

THE DISEASE OF ROAD ACCIDENTS*

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I wish to discuss a disease the incidence of which is increasing, not steadily but very rapidly. It is a disease which affects all ages, but particularly the young child and the adult. The aetiology of this dread disease is man himself. Its pathology is extremely complicated, the morbidity and mortality are extremely high, and the social and economic repercussions are a heavy burden on the nation as a whole. The prognosis of the disease, under present circumstances, is very poor. The one heartening aspect is that the treatment, and even the partial cure, is a practical proposition if it is tackled along the correct lines.

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The disease of road accidents occurs in practically all parts of the world and strenuous efforts are being made to prevent its further increase and to diminish the existing incidence.

THE EXTENT OF THE PROBLEM

The Second World War was the most destructive in human history. During the 6 years of the war, South Africa had to pay the price of 23,000 killed and wounded. By contrast, 1957 alone, 32,662 people were killed and injured in road accidents in South Africa. Table I shows the number of road accidents reported in South Africa in the 5 years 1953-57 and corresponding figures for killed

and injured. It will be seen that the figures have nearly doubled during the interval of 4 years.

TABLE I. YEARLY ROAD ACCIDENTS IN SOUTH AFRICA

Year	Accidents	Killed	Injured
1953	59,320	1,195	17,929
1954	70,185	1,596	22,324
1955	77,479	1,876	24,504
1956	80,210	1,885	25,515
1957	93,210	2,254	30,368

During 1957 the average daily number of people killed or injured badly enough to require hospital treatment was 89.4. Daily, 6.2 persons are killed in road accidents.

The annual cost of road accidents to South Africa is £35,000,000.

Table II compares the number of Europeans killed and injured in road accidents with the numbers that died as a result of other diseases which are apparently regarded as so much more important

TABLE II. EUROPEAN DEATHS

	1955	1956	1957
Heart Disease	6,051	6,420	6,576
Cancer	3,599	3,799	3,947
Tuberculosis	238	237	206
Poliomyelitis	43	151	115

Road Accidents, Killed and Injured

and on which very large sums of money are spent annually. These figures are for all age-groups. In selected age-groups, for instance from 6 years to 25 or 30 years, the number of deaths in road accidents far surpass those due to any other disease.

Very large sums of money have been collected and are spent annually on research and treatment of such conditions as heart disease, cancer, tuberculosis and poliomyelitis, whereas in combating road accidents a comparatively small contribution is made towards research and prevention.

Fig. 1 represents the distribution of deaths from road accidents according to age (1957). It shows that there were more deaths after the age of 6, when children start going to school (6-12 age-group) than before the age of 6 (0-5 age-group). Then there is some reduction in mortality in the children at high school to the age of 17 years (13-17 age-group). From 18 years, when in this country a driver's licence can be obtained for motor-cycles and motor-cars, the figure is much higher (18-24 age-group) and there is a further great increase in the 25-29 age-group and the 30-34 age-

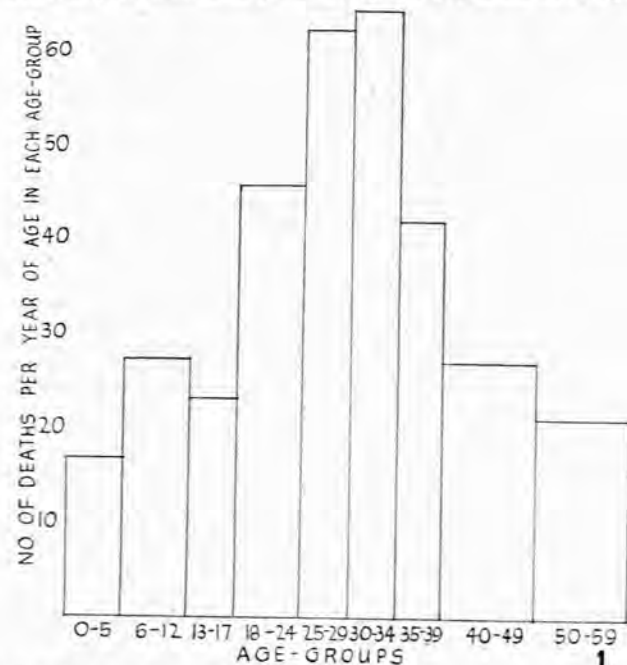


Fig. 1. Deaths in road accidents (1957) according to age.

group, when the mortality reaches its peak. From 35 the numbers of deaths successively falls with age through the age-groups 35-39, 40-49 and 50-59.

