



PERS 291 ANALYSIS OF FACTORS ASSOCIATED WITH
120 ROAD ACCIDENTS IN JOHANNESBURG

NATIONAL INSTITUTE FOR PERSONNEL RESEARCH
COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH

CSIR Report PERS 291 (pp. i - vi ; 1 - 62)

UDC 656. 1. 08 (680)

Johannesburg, Republic of South Africa, July 1979.

SPECIAL REPORT

PERS 291 ANALYSIS OF FACTORS ASSOCIATED WITH
120 ROAD ACCIDENTS IN JOHANNESBURG

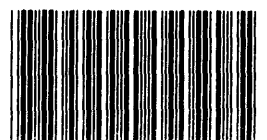
By MONICA D. VAN DER NEST

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Miss Gail Mackenzie.

The 120 respondents.

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 Mr Fred Reuning

SUMMARY

This report is a follow-up of the concussion survey completed during 1977 at the Johannesburg General Hospital.

The patient's view of the accident, the hospital records and the police records were studied by an intern clinical psychologist.

In Section 1 of the report the biographical details of 120 patients injured as a result of road accidents are analysed, police reporting and under-reporting are discussed, the place, day, and hour of accidents are analysed and a description of accidents is given.

While alcohol intake was, in most cases not measured, the interviewer obtained useful information about the alcohol consumption before accidents. A number of pre-accident and accident related psycho-medical factors are given.

In Section 2 of this report all the data available on 43 drivers of motor cars, riders of motor cycles and pedestrians are presented as case studies.

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1. BACKGROUND OF SURVEY

This survey was a continuation of the concussion study previously completed at the Johannesburg General Hospital C/PERS 262. During 1977 data collected at the Accident service of the Johannesburg General Hospital were made available to the NIPR. These data, while not meeting all the objectives formulated by the research programme for the period 1 April 1977 to 31 March 1978, could be analysed and treated in a pilot study. The results could serve as a basis upon which a decision could be made to undertake further research in order to answer more of or all the problems formulated in the objectives.

In the report on the pilot study it was strongly recommended that a similar survey organised by the NIPR be undertaken. While this was under consideration the following events led to a decision to undertake this survey :

- a) Professor A.E. Wilkinson, Head of the Accident Service paid a personal visit to the Ergonomics Division of the NIPR during December 1977 and invited a staff member to join the Accident Service temporarily, to conduct a survey while enjoying the privileges accorded to the hospital staff.
- b) The services of an intern clinical psychologist who had finished her practical training became available to the Ergonomics Division.

After discussions with the NITRR it was decided to take advantage of these offers.

A questionnaire, included as Annexure A was devised and used.

2) THE QUESTIONNAIRE

The questionnaire consisted of three parts. Part one (questions 1 - 15) was completed during an interview conducted by the intern clinical psychologist with the patient. Special emphasis was placed upon the patients' view of the accident and how he thought it could have been

2.

prevented if the accident situation were reconstructed. Apart from certain biographical details information was gathered regarding the following :

- a) The number of hours the patient had been without sleep before the accident took place .
- b) The patient's assessment of his own health before the accident .
- c) Whether the patient was emotionally upset immediately before the accident .

Part two of the questionnaire was completed by the interviewer from the hospital files and contained information regarding the age and annual income of the patient , date and time of admission, blood alcohol concentration and injuries sustained. Part three of the questionnaire was completed from the police records on the accident . Permission for this was obtained from the S.A. Police and the interviewer was given access to the police records .

In devising the questionnaire provision had been made for a comparison of the accident situation as seen by the patient with the police report of the accident .

3. DESCRIPTION OF THE SAMPLE

The sample consisted of 120 white patients interviewed in the Johannesburg General Hospital between January and April 1978. All the patients were admitted as the result of road accidents and had sustained injuries necessitating at least 24 hours in hospital. The Johannesburg General Hospital admits patients who are 14 years and older. The interviewer visited the Accident Service ward during the week as well as on Saturdays or Sundays in order to obtain details of consecutive admissions . The aim was to obtain a larger sample and to continue interviewing over a longer period but other academic commitments forced the interviewer to discontinue her activities at the Hospital and it was impossible to find another person with her particular abilities and interests to continue .

Because this sample represents only a small fragment of road accidents in South Africa, no attempt is made to generalise to a wider population from these findings. However, because of the approach pursued it was possible to gather useful data regarding the patients' views and attitudes, the hospital assessment of injuries and the police records of the accident.

4. BIOGRAPHICAL DETAILS OF THE SAMPLE

4.1 SEX

The sample comprised 86 males (72%) and 34 females (28%). This difference is statistically significant ($p < 0,05$).

4.2 AGE

TABLE 1 AGE OF PATIENTS

Age	No. of cases	Percentage	Rank order
17 years or less	12	10.00	3
18-25 years	53	44.16	1
26-35 years	21	17.50	2
36-45 years	11	9.17	4
46-55 years	4	3.33	7
56-65 years	8	6.67	5
66 years & over	8	6.67	5
Not stated	3	2.50	8
Total	120	100.00	

The findings relating to the age-group of the patients are in agreement with both South African and overseas statistics. The greatest percentage of accident victims are aged 18 to 25 years. Compared to the previous survey undertaken at the General Hospital during 1976, the percentage of 18-25 year-olds involved in road accidents had risen from 35% to 44.16%. This variable is further analysed on page 7.

4.

4.3 HOME LANGUAGE

TABLE 2 HOME LANGUAGE OF PATIENTS

Language	No. of cases	Percentage	Rank order
English	79	65,83	1
Afrikaans	27	22,50	2
Foreign languages	12	10,00	3
Not stated	2	1,67	4
Total	120	100,00	

The sample contained significantly more ($p < 0.05$) English speaking patients.

Although it can be argued that the Johannesburg General Hospital is geographically situated in a predominantly English-speaking locality namely Johannesburg city, Hillbrow and Braamfontein, it is interesting to note that only 13.33% of all the accidents investigated took place in this area.

4.4 EDUCATIONAL STANDARD

TABLE 3 EDUCATIONAL STANDARD OF PATIENT

Educational standard	No. of cases	Percentage	Rank order
Std 8 or less	58	48,33	1
Matriculation	41	34,17	2
Post-matric qualifications	13	10,33	3
Not stated	8	6,67	4
Total	120	100,00	

While significantly more ($p < 0.05$) patients had only Std 8 or less it must be kept in mind that 10% of the sample represented persons 17 years of

age or younger. Most of these were still at school at the time of the accident.

4.5 TYPE OF EMPLOYMENT

TABLE 4 OCCUPATION

Type of employment	No. of cases	Percentage	Rank order
Professional and Executive	26	21,66	2
White collar workers	35	29,17	1
Skilled workers , artisans	19	15,83	4
Wholesale and retail tradesmen	17	14,17	5
Not in employment	20	16,67	3
Not stated	3	2,50	6
Total	120	100,00	

The 'not in employment' group includes housewives , pensioners , students and two 'out of work' persons .

4.6 INCOME

TABLE 5 ANNUAL INCOME OF PATIENTS

Income	No. of cases	Percentage	Rank order
More than R10.000	9	7,50	5
R5001-10.000	23	19,17	3
R2001-5.000	40	33,33	1
Less than R2.000	5	4,17	6
Not stated	13	10,83	4
Not in employment	30	25,00	2
Total	120	100,00	

It is clear that some discrepancy exists between the information contained in Table 4 and that contained in Table 5. Table 4 represents information given by the patient to the interviewer while Table 5 represents information obtained by the hospital administration from the patient or from members of his/her family. It is known that in a provincial hospital medical charges are calculated according to the level of income of the patient. It appears from the results obtained in this survey that patients tend deliberately to understate or withhold their level of income in order to reduce their medical expenses.

4.7 ACCIDENT RECORD OF PATIENT

TABLE 6 ACCIDENT RECORD OF PATIENT (AS A DRIVER)

No. of accidents	No. of cases
0	28
1	22
2	7
3	5
4	0
5	1
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	1
Not applicable	<u>56</u> (not driving)
Total	120

In recording the accident record of patients, only those patients who were driving at the time of the accident were questioned. From the information obtained, (see Table 6), which excluded the accident under investigation, it appears that this group of 64 drivers had been, as drivers, involved in a

total of 123 accidents. It must be borne in mind that according to previous surveys conducted by the writer, drivers tend to understate the ir accident records.

