



AGGRESSIVE ROAD BEHAVIOURS IN SOUTH AFRICA

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Aggressive road behaviours (incorporating 'road rage' and aggressive driving) have been reported to be a major problem internationally, but in South Africa there is a paucity of data about the magnitude and risk of the problem.

WHAT IS ROAD RAGE?

LEVELS OF AGGRESSIVE ROAD BEHAVIOURS

Using ideas from the work of Shinar¹³ and Wells-Parker¹⁴, we measured aggressive road behaviours on a continuum of four levels, which include:

- LEVEL 1: non-threatening expressions of annoyance such as complaining and/or yelling to one's self and/or fellow passengers in response to another driver's behaviour
- LEVEL 2: aggressive driving, i.e. mild, verbal or gestural expressions of anger, directed at the perceived offending motorist - includes the use of insensitive or obscene gestures and inappropriate and excessive use of the horn and lights
- LEVEL 3: road rage (mild), i.e. threatening and intimidating behaviours such as trying to cut another car off the road or following/chasing another driver in anger
- LEVEL 4: road rage (extreme) i.e. direct confrontational behaviour such as arguing with or assaulting another motorist.
- 'Other high-risk' or 'other hazardous' driving behaviour refers to deliberate and dangerous driving but where there is no intentional aggressive interaction (for example running red lights, weaving in traffic, driving above the speed or legal alcohol limit).
- By depicting aggressive road behaviour along a continuum, we suggest that all categories of these aggressive behaviours are related to road safety, public health and criminal justice.
- Whereas aggressive driving (characterized by instrumental aggression) is regarded as a traffic offence, road rage, on the other hand, is characterized by hostile aggression and is regarded as criminal behaviour.

South African publications on driver aggression are limited mostly to magazine articles. Published journal articles include an editorial describing the association between road rage and psychiatric morbidity¹² and articles based on criminal justice issues around the 'Eadie road rage trial'^{2, 4}

THE EADIE CASE

While driving home after spending an evening at his sports club, Graham Eadie was constantly harassed by another driver through tailgating, flashing of lights and overtaking only to slow down in front. When the two vehicles stopped at a set of traffic lights, Eadie alighted from his vehicle and used a hockey stick to damage the victim's vehicle after which he fatally assaulted the victim using his fists and feet. Eadie was later judged to possess criminal and cognitive capacity throughout the incident and was found guilty of murder^{2, 4}.

In South Africa in 2001, 27% of all injury-related deaths were as a result of road traffic collisions⁵. For the same year, the National Department of Transport indicated that South African road users had 512 000 crashes, which caused 7900 deaths and 150 000 injuries^{7, 8}. The cost of this carnage to the South African economy was estimated to be approximately R13.8 billion⁷. However, for 2000, the South African National Burden of Disease Study projected the country's traffic fatality burden to be in the region of 18 000 deaths per annum, in which case, the economic costs would also be much higher¹.

METHOD

The study took the form of a cross-sectional descriptive survey and included an interviewer-administered semi-structured questionnaire to collect both qualitative and quantitative data. Data were obtained using self-report by motorists. The questionnaire focused on respondents' demographic characteristics, general motoring characteristics and adverse driving behaviours, which included indicators for

RESULTS

DEMOGRAPHIC AND MOTORING CHARACTERISTICS

Reflecting the overall city demographics, most motorists who participated in the study were married Indian^a and African^a males, possessed about 12 years of education and were fairly experienced drivers in that they reported driving for many years and drove high average distances almost every day.

PREVALENCE OF DRIVER AGGRESSION

- Eighty per cent of the drivers reported that they had performed level 1 behaviours (mild, verbal, but non-threatening expression of annoyance) half of the time when the opportunity arose.
- Between 64 - 84% of the drivers reported that they had experienced level 2 behaviours (aggressive driving behaviours, verbal or other expressions of anger directed at the offending motorist) half of the time when they were driving. Although being hooted or yelled at was most often reported for victimisation, the highest level of anger was generated when obscene gestures were directed at the victim. This had an anger intensity rating of 6 (out of 10). Between 20 - 54% of drivers had performed level 2 behaviours more or less half of the time. Hooting or yelling at another driver was also most often reported for perpetration.
- Between 10 - 80% of drivers reported that they had experienced level 3 behaviours (direct threatening and/or intimidating behaviours) just more than half of the time when they were driving. Preventing a person from entering a lane, preventing one from passing and

