results were 80.74% (FIGURE 5). The overall knowledge level is above 75% which can be sufficient provision for participants regarding road transportation safety. Participants can carry out further development independently in line with the experiences and events experienced by each participant. This can also be used as a milestone to transmit and disseminate understanding and knowledge in the life environment of each participant, especially regarding procedures for using public transportation.

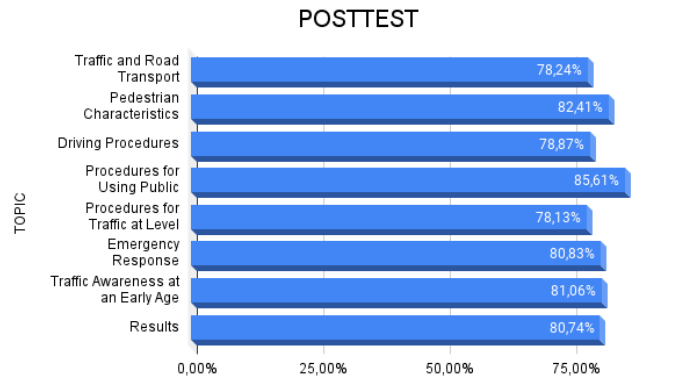


FIGURE 5. Post-test Result

The community empowerment carried out has been proven to increase knowledge and understanding of road transportation safety. 7 topics had an increase of more than 50% with the highest increase in the topic procedures for using public transportation (61.99%), while the lowest increase was in the topic driving procedures (52.16%). Overall the results of the increase were 57.68%. Driving procedures had the highest pre-test, but the post-test was the lowest, while improvement was the lowest. 7 topics and the final result is an increase of between 51%-75% which is included in the Good Enough category(FIGURE 6). This happens because there are many things that are not paid attention to in detail when driving, even though these things play a very important role in road transportation safety.

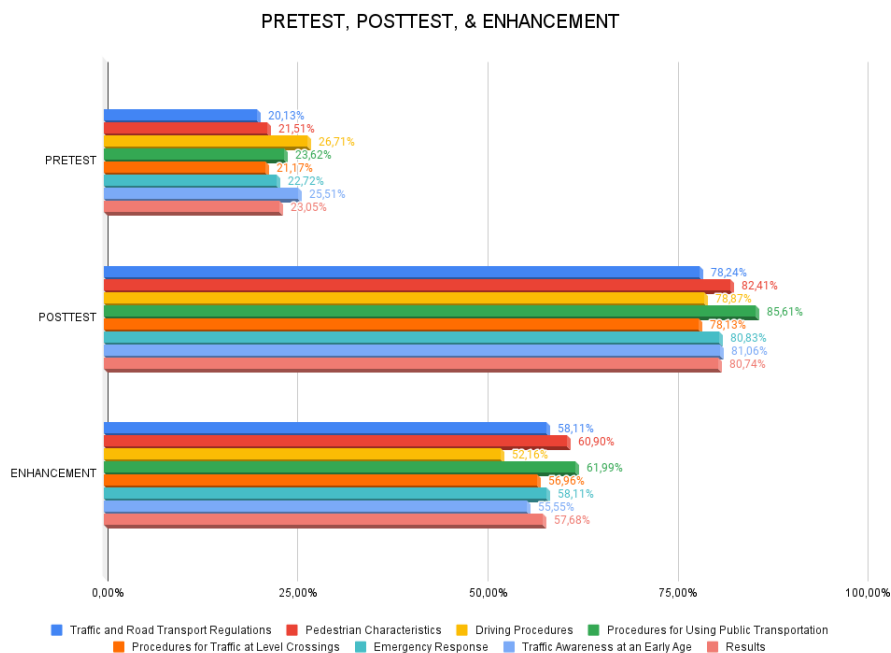


FIGURE 6. Enhancement Result

Procedures for using public transportation had the highest post-test results, even though the pre-test was not the highest, so it became the highest improvement. The experiences and understanding provided during the activity have great appeal, because they are in accordance with what is often experienced by participants. Events that occur in the participants' surroundings become material for discussion and enlightenment during the activity. This is the highest success and is in line with the Indonesian government's program to encourage the use of public transportation. Safe use of public transportation is very important, because you will interact with many members of the public at public facilities. The improvements that occur can be the start of realizing road transportation safety for society.

CONCLUSION

Community empowerment was carried out in partnership with the Cirebon City Transportation Service, West Java Province with 60 participants from PAUD Teachers and Transportation Service Employees, carried out for 2 days with 7 topics regarding road transportation safety. The majority of participants consisted of teachers (83.3%), female (90%), had at least a bachelor's degree (60%), and were over 46 years old (51.5%). The pre-test results showed that participants' knowledge of 7 road transportation safety topics was still below 30%. Activities are carried out for 8 hours every day, the first day is phase 1 to phase 4 and the second day is phase 5 to phase 7 (10 hours of theory and 6 practice). The post-test results showed that participants' knowledge of 7 road transportation safety topics was above 75%. 7 topics had an increase of more than 50% with the highest increase in the topic procedures for using public transportation (61.99%), while the lowest increase was in the topic driving procedures (52.16%). The experience and understanding provided during the activities have great appeal, so that the improvements that occur are the beginning of the realization of road transportation safety in society.

ACKNOWLEDGMENTS

This work was supported by Politeknik Keselamatan Transportasi Jalan (PKTJ) Tegal, and Cirebon City Transportation Service, West Java Province.

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