

evaluate the impact of it and try to evaluate impact of other preventive measures.

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SAFE SCHOOL TRANSPORTATION OF CHILDREN SUPPORTED BY INTELLIGENT TRANSPORT SYSTEMS

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Background The article presents the evaluation results of integrated system for safe transportation of children to school done in Poland, which exploited Intelligent Transport Systems (ITS) and was developed and implemented within the European funded project Safeway2School. SW2S system included several elements, in Poland these were the following: pedestrian safety system at bus stops – Intelligent Bus Stop (IBS) and activating tags for children, bus stop inventory tool. These were supplemented with a new sign placed on a school bus and bus stops and trainings for children, parents, bus driver and bus assistant.

Methods The methods used for the evaluation of the system were pre and post speed measurements and eye-tracking experiment together with a survey carried out among drivers who used the school bus route, where selected elements of system were tested. Also a survey among users was carried out in order to measure the acceptance of the SW2S system.

Results The results of the eye tracking experiment proved that IBS attracts more attention of drivers than a regular stop. The flashing lights of IBS make drivers more aware of what is happening on the road and they notice IBS faster than a regular bus stop. The results of noticing and observing new school bus sign suggest that drivers noticed the new sign quicker than the regular bus sign which supports the assumed hypotheses.

The results of the survey support the eye-tracking outcomes while majority of drivers noticed new sign (80%) and IBS (75%). Majority of drivers declared that they always reduce speed when people are waiting at the bus stop or a bus approaches the stop.

The expected speed reduction of drivers on school bus route during the activity of IBS has also occurred.

Conclusions The elements tested in the implementation of SW2S system in Poland were positively evaluated which is of great importance for the safety and security of children and it also influences the general level of road safety.

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CHILD INJURIES REPORTED IN COMMUNITIES RECEIVING A ROAD INFRASTRUCTURE INTERVENTION IN DAR ES SALAAM, TANZANIA

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Background School Area Road Safety Assessments and Improvements (SARSAI) is a community-based road traffic injury prevention program that combines minor infrastructure improvements with road safety education at primary schools. In 2015, SARSAI was implemented in 9 schools in Dar es Salaam. We report the results of a pre-intervention population-based survey conducted to establish a baseline of child road traffic injuries in communities near schools eligible for the intervention.

Methods A household census was conducted in a sample of 22 communities around schools eligible for SARSAI, including 15,480 parents or guardians of children ages 5–16. Parents or guardians were asked basic demographic information about children in the household, and if any children had been involved in a road traffic crash in the past year. If a child had been injured or killed in a crash, a detailed questionnaire was given to the parent or guardian to collect information on the circumstances of the injury, health outcomes, and long-term functional status. Data were collected over the 3 months preceding the intervention.

Results The survey identified 199 child road traffic injuries in the past year. About 83.4% of injuries required medical attention. Three injuries resulted in permanent disability, and 7 children were killed by road traffic crashes. Legs (38.2%), head (22.6%), or arms (15.6%) were the most common body areas injured. Most injuries (62.4%) occurred while walking to school and most resulted from a crash with a motorcycle (48%) or private car (24.5%).

Conclusions Road traffic injuries were a substantial problem among primary school students. Interventions, such as SARSAI, to protect children walking to school from motor vehicles have the potential to reduce injuries. A post-intervention survey conducted one year after the intervention will provide insight into the effectiveness of the SARSAI program.

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THE ARMADILLO CLUB AS AN ELEMENT OF ROAD SAFETY AWARENESS RAISING CAMPAIGN ADDRESSED TO CHILDREN

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Background The Armadillo Club educational program was an element of the nationwide road safety awareness campaign entitled Armadillo Club Always Belts Up which has been conducted in Poland since 2005. The Armadillo Club was carried out by Motor Transport Institute in 2012/2013 school year and was targeted at kindergartens and elementary schools children and their parents. The article presents the campaign and the educational program as well as its evaluation outcomes.

Objective The objective of the whole campaign was to make the fastening of seatbelts more attractive for children and the educational program aim was to educate 4-12-year-old children in selected issues related to safety, with particular emphasis on road safety.

Results In total, 13613 children from 105 kindergartens (7030 children), 61 schools with classes 1–3 (4021 children) and 37 schools with classes 4–6 (2562) participated in the Armadillo Club. According to respondents, majority of club activities were carried out in accordance with the program guidelines (91%). 42% of respondents considered the program as interesting and 43% – as very interesting. According to 15%, certain elements were interesting, other were less interesting. 98% of respondents declared that if the campaign was to be continued, they would participate again.

Conclusions The innovative character of the whole campaign lies in the combination of awareness raising campaign with enhanced enforcement and the Armadillo Club programme. The evaluation results of both the campaign and the program were satisfactory. The post-tests show that the use rate of seat belts and child restraint systems increased by 40% in Poland since 2004.

