# Road Safety and Mental Health in South Africa

## PART I

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## SUMMARY

**The increasing mortality and morbidity resulting from road accidents are described against a background of current measures to reduce the incidence of such accidents. Literature referring to this, particularly the work of Whitlock, and personal experience, suggest that research methods primarily aimed at safe road-vehicle construction, together with increasing punitive legislation, have not completely contained the rising accident rate, with its human suffering and financial cost to the country.**

**Public apathy, lack of personal identification and responsibility are regarded as significant aspects, but emphasis is placed upon the importance of the human element, particularly the personality type involved in repeated, serious traffic accidents or offences, with aggressive and antisocial attitudes, or influenced by alcohol and drug dependency, and a possible connection with organised crime. The need exists for more education and understanding, research and regular examination of those involved in repeated serious accidents or offences. Recommendations are made as to medical treatment and suspension or cancellation of licences in specific instances.**


*S. Afr. Med. J.*, **48**, 167 (1974).

## MORTALITY AND MORBIDITY RATES

In June 1961, Mundy[1] stated in the *South African Medical Journal* that he anticipated a mortality of about 3 000 and a morbidity of over 36 000, whereas Brown[2] quoted 18 400 people seriously injured, 45 000 with lesser injuries, and 8 400 people killed on South African roads in 1971. He estimates that for every person killed there is at least one person so badly injured, physically or mentally, that he or she will require continued nursing and other medical treatment for the rest of his or her life.

During the last 10 years, the death rate has almost trebled despite stricter, more punitive legislation relating to negligent driving or driving under the influence of alcohol or drugs, and the contravention of traffic laws, and despite increasing research into improving the safety of vehicles and roads. The increase in mortality cannot be attributed to the increase in population alone, nor to the number of vehicles on the road, or both, but could indicate that the measures being employed to contain the increasing road accident rate, although extremely important, cannot be regarded as entirely adequate.

No accurate statistics of the actual financial cost to the country in life and efficiency are available, although they surely are astronomical; more, however, must be the toll of human suffering and tragedy which cannot be assessed in rands and cents.

In an attempt to reduce mortality, more warnings to the public, through mass media of comn unication, are being issued, but the daily toll continues to rise. Many factors obtain, including an inability to convey to the public the suffering of individuals involved in road accidents, in contrast to the pitiful tales of those involved in earthquakes, floods, shark attacks, and other events which in reality involve a small number of people, compared with the multitude killed or maimed on the roads.

Significantly little personal concern is shown by the public whose attitude seems to be: 'It cannot happen to me'—probably a fundamental factor in road accidents. The majority of individuals experience some degree of apprehension prior to flying in aircraft or, at least, respect for the possible hazards of this mode of travel. On the other hand, few experience the same sensation when they enter or drive a motor car, despite statistics that the hazards involved in car travel compared with air travel, are significantly far higher; in fact Whitlock[3] estimates the comparable road death rate to air death rate per 100 million vehicle miles travelled in 1958 as 2,3 - 0,43. In this respect, however, consideration must be given not only to the difference in the public's attitude, but to the fact that flying crews are carefully selected and responsible individuals subjected to annual examination.

It must be recognised, however, that were the same economic principles to apply, it is probable that fewer individuals would be allowed to drive, and the reduction of revenue from oil and motor companies could, conceivably, influence policy; it is, however, problematical whether a falling-off of revenue could compare with the total cost to the country from car accidents. What is not problematical is that a fall in revenue cannot be equated with the cost in human suffering and disability. If Brown's comments are accurate and 8 400 people are permanently maimed, and assuming the average income of those killed or permanently maimed, to be as low as R1 000 per person, the total loss of income alone, for 1972, would be of the order of R17 500 000. This figure, although only an estimate, should also be viewed in relation to age. Pedestrian involvement in accidents is highest in childhood, and in motor car and motor cycle accidents, between 17 and 20 years of age. Extrapolation

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of the curve, therefore, would reach astronomical figures over a period of 20 years, and any statistical research should include potential loss and the costs of maintenance of those permanently maimed. Only in this way can legislative changes be encouraged, for economics knows no boundaries and usually determines policy.

