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Duta Safety Riding: The Actors of Traffic Accidents Prevention in Samarinda, East Kalimantan, Indonesia

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1Departement of Occupational Health and Safety, 2Departement of Epidemiology, 3Departement of Environmental, Mulawarman University

Abstract

Traffic Accident is the main cause of death for adolescents. The adolescents’ thought that they’ve matured enough to ride motorcycles on roadway, although the knowledge about safety riding they had was low, and it made they usually on dangerous situation which riding which leads to fatal accident, which could cause disabilities or death. Therefore, safety ambassador group as peer group in act on safety as prevention step to decrease the number of accidents on roadway. Training was given to increase knowledge and attitude about safety riding as the priority on preventing traffic accidents. Since safety riding ambassador could be a role model for other teenagers to act on safety riding. The aims of this research was giving training about safety riding to safety riding ambassadors in order to increase the knowledge and behavior on safety riding. This research was a pre-experimental using one group pre-posttest design. There were 25 high school students as the samples using purposive sampling. The results have shown that the average score about knowledge was 18.12 before training, while after training it was 18.32. The average of safety riding behavior before training was 140.6, while after that, it was 141.6. The statistic test had shown that there is no difference on safety riding behavior before and after training (p=0.06), however there was the difference on knowledge before and after training (p=0.05). This research can be concluded that training could increase the safety riding ambassadors’ knowledge about safety riding.

Keywords: Adolescent, Peer, Safety Riding, Traffic Accident.

Introduction

Each year, traffic accident related death takes 1.25 million people, most of which are teenagers aged 15–29 years old, and 90% of the misfortune occurs in developing countries.1 Fifty percent of death on the road are walker, bicycle riders, and motorcycle riders.2 Indonesia, as one of the developing countries, has 120 deaths each day due to traffic accident. The newest data from the Directorate General of Land Transportation showed that the average growth of traffic accidents in Indonesia was 16.59 %.

The mortality among teenagers both in America and Developing countries caused by traffic accident grounded on the fact that most teenagers consider
themselves matured enough to ride motorcycles.6 The risk of accidents for young riders (18-24 years old) is as twice as higher than that of adult riders.7 8

Department of Transportation of Samarinda reported that traffic accidents took place in East Kalimantan was 1.767 in 2010 and decreased into 1.347 events in 2011. From 2.115 victims-related traffic accident, 463 lost their live, 517 had severe injuries, and 1.135 had minor injuries.3 Traffic Police Station of Samarinda reported the number of deaths cause traffic accident increased in 2013, 83 people died, while in 2012, within 249 events of the traffic accidents, 67 people died.9

Setyowati10 observed that 50.8% respondents have unsafe behavior, 49.2% respondents have poor knowledge about safety riding, and 57.8% have negative perception about danger on a roadway, the reasons of students riding motorcycle themselves are that no one can take them to school (39.4%) and the schools are too far from their homes (11.7%).

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The intervention explored in this paper covers giving education about safety riding to Safety Riding Ambassadors as peer group education, it is expected that participants’ knowledge, skills, and awareness about safety riding increase; so that, the number of traffic accidents would decrease.

Given this situation, this paper analyzes the impact of giving training to increase knowledge, attitude, and skill rates of students chosen as Safety Riding Ambassadors among students of Senior High School who act as the peer group educators in Samarinda.

According to Soehodho, the factors, human errors are the most taken place in Indonesia causing death or injuries involving students who has lack of knowledge about safety riding. In dealing with this situation, providing education and training to the students in the right way is expected to decrease the cases of traffic accidents.

The aim of this study was to analyze the impact of training about safety riding on their knowledge, attitude, and skills as the Safety Riding Ambassadors. This research was conducted while giving the training about Safety Riding and analyzes the impact of training to the knowledge, attitude, and skills of 25 Senior High School Students chosen as Safety Riding Ambassadors in Samarinda.

**Method**

This quantitative study using pre-experimental design on one group was conducted using pre-posttest approach; before and after the experiment. Purposive sampling technique was used to choose 25 Senior High School Students from 315 students who have participated in Safety Riding Research in 2017. The chosen ones were quantified based on the scores in answering questionnaire about safety riding, and they were asked to sign a written permission and an informed consent to participate in the study.