If these figures are plotted separately for pedestrians, cyclists, those on motor-cycles, and those in motor-cars, they show a

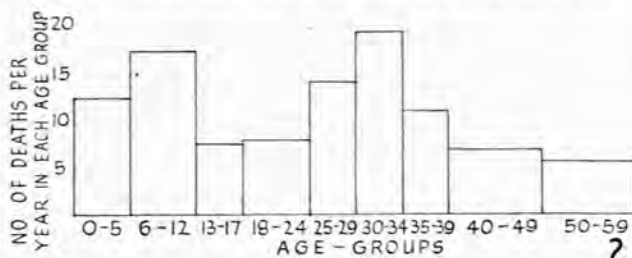


Fig. 2. Deaths of pedestrians in road accidents (1957) according to age.

different age distribution for each group. The figure for pedestrians (Fig. 2) shows the highest mortality in the 30-34 and 6-12 age-groups.

For cyclists the figures bring out the dangers confronting those of school age, and for motor-cyclists they show that most of the tragedies are enacted between 18 and 23 years of age. In motorists the biggest incidence is from about the age of 18 years to about 25 years, after which age it declines in a more or less even curve.

When these figures are considered, one cannot but be amazed at the lack of a realistic organized programme supported by adequate financial assistance to combat this most urgent and important problem. True, we have a National Road Safety Organization which has done excellent work in endeavouring to prevent road accidents by educational and other means, but this problem is one that demands the attention of the highest governmental authorities and research supported by adequate funds.

THE CAUSES OF ROAD ACCIDENTS

The causes of road accidents may be divided roughly into 3 major groups, viz. (1) the human element, (2) the engineering efficiency of the vehicles used on the road, and (3) highway facilities.

1. The Human Element

This is far and away the most important cause of road accidents. We are confronted with a weakness in our social order of which road accidents is but one of the symptoms, delinquency being another. It is a most complex problem, embracing sociology, medicine, organization and politics. I think that racial peculiarities should also be given a place in the problem. It involves the laws of nature, including time, space and motion, plus the frailties and the complexities of human nature and the interrelations and the competition of human beings living together. Assertiveness, lack of discipline and of the acceptance and fulfilment of the road courtesies, and in a wider sense the lack of good manners, contribute largely towards accidents. Inattentiveness, carelessness and a certain basic type of psychological make-up predispose towards road accidents, and it has been conclusively proved that certain people are much more accident-prone than other people. These people usually appear to have a lower sense of social responsibility, an unfavourable attitude towards safety measures and traffic control, a disinclination to admit their own faults, and a poor attitude towards other road users, on whom they tend to project their own lack of discipline.

These facets of human nature are largely intractable to all the attempts of science to modify or control it. It may to some extent be responsive to educative processes whereby an appreciation of value is inculcated and habits of self-control are established. These aspects of the human element are possibly the most important factor responsible for road accidents, and unfortunately this is the factor which is most difficult to remedy.

There is, however, the other aspect of the human element, which is capable of some measure of control. At the present time the granting of a driving licence to an individual is largely dependent on his having attained a certain age and his ability to satisfy the examiner that he is capable of driving a motor vehicle. The examiner is often entirely unskilled and the method is open to gross abuse, particularly in the smaller centres. Advanced age does not appear to preclude the individual from possessing a

driving licence. A large number of individuals driving motor vehicles have some mental or physical infirmity. Inadequate vision, deafness, amputation of a limb, heart disease, diabetes, and epilepsy are but a few of the conditions which should exclude an individual from obtaining a driver's licence.

