

The importance of adult school crossing guards for child pedestrian road safety

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Introduction

Child pedestrian injuries are a real concerns in North America not so for the number of death or severe injured kids, although only one is already too many, but mainly because of the parent's feeling of insecurity it creates. Everybody would agree on the right for children to walk safely to school. These daily activities should take place without constant parent's fear of traffic. But reality is never as simple and interactions with vehicles are frequent events in a child's routine outside experiences, especially in cities. That being said, major reductions in rates of injury and numbers of victims of road accidents have occurred over the past decades. For example, in the United States the rate of traffic-related pedestrian ages 14 and under declined by 49% for deaths and by 36% for injuries from 1990 to 2000 (Hanley, Cody et al. 2002), but an average of 355 unintentional pedestrian fatalities among children under 14 years old still occurred since 2000 (Safe Kids Worldwide 2011). On the Montreal island, it is almost 2000 child (5-17 year-old) pedestrian incidents that required an ambulance between 1999 and 2008, with 49% of the victims aged between 5 and 11 years old (Morency, Gauvin et al. 2011).

Risk perception is defined as an intuitive assessment that most people will trust when faced with a particular danger, based on the information that they have. The interest of studying people's perception of risk of any kind lies in the need to better understand the cognitive processes that lead to their choices and changes in behaviour when confronted with these risks (Ajzen and Fishbein 1980). In road safety literature, risk perceptions have often been studied as a factor that influences risk-taking behaviours, especially when it comes to drivers. However, there has been little exploration of the situation for other road users such as child pedestrians, with the exception of a few studies that highlight road risk parental perceptions as an important factor in their road safety practices and their transport mode choices on the journey to school (Collins and Kearns 2001; Lam 2001; Pooley, Turnbull et al. 2005; Kerr, Rosenberg et al. 2006; Merom, Tudor-Locke et al. 2006). As Noland (1995) stresses, "individuals are more likely to choose a given commute mode the safer they perceive it to be."

Now that every government wants their children to “move”, walking and cycling to school seems to be one of the way contributing to some exercise in a day (Mackett, Lucas et al. 2005; Mackett In press). How then reconcile those two viewpoints: walking to school in perceived unsafe environments? A strategy adopted by several cities around the world is to hire adult school crossing guards to patrol at problematic intersections: those adults can then help children to cross safely (Rosenbloom, Haviv et al. 2008). The Montreal (Canada) police department chose a long time ago this particular intervention to secure the way to school, with some success, even though very few in-depth study in the world were made as to what extent the work of adult school crossing guards helps to improve road safety around schools (Bonneau 1999). This paper presents results of a broader project on the effectiveness of this prevention strategy. The questions that will be the focus of our analysis here are related to school guards’ description and perception of their working environment.

Methodology

Two data collection strategies were put in place for this part of the project: questionnaires and focus groups. A three-section questionnaire was sent to every adult school crossing guard employees, both permanent and supernumerary. The first section included questions on their daily routine: schedule, number of kids crossing, distance to cross, signalling, etc. The second one comprised questions on their work appreciation and perception, rating different issues such as traffic control and road users’ rule compliance on a Likert scale ranging from 1 (totally disagree) to 7 (totally agree). The last one asked demographic and career questions: age, sex, number of years of experience, etc. At the end of every questionnaire, an additional section asked respondents if they would be willing to participate to a focus group: if so, they were invited to fill the form with their contact information. If not, the questionnaire was left anonymous. A total of 648 questionnaires were sent.

Focus groups were organised a few months later: every school guards willing to participate was called and invited to join one group. Those focus groups were held in a “neutral” location and in different parts of the city to encourage participation of everyone: university classrooms or community centers were rented every time. Three themes were discussed with each group, letting around 20 minutes of discussion for each of them. The first one was related to their “physical” working environment: how is their intersection managed? Is there important traffic? Are traffic lights in place relevant? The second one was about people passing through their work environment: Do parents and children respect the rules? Have they

experienced or heard about accidents nearby? The last theme discussed with them was related to their employer and to the school staff: Do they feel supported? What is the relationship they have with the school(s) around their intersection? Six discussion groups were held within three weeks in June 2012 and 62 people participated. Answers from questionnaires and focus group participants' discourse were analysed and compared to add some perspective to each other. Descriptive results are presented in the following sections.

Results

A total of 379 forms were retained for analysis, including a few questionnaire in English¹ (58% return rate). Table 1 shows the general portrait of participants. They are experienced crossing guards as we can see by the number of years of experience (39% with more than 10 years) and by their age (more than 80% over 50 years old). Both men and women are well represented, with little more women, similar to the focus group. Three-quarter of them worked at more than 5 intersections since they started, almost a quarter to more than 15 intersections. This include supernumerary than can travel a lot from one intersection to another before having "their" spot: most of them dislike this period, as they told us in our discussion groups, and hey wold like to have more stability from the start. Despite this early-career period, almost all respondents appreciated their work (98% "agree"), a fact that was confirmed in our discussion groups where every participants insist on the love they have for kids, who are their first motivation to go to work every day.

