Road Safety and the Elderly / Older Road Users Background

Road Safety Authorities and non-government organizations place much focus on road safety and the younger generation – but often neglect the older road users. The group of elderly road users is getting increasingly larger and our road safety strategies should pay more attention to the possibilities and limitations of this group of road users.

In the coming decades, the number of elderly road users will increase considerably and so too their fatality rate in traffic. When involved in traffic crashes the risk of severe injury is considerably higher because of their physical vulnerability.

We need to discuss road safety and the risks to older people and recommend measures to enhance the safety of these road users!

Facts and Numbers

- As the elderly are less agile and resilient, the likelihood of being killed as a pedestrian is more than twice that for younger adults
- Every fifth person killed on roads in Europe is aged 65 or over it is estimated that by 2050 one death out of three will be an elderly person, if their safety level does not improve.
- The elderly are more likely to be severely injured or killed in a crash. The fatality rate of the 65-74 year olds is about twice that of the 30-64 year olds. The fatality rate even is eight times higher for the over-75s.
- With the same impact force, the death rate is approximately three times higher for a 75 year old motor vehicle occupant than for an 18 year old. The physical vulnerability has the severest consequences during 'unprotected' journeys such as walking and cycling.
- Older drivers find it more difficult to judge the speed and intentions of other drivers. From the age of around 45 most of us need glasses to see well either at a distance, close up or for both. For example, by around the age of 60 our eyes will normally require three times more light to see as well as when we were aged 20.
- The fatality rate of elderly drivers is considerably lower than that of elderly cyclists and pedestrians.
- The death rate is particularly high for elderly cyclists

Who do we regard as elderly / old road users?

- This is not something to be judged with reference to an exact number of years and days!
- We often refer to the elderly road users as people of 65 years and older.
- Rigid age boundaries do not take into consideration the fact that ageing is a process that does not start at the same age for each and every individual, nor does it progress at the same pace.
- We need to acknowledge that there are large differences in driving skills between people of the same age, as well as in their physical and mental abilities.
- Some 85 year olds are in better shape than certain 40 year olds.

Factors contributing to risk level of older road users

Why does the older age group pose a significant road safety risk? Are there specific factors that impact on their safety? The road safety of elderly road users is determined by two factors: functional limitations and physical vulnerability.

Functional limitations

Functional limitations are those factors that determine why they are more likely to be involved in a crash. These can be summarized as follows:

- Ageing is most likely accompanied by the slowing down of observation, decision making, and movement processes, and a decreased capacity to carry out more than one task simultaneously.
- Ageing also manifests in a decline or slowing down of movements, a decline in muscle strength, a decline in the finely tuned coordination, and a particularly strong decline in the ability to adapt to sudden changes in bodily position.
- In traffic where there is pressure of time and the necessity of dividing one's attention, this can have negative road safety consequences.
- There is a high demand of motor functions and sensory, perceptual and cognitive actions in activities such as walking and cycling
- Sudden movements more rapidly cause loss of balance and falling among the elderly.
- Functional limitations do not automatically cause unsafe traffic behaviour as older road users compensate through other characteristics, such as insight in their limitations, experience and changes in behaviour.

Increased Physical Vulnerability

The increased physical vulnerability brought about by ageing contributes to crashes having a worse outcome for the elderly.

- Increased physical vulnerability, like for instance osteoporosis, is the result of biological processes which makes people more sensitive to external forces, such as a crash.
- The physical vulnerability has the most severe consequences for unprotected modes of transport such as walking and cycling.
- Physical vulnerability also influences the injury severity of drivers.

Characteristics of driving behavior from the elderly / Older Road User

Letting go of their vehicles is often a traumatic experience for the elderly – seen as a farewell to part of their social lives. Not all the elderly pose a disproportional danger to other road users. They are more often severely injured themselves (killed or hospitalized) in a collision with other

motorists than that they, as motorist, cause severe injury to other road user (drivers or other types of road user).