PREVALENCE OF 'OTHER HIGH-RISK DRIVING BEHAVIOURS'

Excessive speed for prevailing circumstances and driving under the influence of alcohol are the two largest contributors to the burden of traffic collisions in South Africa⁷. From our study, these behaviours were also prevalent:

- Just more than half (53%) of the motorists reported driving above the posted speed limits half of the time that they had the opportunity to do so.
- About a tenth of motorists acknowledged driving

In light of the disproportionately high national traffic injury statistics and the increasing focus on road rage, an exploratory study was carried out among motorists in the Durban Metropolitan Area (DMA). In this study, we aimed to:

- establish a demographic and motoring profile of motorists in the DMA;
- describe the nature and extent of aggressive and 'other hazardous' road behaviours in the DMA; and
- establish predictors for aggressive road behaviours.

annoyance, aggressive driving, road rage and other general high-risk driving behaviours. Although the study only included urban motorists in the Durban Metropolitan Area (DMA), this is consistent with international findings that suggest driver aggression is more prominent in urban areas or areas of high congestion^{9, 11, 13}. A sample of 1006 motorists was drawn from users of petrol stations in the DMA.

being 'tailgated' had the highest reported prevalence for both victimisation and perpetration. However, anger intensity was highest (7 out of 10) when one experienced being cut/forced off the road. Between 4 - 29% of drivers admitted perpetrating a level 3 behaviour about a third of the time while they were driving. According to respondents, they perpetrated their level 3 behaviours most frequently through preventing another motorist from entering a lane.

- Between 5 - 18% of drivers reported that they had experienced level 4 behaviours (direct confrontational behaviours) between a quarter and two-thirds of the time they were driving. With victimisation, getting out of the car and arguing with one was most prevalent and also generated the highest intensity of anger (8 out of 10). Having one's vehicle deliberately collided into or damaged was the most frequently reported behaviour. Only 0.3 - 7.2% of drivers admitted to having performed a level 4 behaviour between a third and half of the time they were driving. Getting out of the car and arguing with another driver was most commonly reported for perpetration.

under the influence of alcohol and on average they did so four out of ten times when the opportunity arose. More than half of these drivers also reported becoming more aggressive when they drove under the influence of alcohol.

TABLE I. PREVALENCE AND FREQUENCY OF ENGAGING IN 'OTHER HIGH-RISK DRIVING BEHAVIOURS.

HIGH-RISK DRIVING BEHAVIOURS	PREVALENCE		FREQUENCY	
	n (pos)	%	mean (pos)	S.D
1. Drive above speed limit	524	52.6	4.8	2.9
2. Speed through yellow or drive through red	475	47.6	3.5	2.2
3. Insufficient following distance	299	30.1	3.4	2.4
4. Weave in traffic	205	20.6	4.1	2.8
5. Drink and drive	113	11.4	3.9	2.6
6. Drive above legal blood alcohol limit	81	8.2	4.0	2.8
a) Received at least one traffic fine in the past year	384	38.5		
b) Number of fines received			2.0	1.6
c) Carry a weapon while driving	68	7.0		
d) Become aggressive when drinking and driving	45	4.6		

WHO ARE THE LIKELY PERPETRATORS?

DEMOGRAPHY AND DRIVING CHARACTERISTICS

- According to our analysis, only level 1 behaviours (mild, verbal but non-threatening expression of annoyance) were predicted by the frequency of driving in that motorists who drove almost every day were more likely to engage in these mild forms of aggression.
- Younger drivers were shown to engage in level 2 behaviours (aggressive driving behaviours - verbal or other expressions of anger directed at the offending motorist) more often than older drivers.

HIGH-RISK DRIVING BEHAVIOURS

- All groups of aggressive road behaviours were positively related with at least two high-risk driving behaviours that included weaving in traffic (erratic

changing of lanes); not maintaining an adequate following distance; driving above the posted speed limits and running red traffic lights.

ALCOHOL AND FIREARMS

- Drinking and driving was a strong predictor of level 2 and 4 behaviours.
- Carrying a weapon whilst driving (most often a firearm) was a strong predictor of level 4 behaviours (direct confrontation). The relationship between carrying a firearm and aggression in the traffic environment was also confirmed in another study carried out in Arizona⁶. According to this study, drivers who had a firearm in their vehicle were about three times more likely to engage in level 3 or 4 behaviours than motorists who never drove with a firearm.