5. ACCIDENT RELATED ENVIRONMENTAL FACTORS

5.1 STATUS OF PATIENT

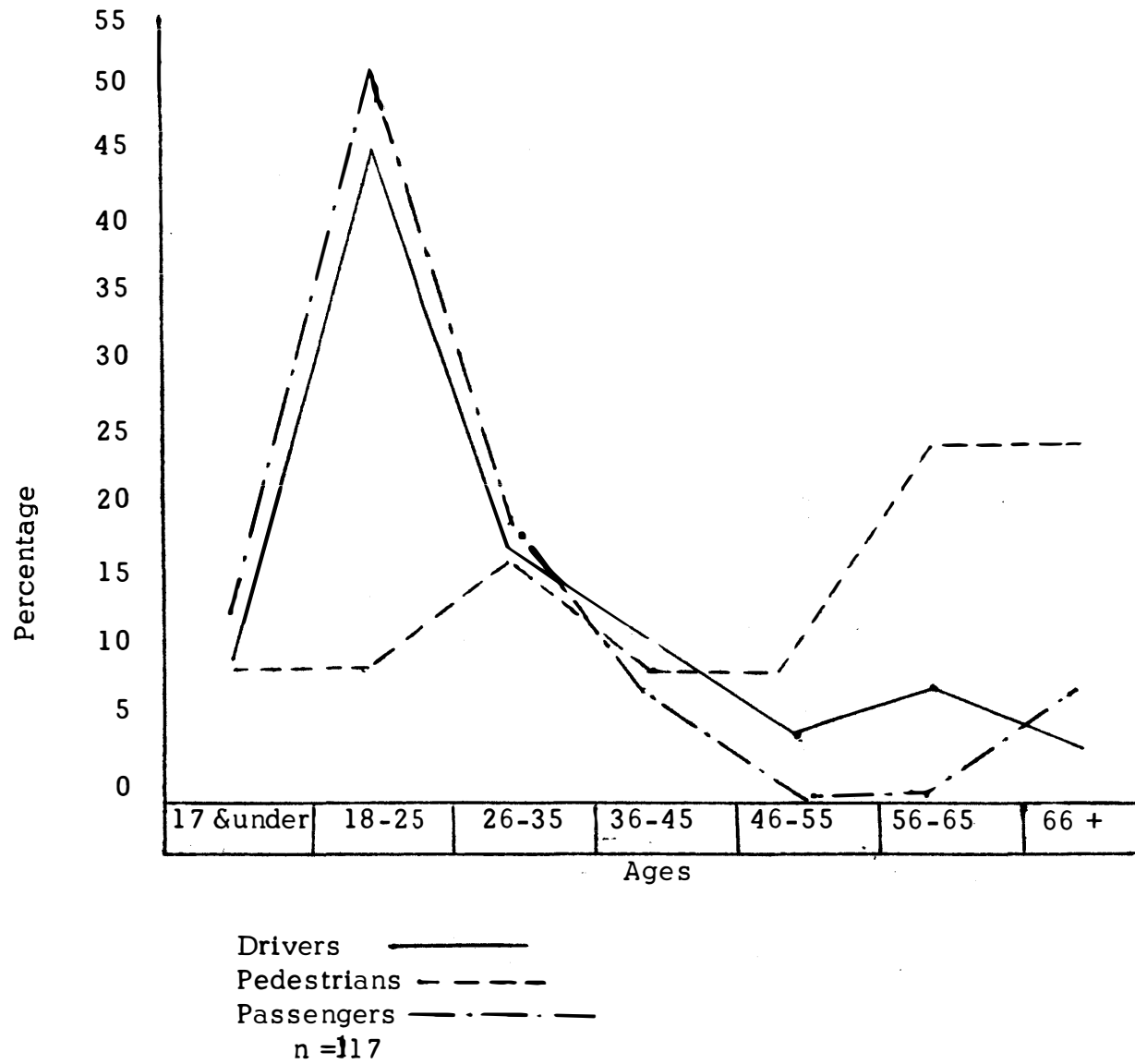
TABLE 7 STATUS OF PATIENT DURING ACCIDENT

Status	No. of cases	Percentage	Rank order
Driver	64	53,33	1
Passenger	41	34,17	2
Pedestrian	12	10,00	3
Not stated	3	2,50	4
Total	120	100,00	

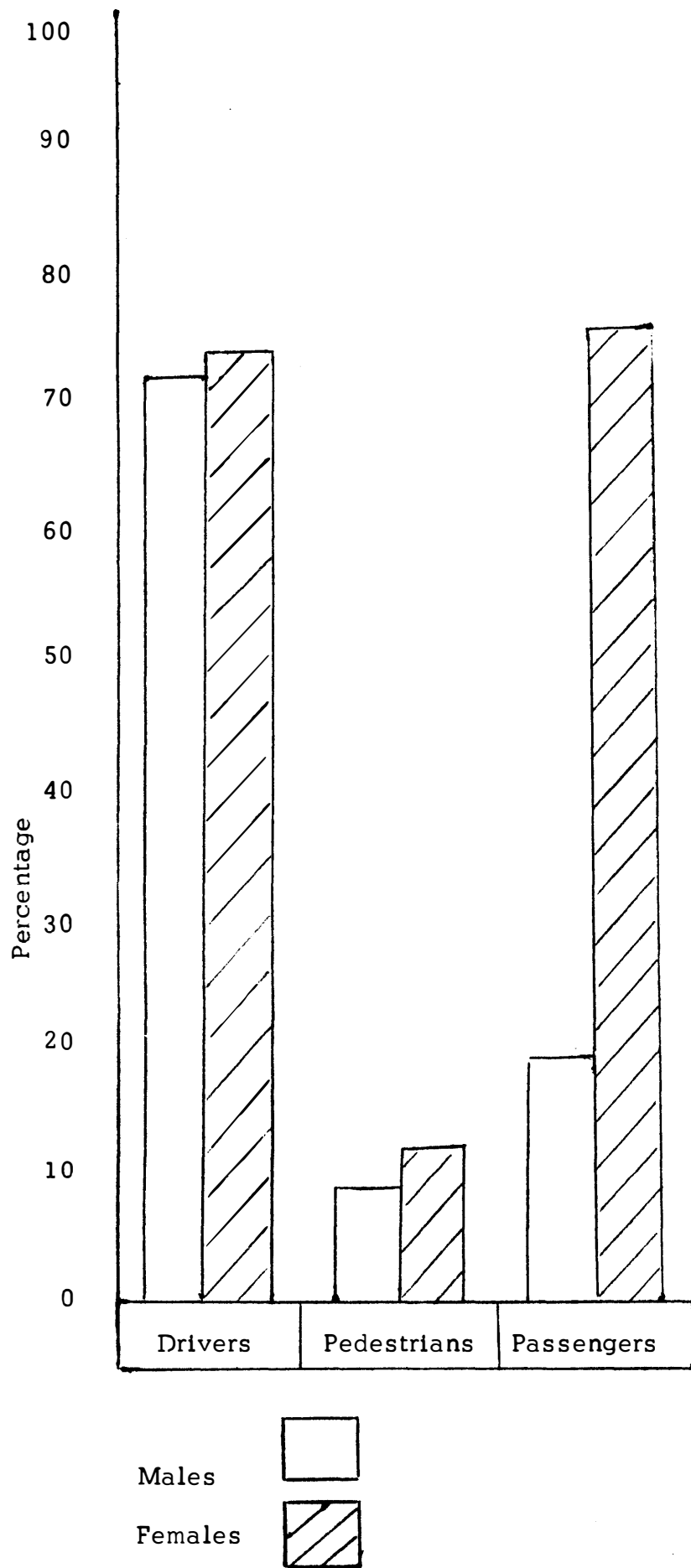
The differences contained in Table 7 are statistically significant ($p < 0,05$). In three instances the role of the patient at the time of the accident could not be determined. In one case the patient, a female, died shortly after the accident. In the remaining two cases, both male, the patients refused to cooperate with the interviewer. In both cases the hospital records indicated that alcohol had been consumed before the accident and in both cases the accident had not been reported to the police. In further analysis regarding the status of the patient, these three cases are excluded.

In Graph 1 the status of the patient in the different age groups is given. The highest percentage of both driver and passenger victims were in the 18-25 year age group while a higher percentage of the pedestrian victims were in the 56 years of age and older age groups. These differences are statistically significant ($p < 0,05$).

In graph 2 highly significant sex differences between drivers and passengers are shown. Significantly more ($p < 0,05$) males than females were involved as drivers in the accidents investigated, while significantly more females were involved as passengers.



GRAPH 1 STATUS VERSUS AGE



GRAPH 2 STATUS VERSUS SEX

There is no significant difference between male and female pedestrians involved in accidents.

5.2 TYPE OF VEHICLE INVOLVED

TABLE 8 TYPE OF VEHICLE INVOLVED IN ACCIDENT

Type of vehicle	No. of cases	Percentage	Rank order
Motor car	75	62,50	1
Motor cycle, scooter, moped	23	19,17	2
Bicycle	1	0,83	4
Van, bakkie, kombi	5	4,17	3
Heavy duty vehicle	1	0,83	4
Not stated	3	2,50	n/a
Pedestrian accidents	12	10,00	n/a
Total	120	100,00	

The information contained in Table 8 was obtained from interviews with individual patients. It is possible that some of the drivers interviewed carried a number of the passengers interviewed and therefore that the same vehicle was referred to in more than one interview. Regarding the type of vehicle involved in the accidents investigated there is no significant difference between the data gathered during 1976 and those gathered during 1978.