2. The Efficiency of the Vehicle

It is most interesting to examine the degree to which the different types of vehicles are involved in accidents. The figures are shown in Table III. These figures, however, are to some extent misleading because of the fact that the different vehicles are used on the road to different degrees. If the number of accidents is plotted against

TABLE III. INVOLVEMENT OF DIFFERENT TYPES OF VEHICLES (1957)

Type of Vehicle	Number Involved in Accidents	Total Number Registered	% Involved in Accidents	Number Killed
Commercial vehicles	39,069	213,273	18	981
Private motor-cars	98,789	697,555	14	1,228
Motor-cycles	7,373	50,717	15	124
Motor-scooters	2,002	?	?	32
Power cycles	1,002	?	?	13
Ordinary bicycles	13,622	?	?	460

a fixed number of miles travelled by each of the commercial vehicles, private motor-cars and motor-cycles, then a different accident-liability rate is found. During 1954-55 for every 100 commercial vehicles involved in accidents over a given distance, 110 private motor-cars and 115 motor-cycles were involved. The reason is that commercial vehicles are used more intensively and travel a greater mileage annually than, for instance, private motor-cars and motor-cycles.

All the large motor-manufacturing companies have in recent years made concerted attempts to increase the safety of motor vehicles from the engineering point of view. One would mention the introduction of more efficient power brakes, power steering, shatter-proof glass, cushioned dash boards, safer doors and door handles and—possibly the most important—the introduction of reflectors, front and rear, so that parked vehicles can be seen at night from a long distance. With motor-cycles the compulsory introduction of crash bars has been of considerable value. The routine and compulsory use of crash helmets for motor-cyclists would go a long way towards reducing the serious head injuries so often sustained by these people.

The introduction of the so-called safety belt in America has not proved to be so successful as it was originally hoped. While it has not been definitely proved, it has been found that persons who have been injured while wearing a seat belt have sustained compression fractures of the spine. It has been suggested that if a person wearing a seat belt is flung violently forward at the moment of impact, he sustains a jack-knife type of injury which often results in a compression fracture of the lumbar spine. However, it is possible that without the belt he would have been more seriously injured.

So much for the newly made vehicle; but what of the many 'vintage' vehicles still found on the road? Many of these old-model vehicles are owned by non-Europeans who for economic reasons are in the first place not able to buy newer models and in the second place are not capable of maintaining their cars in a satisfactory roadworthy condition. Moreover, some of them have not the necessary adaptability or the necessary sense of responsibility and technical skill required in handling fast-moving vehicles. The reason for these deficiencies are largely cultural and economic. It goes without saying, however, that a vehicle that is not adequately roadworthy is a menace on the road, irrespective of the capability of the driver.

Theoretically, regulations exist for the testing and re-testing of the roadworthiness of motor vehicles. In practice, however, vehicles are tested for roadworthiness only when the ownership is changed. If ownership does not alter, then the vehicle is very rarely, if ever, tested, no matter how long it remains in use or how dilapidated it becomes.

3. Highway Facilities

The road-engineering departments of the different Provinces and of the Department of Transport are actively engaged in providing South Africa with standard roads. It is unreasonable to expect that this young country with its comparatively sparse population should do more to improve the main roads. Seen

from an engineering point of view, the Union's highways are as good as can be expected and it would be too heavy a burden on the taxpayer to create large dual roads throughout the country. The roads in the Union on the whole are not built for speeds above 60 miles per hour. This fact is unfortunately not realized or kept in mind by the drivers of motor vehicles.

The Provincial traffic departments are completely under-staffed and a Provincial traffic officer is almost as rare on the road as a really courteous driver. Apart from municipal staffs, in Natal there are 40 Provincial traffic officers, in the Cape 17, in the Transvaal 33 and in the Free State (officially) only 4. In my opinion the understaffing of the Provincial traffic departments may in a sense be regarded as an important cause of road accidents. I have but to recall to your minds the large numbers of cyclists, largely non-European, on the roads at dusk and even after dark without any lights or even reflectors on their cycles. This fits in with the fact that 460 cyclists were killed in 1957, of which 415 were non-Europeans.

