

Original Research Article

Development of a local wisdom-based social media literacy model for K3 behavior in public transport drivers in Padangsidempuan city, Indonesia

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ABSTRACT

Background: Unsafe driver behavior and driver negligence while driving, one of which is making phone calls while driving a vehicle, can cause traffic accidents and death.

Methods: The research design used a quasi-experiment. The research was conducted at the Padangsidempuan city passenger terminal. The research subject was a public transport driver. Research intervention for 5 months by providing social media literacy modules/guidelines based on local wisdom, leaflets and posters, every month a visit or monitoring of drivers was carried out using a research questionnaire. The research instrument was a research questionnaire used to measure changes in OSH behavior (pre-test and post-test) and the media used were modules, leaflets and posters. Data were analysed by univariate, bivariate, multivariate analysis with SPSS and Friedman test, Mann Whitney test and post hoc test.

Results: The results of this study found that at the initial measurement of knowledge with the post 1 measurement, the p value =0.007, the initial measurement with the post 2 measurement p=0.000 and the post 1 and post 2 measurements p value =0.001. This means that there was a significant difference in knowledge between the initial measurement and the post 1 and post 2 measurements.

Conclusions: This finding can be concluded that knowledge of safe driving has a greater influence on unsafe behavior compared to years of service.

Keywords: Driver, Knowledge, OHS behavior, Social media literacy based on local wisdom

INTRODUCTION

Traffic accidents are one of the highest causes of death in the world and a major challenge for public health workers.¹ The causes are unsafe drivers, poor infrastructure, poor vehicle safety standards and inadequate driving laws and driver negligence while driving, one of which is making phone calls while driving a vehicle.² Based on WHO data, worldwide, an estimated 1.2 million people die in traffic accidents every year and as many as 50 million people are injured as a result of

these incidents.^{3,4} Data from the Indonesian Ministry of Health (2020) shows that the incidence of land transportation accidents is included in the top 10 diseases that cause outpatient care and data from the Indonesian Ministry of Transportation shows that in 2020 there were 26,495 traffic accidents throughout Indonesia.⁵ Seeing this, we need to build and develop a road safety culture.⁶ In relation to road safety, someone who has been conditioned by a disciplined culture will comply with the rules and ethics on the road, and vice versa.⁷ A person's indiscipline while driving can cause an accident.⁸ Of the

many accidents that have occurred in Indonesia, the majority (90.3%) are caused by the human factor. Furthermore, of the 90.3% of accidents caused by the human factor, 86.8% were caused by driver error.⁹ BPS data in Padangsidempuan city, north Sumatra Province, traffic accident cases in 2021 there were 6,435 traffic accidents with 532 fatalities, 2,688 serious injuries, 4,290 minor injuries, and a total loss of up to 18,883 million rupiah. From the traffic accident data, this includes traffic accidents experienced by public transport.¹⁰

More accidents experienced by public transportation occur due to the actions of these transport drivers who are used to driving their vehicles recklessly and not obeying existing traffic signs and driving while making phone calls.¹¹ Factors causing traffic accidents in Indonesia in 2012 were dominated by human factors, namely 93.52%, vehicle factors by 2.76%, road factors by 3.23%, and environmental factors by 0.49%. The dominant factor causing traffic accidents is humans, where humans as drivers have factors that influence driving, namely psychological factors and physiological factors.¹² According to Prasetya et al, the factors related to safe driving for bus drivers on the Semarang-Surabaya route, the result was that knowledge of safe driving was related to safe driving behavior. Of the 40 respondents, 26 of them had sufficient knowledge of safe driving so they were unable to identify hazards and risks.¹³ According to Puteri and Nisa's research regarding factors related to safe driving behavior in travel x drivers, it was found that tenure is related to safe driving with a significance value of 0.027. Drivers with long service tenure are more experienced, and alert so they can drive the vehicle more safely.¹⁴ In a study by Yang et al investigated the relationship between driving behavior and the knowledge function of elderly taxi drivers, and found the effect of knowledge on safe driving behavior. Knowledge ability can have a profound effect on old age driving ability.¹⁵ Deterioration due to aging increases the risk of accidents in older drivers, and the record of serious injuries increases in the event of an accident. Among the many factors that increase the risk of traffic accidents are the characteristics of older age; that is, to drive safely, drivers need a minimum level of visual and auditory ability, along with intact perceptual, cognitive, and executive functions.¹⁶ Previous studies reporting on drivers' driving behavior characteristics also reported that drivers tend to avoid driving at night or when it's raining.¹⁷ From this, it can be surmised that there is no K3 (safety driving) behavior that is owned by public city transport drivers, so it is necessary to do research. In addition, many studies have been carried out to analyse the factors that cause traffic accidents, and to determine a traffic accident prevention model for public transport drivers has not been carried out.