5.3 POLICE REPORTING

Section 135 of the Transvaal Road Traffic Ordinance requires that "(1) The driver of a vehicle on a public road at the time when such vehicle is involved in or contributes to any accident in which any other person is killed or injured or suffers damage in respect of any property or animal.....
... (f)shall, unless he is incapable of doing so by reason of injuries sustained by him in the accident, as soon as reasonably practicable, and in any case, within twenty-four hours after the

occurrence of such accident, report the accident to any police officer at a police station".

Subsection 2 of section 135 further states that failure to comply with subsection 1 above is an offence leading to a fine not exceeding one thousand two hundred rand or to imprisonment for a period not exceeding three years, or to both such fine and imprisonment.

Police reports could be traced of the accidents in which 86 of the 120 patients were involved. It was found that 34 (28%) of the patients were involved in accidents that were not reported to the police. It could not be ascertained from the information available what the total number of accidents was in which the 120 patients were involved. A thorough check of the police records showed that not one of the cases under the heading "not reported" travelled in a vehicle involved in an accident that was reported.

It is extremely difficult to assess where the blame for not reporting an accident lay. In some accidents the driver was seriously injured and in some he/she could not remember anything about the accident. As far as could be ascertained the police were, in many cases, called to the scene of the accident by bystanders.

In Table 9 an attempt is made to categorize the status of the patient during the accident and to assess the percentage of non-reporting.

TABLE 9 POLICE REPORTING OF ACCIDENTS

Category	Total cases	Cases not reported	Percentage not reported
Motor vehicle drivers	46	6	13,04
Motor cyclists (1 cyclist)	18	6	33,33
Passengers	41	14	34,15
Pedestrians	12	5	41,66
Not stated	3	3	-
Total	120	34	28,33

In three cases the status of the patient during the accident could not be ascertained. Two of these patients travelled in the same vehicle and both said that the other person was driving. Both were under the influence of alcohol. The third person refused to give any information regarding the accident.

In the case of six drivers no report was made to the police. Four of these drivers were found to have consumed, according to their own statements, a fair amount of alcohol before driving. Of these four cases, one did not have a driver's licence at the time of the accident. One driver did not consume any alcohol but was driving to school in his father's car without being in possession of a drivers' licence. The sixth driver died shortly after the accident and no report was made to the police.

Five motor cycle drivers plus one cyclist did not make police reports. Three of the motor cyclists had consumed alcohol before the accident and had lost control of their vehicles. Some drivers of motor vehicles and motor cycles reported to the interviewer that they could not remember anything about the accident. This may also be a possible cause of not reporting the accident.

Five pedestrian accidents were not reported to the police. Not one of these pedestrians had consumed alcohol. It was also found that no police report was made by any of the drivers involved in these accidents.

5.4 DESCRIPTION OF ACCIDENT

A total of 84 police reports were available. The description of the accident obtained from the patient was compared to the description of the accident in the police records. In 12 cases the patient could not remember anything about the accident or preferred not to describe the accident situation. In a further 12 cases the police records did not contain enough information to make a comparison. According to some of the latter records the police arrived at the scene of the accident too late to make an accurate assessment. The views regarding the accidents of

sixty patients were compared to the police record of the accidents. Of these 40 (67%) were in agreement, 17 (28%) deviated slightly and 3 (5%) deviated greatly.

The accident situation was reconstructed from reports obtained from drivers, police reports and, in a few instances, information obtained from passengers.

In Section 2 of this report, a number of individual case studies are given.

TABLE 10 DESCRIPTION OF ACCIDENT

Category (see discussion below)	No. of cases	Percentage	Rank order
1. Lost control of vehicle	18	28,13	1
2. Head-on collision	4	6,25	6
3. Intersection collision	15	23,45	2
4. Driver died	2	3,12	7
5. Hit from behind or side-swipe	6	9,37	4
6. Cannot remember and accident not reported	12	18,75	3
7. Gone to sleep	2	3,12	7
8. Ran into stationary object	5	7,81	5
Total	64	100,00	

DISCUSSION OF CATEGORY

CATEGORY 1 DRIVER LOST CONTROL OF THE VEHICLE

More than 50% of these drivers had consumed alcohol before the accident. In most cases the vehicle left the road and collided with stationary objects. No other vehicles were involved in these accidents. The drivers in this category are, compared to the total sample, relatively young. (Average age 23). Two drivers aged 17 and one aged 14 did not hold a drivers licence.

Two of these accidents took place while it was raining. In most of these cases the drivers admitted to the interviewer that their speed was too high. One driver admitted to having travelled at 170 km/h and one at 130 km/h, both in built-up areas with 60 km/h speed limits. In only one instance was the driver a female and a tyre burst at high speed was given as the cause of the accident.

CATEGORY 2 HEAD-ON COLLISION

Four drivers were involved in head-on collisions. One driver said he had to swerve to avoid something in the road. One driver was overtaking a vehicle and two drivers said that the other party was travelling on the wrong side of the road. These two drivers collided with each other at 01h00 and were, according to police records both in the middle of the road when the collision occurred.

CATEGORY 3 COLLIDED AT INTERSECTION

Fourteen male drivers and one female driver were involved in collisions at controlled intersections. Of these, four occurred at stop streets and in one of these accidents the driver, aged 73 years, did not stop. The other three drivers were riding motor cycles. In these three accidents the driver of the other vehicle either did not stop or stopped and then pulled away. Of the eleven drivers who were involved in collisions at a robot, three appeared to have crossed against a red robot, three against a late yellow phase and three collided with a vehicle turning at the robot. Two drivers stated (supported by police evidence) that the other party was at fault.

In these fifteen accidents not a single driver interviewed had taken alcohol before the accident.

CATEGORY 4 DRIVER DIED

Two drivers died shortly after the accident and little or no information about the accidents was available.

CATEGORY 5 HIT FROM BEHIND OR IN A SIDE-SWIPE

Three of the six male drivers involved in this category were involved in "side-swipes". One driver was heavily intoxicated and admitted it was his own fault. Two blamed the "other" driver, but both failed to report the accident to the police. Three drivers were hit from behind, one when stopping at a red robot, one when stopping at a yellow robot, and one when stationary in a traffic lane.

CATEGORY 6 DRIVERS CANNOT REMEMBER

When interviewed twelve drivers could not recall any details regarding the accident. Most of these said they came around in the hospital bed. Eight of these (six drivers admitted this) had been drinking at a party or with friends at hotels. Two drivers were tested by the police and found to be heavily under the influence of alcohol. In the other ten instances the police were not contacted by the patient and the police reports were reconstructed from evidence by other drivers, passengers or persons at the scene of the accident. In most accidents it appears that the patient's car hit stationary objects or just left the road. Some of the patients could not recall that they were driving the vehicle at the time of the accident. Most of these patients sustained concussion and/or other serious injuries.

Eleven of the 12 drivers were male. The one female driver did not give any information concerning herself or the accident even to the hospital authorities. It was discovered that she even used a false name.

CATEGORY 7 GONE TO SLEEP WHILE DRIVING

Two drivers admitted that they fell asleep at the wheel. One had taken alcohol and one had not slept for about 23 hours.

CATEGORY 8 RAN INTO STATIONARY OR SLOWER MOVING OBJECT

There were five male drivers in this category. Four drivers took alcohol before the accident. One driver collided with a road grader and the other

four ran into vehicles that had slowed down or stopped.

5.5 AREA WHERE ACCIDENT OCCURRED

TABLE 10 AREA WHERE ACCIDENT OCCURRED

Area	No. of cases	Percentage	Rank order
City	16	13,33	3
Suburban	75	62,50	1
Rural	28	23,34	2
Not stated	1	0,83	4
Total	120	100,00	

In the first category in Table 10 namely 'city', the immediate area close to the Johannesburg General Hospital was included. This area includes Braamfontein, Hillbrow and Johannesburg city. Since only 13,33 % of all the cases admitted and included in this survey were involved in accidents in the immediate geographical vicinity of the hospital, it does appear that there is no geographical bias in the sample.

The patients included in the 'rural' category were involved in accidents that occurred outside the municipal area of Johannesburg.

5.6 DAY OF ACCIDENT

TABLE 11 DAY OF ACCIDENT

Day	No. of cases	Percentage	Rank order
Monday	18	15,00	4
Tuesday	16	13,33	5
Wednesday	9	7,50	7
Thursday	13	10,83	6
Friday	20	16,68	3
Saturday	22	18,33	1

Cont

Sunday	22	18,33	1
Total	120	100,00	

Significantly more ($p < 0.05$) accidents took place on Saturdays and Sundays . This finding is in agreement with the results obtained in the 1976 survey.