## PUBLIC APATHY, IDENTIFICATION AND FANTASY

Public apathy towards car travel may be multifactorial and related to the unconscious use of defence mechanisms against anxiety, or a gradual conditioning process; whereas interest in the history of aviation dates back to ancient mythology and the many tragedies and hazards of air travel, and it continues with the public interest in, and personal identification with, the few individuals involved in space travel which appears as a greater challenge to the exploratory instinct of man. The emphasis during the last 40 years has been upon achievement allied with anxiety and fear, and not experienced in the history of vehicular travel to the same extent. A similar comparison can be drawn between sea travel, and the history of exploratory prowess and its acclaim.

The reaction of people appears to be connected with a feeling of relative safety on terra firma, compared with the fear of death at sea or in the air, and this is reflected in the attitude to travel through these elements. There is an analogy in the thousands of spectators who watch motor car racing and who are horrified when a fatal crash occurs and causes the death of a driver. Similar horror, however, does not appear when one such spectator, identifying himself with the racing driver, dies in an accident on the way home. A similar outcry in the Press does not appear nor are there as many tributes paid to the victim of the car accident as there are to the racing driver and his family. This may indicate personal identification by both journalist and spectator with the driver of the racing vehicle, or reflect the possibility that the public is unable to tolerate the constant anxiety of such identification in daily vehicular travel. On the other hand, individuals may unconsciously deny character traits which could seriously prejudice the right to a driver's licence, or jeopardise any personal financial interest in the motor and oil trades.

The driver of a faulty motor vehicle seems to ignore the possible consequences of his dangerous action, although he might later admit his offence; and so more accidents are to be anticipated in view of the increasing number of faulty vehicles, despite the vigilance of the authorities, unless regular examinations and inspection of both driver and car are required by law, or public apathy can be altered, which appears doubtful.

## PUBLIC FANTASY

There appears to be a general tendency among the authorities and the public at large for them to project their conflicts onto a physical scapegoat, the main targets invariably being vehicles and toxic substances such as alcohol or other drugs, or to attempt to treat an ailment with increasing punitive measures by exacting either the Mosaic penalty of an 'eye for an eye', or the medieval flogging of the schizophrenic and epileptic to exorcise the possessing demons. This attitude appears acceptable by the majority, and the method of choice, for as Carstairs[4] says: 'We take on trust many things we have not thought out as tested empirically. A socially shared and endorsed fantasy becomes a social reality.' It would seem that as yet little clear thinking has been applied to the human factor despite the experience gained from the causes of flying accidents in World War II when, although the pilots were skilled and selected, the major single factor causing aircraft accidents was pilot error.[5]

A further current fantasy, or social myth, relates to the emphasis being placed upon the importance of safety factors in road construction, road dimensions, car roadworthiness, and vehicular safety, etc. It is acknowledged that research into these aspects is vital, but it is also significant that the proportions of time and money spent, for example, on determining the reasons for so many individuals being involved in serious accidents, pale into insignificance when they are compared with the expenditure of one major motor car company to improve the safety of a particular type of automobile. In fact, *Tonus*[6] reported that one motor car company had 500 people working on designs for experimental safety vehicles. Although this is to be applauded, the multiplicity of human factors must be carefully evaluated and provision made, or the accident rate will continue to spiral.

## LACK OF PERSONAL IDENTIFICATION

Norman[7] draws attention to the fact that motor car accidents are the most common single cause of violent death, especially in young people, in most countries; yet, somehow, this statement does not appear to arouse the response to be expected in the public. By contrast, in 1968, in the USA 266 200 young and middle-aged Americans died from diseases of the cardiovascular system, and 86 000 from accidents.[8] Public anxiety is far more than three times as great over the former, however, than it is over the latter. The relatively high incidence of cardiac neurosis is a pointer in this direction, for rarely is 'car phobia' found in clinical practice. The latter is as undesirable as the former, but the significant disproportion between the two, which is representative of community identification with each of these lethal conditions, indicates the current attitude.