This study aimed to analyse and assess the effect of local wisdom-based social media literacy models on OSH behavior among public transport drivers in Padangsidempuan city.

METHODS

This study used a quasi-experimental design with a non-equivalent control group design. The research subject was a public transport driver. The research was conducted at the Padangsidempuan city passenger terminal for 5 months starting from July-November 2022. The sample criteria were male drivers, willing to be respondents and able to write and read. Sampling was done by purposive sampling. Research intervention for 5 months by providing social media literacy modules/guidelines based on local wisdom, leaflets and posters, visits or monitoring drivers were carried out every month using a research questionnaire. The research instrument was a research questionnaire used to measure changes in OSH behavior (pre-test and post-test) and the media used in this study were modules, leaflets and posters. Data were analysed by univariate, bivariate, multivariate analysis with SPSS and Friedman test, Mann Whitney test and post hoc test (Wilcoxon test).⁵

RESULTS

Characteristics of public transport drivers for the treatment and control groups

The characteristics of the intervention group consisted of 2 groups, namely the treatment group and the control group. The characteristics can be seen in Table 1.

Table 1: Characteristics distribution of intervention group public transport drivers.

Characteristics of public transport drivers	Treatment group		Control group	
	n=34	%	n=34	%
Age				
Old	16	47.1	14	41.2
Young	18	52.9	20	58.8
married status				
Married	26	76.5	31	91.2
Not married	8	23.5	3	8.8
Education				
Low	29	85.3	28	82.4
Height	5	14.7	4	11.8
Ethnic group				
Batak	18	52.9	3	8.8
Java	16	47.1	31	91.2
Cell phone ownership				
Have	14	41.2	28	82.4
Do not have	20	58.8	6	17.6

Table 1 shows that the respondents are young, the status of respondents is married, low education, has the largest percentage. The at-risk ethnic group had the largest percentage in the treatment group while the Batak ethnic group had the largest percentage in the control group. In the treatment group, more respondents had mobile phones

than did not have mobile phones, whereas in the control group it was the other way around.

Differences in knowledge of public transport drivers in the treatment and control groups

Changes in the knowledge of public transport drivers in the treatment and control groups, before and after being given local wisdom-based social media literacy education interventions can be seen in Table 2.

The results of data processing to see the differences in treatment and control before and after the intervention, in Table 2 show that there was no difference in knowledge of social media literacy based on local wisdom, in the treatment and control groups at the initial measurement ($p=0.346$). However, after providing education, there were differences in social media literacy knowledge based on local wisdom in the treatment and control groups at post 1 measurement ($p=0.002$) and post 2 measurement ($p=0.000$). To find out the differences in knowledge in each group in each measurement, in the

control group, there was no difference between before and after the provision of social media literacy education based on local wisdom with a value of $p=0.281$. In the control group, the median value of initial knowledge was 4. After giving interventions in the form of giving modules, leaflets and posters, the post 1 measurement obtained a median value of 4, and the post 2 measurement results obtained a median value of 4. Meanwhile in the treatment group there was a change in the level of literacy knowledge social media based on local wisdom. In the treatment group, the median initial knowledge value was 4. After providing interventions in the form of training and modules, leaflets and posters, post 1 measurements of social media literacy knowledge based on local wisdom were carried out and the results increased to 6. Further assistance was carried out for 5 months to provide more understanding about local wisdom-based social media literacy once a month for 5 months, and there was an increase in knowledge to 6.5 in post 2 measurement results. Based on the results of Friedman's test, there was at least a significant difference between the treatment groups before and after being given the intervention ($p=0.000$).