These findings suggest that motorists who drink and drive or carry a weapon when driving are more likely to engage in the extreme road rage behaviours, which includes getting out of the car to argue or hurt another motorist, deliberately colliding with or damaging another vehicle, or pointing a firearm or shooting at another motorist. Additionally, drinking and driving and carrying a weapon whilst driving also predicted victimisation and anger for road rage behaviours.

RECOMMENDATIONS

A comprehensive and coordinated approach that includes education, enforcement, environmental and engineering-type interventions is recommended and the following strategies are most likely to prevent and contain aggressive road behaviours.

EDUCATION, AWARENESS AND TRAINING

Educational interventions may include behavioural modification, skills transfer, psycho-educational support and population-wide public campaigns targeted at both the general population as well as repeated offenders of speed limits, legal alcohol limits and carriers of illegal firearms. More than one-third (37.8%) of respondents recommended education, awareness and training measures. We stress that effecting positive behaviour change takes time and educational efforts may yield better outcomes when combined with other groups of intervention strategies. Specific education-type strategies may include:

^a We recognize that the term 'race' and its constituents 'African', 'Coloured', 'Indian' and 'White' are social constructions that served particular political purposes. The use of these terms in this paper does not imply any acceptance of the racist assumptions on which these labels are based. The terms are used to reflect the differential manner in which apartheid impacted (and still does) on the lives and health of South Africans.

- The teaching of safe and responsible driving practices, including training in anger management within the driver licensing process, either during the learner-licensing phase or in the form of a graduated licensing system. This would require young drivers to demonstrate responsible driving behaviour over three phases before obtaining a final unrestricted license. Outcome-based methodologies could be adopted in order that knowledge and behaviour is sustained. This would allow for instructors to be facilitators of learning where learners are helped to reach the desired outcomes on their own and not merely be fed information.
- On a broader societal level, campaigns focusing on safe driving norms could be encouraged. Behavioural strategies should be integrated to help influence internal attitudes, beliefs, values and social norms. Specific

ENFORCEMENT

Considering the positive association between aggressive road behaviour, carrying of firearms, excessive speed and driving under the influence of alcohol, enforcement measures may be useful as complimentary interventions. Just under half (44.3%) of the motorists were in favour of legislation and enforcement-related measures to address aggressive road behaviours. International experience has, however,

ENVIRONMENTAL MODIFICATION, ENGINEERING AND DEVELOPMENT

The congestion and stress on our roads are aided by factors such as rapid urbanization, the associated proliferation of informal developments with high population density, increasing levels of motorization, long travelling distances and sensory overload. Sensory overload may be generated by excessive road signage or advertising, excessive roadside vending, excessive noise from construction or loud music from vehicles. Specific environmental and engineering-related strategies may include:

- Comprehensive injury prevention initiatives that embrace general socio-economic and environmental upliftment of the low-income informal sector and planning for pedestrians, mixed-land use and heterogeneous traffic patterns.

outcomes should involve reducing the competitive aspects of driving, encouraging respect and cooperative driving behaviours and regular modelling of safe driving on the roads. Awareness strategies will also be beneficial to alert drivers to the behaviours that generate high levels of anger and that are likely to provoke aggressive reactions in the traffic environment. Following this, a variety of anger and stress management tools need to be made available to those who perceive themselves to be at risk.

- As a punitive measure, those prosecuted for serious driver aggression could be compelled to attend psycho-educational and skills programmes. On a voluntary level, large industries such as the vehicle insurance industry could be persuaded to provide incentives for motorists to participate in psycho-educational programmes.

shown that enforcement measures such as screening for alcohol among motorists should be frequent, routine and random to be effective³. Where financial restrictions and competing demands limit the application of labour-intensive enforcement measures, automated enforcement systems (such as cameras) and environmental and/or engineering type interventions may be of better use.

- Improved public transportation planning systems are required to curb congestion, the increasing levels of motorisation and sensory overload and thus contribute to the reduction of anger and stress among road users.
- Advances in road engineering, product modification and intelligent traffic systems offer promising possibilities. New vehicle designs include stress detection sensors, which may alert drivers about their own high-risk driving behaviours, allowing them to respond by adjusting speed, following distance or initiate other appropriate calming measures. Other technological promise lies in data recorders that provide behavioural feedback or a 'black box' which can record vehicle speed, acceleration and braking before a crash. Other vehicle design measures could include options for communicating a message of apology or appreciation to fellow motorists.

A full technical report based on this study is available from the MRC-UNISA Crime, Violence & Injury Lead Programme (Durban).

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