Whitlock[9] draws attention to the major public outcry and even the political implications in many parts of the USA, against the Vietnam war, yet by 30 December 1967, the number of deaths in Vietnam in 5 years approximated the number killed on the roads in the USA in just over 2 months! In Australia, about the same number of people were killed on the roads in 22 days as Australian soldiers in Vietnam during the previous 12 months. The paradox is that the impact on families and relatives in each instance is as tragic, but the public outcry in response to discon-

tinuing, for example, the Vietnam war compared with the outcry against road deaths, appears to be in an inverse ratio.

Some 'common denominator' appears to exist for the psychopathology of those driving motor vehicles and the recklessness of pedestrians. There is, however, the dedication to duty of individuals such as the traffic police and members of the Road Safety Council. Unlike the general public, they are personally and constantly involved, and have an emotional awareness of danger on the road. It would be wise to study the reasons for their dedication to duty, and to find ways and means of making this known to the public. This could lead possibly to a personal realisation of the consequences of road accidents. Some motorists recognise certain places as dangerous, e.g. in Natal, Van Reenen's Pass, Griffin's Hill, and the Leo Boyd Highway, where more care is taken for the simple reason that there is personal emotional involvement with a friend or relative fatally injured at a particular spot.

It is unfortunate, therefore, that the Press does not give more details about serious accidents, the actual events which have occurred, and the tremendous attendant physical and emotional suffering, for these accidents almost invariably involve litigation, and Press reports could possibly prejudice the trial. However, the publication of the court records and the personal suffering and deprivation, afterwards, might give the general public considerably more information and make it personally more aware of the true state of affairs, provided this was an ongoing process.

## PERSONAL RESPONSIBILITY

The National Road Safety Council is quoted by Brown[2] as stating that the most important causes of collisions on our roads are: (*a*) reckless and negligent driving; (*b*) misuse of alcohol and stupefying drugs; (*c*) injudicious speed; (*d*) disregard for traffic signals and road signs, and (*e*) following the vehicle in front too closely.

Although he states that these causes are not necessarily in the order of importance, by this statement Brown tacitly infers that the most important factors in collisions on the road relate to people themselves and not primarily to the state of the motor cars or the state of the road. It would appear odd that so little attention has been devoted to the personality of those involved in one, several, or all of the categories listed by the Road Safety Council. *Tonus*[6] reports Dr J. Odendaal, leader of the Accident Investigating Unit of the CSIR's National Institute for Road Research, that 9 out of 10 accidents in urban areas are linked to violations of traffic regulations. This endorses the opinions expressed earlier; however, he advises enforcement of traffic regulations and that the qualifications for a licence are not strict enough. After 7 years' investigation the emphasis is still upon the physical state and not the psyche of the individual, without any attention being paid to the personality of the driver and the reasons why he violates traffic regulations. It is, therefore, all the more imperative for personal responsibility and human factors to be investigated first.

## HUMAN OR PERSONALITY FACTORS

These appear to be many and varied if cognisance is taken of current literature. One major personality trait is aggression, regarded either as innate and manifesting as a response to varied situations, or learned behaviour consequent upon frustration or counter-aggression. Many authors have written on aggression, on its origin either inherent or the result of environmental circumstances: unfortunately, as Lorenz[9] has indicated, interspecific aggression is found in the vast majority of vertebrates and many invertebrates as a factor in the survival of the species. There is little doubt, therefore, that aggression manifests in all members of so-called *Homo sapiens*, to a greater or lesser degree. In this respect man appears increasingly incapable of channelling his aggression into constructive behaviour, but rather resorts to force, in his conflicts with current international society. This is revealed increasingly on the road, where a sense of inferiority engendered by social circumstances manifests its hostility by means of the accelerator on a macadamised road. An attempt to answer the problem by punitive or prohibitive measures throughout the world appears to have been only partially successful, as has been shown in the Californian studies.