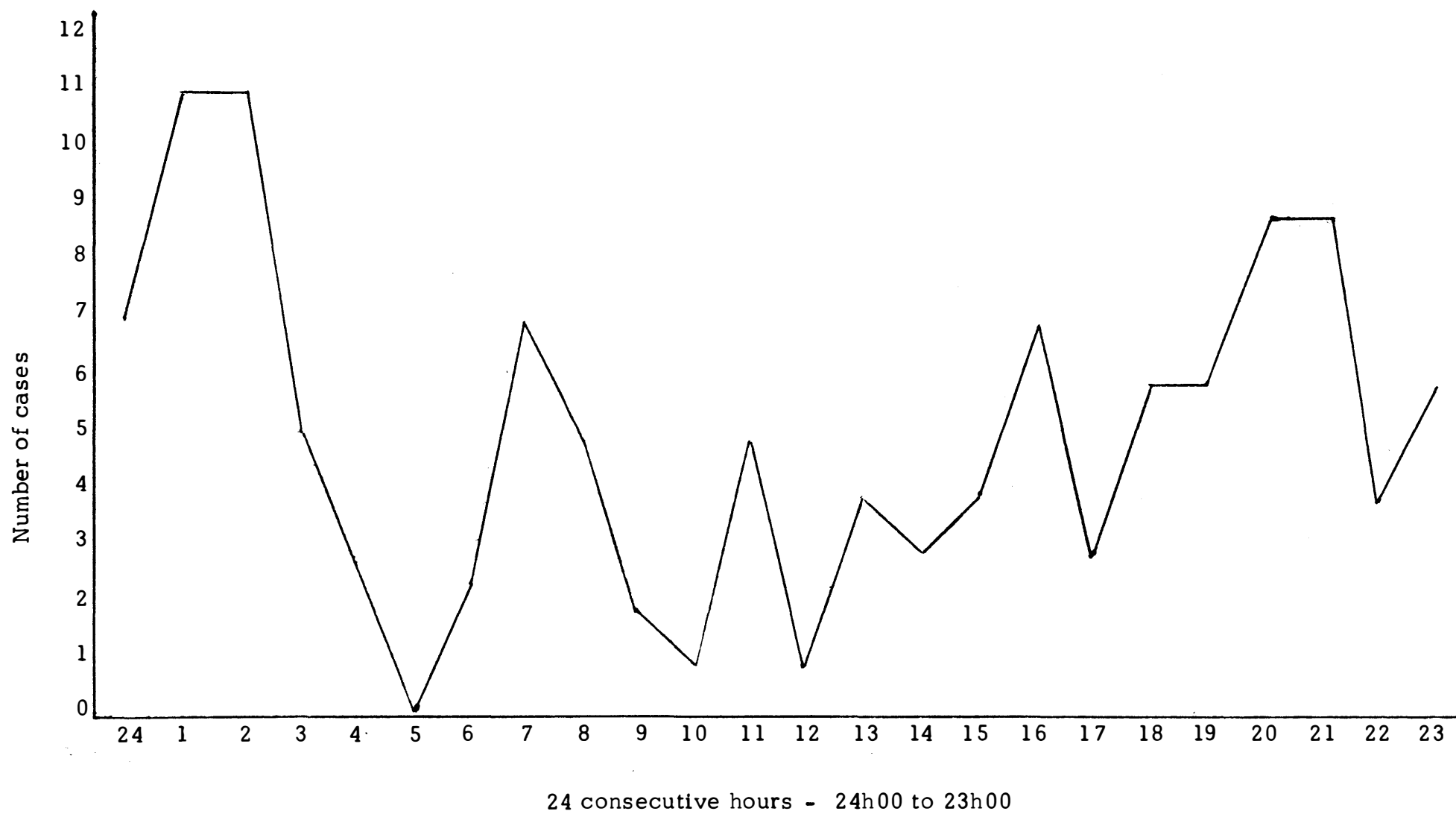
5.7 TIME OF ACCIDENT

According to the 1976 survey, most accidents took place between 18h00 and 24h00. In this survey accidents were recorded on an hourly basis over 24 hours. The results, which can be seen in Graph 3, clearly indicate that most of the accidents investigated took place between 01h00 and 02h59, a factor that was disguised by the previous calculations. According to the accident records alcohol and fatigue were present in most of these accidents.

5.8 SEAT BELTS

The sample interviewed included 75 occupants of motor cars. Of these 31 (41%) said that they did wear their seat belts, 31 (41%) said that they did not wear their belts and no information regarding seat belts could be obtained from 13 (18%) patients. Of the 31 patients who said that they did wear seat belts, 23 were positively diagnosed concussion cases. The medical records of these 23 patients were searched and in most cases reflected injuries that could have been caused by three-point seat belts. Further analyses are given in graph 4 .(Page 24)

One conclusion that can be drawn from the available evidence is that these patients did not adjust the seat belts properly before driving. It must be borne in mind that the wearing of seat belts was not mandatory at the time this survey was undertaken.



GRAPH 3 TIME OF ACCIDENT

6. PRE-ACCIDENT AND ACCIDENT RELATED PSYCHO-MEDICAL FACTORS

6.1 ALCOHOL CONSUMPTION

It was not possible, from the available records, to ascertain the exact blood alcohol level of drivers and pedestrians. However, the interviewer, during the in-depth interview with patients together with information obtained from the hospital and police records, could gain insight into the approximate amount of alcohol consumed before the accident occurred. In two instances the police records showed blood alcohol levels exceeding 0,20 g/100ml. In a number of cases the hospital records indicated that patients were quite heavily under the influence of alcohol. In 20 of the 27 cases where alcohol was consumed before the accident, the patient admitted this to the interviewer and most of them stated that the accident might have been prevented if they had not consumed so much alcohol. One patient is an alcoholic who had been in a number of clinics for treatment and another patient is both an alcoholic and a drug addict. Table 12 gives an analysis of the alcohol consumption of the drivers and pedestrians interviewed.

TABLE 12 ALCOHOL CONSUMPTION OF DRIVERS AND PEDESTRIANS

Category	Total No. of cases	Total No. of cases that had taken alcohol	Percentage that had taken alcohol
Motor vehicles	46	23	50,00
Bicycle	1	0	0,00
Motor cycles	17	4	23,53
Pedestrians	12	1	8,33
Total	76	28	$\frac{+}{=}$ 36,97

It can be observed that drivers of motor vehicles represent the highest percentage that had taken alcohol before driving. This was followed by motor cyclists, representing 23,53%. Only one of the twelve pedestrians involved in an accident had taken alcohol.

6.2 NUMBER OF HOURS DRIVERS HAD GONE WITHOUT SLEEP

During the interview drivers and pedestrians were questioned about the number of hours they had gone without sleep prior to the accident. The information gathered is contained in Table 13.

TABLE 13 HOURS DRIVERS AND PEDESTRIANS HAD GONE WITHOUT SLEEP

Hours no sleep	Motor vehicle drivers	Motor cyclists	Pedestrians
1 - 5 hours	4	5	4
6 - 10 hours	5	4	2
11-15 hours	19	6	3
16-20 hours	16	2	1
21-24 hours	2	1	0
Not stated	-	-	2
Total cases	46	18	12
Average hours	13	9	9

Although it appears that the drivers of motor vehicles had been awake for more hours than motor cyclists and pedestrians before the accident took place, this difference is not statistically significant. Apart from two instances where drivers of motor cars told the interviewer that they had been extremely tired before the accident, in the sample investigated no other evidence could be found that fatigue had contributed to the accident in which the patient was involved.

6.3 EMOTIONAL STATE OF DRIVER

Drivers and pedestrians were asked whether they had been emotionally upset immediately before the accident. The replies are given in Table 14.

From the interviews with patients it appeared that 24,2% of drivers and pedestrians could recall that they were emotionally upset immediately before the accident took place. Reasons given for being upset include marital, employment, other personal relations and financial problems.

TABLE 14 EMOTIONAL STATE BEFORE ACCIDENT

State	No. of cases	Percentage	Rank order
Upset	18	24,6	2
Not upset	43	58,9	1
Not sure	10	13,7	3
Not stated	2	2,8	4
Total	73	100,00	

In the above and some of the following tables, the 2 patients who died are excluded.

6.4 STATE OF DRIVER OR PEDESTRIANS' HEALTH AT TIME OF ACCIDENT

Eighty percent of the group interviewed stated that their health was good at the time of the accident. Fifteen percent stated that their health was 'fair' and only 5% said that their health was poor.

The reasons given for suffering from fair or poor health were nervous disorders, heart and/or blood pressure problems, chest problems, arthritis, diabetes and stomach ulcers.

6.5 HOW ACCIDENT COULD HAVE BEEN PREVENTED

Drivers and pedestrians were asked their views on how the accident could have been prevented if the situation was reconstructed.