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VOORBEHOEDENDE BEHANDELING VAN HIERDIE SIEKTE

'n Poging is aangewend om die omvang van hierdie baie ingewikkelde probleem te skets. Daar is ooglopend baie ander faktore wat moet oorweeg word in die etiologie, patologie en simptome en tekens van hierdie vernietigende siekte. Ons kom nou tot die behandeling van hierdie siekte, maar voor ons dit bespreek moet ons eers die reeds bestaande voorbehoedende behandeling noem. Die Nasionale Padveiligheidsorganisasie is reeds in 1949 in die lewe geroep en hierdie organisasie het aansienlik baie gedoen aan die groot taak van opvoeding van die jeug en wel op die volgende wyse:

1. Padveiligheid is 'n verpligte leervak in alle skole en 'n handleiding en leerplan is deur die Organisasie opgestel wat in alle skole beskikbaar gestel is.

2. Skolierpatrollies doen uitstaande padveiligheidswerk en daar bestaan tans meer as 500 sulke patrollies in die land.

3. Dan is daar nog ander metodes soos opstelkompetisies, vasvrededstryde, lesings en rolprentvertonings en behendigheids-toetse met fietse wat vir kinders in die skole georganiseer word.

Om die volwassenes in te lig en padveiligbewus te maak, is die volgende aktiwiteite ingestel: (a) Veiligbestuurskemas, (b) lesings en rolprentvertonings vir volwassenes in georganiseerde groepe, (c) publisietsveldtogte wat van tyd tot tyd gereël word, (d) eenvormige verkeersordonnansies in al die Provinsies wat reeds tot stand gekom het, en (e) padkodes vir Blank en nie-Blank.

Presies dieselfde wat in hierdie opsig vir Blankes gedoen word, word ook vir die nie-Blankes gedoen.

Op hierdie stadium moet spesiaal gemeld word dat die medici en die Mediese Vereniging in ons land geensins bygedra het tot die oplossing van die probleem nie. In ander lande is daar baie meer belangstelling aan die kant van die medici, en in lande soos byvoorbeeld Amerika, neem die medici selfs die voortou in die stryd om die ernstige probleem die hoof te bied.

Dit is betreurenswaardig dat die dokter in Suid-Afrika skynbaar tevrede is om 'n poging aan te wend om die lapwerk te doen nadat die ramp reeds plaasgevind het. Hierdie houding is veral baie moeilik om te verstaan as dit in gedagte gehou word dat die medici aan die spits staan by ander siektetoestande soos tuberkulose, kanker, poliomiëlietis en hartsiektes, terwyl hulle ten opsigte van hierdie meer ernstige siekte 'n onverstaanbare fatalisme aan die dag lê. As een persoon 'n medelywekkende siekte opdoen, of 'n paar mense verdrink of word deur haaië gevang, word groot hoeveelhede geld, tyd en navorsing aan die moontlike oplossing van die probleem gewy. Daar word egter daaglik 6-2 persone op die pad gedood en ons staan heeltemal onverskillig teenoor hierdie probleem.

Ons kom nou tot moontlike vorms van behandeling van die siektetoestand, of anders gestel, tot voorstelle om padongelukke te bekamp. In die bespreking van die oorsake van padongelukke het ons reeds 3 groot groepe genoem: (1) Paaie, (2) die doeltreffendheid van die voertuie wat op die paaie gebruik word van die ingenieursoogpunt gesien, en (3) die menslike faktor.

Paaie

Dit is reeds beklemtoon dat die meeste paaie oor die algemeen so goed is as wat onder omstandighede verwag kan word. Daar is, egter, wat die groot stede soos Kaapstad, Johannesburg en Pretoria betref, reeds grootse planne uitgewerk wat sal meehelp

om in hierdie digbewoonde en beboude gebiede die verkeer maklik te laat vloei en tienduizende ongelukke uit te skakel.

Om hierdie skemas aan te pak sal baie miljoene ponde kos. Aangesien dit egter 'n belegging vir die toekoms is, is dit nie meer as reg en billik nie dat langtermynlenings aangegaan word om hierdie projekte so gou moontlik aan te pak en te voltooi, en dat die nageslag help afbetaal aan hierdie lenings.