Aggression in an individual may be latent, but may be released by alcohol or other drugs, or by the mere fact that he is behind the wheel of a powerful motor car. It may be overt and manifest itself in the day-to-day mode of living, which includes driving a car, as one of the ego mechanisms in the handling of intrapsychic anxiety. Canty, as quoted by Whitlock,[3] states '. . . when the driver is in his own car there is more freedom to demonstrate the presence of unsocial, irresponsible and even antisocial traits'. Whitlock[3] further quotes the studies by Sellig (1941), Tillman and Hobbs (1949), and Conger *et al.* (1957 and 1959) of persons involved in repeated road accidents who were more likely than persons not so involved to demonstrate impulsive hostility, poor reality-testing, emotional lability, impaired intellectual function, a highly personalised idiosyncratic fantasy life, and withdrawal from interpersonal relationships. He states that these antisocial attitudes figure prominently in the findings of many other observers who comment upon anxiety, tension, and little control of aggression. Selzer *et al.*[10] commented on the psychological make-up of persons—mainly alcoholics—involved in road accidents in one study of 96 drivers responsible for fatal accidents. 'In one study (1968) of 96 drivers responsible for fatal accidents, there were significant findings of paranoid thinking, suicidal tendencies, depression, and expression of violence. Fifty-two per cent of the accident subjects compared with 18% of controls, had experienced social stress within the past year, and 20% of accident subjects had been involved in major rows within 6 hours of the accident. Once again, there is evidence of poor control of aggression coupled, in a proportion of cases, with suicidal impulses.'[3]

In South Africa, Shaw[10] described drivers at risk as displaying emotional immaturity, increased anxiety, tension, and an increased incidence of antisocial behaviour; bad risks are those who are mentally defective or psychotic,

maladjusted, lacking control, and particularly the person who exhibits uncontrolled aggression, the selfish, self-centred person, and the one who harbours grudges, grievances, and resentment. In this respect, to quote McFarland,[5] 'studies of accidents in air transportation attribute 75 - 85% of the causes to human failure in one form or another,' and he lists errors of judgement, loss of emotional control, disobedience of orders, exhibitionism and recklessness, as some of the factors involved, in addition to the inability of some pilots to take appropriate action in an emergency.

## ANTISOCIAL ATTITUDES

Whitlock[3] quotes many authors including Carthy and Ebling (1964), Berkowitz (1962), and Buss (1961), and draws attention to young adult males with sociopathic tendencies and anger as contributory factors in road accidents 'commented upon by psychologists, psychiatrists, police and clergymen'. He says, '. . . there is undoubtedly a type of personality, the aggressive psychopath who appears to have a very low tolerance of frustration coupled with a ready resort to violence in order to overcome his difficulties . . . they act impulsively without much thought for consequences to themselves or others'.

The Road Research Laboratory[12] describes one study of 'drivers employed by a large trucking company, and the conclusions of a number of experts, that accident repeaters show conflicts in their reaction to authority, have aggressive tendencies, are irresponsible and likely to be socially maladjusted. They have a history of aggression, truancy and disciplinary problems during childhood, at school, and in the armed forces . . . In the high accident rate are individuals whose parents have been divorced, where discipline was poor, and a history of being dismissed from employment exists.'

It is suggested that many individuals who display features of aggression or the personality types above, do not manifest this only on the roads. Whitlock[3] quotes the work of Tillman and Hobbs (1949) and a controversial study by Willett, criticised by Steer and Carr-Hill, who nevertheless discuss studies in Canada and the USA with confirmatory work in Australia, which suggest a close association between criminal behaviour and serious traffic offences. From the reports available there appears also some confirmatory evidence in England and Wales, Denmark and Belgium. In this respect many authors are quoted, for example, Raphael (1967); 'Among persons convicted of dangerous driving . . . males had 5 times the expected number of convictions for breaking and entering', whereas Tweddell (1968), McFarland and Mosely (1954) and West (1967) note that only a small part is crime of a violent nature and mainly of a civil nature.