TABLE 15 HOW ACCIDENT COULD HAVE BEEN PREVENTED

Category	No. of cases	Percentage	Rank order
Action on drivers part	38	52,0	1
Action by other parties	15	20,5	2
Could not have been prevented	10	13,7	3
Road construction - lighting	8	11,0	4
Not stated	3	2,8	
Total	73	100,00	

It is interesting to note that 52,0% of the drivers and pedestrians interviewed said that action on their part could have prevented the accident. Of these more than 70% said that the accident might have been prevented if they had taken less alcohol or if they had not driven at such a high speed. Most of the pedestrians and motor cyclists said that the accident could have been prevented if action had been taken by the other party.

6.6 MEDICAL FACTORS RELATING TO THE ACCIDENT

The following medical categories relating to the accident are a repetition of those investigated in the concussion study previously completed. It was agreed to repeat these questions because of the availability of the information and to further support the statistical evidence already gathered.

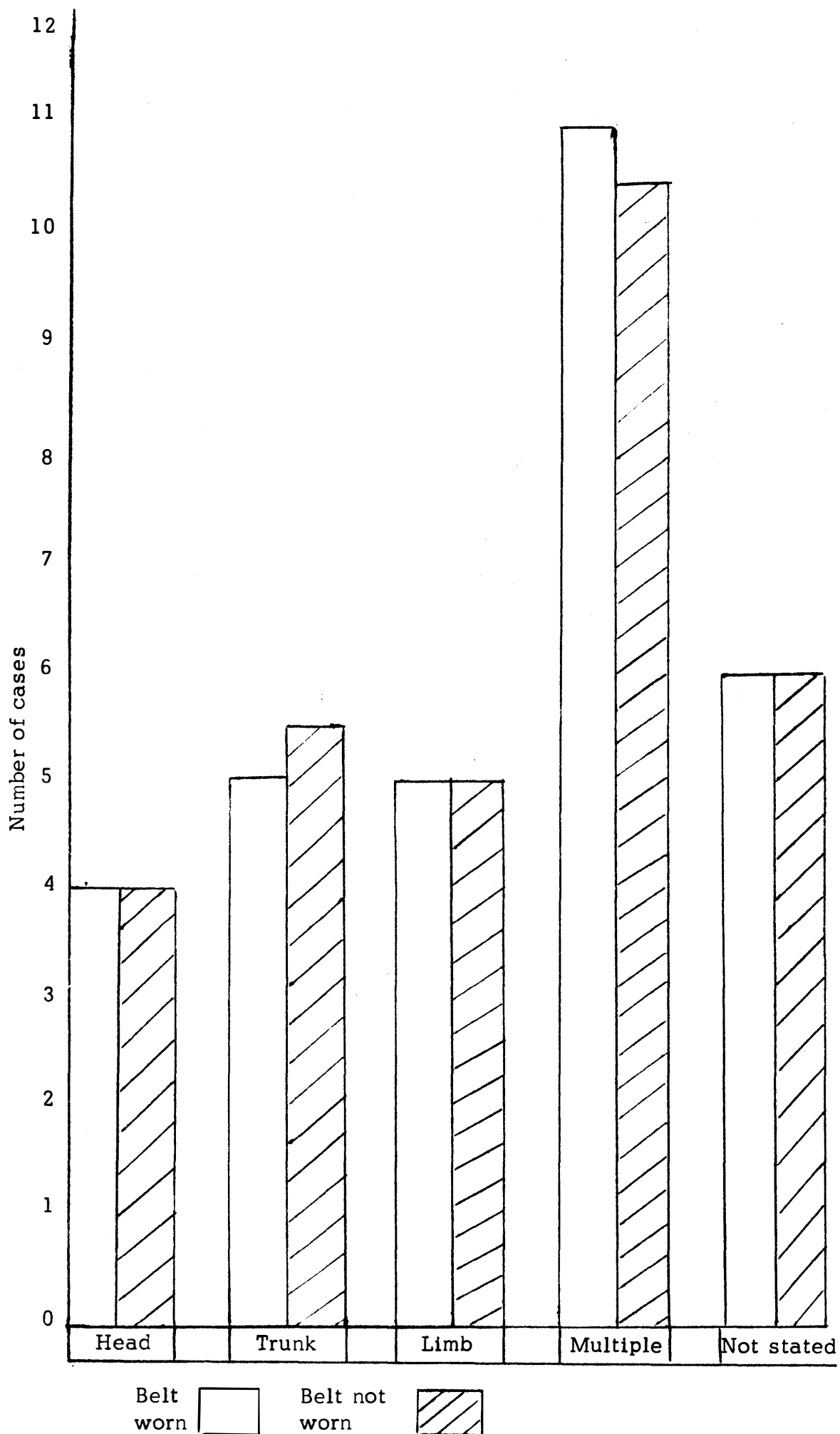
6.6.1 MAIN INJURIES RECEIVED

TABLE 16 MAIN INJURIES RECEIVED

Category	No. of cases	Percentage	Rank order
Head	13	10,83	5
Trunk	26	21,67	2
Limb	18	15,00	4
Multiple injuries	38	31,67	1
Not stated	25	20,83	3
Total	120	100,00	

Graph 4 was drawn in an attempt to establish whether there were any significant differences between the type of injuries received and use of seat belts . Whether seat belts were worn or not was known in 62 cases . Of these 31 stated that they did wear seat belts and in most cases there was medical evidence to support this . In 31 cases the patients stated that they did not wear seat belts .

According to the information given in Graph 4 there are no significant differences between the type of injury received and the wearing of seat belts in the group investigated .



GRAPH 4 MAIN INJURIES AND SEAT BELT WEARING

6.6.2 PRE-TRAUMA AND POST-TRAUMA AMNESIA

TABLE 17 PRE-TRAUMA AMNESIA

Diagnosis	No. of cases	Percentage	Rank order
Positive	26	21,67	2
Negative	82	68,33	1
Not diagnosed	12	10,00	3
Total	120	100,00	

TABLE 18 POST-TRAUMA AMNESIA

Diagnosis	No. of cases	Percentage	Rank order
Positive	42	35,00	2
Negative	65	54,17	1
Not diagnosed	13	10,83	3
Total	120	100,00	

6.6.3 TIME UNCONSCIOUS AFTER ACCIDENT

The duration of unconsciousness after the accident, according to the hospital records, ranged from a few seconds to four days. Only 30 patients were reported to have lost consciousness after the accident. Of these, 22 were unconscious for a period of 1 to 59 seconds, 4 for 1 hour to 23 hours and 4 for more than one day.

6.6.4 STAY IN HOSPITAL

Six patients were transferred to other hospitals such as the Workers' Rehabilitation Hospital (now the Milpark Hospital) or private or provincial hospitals closer to their homes. There is no record of their total length of stay in hospital. Three patients died while in hospital.

TABLE 19 LENGTH OF STAY IN HOSPITAL

Stay in Hospital	No. of cases	Percentage
1 day	38	31,67
2 days	21	17,50
3 "	12	10,00
4 "	6	5,00
5 "	5	4,18
6 "	1	0,83
7 "	4	3,33
8 "	3	2,50
9 "	1	0,83
10 "	2	1,67
11 "	1	0,83
12 "	1	0,83
13 "	0	0,0
14 "	4	3,33
14 days to 1 month	9	7,50
1 to 2 months	2	1,67
2 to 3 months	1	0,83
3 + months	0	0,0
Not known (3 died)	9	7,50
Total	120	100,00

This sample of 118 patients had thus spent a total of 726 days in the Johannesburg General Hospital. Of these, seven returned to the hospital for plastic surgery after discharge. No record of further in-hospital treatment was available.

6.6.5 TIME ELAPSED BEFORE PATIENTS RETURNED TO WORK

In 43 (36%) of the patients treated in hospital, there was no information as to the date of return to work. This number included the three patients who had died, the 20 patients not in employment and three patients about whom

no information could be obtained. The remaining 17 patients did not receive major injuries or out-patient treatment and it is assumed that they returned to work soon after the accident.

The number of working days lost as a result of the accident is reflected in Table 20.

TABLE 20 NUMBER OF DAYS BEFORE PATIENTS RETURNED TO WORK

No. of days	No. of patients	Total no. of days
1	16	16
2	19	38
3	6	18
4	6	24
5	3	15
6	4	24
7	2	14
8	2	16
9	1	9
10	2	20
14	2	28
15	1	15
17	1	17
18	1	18
19	1	19
22	1	22
25	1	25
28	2	56
42	1	42
90	3	270
100	1	100
120	1	120
Total	77	926

It appears that 77 patients lost a total of 926 working days. An estimate of the economic loss to the country as a result of these accidents is not possible because of the variation in occupational status. Conflicting reports about the patients' annual income further complicated a possible estimate.

