

**Learning Outcomes** Parents are of paramount importance in protecting the youngest children. They are aware of the living environment of their child and the child's current developmental steps. A sensitisation to both of these aspects is of great importance to the child's safety during the first years of life.

## 2D – Road – Pedestrians, March 23, 2021

### 2D.001 DISTRACTED WALKING PREVENTION WITH MULTI-SECTORAL COLLABORATION FROM RESEARCH TO AWARENESS & EDUCATION

Xiajun (Joy) Xu\*, Minyan (Monica) Cui\*. *Safe Kids China, Shanghai, China*

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**Background** Road traffic accident is the first killer to teens aged 15–17 in China. Teens are the group walking independently and with the highest increasing rate on web-surfing through mobile phone. This program involves research and transfers the research findings into actions on awareness and education to prevent the distracted walk among teens and public.

**Objective** Understand distracted walk among teens and raise awareness on no distracted walk among teens and the public.

**Method** 1) A questionnaire survey on distracted walking among 2,984 teens in 12 schools were conducted 2) Results were used to build an awareness campaign with multi-sectoral collaboration; 3) Working with local educators to have the curriculum into schools as a must-do education to teens.

**Results** 1) A research report on teens distracted walk was issued which showed 35.80% of the respondents using cell-phones while walking, among which 18.04% were hit by vehicles; 2) The findings were used to lobby: a) the decision-makers of multi-sectors working together on the campaign 'The Moment of Silence' and the promotion in the public transportation (public bus and subway) and shopping malls; b) the decision-makers of educational sector to have 'No Distracted Walking' curriculum into 2000 schools of 5 cities as the must-do education on road safety and also schools over 40 cities used the curriculum.

**Conclusion** Research findings are the key to kick the ball running on engaging local government's action on raising the awareness on 'No Distracted Walking' among teens and the public.

### 2D.002 DISTRACTION INDEX: A NEW INDICATOR FOR MEASURING DISTRACTED WALKING

<sup>1</sup>Peishan Ning\*, <sup>2</sup>David C Schwebel, <sup>2</sup>Casie H Morgan, <sup>1</sup>Guoqing Hu. <sup>1</sup>Central South University, Changsha, China; <sup>2</sup>University of Alabama at Birmingham, Birmingham, USA

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**Background** Simple and valid measures are important for studying distracted walking, an important and emerging risk factor for pedestrian injury. Based on common epidemiological indicators for distracted walking, we developed and validated an indicator to measuring distracted walking, called the 'distraction index'.

**Methods** A large, video-based, observational study was conducted at 20 intersections in Changsha, China. To develop a 'distraction index' that would quantify safety risks based on distracted walking, we calculated relationships between 7 observed distraction indicators and 3 safety outcomes. This allowed us to assess the discriminant validity of the 7 indicators and create a 'distraction index' that best predicts street-crossing safety based on distracted behavior.

**Results** In total, 8,729 distracted pedestrian crossings were identified. Discriminant validity varied greatly across the distraction indicators. Compared to each individual indicators, the distraction index demonstrated the strongest capacity to discriminate all three safety measures of street-crossing. Using the three levels in the 'distraction index', distracted pedestrians had much higher risks of experiencing near-crash events compared to undistracted pedestrians, with odds ratios of 1.3 (95% CI: 1.1, 1.4) for low index scores, 1.6 (95% CI: 1.4, 1.9) for medium, and 1.9 (95% CI: 1.6, 2.3) for high.

**Conclusion** The distraction index predicted pedestrian crossing safety more accurately than any of the seven individual measures of distracted walking. We recommend use of this index in future research.

**Learning Outcomes** No widely recognized epidemiological measure exists to observe distracted walking. The newly-created 'distraction index' shows excellent discriminant validity compared to individual indicators of distraction.

### 2D.003 ROAD ENVIRONMENTAL CHARACTERISTICS, DISTRACTED WALKING, AND PEDESTRIAN SAFETY: AN OBSERVATIONAL STUDY

<sup>1</sup>Peishan Ning\*, <sup>1</sup>Peixia Cheng, <sup>1</sup>Jieyi He, <sup>1</sup>Wangxin Xiao, <sup>1</sup>Junjie Hua, <sup>2</sup>David C Schwebel, <sup>1</sup>Guoqing Hu. <sup>1</sup>Central South University, Changsha, China; <sup>2</sup>University of Alabama at Birmingham, Birmingham, USA

10.1136/injuryprev-2021-safety.46

**Background** Distracted walking is a major risk factor for pedestrian injury, but it is unknown whether pedestrians have different risks of distracted walking in some road environments compared to others.

**Methods** An observational study was conducted at 20 intersections in Changsha, China. We developed a composite measure distracted behavior (called the 'distraction index') based on types and duration of pedestrian distraction. Another composite indicator, 'road environmental risk score', was constructed on the basis of eight variables on road environment and traffic volumes. The mediating effect of distraction index was examined while studying the impact of road environmental risk score on the risk of near-crash events.

**Results** In total, 8729 of 25436 (38.9%) pedestrians were distracted by mobile phone use, interaction with others, or eating/drinking/smoking while walking. A higher distraction index was related to higher risk of near-crash event ( $p < 0.05$ ). The distracted index was positively associated with the road environmental risk score ( $p < 0.05$ ). Pedestrians with high and medium road environmental risk scores had higher risks of a near-crash event than those with low scores (RR=1.41, 95% CI: 1.15, 1.73; RR=1.56, 95% CI: 1.28, 1.92). Road environment yielded an indirect effect on near-crash event; the effect was mediated by the distracted walking index, accounting for 5.3% of total variance.