Daar kan ook aansienlik baie gedoen word om die paaië self meer veilig te maak en wel deur die volgende metodes: Dit is reeds genoem dat daar slegs 'n karige aantal provinsiale verkeersbeamptes op die huidige oomblik is en hierdie getal sal minstens verdubbel of verdrie- of vervier-dubbel moet word, en 'n 24-uursdiens sal vir hierdie beamptes ingestel moet word. Na 5 nm. hyvoorbeeld, wanneer die verkeer op die paaië die drukste is, gaan die verkeersbeamptes van diens af en wanneer hulle die nodigste is, is hulle nie op diens nie.

Die stedelike verkeersbeamptes moet by die Suid-Afrikaanse Polisie in een organisasie ingeskakel word, of anders moet daar baie beter samewerking tussen die twee groepe bestaan. Eenvormige opleiding van alle verkeersbeamptes deur middel van 'n kollege soortgelyk aan die Polisie-opleidingsdepot, is 'n vereiste. Baie nie-Blankes moet opgelei word vir die beheer van nie-Blanke verkeer.

Dit word ook aan die hand gedoen dat in oorlegpleging met die Minister van Justisie, 'n paar honderd spesiale verkeersbeamptes in privaat klere aangestel moet word. So 'n beampte moet die reg hê om die sleutels van 'n roekelose motorbestuurder van hom weg te neem, en indien nodig, moet die motor gekonfiskeer word. As 'n motoris nie weet of die persoon wat voor of agter hom ry 'n spesiale verkeersbeampte is nie, sal hy altyd versigtig en op sy hoede bly. Persone wat aangestel word as spesiale verkeersbeamptes sal noodwendig baie noukeurig gekeur moet word, maar dit is tog wel 'n praktiese moontlikheid.

Die Doeltreffendheid van die Voertuie wat op Paaië Gebruik Word

In die eerste plek moet daar baie strenger snelheidsbeperkings vir verskillende voertuie opgelê word. Ek dink veral aan die bromponie wat 'n nuwe moordtuig is wat tot stand gekom het en wat alreeds verantwoordelik is vir baie ongelukke en in die toekoms nog verantwoordelik gaan wees vir 'n baie groter aantal ongelukke. Die kragfiets is 'n soortgelyke gevaarlike wapen, veral in die hande van betreklike jong kinders. Beheermaatreëls behoort net so prakties moontlik te wees soos die verpligte daarstelling van geraasdemperers aan voertuie en weerkaatsers.

Toets vir doeltreffende padvaardigheid van motorvoertuie moet 'n daadwerklike maatreël word. Terwyl dit onprakties is om jaarliks elke voertuig te toets vir padvaardigheid, behoort 'n toets sekerlik van tyd tot tyd op verdagte voertuie uitgevoer te word. As daar voorsiening gemaak word vir hoë boetes in gevalle waar 'n voertuig nie padvaardig gevind word nie, sal eienaars sorg dra dat die voertuie in 'n beter meganiese toestand verkeer.

Die Menslike Faktor

Hierdie faktor bied die moeilikste aspek van die hele probleem om doeltreffend te beheer. Die ideaal sou wees die daarstelling in elke individu van 'n hoë graad van sosiale gewete, wat 'n beter verhouding teenoor veiligheidsmaatreëls en verkeerskontrole behels en 'n sielkundig volwasse besef van verantwoordelikheid en veral hoflikheid teenoor die medegebruikers van die pad.

Die opvoeding van die publiek vanaf die skooljare, sowel as van die volwasse publiek, sal moet volgehou word en heelwat uitgebrei word. Op hierdie wyse mag daar met verloop van tyd 'n padveiligheids-bedagsaamheidsin by die publiek ontwikkel sowel as 'n beter verantwoordelikhedsgevoel.

Algemene her-registrasie van alle motorbestuurders met die opstel van 'n sentrale buro- en rekordstelsel vir alle bestuurders, is 'n vereiste. Enige nuwe drywer moet 'n mediese sertifikaat toon alvorens aan hom 'n lisensie toegestaan word. Dit sou ook baie goed wees indien alle bestuurders van voertuie, oor 'n ouderdom wat kan bepaal word, jaarliks 'n mediese sertifikaat moet inhandig as bewys van hul fisiese doeltreffendheid om so 'n voertuig te bestuur.