The materials given were including traffic regulation, safety riding, and riding test. The respondents were asked to complete the three sections questionnaires before and after the training. Section A was about The characteristic of Respondent; B: The Attitude about Safety Riding; and C: The Knowledge about Safety Riding. The questionnaire was designed using strict questions of Likert scale; for the attitude about Safety Riding, the answers were 1= Never, 2= Sometimes, 3= Often or 4= Always; meanwhile, the knowledge was measured using Gutman Scale, Correct – Incorrect.

The analyses was conducted using SPSS v 24.0 with Wilcoxon test for 2 related samples, for all results the statistical significance were reported using p value, and the significance level was set at $\alpha = 0.05$.

**Results and Discussions**

**Socio-demographic characteristics**

**Table. 1 Respondents Frequency Distribution Based on Respondent Characteristics**

<table>
<thead>
<tr>
<th>No</th>
<th>Characteristics</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>6</td>
<td>24.0</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>19</td>
<td>76.0</td>
</tr>
<tr>
<td>2</td>
<td>Ownership of SIM C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>21</td>
<td>84.0</td>
</tr>
<tr>
<td>3</td>
<td>Have Experience Traffic Accident</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>15</td>
<td>60.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>10</td>
<td>40.0</td>
</tr>
<tr>
<td>4</td>
<td>Age (Year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>6</td>
<td>24.0</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>19</td>
<td>76.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>25</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 1 shows that 76.0% of the respondents are 17 years old female, 84.0% has no driving license (C level), and 60.0% has experiences of traffic accidents.

The results showed that 17 years old female with no driving license and had dealt with traffic accidents dominated the characteristics of the respondents. The law number 22, 2009 About Traffic and Vehicles permitted 17 years old citizens to have driver license. Driving license is the evidence of registration and identification given by the Police of Republic of Indonesia to its citizens who meets all the administrative requirements, such as physically and psychologically healthy, understand the traffic signs, and skill full in riding vehicles. Therefore, as 84.0% of respondents had no driving license, the respondents had no sufficient knowledge and skills in riding vehicles.

This fact suggested that the risk to have a number of traffic accidents could increase for the students did not have sufficient skills on safety riding; while, 60.0% of the respondents had experienced to be the victims of traffic accidents. Unskilled riders have risk of death 0.263 times than skilled riders, and in Indonesia, traffic accident related death is also influenced by the number of population and vehicles, eligibility to have driving
Traffic police task force of Samarinda and Transportation Department of Samarinda delivered the training about safety riding observed in this study. The training materials were subjects related to traffic and vehicles regulation, traffic signs, vehicles equipment, traffic instructions, safety riding simulations, and riding practice test. The training was conducted in two days at SMA Negeri 3 Samarinda (State High School 3 of Samarinda), and the safety riding simulations and riding practice test were conducted at police station in Samarinda.

All of the materials, simulations, and riding practices test were given to safety riding ambassadors who would act as the peer group educators. This training was given to the safety riding ambassadors since they are still teenagers, and teenagers in the same ages can communicate more openly and easily than parents and teachers. Most adults who have regular contact with adolescents understand the value and importance that these young people attribute to their friends and peers. Many people would concede that such groups serve as the primary means by which teenagers share and validate each other’s struggles to develop new identities and to assume new, more mature roles. Many would also concede that peers usually provide emotional support and intimate counsel when adults are unavailable or appear indifferent. On the other hand, many adults regard peer groups as the instigators of all the problems we commonly associate with adolescence: defiance of adult norms, the use and abuse of alcohol and drugs, delinquency, sexual experimentation, experimentation with guns, and even suicide. So utilizing peer friends to deliver positive information related to teenagers’ safety can be considered as a health promotion strategy.

Table 2 shows the percentage of safety riding knowledge and attitude among Duta Safety Ridings before and after training. Most of them (48.0%) have poor basic attitude regarding safety riding and turn into 44.0% after getting the training. Meanwhile, 48.0% respondents have poor knowledge about safety riding, but turn into 36.0% after getting the training.

