

Dr Claire Cleland<sup>1</sup>, Prof Frank Kee<sup>1</sup> & Dr Ruth Hunter<sup>1</sup>

<sup>1</sup>Centre for Public Health, School of Medicine Dentistry and Biomedical Science, Queen's University Belfast, United Kingdom

Funded by the National Institute for Health Research and we would like to acknowledge the wider research team from the University of Edinburgh, University of Exeter, University of Cambridge, Sustrans, University of East Anglia and University of Bristol.

## Introduction

Traffic is a determinant of health which impacts all communities regardless of location and socio-economic status. The use of motorised vehicles has received negative attention, specifically in relation to collisions resulting in deaths and casualties (including pedestrians and cyclists) with evidence showing casualties are socially patterned with higher levels in disadvantaged areas. In addition, motorised transportation adds to the burden of physical inactivity causing a reduction in active transport and an increase in sedentary behaviour.

A simple and cost-effective city centre 20mph speed limit intervention (road signage and legislation) was implemented in Belfast, city centre (76 streets, Figure 1) as it has the capacity to have direct (collisions, casualties and safety); and indirect (active transport and active living) impacts. As a population approach it also has the potential to shift cultural norms and attitudes about cars, which negatively impact health and the health of our planet. As an intervention of this nature requires individual 'buy in' and current evidence is ambiguous regarding public perceptions of speed limit schemes the current study aimed to examine public perceptions and its impact on health, safety, active living and active transport.

Figure 1. Belfast City Centre 20mph speed limit streets



## Objectives

The objectives of the current study were two fold: 1) to gain an understanding of public perceptions by implementing a quantitative perceptions survey; and 2) to provide context to the quantitative data by implementing a qualitative focus group study.

## Methods

A cross-sectional survey with adults >17 years (May 2018) was implemented within Belfast city centre by a team of trained survey assistants - analysis was performed in SPSS. Focus group recruitment took a purposeful sampling strategy to ensure that, where possible, sampling of adults >17 years from specific population groups, was achieved where differential impacts would be evident. Such groups/individuals included: pedestrians, cyclists, drivers, older adults, individuals characterised as being from a low socio-economic groups (non-car owners and/or unemployed), those who have a specific job role (taxi, bus or delivery driver, city centre manager or retail worker) and commuters. Focus groups (July-December 2018) were implemented by one lead researcher (CC) within Belfast city centre and within the Belfast metropolitan area. Thematic analysis in Nvivo by two independent researchers (CC and RH).

## Results

Four hundred and ninety adults were recruited to the quantitative survey with the majority aged 21-30 years (n=145, 29.6%), female (n=212, 43.3%), with no disability or medical conditions (n=382, 78.0%) and reported their ethnicity to be white (n=403, 82.2%). Findings from the survey are presented in Table 1.

Table 1.	Percentage of sample (n)
Understood why the speed limits were introduced	73.9% (362)
Disagreed with speed limits being a 'bad idea'	54.4% (267)
Thought the speed limits would make people drive slower	62.0% (304)
Agreed the limits have led to an increase in cycling	35.2% (160)
Neither dis/agreed with speed limits leading to an increase in how pleasant the area is to live/work	42.5% (186)
Agreed speed limits will lead to safer streets	71.9% (326)
Neither dis/agreed speed limits will lead to an increase in more opportunities to socialize	48.8% (216)

However, regardless of the positive findings reported within the survey when perceptions were probed further qualitative analysis showed that very few individuals were aware of the extent of the 20mph scheme due to limited signage and a small awareness campaign. It was the shared opinion that there would be better 'buy in' and ownership from individuals if they had of been fully informed of the scheme from the outset and throughout and made aware of the benefits for health, well-being and active living.

Participants agreed with the rationale for the 20mph speed limits in line with the results from the quantitative survey however they highlighted the intervention as only being a beneficial starting point for increasing active living and active transport and a positive change in regards to the promotion of safety for pedestrians, cyclists, children etc. in terms of actual (reduction in number and severity of collisions and casualties) and perceived safety. Although it was felt that more work is required alongside speed limits in order to effectively sustain change in the longer term – speed limits alone are not the answer. "Its like putting a plaster/band-aid on a broken leg". Participants called for:

- Better quality and quantity of cycle paths (including segregation)
- Better speed education and awareness (lower speeds)
- Pedestrianisation on busy city streets
- Enforcement (speed cameras, fines)



## Discussion

Reduced speed limits provide a cost-effective starting point to instigate change for active living. However further work is required across agencies in order to build upon initial change in behaviours, safety, active transport and active living in order to maintain change in the longer-term.

## Implications

Reduced speed limits have the potential to offer a cost-effective intervention to potentially improve active living and to increase physical activity regardless of community demography. Therefore, when implemented in combination with the suggested additions speed limits have the potential to be implemented in any area and impact those at greatest risk for physical inactivity and its related diseases.