Dit behoort ook die plig van die medikus te wees om sy pasiënt,

wat na sy mening nie in staat is om 'n voertuig te hanteer nie, in hierdie voë te waarsku.

Aangesien daar egter by so baie mense 'n gebrek aan 'n sosiale pligsgevoel en bedagsaamheid bestaan, kom ons nou tot die persoon wat ten spyte van alle pogings om hom beter op te voed en in te lig, nogtans roekeloos bestuur of onder die invloed van drank bestuur, en as gevolg daarvan werklik 'n potensiële moordenaar is met 'n dodelike wapen in sy hand.

Daar is reeds goeie bestaande verkeersordonnansies en wetgewing wat as gevolg van tekort aan personeel en gebrek aan die nodige opleiding, nie prakties toegepas word nie. Wetgewing moet ingedien word om persone wat nalatig, roekeloos en onder die invloed van drank bestuur, by eerste oortredings sonder 'n opsie tronk toe te stuur. Hierdie maatreël sal waarskynlik meer goed doen as enige ander enkele maatreël om die probleem die hoof te bied. Dit mag 'n drastiese voorstel klink, maar indien in gedagte gehou word dat 'n persoon wat dagga in sy motor het sy motor verbeur, of dat iemand wat 'n wildsbokkie gesteel het se motor en geweer gekonfiskeer kan word, dan is die voorstel dat 'n potensiële moordenaar se motor gekonfiskeer moet word eensins te drasties nie. Ons is oortuig daarvan dat met hierdie maatreëls duisende lewens in ons land gespaar kan word en die onnodige verkwisting van baie miljoene ponde vermy kan word.

Navorsing

Uit die voorgaande blyk dit duidelik dat die menslike faktor waarskynlik die belangrikste faktor is waarmee ons te doen het en gevolglik moet navorsing, wat vanselfsprekend uiters noodsaaklik is, toegespits word op die opvoedkundige en die sosiale terreine. Tegnieke navorsing, byvoorbeeld ten opsigte van padkonstruksie en veiliger voertuie, word reeds deur verskeie ander liggame onderneem.

Sosiale navorsing moet aangewend word om te probeer vasstel hoekom sommige padgebruikers bestuur teen 'n spoed wat te hoog is vir heersende toestande, hoekom sommige bestuurders in die middel of aan die regterkant van die pad bestuur wanneer hulle om 'n blinde draai of oor 'n blinde bult gaan, en waarom tekens vir verkeerswaarskuwing veronagsaam word, veral as dit in ag geneem word dat hierdie tekens spesiaal opgerig word om die bestuurder teen moontlike gevaar te beskerm. Die rol wat drank speel in motorongelukke verg sekerlik baie meer aandag. Die verband tussen die geestestoestand van die individu en die rol wat dit speel met betrekking tot sy medegebruikers, en die invloed wat dit uitoefen op sy padmaniere, is reeds bespreek en behoort in 'n navorsingsprojek baie meer aandag te geniet.

CONCLUSION

I have attempted to sketch the outlines of an extremely serious disease and to emphasize the immensity of the problem. It is not only the function but the inherent desire of the doctor to prevent illness and death and also to alleviate suffering. In the case of this particular disease, it would appear that in South Africa the medical profession have been satisfied to try to alleviate the suffering and reduce the mortality caused by the disease and have done very little, if anything, to prevent the occurrence of the disease.

This is all the more surprising if one bears in mind the great interest taken and the important role played by the medical profession in other diseases like poliomyelitis, tuberculosis, cancer, heart disease, to mention but a few. By the very nature of the problem all of us except the bedridden and infants have a concern and a responsibility in the incidence of traffic accidents.

There is an imperative and urgent need for the medical profession to take an active part in the prevention and cure of this dread disease which has a fantastically high morbidity and mortality rate and imposes a great financial burden on the country as a whole.

It is my considered opinion that a special committee of the Federal Council of the Medical Association should be set up to deal with the problem of road accidents. Such a body should act in an advisory capacity to the various organizations concerned with road safety and to the Government.