7. SUMMARY AND CONCLUSIONS

This study was a continuation of the concussion survey completed during 1976 at the Johannesburg General Hospital. A new and more extensive questionnaire was used.

The sample consisted of 120 white patients admitted to the hospital as a result of road accidents.

The largest group of drivers was in the age group 18-25 years (44%) while the largest group of pedestrians (50%) were over 56 years old. More English-speaking than Afrikaans-speaking patients were interviewed. Almost half the sample (48%) had not been educated beyond standard 8. Some of the patients (4%) were still at school and intended to reach a higher educational standard. It appears that when giving details to the hospital authorities, patients deliberately understated or withheld their level of income in order to minimize their medical expense account.

The 64 drivers in the sample had been, as drivers, involved in a total of 123 accidents. This includes 69 previous accidents.

Most drivers (72%) were male, while most passengers (76%) were female.

It was found that 28% of the patients interviewed were involved in accidents that were not reported to the police. The accidents not reported included motor vehicle drivers 13%, motor cyclists 33% and pedestrians 42%. Fifty-eight percent of the motor vehicle drivers and the motor cycle riders who did not report the accidents had consumed alcohol immediately before the accident.

A total of 84 police reports were studied. Of these, most (67%) were in agreement with the patient's description of the accident and only 5% deviated greatly. In rank order, the identified causes of accidents were :

- 1) Lost control of vehicle (28%)
- 2) intersection collisions (23%)
- 3) hit from behind or "side-swiped" (9%)
- 4) ran into stationary objects (8%)
- 5) head-on collisions (6%), and
- 6) fallen asleep behind the wheel (3%)

In 19% of the accidents the driver could not or preferred not to remember what happened and the police were not at the scene of the accident. Most accidents took place on Saturdays, Sundays and early Monday mornings. The highest percentage (22%) occurred between 01h00 and 02h59 and the second highest (18%) between 20h00 and 21h59.

Alcohol was consumed before the accident by 50% of the motor vehicle drivers, 24% of the motor cycle riders and 8% of the pedestrians in the sample

In 24% of the accidents investigated the drivers stated that they had been emotionally upset before the accident took place.

When asked how the accidents could have been prevented, the drivers of motor vehicle and the riders of motor cycles gave the following answers. Action on the driver's (or rider's) part 51%, action by other parties 20%, could not have been prevented 14%, and road construction and lighting 11%. No significant differences were found among the types of injuries received when drivers wearing seat belts were compared to injuries received by drivers not wearing seat belts.

In Section 2 of this report a number of case studies are given. Interesting factors emerging from these are that some of the pedestrian and other

accidents had as contributory factors

- a) impaired vision, impaired hearing or total deafness,
- b) drivers being emotionally unstable, upset or worried at the time of the accident,
- c) drivers being extremely tired and overworked and
- d) drivers being under the influence of alcohol.

In 23% of the accidents investigated the drivers admitted to having taken a substantial amount of alcohol before the accident. This was confirmed by the hospital records, yet according to the police reports, no alcohol had been consumed.

SECTION 2 CASE STUDIES OF ROAD ACCIDENT INJURIES

Section 1 of this report mainly deals with a statistical analysis of a sample of 120 patients injured in road accidents and admitted to the Johannesburg General Hospital. In this section a number of factors relating to the sample that could have contributed to the accidents are exposed.

While much can be learned from the statistical analyses of a group of accident victims, each accident is a unique situation and in Section 2 a number of case studies of the drivers and pedestrians involved in the accidents investigated are presented. Particular attention is given to the views about the accident held by the driver or pedestrian involved, his or her personality problems, the injuries sustained and the police record of the accident.

CASE NUMBER 1

PATIENT : A male, hotel manager aged 22 injured while driving a motor car.

TIME OF ACCIDENT : 01h00

PATIENT'S DESCRIPTION OF ACCIDENT : "I had been drinking with the men at the hotel before driving home. I recognized a friend at the side of the road, hooted and waved at him. I was under the influence of alcohol and lost control of the vehicle".

WITNESS TO ACCIDENT : The friend to whom the driver waved, said that the vehicle was travelling at a very high speed when it left the road.

DRIVER : "The accident could have been prevented if I was going slower and if I had less to drink".

SEAT BELT : Driver said he did wear a seat belt.

INTERVIEWER : The patient said that he was emotionally upset at the time of the accident. His marriage was breaking up. He suspected his wife of going out with another man and he spent most of his off-duty time at the hotel drinking with employees.

POLICE REPORT : The driver lost control on a straight well-lit main road, and skidded into a tree. Carried two passengers and both were injured. Driver under the influence of alcohol. No blood sample taken.

HOSPITAL REPORT : Concussion, lacerations on left arm, left hip, chin and right lower leg. Spent two days in hospital before being discharged. Both passengers received multiple injuries, one spent 3 and the other 5 days in hospital. Driver under the influence of alcohol when admitted.

CASE NUMBER 2

PATIENT : A young male driver of a motor car, aged 18 years and still attending school.

TIME OF ACCIDENT : 00h30.

PATIENT'S DESCRIPTION : "It was a head-on collision. I saw two headlights coming at me on my side of the road and can remember nothing further.

The accident could not have been prevented ".

SEAT BELT : Not used.

INTERVIEWER : The patient stated that he was in a good mood. He belongs to a very closely-knit Greek family and he has many friends.

POLICE REPORT : Head -on collision on Johannesburg/Vereeniging road. Road not well-lit. Both drivers in the middle of the road and both sober. Extensive damage to both vehicles.

HOSPITAL REPORT : Facial lacerations, multiple fractures of limbs, intestinal injury and haemorrhage. No trace of alcohol intake. Spent 14 days in hospital and had to return for skin grafts.

CASE NUMBER 3

PATIENT : A 73 year old male driver of a motor car. A pensioner.

TIME OF ACCIDENT : 09h00.

PATIENT'S DESCRIPTION : "I was travelling along a straight suburban road. The other vehicle came out of a side road and a collision took place. It was entirely the fault of the other driver, but I will not lay any charges ".

SEAT BELT : Patient said he did wear his seat belt.

INTERVIEWER : An unco-operative, aggressive and aloof person.

POLICE REPORT : Collision took place at a stop-street intersection. The patient failed to stop and was at fault. No alcohol taken. Dry and sunny weather.

HOSPITAL REPORT : Concussion, multiple lacerations and internal injuries. No sign of alcohol intake. Patient spent 23 days in hospital.

CASE NUMBER 4 (patient died)

PATIENT : A female pedestrian aged 50 years . A housewife .

TIME OF ACCIDENT : 14h00.

POLICE REPORT : Patient crossed at pedestrian crossing at intersection when a driver of a motor vehicle turning right collided with her.

Passenger in vehicle stated, "She was walking, looking neither left nor right. When she was right next to the left hand side of the car I shouted to the driver but it was too late". Pedestrian and driver sober. Clear daylight.

HOSPITAL REPORT : Concussion, cerebral oedema and lacerations. The patient went into coma soon after admission and died.

CASE NUMBER 5

PATIENT : A male driver of a motor car. 18 years old and unemployed.

TIME OF ACCIDENT : 21h00.

PATIENT'S DESCRIPTION : "I just touched the brakes slightly and the car moved to the left of the road and hit the pavement. I bumped my head on the side of the car and lost consciousness. The accident could not have been prevented". Patient had his driver's licence for a very short time. A member of his family visiting him in hospital said that the patient 'was racing and the car is a total write-off'.

SEAT BELT : Medical evidence supports that it had been worn.

INTERVIEWER : Patient said that he was not emotionally upset at the time of the accident. He wanted to be a policeman and had attended the police college but was discharged because of ankle problems. (Could this be related to the accident?)

POLICE REPORT : Visibility dark but road well-lit. Straight suburban road. Car left road and collided with tree. Car extensively damaged.

HOSPITAL REPORT : Patient remained unconscious for more than one hour after admission. Concussion, facial and body lacerations and a broken jawbone. No smell of alcohol. Spent 11 days in hospital.

CASE NUMBER 6

PATIENT : A male driver of a motor car. A civil engineer aged 24.

TIME OF ACCIDENT : 03h30.

PATIENT'S DESCRIPTION OF ACCIDENT : "I remember swerving for something but I can not recall what it was. I came from a party and was in a happy mood. That is all I remember".

SEAT BELT : Patient wore a lap seat belt.

INTERVIEWER : Patient appeared to have no emotional problems. He came from a country town to be the best man at his friend's wedding and they were at a rehearsal party, which they all enjoyed. He had a few drinks.

POLICE REPORT : Patient lost control of his vehicle on a straight well-lit road and collided with a wall. Accident took place in a built-up suburban area. No mention of alcohol intake.

HOSPITAL REPORT : Concussion, seat belt abrasions and lacerations across stomach. Fractured jaw and lacerations on hands. Patient smelled strongly on alcohol. In hospital for 3 days before being transferred to the Dental Hospital.

