

**Assessing the Safety and Mobility of
Older Road Users in Urban Areas**

Lucy Rackliff

Supervisor; Dr Andrew Morris

Transport Safety Research Centre

Loughborough University

Abstract

Older road users have a higher than average fatal accident rate, partly as a consequence of functional limitations related to ageing, exacerbated by their physical vulnerability. In Great Britain in 2007, 663 people over sixty were killed in road accidents, the single biggest proportion being in urban areas. (Department for Transport, 2008). Projected increases in the proportion of the population over 65, coupled with increased levels of car-ownership for this group, have led to concerns of a significant road safety problem developing.

Against this background, the need for older people to stay mobile remains. Physical activity promotes mental and physical health, and is important for maintaining access to essential services such as medical care and shops. Barriers to mobility include heavy traffic, discontinuous or poorly maintained pedestrian facilities and concerns about personal safety. Because of declining mental and physical capabilities, financial pressures and isolation, older people are particularly affected. Historical approaches to transport policy like prioritising motorised traffic and segregating pedestrians have sometimes inadvertently added to the problem.

This research uses focus groups comprised of older road users to explore the potential conflict between road safety and mobility. The travel patterns and needs of older road users are explored, and policy is evaluated in the context of its effect on older people's mobility and safety. The work forms part of a broader project looking at how road safety targets are framed, how this affects other transport planning objectives, and what the implications may be for older people's quality of life.

1. Introduction

Increases in the proportion of the population that is over 65 are predicted for many countries, including Great Britain. According to the Office for National Statistics (2010) there was an increase in life expectancy of 4.8 years for men and 3.6 years for women between 1981 and 2001. Coupled with this are increases in the proportion of people holding a driving licence: In 2006, 63% of women and 81% of men in Great Britain held a full driving licence. This compares with 29% of women and 69% of men in 1975. (Department for Transport 2008¹). According to (O'Neill 2000) between 1965 and 1985 there was an increase of 200% and 600% respectively in the number of men and women drivers over 65 in the UK.

It is expected that in future, older people will be accustomed to a higher level of mobility, being more likely to own and use a car than previous generations (Brace et al, 2006).

In Great Britain in 2007, 663 people over the age of 60 were killed in road accidents. (Department for Transport, 2008²). European data suggests that 19.2% of road fatalities in Europe in 2006 were aged 65 or over. The European Transport Safety Council (ETSC) (2008) points out that whilst older people account for one sixth of the European population, one fifth of road fatalities are 65 or over.

Compared to the overall population, older people have a lower share of fatalities on motorways and rural roads but a higher share on urban roads (Leitner et al, 2008). They are also more likely to have crashes at complex junctions, which occur more commonly in built-up areas. (Hakamies-Blomqvist 2003), hence the focus on urban areas in this research.

The need to maintain access to key services remains as people age. In addition to serving practical objectives such as attending medical appointments and buying provisions, continued mobility is important for access to social activities, helping to prevent the isolation and loneliness that can lead to mental health problems. According to Clarke and Nieuwenhuijsen (2009), older people are particularly affected by physical barriers in the local environment, as a result of declining mental and physical capabilities, financial pressures and social isolation.

Outcomes-based measures of road safety like accident or casualty counts are useful for comparing the risks to users of different transport modes, for comparing road accidents with other public health risks, and to assess changes in risk over time. However, such measures cannot readily assess safety in conjunction with a broader range of factors such as the ease with which older people can access the services and activities they need to stay mentally and physically well.

The aim of this research is to explore the broader issue of promoting road safety whilst facilitating continued mobility, specifically in the case of older road users. Using the city of Coventry as a case study, the research identifies the places within urban areas that older people use, and aims to highlight barriers to safe mobility.

2. Methodology

Four focus groups were undertaken, with the aim of collecting qualitative data to support and inform analysis of quantitative data (for example, bus origin and destination data, accident statistics and data about the features of the road infrastructure) later in the project. An important objective was to understand the services and activities that older people particularly need to access, as well as those that they felt served important social functions. Factors in the urban environment which presented barriers to mobility and accessibility were explored through open discussions, initiated by an informal presentation of the project.

3. Results and discussion

3.1 Participant Information

The focus groups were held in July 2010, with the numbers and ratio of male:female shown in table 1, below. Participants were selected via the Women's Institute, with male participants being the husbands of WI members. The discussion was initiated by explaining the aims of the project, and inviting participants to discuss the places that were important to them and to explore their experiences of travelling there. All of the participants were relatively active and without significant mobility problems.

DATE	PARTICIPANTS	MALE-FEMALE	AGE RANGE
6 th July	8	4-4	65 - 80
13 th July	7	3-3	67 - 91
19 th July	7	2-5	61 - 77

Table 1; Focus group participants

3.2 Activity Patterns

Initially, participants were encouraged to discuss the type of activity that was most important to them, and to identify places they wanted to be able to get to on a weekly basis.

The main activities identified were leisure-related, and included; craft group, library, theatre, evening classes, museums, restaurants and "keep-fit" classes.

A number of activities related to health and well-being (such as University of the 3rd Age, Church, hospital and Doctors) were also mentioned.

There was some discussion around the issue of how their activities differ from average or younger groups: The main difference highlighted was that participants felt they were likely to be travelling at different times of the day. It was felt that outside congested peak periods, vehicle speeds are higher, making traffic more intimidating, especially (though not exclusively) for pedestrians. None of the participants was still in employment, meaning they were not making commuting journeys. All preferred to travel outside the peak, for reasons connected to traffic conditions (private transport), pricing (public transport) and a sense that peak time travel was stressful and inconvenient. When there was little control over travel time decisions (e.g., early hospital appointments) they felt their needs were poorly catered for. Two participants (both male) stated that they used different routes when travelling in the peak, to avoid parts of the network they found problematic.