Table 2: Changes in local wisdom-based social media literacy knowledge in the treatment group and the control group.

Group	Knowledge			Change	P value
	Pre	Post 1	Post 2		
	Median (min-max)	Median (min-max)	Median (min-max)	Median (min-max)	
Treatment (training + module + leaflet + poster)	4 (0-8)	6 (1-9)	6.5 (4-8)	2.00 (-2-6)	0.000*
Control (module)	4 (0-7)	4 (1-7)	4 (1-7)	0.00 (-2-2)	0.281*
P value	0.346**	0.002**	0.000**		

*= Uji Friedman, **= Uji Mann Whitney

An explanation that makes it easier to see the difference in the average change in knowledge level between the treatment group and the control group can be seen in Figure 1.

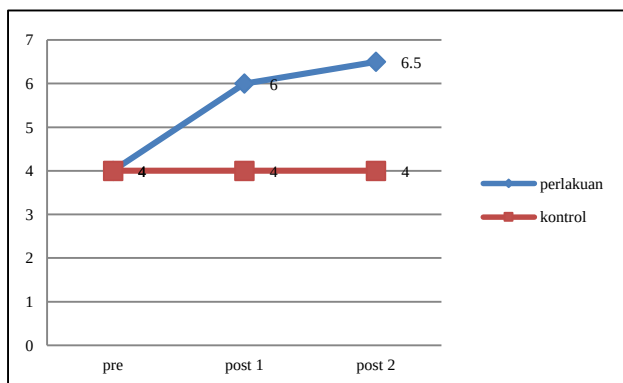


Figure 1: Changes in local wisdom-based social media literacy knowledge before and after intervention.

Table 3: Differences in knowledge of pre-post measurements in the treatment group.

Measurement	n	p
Preliminary knowledge and post knowledge 1	34	0.007
Preliminary knowledge and post knowledge 2	34	0.000
Knowledge post 1 and knowledge post 2	34	0.001

p = Wilcoxon test.

To further explain which measurements experienced differences between changes before and after the intervention in the treatment group, a follow-up test was carried out, namely the post hoc test (Wilcoxon test). The measurement results can be seen in Table 3.

Table 3 shows that there was a significant difference between the initial measurement and post 1 and post 2 measurements. The measurement results show that in the initial measurement with post 1 measurement, the value

of $p=0.007$, the initial measurement with post 2 measurement, the value of $p=0.000$ and the post 1 and post measurements post 2 value of $p=0.001$.

DISCUSSION

An example of an unsafe act is driving a car by not following traffic rules, while an example of an unsafe condition is dim street lighting, weather factors, damaged and/or uneven road conditions which can result in a traffic accident. Equipment factors can cause accidents if the equipment used is not standard, maintenance is not carried out and it is damaged internally.¹⁸ According to Santoso, the human factor is the cause of 80-85% of work accidents.¹⁹ In addition, it is influenced by the low knowledge of occupational safety and health. Knowledge is a predisposing factor in changing the behavior of a person or group of people, while it is known that local wisdom-based social media literacy is the basis for health knowledge and is very influential in the behavior of preventing and treating a disease.²⁰ Based on the results of the research in stage 1, it was found that the percentage of social media literacy based on local wisdom was low in the group of public transport drivers (63.8%), and there was a significant relationship with bad OSH behavior ($p<0.05$). The results of the research in phase 1 became the reference for conducting interventions to develop local wisdom-based social media literacy models in stage 2. Based on the intervention using modules, leaflets, posters and mentoring based social media literacy models, the results obtained were significant increases in knowledge in the treatment group and control group. The results of the intervention to see the differences in treatment and control before and after the intervention, in table 2 show that there is no difference in local wisdom-based social media literacy knowledge, in the treatment and control groups at the initial measurement ($p=0.346$). However, after providing education, there were differences in social media literacy knowledge based on local wisdom in the treatment and control groups at post 1 measurement ($p=0.002$) and post 2 measurement ($p=0.000$).