Whitlock[3] concludes this section with the comment that 'the personality structure of those convicted of crimes of violence will often show features of aggressive psychopathy. The association of this class of personality with excessive drinking, paranoid ideation, hostile attitudes towards authority, and suicidal tendencies seems at times to be expressed with devastating consequences upon the public highway.' Smeed[12] does not altogether agree with these views, nor does Gunn,[14] that automobile violence fluctuates with other types of violence rates, especially as nationally published figures are unreliable. Although there is no positive correlation, however, it would appear that a possible relationship exists between accident repeaters, and violators of traffic laws and a section of society who manifest antisocial behaviour. This is, therefore, worthy of detailed study, particularly in this country where the accident rate is high and where considerable violence occurs in certain areas. Smeed[12] thinks that there is a general tendency for road fatalities per head of population to decrease as motorisation increases, and comparison of road fatalities calculated according to the number of vehicles and not only upon population. He believes that there is a general tendency for road users to improve their behaviour as motorisation increases. Notwithstanding this, as Gunn[13] says, 'there is a growing feeling among many of us who are concerned with antisocial behaviour that antisocial behaviour in a car is curiously neglected or compartmentalised'. Selzer *et al.*[14] found evidence of paranoid thinking, suicidal tendencies, depression and aggressive violent action in 96 drivers who were responsible for fatal accidents. These poorly-controlled aggressive features were either internalised with a tendency to suicide, or manifested in violent activity, and 20% had been involved in major arguments within 6 hours of the accident, and 52% had experienced some stressful situation within the previous 12 months.

In Johannesburg recently a newspaper reported (*Rand Daily Mail*, 12 January 1972) the findings of a magistrate that a woman had been mentally ill while driving a motor car at the time of a fatal accident which resulted in the loss of 2 lives. The evidence of mental illness was supported by 2 medical certificates given prior to the accident.

The literature on the relationship between mental illness, excluding sociopathic behaviour, epilepsy, alcohol, and drug addiction, appears controversial. Pond (1967), quoted by Whitlock,[3] regards severe mental illness as responsible for only a small percentage of traffic accidents and his view is supported by Trueb, whereas Buttigliere and Guenette found mental illness occurring subsequent to an accident.

In order to lend emphasis to Selzer *et al.*'s[10] viewpoint, further studies relating to suicidal tendencies are significant, for suicide and suicidal ideas are recognised concomitants of mental illness. From personal clinical experience there have been several patients who have contemplated crashing their cars at high speed, one needing to be forcibly restrained from so doing; it is also well known that pedestrians have attempted suicide by deliberately throwing themselves in front of motor cars and trams. In this respect Selzer *et al.*[10] discussed 33 suicidal patients as being responsible for 89 accidents, compared with 27 non-suicidal patients involved in about half the number of accidents.

The incidence of car accidents also relates to age, and in the age group 15 - 24 years, three-quarters of deaths are by violence, almost half this number being the result of road accidents in most Western countries. The incidence

of suicide, however, is more common in the elderly, yet suicide is the cause of death ranking third in youth, and in South Africa it appears to be increasing, particularly in the Indian teenage group.

Depressive patients frequently drink in order to alleviate their symptoms, but become subsequently more depressed. 'Depression is common in the unemployed, the separated and the divorced, as is a high rate of alcohol consumption. A large percentage of drivers who consume excessive quantities of alcohol fall into one or both categories and an inference can be drawn that driving under the influence and related accidents may be psychologically motivated and are metaphors for sef-destruction or even suicidal actions."[15] Wyckert[15] quotes Tabachnick *et al.* who studied 3 groups of hospitalised patients, car accident driver victims, potential suicides and appendectomy patients, and who stated 'The results did not bear out the accident-suicide hypothesis but significantly the accident driver victims resembled those who attempted suicide only in one area of behaviour, that of drinking!' Although these findings evoke strong criticism from certain psychoanalytically-orientated investigators, a number of other writers, including Wold,[16] stated: 'Most interviewers felt that self-destructive components are to be found among accident subjects', postulating that under certain circumstances underlying characteristics may present themselves. Furthermore, it is widely accepted that a person, subsequent to a sudden and severe loss of a loved object, may experience self-destructive tendencies.

(To be continued)