



# Challenges of Education in Prevention of Road Traffic Crashes

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## Dear Editor,

Education is a complex issue and there is a need to consider a several factors to provide an effective training program. Regarding the issue of road traffic crashes, there are some contradictory findings about the efficacy of education, which may cause mistrust among professional circles and experts.<sup>1-3</sup>

Some scientists believe that most of the training programs do not necessarily cover all aspects of crashes and only address some of the concerns. Road traffic crashes are a multidimensional issue and can be influenced by various political, economic, social and cultural factors, and thus the efficacy of an education program can be reduced.<sup>4</sup> The low efficiency of educational programs can have several reasons, which are mentioned below:

### 1. Non-use of Specific Educational Theory

The efficacy of some educational interventions poses a serious challenge for researchers. A simple search in scientific databases will result in various studies aiming to offer educational programs for different road users about the road traffic safety. These educational programs are sometimes designed and implemented without sufficient scientific evidence or without relying on specific educational theory.<sup>5,6</sup> Some researchers believe that designing an educational intervention without considering the guiding theory in education is like prescribing a medication to a patient regardless of his/her physiology.<sup>4,7</sup> The use of educational theories entails identifying the audience properly, presenting the educational content in an appropriate manner, and evaluating its feedback. It also helps audiences to gain a better understanding about the safety in relation to their own behavior as road users.

### 2. Non-use of Various Methods for Providing the Educational Content

Some educational interventions are based on learning context-dependent methods. However, learning context-dependent methods is not easily generalized among the

target group.

This type of educational delivery method is not adequately effective for some age groups, including children.<sup>8</sup> Adopting various training methods tailored to the content and target groups such as role-playing, as well as using animation, cartoons, computer games, simulators, virtual reality technologies and augmented reality in training of traffic safety can increase the efficacy of such educational methods.<sup>9-11</sup>

### 3. Insufficient Attention to the Causation Network of Traffic Crashes

Some believe that educational programs only emphasize on one topic, and generally fail to take into account the effect of other interventions. On the other hand, the designed educational intervention may focus on the wrong variable (as a factor influencing the occurrence of traffic crashes or the resulting injuries). For example, some drug abuse resistance education interventions focus on peer pressure as a variable with a direct causal effect, while the effect of the peer pressure in some studies is pale and other factors have a stronger causal effect.

As for the road safety issue, some educational interventions focus on a number of factors, such as vehicle control skills, while these factors may or may not be the main factors responsible for some of the road traffic crashes.<sup>12</sup> The road safety educational programs may focus only on traffic behaviors such as driving speed and may neglect other behavioral aspects such as smoking, alcohol, and drug consumption. In such cases, and even if the trainees demonstrate the positive aspects of driving speed in their behavior, the impact of the negative aspects of other behaviors such as alcohol consumption causes the risk of road traffic crashes to remain in the target group.<sup>8</sup>

### 4. Insufficient Knowledge of Audience

Gaining sufficient knowledge about the target group, as well as paying due attention to the characteristics of individual receiving an education are important factors for deepening learning in the audience. Recognition of

the audience usually takes place over a long period of time. However, it has been shown that educational activities are often short-lived,<sup>13</sup> and short-term interventions may be less effective for the audience.<sup>8</sup>

Some educational interventions only provide safety information without giving the drivers an accurate understanding of their behavior as road users. On the other hand, some educational interventions focus on high-risk behaviors of the drivers without considering the underlying reasons for these behaviors. Many drivers who display an unsafe behavior are aware of the fact that their behavior is not safe; however, they keep displaying the unsafe behavior.<sup>8</sup>

The issue of education has conflicting aspects that should be addressed. For example, raising risk awareness may strongly discourage some people to follow educational topics; while it may be attractive for others and may even encourage them to include their acquired education in their behavior.<sup>8</sup> For instance, education providers focus on quitting high-risk health behaviors such as smoking, alcohol consumption, and speeding that culminate in adolescence, while some training recipients may be curious and think about following these behaviors.<sup>8</sup>

It is argued that sometimes extensive financial resources to run inefficient educational program may deviate the resources from more effective community-based initiatives.<sup>14</sup> Therefore, it is recommended that the researchers and policymakers in this field consider the theoretical and scientific principles when designing and implementing the educational interventions in order to increase their efficacy.

#### Ethical Approval

Not applicable.

#### Conflict of Interest Disclosures

None.

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