CASE NUMBER 7

PATIENT : An Italian male rider of a motor cycle aged 20 years. Owner of a motor spares shop.

TIME OF ACCIDENT : 07h30

PATIENT'S DESCRIPTION : He was going to work and travelled on the freeway. He was going at 170 km/h on a powerful bike and said to the interviewer, "I only go one speed and that is full speed". He likes speed and often takes part in motor cycle rallies. As he was riding along, a station wagon entered the freeway at a stop street and did not give him right of way. The accident could have been prevented if the driver of the station wagon had stopped.

INTERVIEWER : Patient is a rather aggressive type of person and is

obsessed by speed. He was not emotionally upset at the time of the accident and he enjoys the running of his business.

POLICE REPORT : The station wagon pulled off from a stop street after checking that the road was clear. He swerved to avoid a motor bike travelling at high speed but could not avoid a collision. Both drivers sober. Clear daylight.

HOSPITAL REPORT : Abrasions on both legs and fractured jaw. Patient spent one day in hospital and 2 days receiving out-patient treatment.

CASE NUMBER 8

PATIENT : A male pedestrian aged 27 years. Works as a film technician.

TIME OF ACCIDENT : 11h00.

PATIENT'S DESCRIPTION : He was knocked over, at a set of traffic lights, by a motor cycle which came through between a parked vehicle and a vehicle waiting at the traffic lights. The accident could have been prevented by action on the part of the motor cycle rider.

INTERVIEWER : Patient felt he was not at fault. He was not emotionally upset at the time of the accident.

POLICE REPORT : Pedestrian jay-walking 10 paces east of traffic light pedestrian crossing. He passed the front of a large stationary truck when knocked down. This was confirmed by an eye-witness. Rider and pedestrian sober.

HOSPITAL REPORT : Fractured leg and abrasions on face and left hand. Spent 7 days in hospital.

CASE NUMBER 9

PATIENT : A male rider of a motor-cycle aged 17 years. Not in employment but looking for work.

TIME OF ACCIDENT : 01h45.

PATIENT'S DESCRIPTION : "I stopped at a robot in town and was pulling off when a car hit me from behind. My bike is not roadworthy and I purposely travelled at a time when there is little traffic on the road".

INTERVIEWER : A spontaneous young man who is concerned about not finding employment. He wants to be a diesel mechanic.

POLICE REPORT : Both vehicles were moving. Rider of motor cycle hit from behind by a motorist who said that the bike had no reflectors. Both persons sober.

HOSPITAL REPORT : Multiple abrasions and lacerations. No fractures. Patient spent one day in hospital.

CASE NUMBER 10

PATIENT : A male rider of a motor cycle aged 26 years. A bank clerk.

TIME OF ACCIDENT : 06h30.

PATIENT'S DESCRIPTION : He can only remember that he lifted his girlfriend home. He admitted that he was "too drunk" to remember anything else.

INTERVIEWER : Rider was emotionally upset at the time of the accident. He had recently been divorced and had bank debts exceeding R20 000. He likes a motor cycle because of its speed and he often takes part in motor cycle rallies. He has had a number of previous accidents, rolled two cars and only came out of plaster two days previously after being injured in another motor cycle accident.

POLICE REPORT : Straight road. Rider hit pavement and lost control of cycle. According to police report the rider was sober.

HOSPITAL REPORT : Lacerations on wrist and neck. Abrasions on right elbow and abdomen. Renal haemorrhage. Spent 2 days in hospital.

Comment in hospital report "The patient was so heavily under the influence of alcohol that he could not remember the accident".

CASE NUMBER 11

PATIENT : A male rider of a motor cycle aged 18 years. A telephone electrician.

TIME OF ACCIDENT : 01h00.

PATIENT'S DESCRIPTION : "I have no recollection of having had an accident".

INTERVIEWER : Patient cannot remember anything about the accident. He was not worried about anything at the time of the accident. He had been with friends and had had no alcohol.

POLICE REPORT : According to an eye-witness the patient hit the pavement after a bend in the road and lost control of the cycle. Tarmac dry, road well-lit. Direction and speed unknown.

HOSPITAL REPORT : Concussion and lacerations on arm. Spent 1 day in hospital.

CASE NUMBER 12

PATIENT : A male driver of motor car. A free-lance draughtsman aged 37 years.

TIME OF ACCIDENT : 19h30.

PATIENT'S DESCRIPTION : "I saw headlights coming straight at me and pulled steering wheel towards the right side of the road. The accident could not have been prevented as it was the fault of the other driver".

SEAT BELT : Did wear seat belt.

INTERVIEWER : Patient was not emotionally upset. He was looking forward to a party he was going to attend when the accident occurred. He lost consciousness immediately after the accident and only regained it much

later in a block of flats near the scene of the accident.

POLICE REPORT : The driver did not report the accident. He had collided with case number 13 described in this report, on a slight bend in a suburban road. It was raining at the time of the accident.

HOSPITAL REPORT : Concussion. Bruised chest (seat belt bruises). Patient smelled of alcohol on admission. Discharged after 2 days in hospital.

CASE NUMBER 13

PATIENT : Male driver of a motor car aged 60 years. Director of real estate company.

TIME OF ACCIDENT : 19h30

PATIENT'S DESCRIPTION : It was raining hard and he was driving on his side of the road. He does not remember anything about the accident.

SEAT BELT : He did not wear a seat belt because "I do not believe in them".

INTERVIEWER : Patient was not emotionally upset before the accident and was travelling home from work.

POLICE REPORT : Patient went wide around a slight bend in the road and collided with case number 12. Left front of both vehicles damaged. Raining at the time of the accident. Patient sober.

HOSPITAL REPORT : Concussion and lacerations across forehead and chin. Patient had consumed alcohol before the accident.

CASE NUMBER 14

PATIENT : Male driver of motor car. A company director aged 61 years.

TIME OF ACCIDENT : 07h30.

PATIENT'S DESCRIPTION : "I was going slowly across a green robot. Another vehicle travelled against the red robot and collided with me. I could not have done anything to prevent the accident".

SEAT BELT : Patient did wear seat belt.

INTERVIEWER : Patient was not emotionally upset before the accident. He said it was the first accident he had had in his life.

POLICE REPORT : Road surface wet. Patient failed to stop at red robot and collided with another vehicle. Collision took place in the centre of the city. Both drivers sober.

HOSPITAL REPORT : Although accident took place at 07h30 patient arrived at the hospital at 13h15. Suffered from a bruised upper leg and was discharged after 4 days stay in hospital.

CASE NUMBER 15

PATIENT : A male motor cycle rider. An hotel chef aged 23 years.

TIME OF ACCIDENT : 18h20.

PATIENT'S DESCRIPTION : The driver of a car failed to stop at a stop street and collided with the patient who was travelling straight along a through road. The accident could not have been prevented by any action on his part.

INTERVIEWER : The patient had no emotional problems at the time of the accident. He had had three previous motor cycle accidents. All resulted in some injuries. All three were "the fault of the other drivers involved".

POLICE REPORT : A witness stated that he saw a car coming over a stop street at low speed and colliding with the cyclist. The driver of the car did not have a driver's licence and drove off without stopping after the accident but came back 1½ hours later. Both sober.

HOSPITAL REPORT : Compound fracture of right leg. Spent 8 days in hospital and received out-patient treatment for three months.

CASE NUMBER 16.

PATIENT : A female 'out of work' journalist aged 31 years. Was crossing the street as a pedestrian when involved in an accident.

TIME OF ACCIDENT : 08h00.

PATIENT'S DESCRIPTION : She wanted to cross the street to catch a bus and was almost across when she was hit by a motor cycle. Nothing could have been done by her to prevent the accident.

INTERVIEWER : The patient was emotionally upset, **worried** and very depressed at the time of the accident. She is a Serbian Croation from Yugoslavia and is finding it very difficult to find employment. At the time of the accident she was on her way home from an unsuccessful interview for a job. The patient had financial problems and lived from paintings she sold and from money given to her by friends.

POLICE REPORT : A policeman on a motor cycle stated that there was no collision at all. The patient got a fright when she saw the motor cycle coming around a corner and fell. She was **apparently** not injured but insisted on going, by taxi, to hospital.

HOSPITAL REPORT : Patient spent one day in hospital. The only injury was a slight bruise on the right upper leg.

CASE NUMBER 17.

PATIENT : A male rider of a motor cycle. An C.A. (S.A.) **articled clerk** aged 24 years.

TIME OF ACCIDENT : 16h30.

PATIENT'S DESCRIPTION : "I was riding down the main street. At a T-junction a lady in a car stopped at a stop street and eased forward. There were cars parked at the side of the road and her view was obscured. She came into the main road and we collided".

INTERVIEWER : The patient was not emotionally upset at the time of the interview. A very stable and pleasant young man.