Table. 3 The Results of Wilcoxon Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Median (Min-Max)</th>
<th>Mean</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Before</td>
<td>25</td>
<td>17 (13-27)</td>
<td>18.12</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>25</td>
<td>18 (13-27)</td>
<td>18.32</td>
</tr>
<tr>
<td>Attitude</td>
<td>Before</td>
<td>25</td>
<td>142 (106-190)</td>
<td>140.6</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>25</td>
<td>144 (112-171)</td>
<td>141.6</td>
</tr>
</tbody>
</table>

Table 3 shows the average score (mean) of respondents’ knowledge about safety riding, increasing from 18.21 in pre-test to 18.32 in post-test. The average (mean) of respondents’ attitude about safety riding increases, from 140.6 in pre-test to 141.6 in post-test. The statistic result using Wilcoxon Test for the variables of knowledge about safety riding has p= 0.05, meaning that there was a significance difference to the level of knowledge before and after training. Meanwhile, the statistic result using Wilcoxon Test for the variables of attitude about safety riding has p=0.06, meaning that there was no significance difference to the level of attitude before and after the training.

In conducting the program, peer educators (Safety Riding Ambassadors) delivered the information related to safety riding to their peer friends, since in peer education continuous interactions between peer educators and their peer friends is possible to happen. Peer education is important, and considered as an effective way to alter people behavior; consequently, peer educators had to have a better level of knowledge, attitude, and skills to be good examples and role models for their peer friends. Meanwhile, the result related to knowledge variables of safety riding was p = 0.05, meaning that the training program influenced the respondents’ knowledge level. This result of this research was in line with the one of Erawan17 that the average score improvement on students’ knowledge and attitude related to traffic accident prevention is p= 0.000. In this research, the average score of knowledge before and after training was 18.12 and 18.32 respectively, which meant that there was an improvement of knowledge about safety
riding; although, it was not significant (0.2) since the level of the respondents’ knowledge about safety riding was already good (48%).

Furthermore, the score of the respondents’ attitude about safety riding before training was poor (48%) and it decreased to 44% after the training, meaning that there was an improvement as the average score of the respondents’ attitude before and after the training was 140.6 and 141.6 respectively. The improvement could also be identified from respondents’ positive attitude to the statements proposed. For example, the sample statement states: not using helmets even if it is only for short-distance journey. In the pretest, 72% stated that it was wrong attitude, and in the posttest, the numbers of respondents provided similar positively answer improved to 80%. At the statement, “checking the vehicle before using it decreases the risk of traffic accident”, 80% of the respondents answered it correctly in pre-test, and it changed to 84% in post-test.

Similarly, almost all of the statements proposed, such as there is no-smoking regulation, listening to the music while riding is not dangerous, obey to traffic light when there is a police and disobey it when it is not crowded, and the riding skill is not important were responded positively. However, since the statistic test was $p = 0.06$, the differences were not significant, so it could be interpreted that there was no difference of respondents’ attitude about safety riding before and after the training or the training did not influence the respondents’ attitude. This result was not in line with the one of Erawan, who stated that peer education influences knowledge and attitude about traffic accident prevention in Senior High School students.

Dangerous condition, which is also a serious threat for riders, is the distraction while riding. However, this research’s finding showed that most of the respondents stated that no smoking prohibition and listening to the music while riding were not dangerous; in fact, smoking and listening to the music through cell phone were unsafe behavior. Smoking can increase the risk, bigger than using cell phones along the way, so that it is needed to promote to the public the information about those risks among people. Using cell phone can decrease the rider’s concentration, and teenagers usually use their cell phones while riding. Moreover, teenagers usually get serious injuries while using cell phones when riding. The using of cell phones while riding reflects the relationship level between cognitive and behavior.

The safety-riding ambassadors as peer educators were expected to deliver the information to their peer friends to decrease unsafe behavior such as smoking and listening to the music while riding.

**Conclusions**

The training would increase the knowledge about safety riding to the Safety Riding Ambassadors.

**Conflict of Interest:** There is no conflict of interest.

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