Differences in knowledge in each group at each measurement, in the control group, there is no difference between before and after providing education with a value of $p=0.281$. In the control group, the median value of initial knowledge was 4. After giving interventions in the form of giving modules, leaflets and posters, the post 1 measurement obtained a median value of 4, and the post 2 measurement results obtained a median value of 4. Meanwhile in the treatment group there was a change in the level of literacy knowledge social media based on local wisdom. In the treatment group, the median value of initial knowledge was 4. After giving interventions in the form of providing modules, leaflets and posters, a post 1 measurement of social media literacy knowledge based on local wisdom was carried out and the result increased to 6. Then for 5 months mentoring was carried out to provide a better understanding of local wisdom-based

social media literacy once a month for 5 months, and there was an increase in knowledge to 6.5 in the post 2 measurement results. Based on the results of the Friedman test, there was at least a significant difference between groups treatment before and after being given the intervention ($p=0.000$).

This proves that the provision of health education using modules, leaflets, posters and mentoring carried out for 5 months in the treatment group can increase the knowledge of respondents continuously. The assistance provided to the treatment group aims to repeat social media literacy material based on local wisdom so that respondents have a more permanent memory of the material provided. Based on the theory put forward by Notoatmodjo which states that knowledge can be obtained through learning, receiving information or through experience in interacting with the environment, making these three sources an important part of health education to increase one's knowledge and abilities. Furthermore, Notoatmodjo said, health education is a long-term "behavioral investment", which means that the effect of health education can only be seen a few years later. However, in a short period of time, there was only a change or increase in the knowledge of health education in the community.²¹

According to Atkinson and Shiifrin in Satrock, states that the longer information is retained in long-term memory with the help of repetition, the more likely it is to enter long-term memory so that it becomes relatively more permanent. The mentoring method for the treatment group, as an effort to repeat the material provided in this study, is in line with the opinion of David Kolb in the Ministry of Health, RI (2001) which states that knowledge as a result of the learning process is strongly influenced by the time since obtaining exposure.²² The results of this study are especially important for informal sector workers, most of whom have low educational backgrounds, lack access to health information and work long hours. Assistance methods for increasing the knowledge of informal sector workers are urgently needed so that the occupational health program implemented at the Puskesmas as the spearhead of health services for the informal sector community can be optimally achieved. The results of this study are in line with the research of Yudhana and Sari which states that knowledge of safe driving and driving attitudes have an influence on safe driving behavior ($p=0.033$; $p=0.041$). Knowledge of safe driving has a stronger influence than driving attitudes on safe driving behavior ($OR=3.141$; $OR=2.613$).²³ This research is also in line with the opinion of Notoatmodjo which states that knowledge is a precursor factor in one's behavior.²⁴ Drivers who have good safe driving knowledge will have a high awareness of the importance of driving a vehicle safely.¹² After having awareness, a person will perform behavior in accordance with what is known.¹² The better the knowledge possessed by the driver, the positive impact it will have on the driver's safe driving behavior based on

the results of intervention and social media literacy assistance based on local wisdom.^{13,25}

This research was only conducted on male drivers and the number of samples was still limited and the research time was still relatively short so that the study of local wisdom on social media literacy had not been maximally carried out.

CONCLUSION

The findings of this study indicate that social media literacy assistance interventions based on local wisdom have an impact on changes in K3 knowledge and behavior of drivers. Knowledge of safe driving has a greater influence on unsafe behavior than years of service. Therefore, intervention measures to prevent work accidents for road drivers must include strengthening the provision of personal protective equipment and providing counselling to drivers about optimal OHS behavior.

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