The elderly often compensate through their driving behavior:

- They benefit from the insight into their own limitations and driving experience
- They compensate by driving when the roads are less busy
- Studies have shown that the elderly more often choose to drive during daytime and dry weather.
- The elderly on average have a great deal of driving experience which gives them the ability to anticipate on possible problematic situations.
- They display a diminishing desire for excitement and sensation when getting older.
- They will less often drink-drive than younger adults and generally obey the traffic rules more often

Road Safety Measures aimed at improving safety

Family involvement:

- Family members and physicians should be proactive in ensuring the safety of their loved ones on the road, especially if they are afflicted or impaired with a condition that may hinder driving abilities.
- Friends should flag a friend who might be driving unsafely and pose a risk to other road users
- Family members might be in the best position to convince the elderly to go for a medical assessment and check on the important physical abilities required for driving

Road Infrastructure:

- Authorities must provide public transport alternatives and general infrastructure improvements to serve the mobility needs of the senior citizens
- New development should allow the elderly to use their experience and existing automatisms
- This could allow complex tasks to be performed in parts (e.g. crossing the road in phases), in which the elderly can repeatedly view the situation from a safe place and themselves can determine how to deal with time pressure
- Important infrastructure features stand out by means of good lighting and markings rich in contrast.
- Improvements could include better pedestrian crossing facilities, signals and markings provision of longer walk phases, provision of tactile paving, provision of good quality surfaces and avoidance of abrupt changes in level and steep inclines, introduction of a leading pedestrian interval, unambiguous 'WALK' and 'DON'T WALK' signs etc
- Barrier fencing, guardrails or other aesthetic restrictions in shopping areas where there is high conflict between vehicles and pedestrians should allow access to the road only at formal crossing points etc.

• Car-free pedestrian zones and traffic calming treatments could be designed to re-direct or slow traffic in residential areas and in town centres where there is high pedestrian activity.

Vehicle Manufacturers:

- Car manufacturers are developing vehicles with a focus on older drivers' limitations, physical vulnerability and requirements.
- Protection devices such as helmets for cyclists and (light-)moped riders, and seatbelts and (side) airbags for motorists, can limit injury severity.
- Technical adaptations available include servo-assisted steering, an automatic gearbox, and adjustments of the power needed to press down the brake and/or acceleration pedal.
- These are systems that offer specific support for motor functional limitations, such as the decline in muscular strength.
- More Intelligent Transport Systems (ITS) are becoming available which can assist the elderly motorist with functional limitations of vision, attention, and information processing. Examples are systems that warn about other vehicles simultaneously approaching an intersection, systems that help when merging or changing lane, and systems that project the relevant traffic signs and warnings

Education:

- Education can include programs to encourage people to walk and training people to walk safely.
- Education should be focused on altering human behaviour and attitudes.
- Road safety programs could promote safe walking practices along with training in judging speed and distances of approaching vehicles, making appropriate decisions in complex traffic environments
- Education and information meetings are important to inform the elderly about the functional limitations that go with aging, and the aids available to continue driving a car safely for as long as possible.
- These meetings could offer an opportunity to educate about changes in traffic situations and rules, and about problem situations that they could come across and how to deal with them best.

Road Safety Advice for the Elderly Road User

What advice can we offer to our elderly road users?

Older pedestrian crashes, on the other hand, tend to occur on a regular trip, often close to home or at shopping centres or recreational venues. Crash patterns identified are:

- They occur during daylight hours and mostly in urban areas
- They occur at intersections, particularly those without traffic signals

- They are often linked with reduced agility older adults are less able to get out of the way of oncoming vehicles
- Many occur in complex road environments such as on undivided roads, on a roadway in a busy location, and when vehicles are reversing.
- Most common types of crashes were reversals, where the pedestrian expected the driver to stop or alter their course, where the pedestrian thought the vehicle was not moving, and where the vehicle came behind a corner or parked car.
- Errors in judgement include judgement of when to cross the road safely, judgement of the speed or course of the vehicle and unwarranted expectancies about the behaviour of drivers.

Road Safety recommendations to older pedestrians are:

- Be aware of your physical limitations
- Plan your day avoid busy traffic times
- Cross where you can see clearly
- Avoid distractions such as talking to others, cellular phones etc
- Use pedestrian crossing places if you can
- Be careful crossing between parked cars
- Make sure drivers can see you wear something bright.

Road Safety recommendations to older drivers:

- Recognize that many traffic changes have occurred and there is increased heavy traffic and congestion on the roads.
- Take extra care at night or in bad weather and try to avoid driving at these times if possible.
- Plan ahead This will reduce stress levels and planning the route in advance will help the driver cope better with the journey ahead.
- Traveling is tiring and drowsiness and tiredness can lead to accidents.
- Pamper yourselves by taking frequent breaks during their journey.
- Check with your doctor or chemist about the effects of any prescribed or purchased medicines as they can affect driving.

Conclusion

May we not neglect our elderly road users and strive to address their road safety needs!

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