**Conclusion** Specific road traffic environments raise the severity of distracted walking, which further threatens pedestrian safety.

**Learning Outcomes** Specific road environmental risk increases the severity of distracted walking, additionally creating an indirect impact on near-crash event.

#### 2D.004 PEDESTRIANS' STREET CROSSING PERCEPTIONS ON PEDESTRIAN BRIDGES IN DAR ES SALAAM

<sup>1,2,3</sup>Daudi Katopola\*, <sup>2</sup>Fredrick Mashili, <sup>1</sup>Marie Hasselberg. <sup>1</sup>Department of Global Public Health, Stockholm, Sweden; <sup>2</sup>Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania; <sup>3</sup>National Institute of Transport, Dar es Salaam, Tanzania

10.1136/injuryprev-2021-safety.47

**Background** About 30 per cent of all road traffic incidence deaths in Tanzania involve pedestrians. Previous studies show that pedestrian bridges might not necessarily result in high bridge use, even when pedestrians must cross 3–4 lanes with heavy traffic. This paper explores the perceptions of pedestrians when crossing urban roads through using or not using pedestrian bridges.

**Methods** Nineteen semi-structured interviews were purposively conducted around six pedestrian bridges within Dar es Salaam. All interviews were conducted in Swahili, recorded using digital devices, transcribed verbatim then translated into English. To know the perceptions of pedestrians with respect to their experiences of using or not using the bridges, content analysis was employed with the help of a qualitative data analysis software (MAXQDA).

**Results** Three key themes were identified, relating to planning and decision making, alternative activities carried out around pedestrian bridges, and behavioural intentions and perceptions of pedestrians when accessing the bridges. Results also suggest that, participants are aware that the aim of the bridges are to prevent road traffic injuries. Conversely, participants were sceptical about inappropriate behavioural use of the bridges when linked to planning decisions and norms.

**Conclusion** The findings support the idea that already vulnerable road users such as pregnant women, older people and physically challenged pedestrians are exposed to higher risks of being injured since they cannot use the bridges when crossing roads.

**Learning Outcomes** Involvement of users is crucial when constructing pedestrian bridges in order to increase awareness on appropriate behavioural use when crossing roads with bridges.

#### 2D.005 OLDER PEDESTRIAN INJURY OUTCOMES: A SYSTEMATIC REVIEW, META-ANALYSIS, AND GRADE ASSESSMENT

JE Rod\*, Oscar Oviedo-Trespalacios, Teresa Senserrick, Mark King. *CARRS-Q, QUT, Brisbane, Australia*

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**Background** Older pedestrians 60+ (OP) have worse health outcomes due to pedestrian trauma. There is no available systematic evaluation of OP injury outcomes. This becomes increasingly important as the global population ages. We conducted a systematic review, meta-analysis and GRADE

assessment of OP injury severity and compare them with those of younger age groups.

**Methods** We searched PubMed, Embase, Scopus, CINAHL, PsycInfo, AMED, Web of Science, LILACS and TRID to identify studies assessing OP crashes and falls. Reporting was evaluated using STROBE, and GRADE was used to assess evidence quality. Random-effect model meta-analysis served to obtain pooled estimates. The review is registered in PROSPERO (#CRD42019140786).

**Results** We included 60 studies (1,012,041 pedestrians). The pooled incidence proportion of OP crashes was 25% (95% CI: 22.3 – 28.5). OP were found to have higher severe injury, more critical care admissions, and higher fatality than younger pedestrians. OP also have higher incidence rates and severe injury from pedestrian falls. The overall quality of the evidence supporting the findings was low.

**Conclusions** OP risks may offset some of the health gains from active ageing strategies, especially for developing economies with high numbers of vulnerable road users and with rapid population ageing.

**Learning Outcomes** There is a need for research to improve the quality of evidence in regard to short and medium-term health outcomes and address long-term health outcomes for OP trauma.

## 2E – Intentional, March 23, 2021

#### 2E.001 MEASURING THE EFFECTIVENESS OF PREVENTION OF FAMILY VIOLENCE IN A REGIONAL SETTING

<sup>1</sup>Margie Robinson\*, <sup>1</sup>Heath Greville, <sup>1</sup>John Woods, <sup>2</sup>Barbara Nattabi, <sup>1</sup>Monica Moran, <sup>2</sup>Colleen Fisher, <sup>1</sup>Sandra Thompson, <sup>2</sup>Karen Martin. <sup>1</sup>WA Centre for Rural Health, School of Population and Global Health, University of Western Australia, Geraldton, Australia; <sup>2</sup>School of Population and Global Health, University of Western Australia, Nedlands, Australia

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**Background** Rates of family and gender-based violence (FV) are high, particularly in rural and remote areas in Australia. The City of Greater Geraldton, a local government area in the Midwest region of Western Australia, has developed a FV primary prevention strategic action plan. Local data are needed to measure the impact of community based prevention efforts. Our research aim was to develop a tool to measure community attitudes and experiences of FV in order to assess the effectiveness of efforts to change attitudes and reduce violence over time.

**Methods** A working group developed the Local Community Attitudes and Exposure to Violence Survey (LCAEVS), based primarily upon the National Community Attitudes Survey (NCAS), which is periodically undertaken by Australia's National Research Organisation for Women's Safety (ANROWS). Questions from all relevant domains in the NCAS were included, with prioritisation of items likely to be sensitive to change over time. The survey was shortened to reduce respondent burden.

**Results** Geraldton respondents showed misunderstandings about the key drivers and the gendered pattern of FV, while some local attitudes were less supportive of gender equality than those documented in the national survey.