3.3 The Transport System

The most commonly used modes were car (as passenger or driver), and bus, with the difference almost always being determined by end destination. Places that were thought to be difficult or expensive to drive to or park at were accessed by bus. Most felt that free bus passes did not influence mode choice, but this may have been a reflection of the personal circumstances of these participants, for whom cost may not be a key determinant of mode choice. The biggest issues faced with respect to bus travel were;

- Crossing the road to/from the bus stop on either the outward or return leg, agreed by all participants to be a problem.

- Personal safety, felt, surprisingly, by two male participants to be an issue. Two female participants disagreed strongly, saying they had never felt at risk on the bus, regardless of where they sat (upper or lower deck, close to the driver or not).
- The need to have the correct fare ready if travelling during peak periods, not only because of the inconvenience of needing to know it, but because poorer circulation in the fingers made it difficult to have the money ready, especially in colder weather.

A number of problems with road-crossing were highlighted;

- Facilities were felt to be located not where they are most needed, but where they cause least inconvenience to motorised traffic
- The time allowed for pedestrians to cross is not enough (again blamed on the need to prioritise traffic through-put)

A specific example where participants felt the location and design of crossing facilities is particularly poor is shown in figure 1, below.



Figure 1; Shops on Kenpas Highway, Coventry.

A number of participants said they prefer not to use the shops pictured, rather than try to cross the road or detour to the crossing facilities provided.

Other issues that caused concern to participants when they were walking were: uneven pavements, including “tactile” surfaces intended to help identify features such as safe crossing point, but which were felt to present a hazard to arthritis sufferers and others less steady on their feet; shared cycle/pedestrian facilities, which were thought to lead to confusion about who has right of way.

When driving, all participants agreed that roundabouts caused a significant problem, identifying the following as particular issues;

- Lane-keeping
- Speed of on-coming traffic
- Turning the head to get a clear view of on-coming traffic
- Roundabouts with traffic lights

It was suggested that large roundabouts in urban areas caused problems for pedestrians, with crossing being difficult and often necessitating a significant detour along the arms of the roundabout to find a safe place. Simple crossroads were felt to be much easier to negotiate, both on foot and as a driver. One participant suggested that the increased land-take of large roundabouts compared to other junction types made them particularly unsuited to urban areas.

Figures 2 and 3, below, show a location approximately 0.75 miles from Coventry City Centre, close to bus stops, a park and a doctors' surgery which a number of participants agreed was problematic. As can be seen, pedestrians must make a significant detour to cross the junction, and the approaches are wide, with several lanes of traffic. Whilst there is a 30mph limit here, all participants felt vehicles speeds were excessive, making it hard for them to make decisions about the correct lane and when it is safe to pull out or cross.



Figure 2; Junction of the A444/Binley Rd, Coventry.



Figure 2; Junction of the A444/Binley Rd, Coventry.

3.4 Policy implications

The results suggest a number of areas where the interface between safety and mobility for older road users is not well-managed. For example, whilst roundabouts are known to be generally safer for motorised vehicles than other junction types with conflicting vehicle movements, they are problematic for older road users, both as drivers and as pedestrians. There is supporting evidence from existing studies that the increased mental workload and the complexity of decision-making required lead to an increase in errors by older drivers at such intersections (Federal Highway Administration, 2000).

Similarly, segregation of different categories of road user (for example, by the use of pedestrian guard-rail and signalised crossing facilities) is one way of attempting to reduce vulnerable road user casualties. However, for older pedestrians, the location of crossings is a significant issue. Crossings which require lengthy detours are a barrier to mobility, which may reduce casualties at the locations in question at the expense of making the trip almost impossible for some older pedestrians. This in turn has implications for the sustainability of local businesses, the “liveability” of the local environment, and social exclusion for those without access to alternative facilities or transport modes. It is also, arguably, at odds with other government initiatives aimed at promoting more environmentally-friendly lifestyles.

3.5 Study Limitations

An acknowledged limitation when collecting data about people’s mobility is that the least mobile are those whose views are often most difficult to capture, as they may not be mobile enough to access the places and services used to recruit participants. However, in this case, what is important is to identify the features of urban infrastructure that cause additional difficulties for older road users. These do not have to be the most mobility-limited older road users to provide useful insights.

In addition, it is recognised that the participants were not necessarily representative, and their overall number was small. This data will be supplemented later in the project by questionnaire data, and quantitative information such as bus origin and destination data, and other relevant existing data such as accident and exposure figures.

4. Conclusions

The results of the focus groups demonstrate that there is sometimes a conflict between the engineering solutions implemented to promote road safety and the accessibility of services and facilities for older people. Further stages of the work will compare accident and exposure data for the locations identified as being 1) important to older people and 2) problematic, in order to assess how policy priorities might differ if a broader range of information was used when determining them. The work forms part of a larger project looking at how road safety targets are framed, how this affects other planning objectives, and what the implications are for older people's quality of life. The results will form a set of recommendations for progressing both road safety and mobility by constructing and monitoring a set of performance indicators. These will incorporate traditional "outcomes" measures such as accident and casualty counts, but will weigh these against measures of the extent to which the provided infrastructure is a barrier to mobility for older users.

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