Table 2 presents the number of children at the respondent's intersection in the morning, at lunch and in the afternoon. These are self-reported numbers and some of them might not be accurate compared to police service estimate. Focus group participants told us that they would often help every children crossing at their intersection, no matter the school they attend, getting therefore higher numbers. Some of them even help other pedestrians to cross, such as older people or day care groups. They view their work as part of the community and they know that some "usual pedestrians" are waiting for them to be at the corner to cross. Apart from those experiences, the mean and median number are the highest one in the morning, and the lowest at lunch, confirming the most common schedule of school day care service: there are little children going in and out of school at lunch and after class.

¹ A note was added to the first questionnaire (in French, the main language of the employees) send to offer a translated version to those wanting to answer it in English. Additional copies were send to a least five participants.

Table 1: Questionnaire respondents' characteristics (n=379)*

Sex	Men : 44% Women : 54%
Age	Less than 30 years old : 1% 30-49 years old : 14% 50-65 years old : 51% 65 years old or more : 32%
Number of years of experience	Less than a year : 7% 1-4 years : 24% 5-9 years : 28% 10-15 years : 20% More than 15 years : 19%
Number of intersections since they were hired	1-4 : 27% 5-9 : 24% 10-15 : 24% 15 and more : 23%
Work appreciation	Disagree : 1% Neither agree nor disagree : 1% Agree : 98%

*Some questions do not sum up to 100% because of missing answers.

Table 2: Self-reported number of crossing children

	Number of children in the morning	Number of children at lunch	Number of children after school
Mean	54,81	20,87	50,76
Median	40,50	12,00	34,50
Mode	20	10	20

Concerning the type of road design at each intersection, there is a lot of diversity in the answers, as shown in Table 3, and a lot of “no answer”, that we can possibly, but not with certainty, interpret as “absence” (see third column). According to the percentages of the total number of intersections in our sample, it is the marking (zebra or two parallel white lines) that is the most common, followed by traffic lights and stop signs. We also note that there are a small proportion of intersections with a pedestrian light call button (10 %), even if almost a third of them have pedestrian lights.

Table 3: Traffic control devices present at intersections with guards

	Presence (%)	Absence (%)	No answer (%)
Stop sign	40	34	26
Traffic light for vehicle	47	34	18
Green flashing light	8	59	33
Straight green arrow	14	56	31
Yellow zebra marking	22	42	36
White zebra marking	61	21	17
Two parallel white lines	51	24	25
Pedestrian traffic light	31	55	14
Pedestrian light call button	10	55	35

The last section of the questionnaire included different statements on the work itself that participants had to rate from *totally disagree* to *totally agree*. Concerning traffic at their intersection and ease of control during guards' work shift, a majority of respondent agree to the increase in traffic (69%), but only half of them agree to the challenge of controlling traffic (50%). To the opposite, almost 40% of the respondents disagree with the statement "traffic is easy to control at your intersection", which was also a preoccupation said out loud during focus group. School guards explain to us that they can only rely on themselves to control every road user interactions, with the exception of the beginning of the school year (September) where police officers are more active around schools. This can be related to their answer to the statement on intervention effectiveness presented in Table 4: the strongly agree on the effectiveness of police interventions (70% *agree*), even if these interventions do not last long enough. One of the discussion participant summarize the situation quickly by saying that they should leave an unattended police car next to their intersection, that would be the best way to avoid forbidden behaviour from every road users around! Another issue raised in our discussions following this theme is the safety of guards on duty: almost all of them remembered at least one time where their life was put in danger; for some of them, it's once every month that a car misses narrowly their hip or foot!

Table 4: Intervention effectiveness according to different targets

	From police officers (%)	Toward parents (%)	Toward children (%)
Disagree	11	15	13
Neither agree nor disagree	19	30	26
Agree	70	55	61

All focus group discussions put forward additional issues, the main one being the differences from one neighborhood police station to another: depending on their police supervisor, school crossing guards have access to specific equipment (e.g.: official police cap) and to different level of support on-site and in the community. Following this uneven distribution of interventions, the communication between school staff and guards is also very diverse: some have full access to school buildings and are aware of (and invited to) every activities when others don't even know if the school is aware of their work. This miscommunication "triangle" between school police supervisors and school crossing guards represent a first area of possible improvement despite the fact that it involves many actors.

Conclusion

Since several school crossing guard employees do not have a high level of literacy, we facilitated the understanding of the questionnaire by including simple questions and road design and signalisation pictures. Despite these adjustments and a very high return rate (58%), several questions had quite a large number of "missing answers", especially for the road design section (Table 3). This limitation does not alter the relevance of our results, but the high number of participants cannot be taken for granted!

Adult school crossing guards are essential to the safety of children, especially when they are located on arterial roads. Their work helps to save children's life but is also unknown of many citizens. One of the major implications of our results is related to the need for a better recognition of their work by the different road safety actors at the municipal level. Issues raised by the school crossing guards also reveal the lack of respect between all the different road users (cyclists, pedestrians, car-occupants): authorities should take this as an opportunity to foster courtesy in their road safety campaigns.

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