Currently 94% of all children are transported in child restraint systems. Road accidents statistics show that the number of children killed in passenger cars dropped by 55% in relation to decrease of 35% in number of all people killed in road accidents in Poland from 2004 (before the campaign) till 2013.

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LESSONS LEARNED FROM CONDUCTING ROAD SAFETY CURRICULUM IN THAI SCHOOLS

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Teaching and learning road safety has been recommended as a core strategy in both nation and international levels. In Thailand, the Ministry of Education has launched a policy to integrate road safety with school's core curriculum since 2003. In 2006, Road Safety Safety Group Thailand(RSC) reemerged road safety curriculum to foster road safety behaviours in children. Beginning with 2 schools in Lampang Province, Northern of Thailand and the number increased later. Now 6 primary and secondary schools in Lampang manage road safety curriculum. This research focused on road safety curriculum, instructional approach, and outcomes found in 6 schools in Lampang Province.

Methods The After Action Review(AAR) was conducted to explore lessons learned in road safety curriculum. Two studies from this curriculum are a content analysis of road safety curriculum in 6 schools and focus group discussion with stakeholders. It was conducted between December 2012 to April 2013.

Results 1. **Patterns of integrated road safety curriculum.** Results can be described in 4 patterns: (1) themes of road safety that share contents within each subject of school's core curriculum, (2) activities on road safety in one subject that connect to another subjects, (3) integration road safety curriculum within each subject of school's core curriculum, and (4) mix methods of pattern 1 and 2. 2. **Key success factors.** (1) teacher's knowledge and skills for integrating road safety curriculum to school's core curriculum, (2) school's readiness, (3) teacher's participation and empowerment, and (4) principal's supportive and facilitation. 3. **Outcomes.** Results found that most of students (1) had increased road safety skills especially in walking on the street, crossing road and using helmet, (2) had more knowledge and understanding about traffic policy, (3) the concern about wearing helmet behaviour increased from 49% to 88.7%.

Conclusions This study shows that road safety curriculum can be done and works well with school's core curriculum. The success of the application is depended on (1) school's readiness, (2) knowledge and understanding of teachers to road safety curriculum and nature of road safety, (3) administrator's policy and support, and (5) reconcile teacher's attitude at the beginning of taking this curriculum to school.

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CHILDHOOD SAFETY EDUCATION IN RURAL UGANDA

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Background Rural Uganda is an especially hazardous environment for children with limited parental supervision, open fires,

speeding traffic, sharp farm tools, and flowing rivers. Effective safety education has the potential to reduce injury risk among this vulnerable population. Although safety instruction is a required component of the national curriculum, schools face challenges of overcrowding, understaffing, lack of resources and teacher training, and absenteeism which may inhibit student learning of safety behaviours. Given this context, there is need to investigate the content, quality and effectiveness of the safety units as currently taught in Ugandan schools.

Objective Qualitatively assess primary teacher perceptions of 1) childhood injury risks in a rural Ugandan community, and 2) the current state of safety instruction.

Results 21 teachers in grades 1–6 from 5 schools in rural eastern Uganda completed surveys on child injuries and safety instruction. Falls, cuts, and burns are considered the most common injuries among children. Children are frequently left without adult supervision, beginning between ages 3–7. Children are especially likely to be alone when either the child or parent is busy farming, fetching water, or at market. Safety units are most commonly taught in grades 1, 2, 4 and 6. The most common topics are safety around roads/transport and safety at home. The most common instructional strategies include providing information/safety rules, safety demonstrations, and first aid training. All teachers report their students adopt safer behaviours after instruction. Only one teacher reports ever receiving training in safety instruction.

Conclusions Injury risk is high in rural Uganda but children often receive inadequate supervision. Teachers are motivated to teach safety skills but lack supportive training and resources. Explicit training and materials developed for Ugandan teachers has the potential to reduce childhood injury risk in rural Uganda.

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REDUCING SCHOOL BULLYING WITH THEATRE AND ART

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Background Bullying is the most common form of school violence worldwide. School-based bullying prevention programs have shown varying success, and new, innovative programs with a stronger evidence base are needed. Arts-based programming, which appeals to the active emotional brains of adolescents, is a promising approach.

Description of the program Injury prevention researchers and a theatre group collaborated to develop a play called "Out of Bounds," informed by qualitative and policy research. The play tells the story of a cyberbullying event and promotes themes of forgiveness, friendship, identity and labels. "Out of Bounds" was performed in ten Iowa middle and high schools and has more recently been on a national tour. Because viewing a play is unlikely to support behaviour change on its own, the team developed a program of arts-based activities to accompany the play. The activity toolkit is called "HEAR: Helping Educators use Art to Reduce Bullying." Activities were developed for multiple age groups and multiple settings, including classrooms and after school programs. Activities include games, acting, photovoice, reflective writing, drawing, and appreciative inquiry.

Results The play and toolbox were pilot tested through a service learning course with public health students and a school district. The play was performed in eight schools, and teachers chose activities from the toolkit to implement in their classrooms.