POLICE REPORT : Exactly as described by the young man. The **female** driver was at fault.

HOSPITAL REPORT : Multiple bruises and a compound fracture of the leg. Spent 10 days in hospital and afterwards attended the fracture clinic at the hospital. No evidence of alcohol intake.

CASE NUMBER 18

PATIENT : A male driver of a motor car. A products manager aged 46 years.

TIME OF ACCIDENT : 00h30.

PATIENT'S DESCRIPTION : He was travelling along the highway at a fairly high speed and he crashed into something. He does not know what he had hit and regained consciousness in hospital.

SEAT BELT : Medical evidence that it was worn.

INTERVIEWER : According to the patient he was not emotionally upset at the time of the accident. His wife was not well and he was very busy at the office. Some friction existed at home because he was seldom at home.

POLICE REPORT : Patient's car went into the back of a trailer being drawn by a truck. Road well-lit, tarmac dry. Patient unconscious and seriously injured.

HOSPITAL REPORT : Concussion, fractured sternum, both ankles fractured, multiple abrasions on face and forehead. Patient spent 6 days in hospital. He smelled of alcohol when admitted.

CASE NUMBER 19

PATIENT : A female driver of a motor car aged 25 years . A secretary-receptionist .

TIME OF ACCIDENT : 03h00 .

PATIENT'S DESCRIPTION : It was raining and a 'drunk' man parked on the left side of the road facing oncoming traffic . The patient was alone in the car and she thinks she must have hit this car .

SEAT BELT : Not worn .

INTERVIEWER : The patient was emotionally upset at the time of the accident . She was very anxious because she had recently been divorced and her little girl aged three years was alone at home . During the interview the patient appeared to be on the defence . She had given a false name to the hospital staff . The patient said she took ' a few drinks ' before the accident .

POLICE REPORT : The police were not called to the scene of the accident . The driver of the parked vehicle said that when he returned to his vehicle later that morning he found his car smashed up with no evidence of the other vehicle involved . The patient did not report the accident . It could not be ascertained who had removed her vehicle from the scene of the accident .

HOSPITAL REPORT : The patient was brought in by ambulance shortly after the collision which was reported by an unidentified person . The patient was concussed and suffered cuts and abrasions on her leg . She spent 1 day in hospital and smelled of alcohol when admitted .

CASE NUMBER 20

PATIENT : A male driver of a motor car . A university student aged 18 years .

TIME OF ACCIDENT : 07h30 .

PATIENT'S DESCRIPTION : He was driving a new car and did know where all the gadgets were . It started to rain and he was looking for the windscreen wiper . He lost control of the vehicle and it left the road and

hit a tree. The accident could have been prevented if had learned before the accident where all the gadgets were.

SEAT BELT : Medical evidence showed that it was worn.

INTERVIEWER : Patient was not emotionally upset at the time of the accident.

POLICE REPORT : Accident occurred in daylight on a straight road. Patient lost control of the vehicle and collided with a tree.

HOSPITAL REPORT : Abrasions on chest, arms, legs, right hip and forehead. Spent 39 days in hospital in traction plus and further 14 days in traction at home. He suffered a dislocated hip.

CASE NUMBER 21

PATIENT : A male driver of a motor car. A technician aged 20 years.

TIME OF ACCIDENT: 23h30.

PATIENT'S DESCRIPTION : He was taking his girl-friend back to college. He got onto the highway and did not expect to find a robot on the on-ramp. He realised too late that he was approaching an intersection and he was hit by another vehicle on the driver's side. The accident could not have been prevented.

SEAT BELT : Did not wear seat belt.

INTERVIEWER : The patient had flu and he said that he was feeling 'lousy' at the time of the accident. He had not taken any alcohol but took medicine for the flu.

POLICE REPORT : Road lit, tarmac dry. Collision at a robot intersection. Patient crossed on the red. Both patient and girl-friend injured. Both drivers sober.

HOSPITAL REPORT : Abrasions on leg. Internal haemorrhage. Contused liver. Spent 1 day in hospital.

CASE NUMBER 22

PATIENT : Male driver of a motor car. A 24 year old actor and dancer who also works as a masseur.

TIME OF ACCIDENT : 04h00.

PATIENT'S DESCRIPTION : "I felt very sleepy and tired. We had dinner and some wine and afterwards went dancing. I am also a dancing instructor. I got into the car to go home and after a while stopped to have a break because I felt sleepy. When I felt better I carried on but fell asleep at the wheel. I have been working very hard lately".

SEAT BELT : Not worn. "If only I did wear it".

INTERVIEWER : Driver not emotionally upset but he was very fatigued. His massaging takes a lot of physical energy and he works until late at night. He had two previous accidents and was injured in both.

POLICE REPORT : Patient's car hit and mounted the pavement on an off-ramp and it then collided with a pillar. Tarmac dry, road lit. Vehicle extensively damaged.

HOSPITAL REPORT : Multiple lacerations and abrasions on hands, legs and face. Bruised forehead and concussion. Renal haemorrhage. Spent 5 days in hospital.

CASE NUMBER 23

PATIENT : Male driver of a motor car. Works as an internal auditor. Aged 25 years.

TIME OF ACCIDENT : 22h45.

PATIENT'S DESCRIPTION : He had been to an office party and had "only six beers". On his way home he was driving down a main road and found that he could not control the car. It felt as if he had a burst tyre. He hit a curb and the car left the road. The patient feels sure that if he had not taken the alcohol he would not have been as relaxed as he was and he would have received more serious injuries. The accident could not have been prevented even if he was sober at that time.

SEAT BELT : The patient said that he did wear a seat belt but according to the hospital record it appears that he did not wear it.

INTERVIEWER : A very unstable person who has been to many psychiatrists and psychologists for guidance. He is in debt and is worried because he has not paid his psychologists' account and cannot go and see him. Patient has a drinking problem. He had encephalitis five years ago and suffered brain damage which resulted in him having to leave university. Had two previous car accidents. Injured in both.

POLICE REPORT : Patient did not report the accident. It was however reported by another driver who reported that he (the other driver) collided with patient's car which was at the time, stationary. The police went to the scene of the accident and found both drivers to be sober. Tarmac dry, street well-lit.

HOSPITAL REPORT : Patient was so intoxicated when admitted that it was difficult to gauge whether he was unconscious or not. Spent two days in hospital. Had 'suspected' concussion and no other injuries.

CASE NUMBER 24

PATIENT : A male driver of a motor car. An insurance clerk aged 22 years.

TIME OF ACCIDENT : 02h30.

PATIENT'S DESCRIPTION : "I was on my way to Vereeniging but about half-way there, decided to return to Johannesburg. When on my way back I suddenly saw a big object in the road. I must have crashed into it because I can remember nothing thereafter".

SEAT BELT : Did not wear it because he does not believe in it.

INTERVIEWER : A withdrawn person but he said he was not emotionally upset at the time of the accident.

POLICE REPORT : Tarmac dry, road not lit. Patient collided head-on with a stationary road grader. Grader had no reflectors.

HOSPITAL REPORT : Cuts and abrasions on face and concussion. Spent 2 days in hospital. Patient smelled of alcohol when admitted.

CASE NUMBER 25

PATIENT : A male bicycle rider aged 16 years. He is a post office worker sorting mail.

TIME OF ACCIDENT : 19h00.

PATIENT'S DESCRIPTION : "The robot was green for me but changed when I was in the middle of the road. I could not have done anything to prevent the accident".

INTERVIEWER : Patient not upset at the time of the accident.

POLICE REPORT : Tarmac dry. Visibility poor. Was dusk and street lights were not working. No reflectors or headlight on cycle. Three vehicles involved in accident. Car swerving to avoid cycle crossing against red light collided with a parked vehicle.

HOSPITAL REPORT : Cuts and abrasions on face, arms and left leg. Fractured left leg. Spend 4 days in hospital and later admitted to the orthopedic section for further treatment.

CASE NUMBER 26

PATIENT : Female driver of a motor car. A re-upholstery worker aged 35 years.

TIME OF ACCIDENT : 16h00.

PATIENT'S DESCRIPTION : As the patient is deaf it was difficult to communicate with her and no description could be obtained.

SEAT BELT : Was worn according to patient.

INTERVIEWER : A very pleasant independent person.

POLICE REPORT : Patient and another driver travelling on straight roads. Daylight. Tarmac dry. Neither had taken alcohol. Other driver travelling east to west collided with patient travelling north to south. The other driver did not stop at a stop street. Road had been resurfaced and stop lines not yet painted. The one stop sign which was placed high above the road was not seen by the driver of the other vehicle.

HOSPITAL REPORT : Concussion. Spent 2 days in hospital.

CASE NUMBER 27.

PATIENT : A male driver of a motor car. A general office clerk aged 59 years.

TIME OF ACCIDENT : 18h00.

PATIENT'S DESCRIPTION : The driver of the other vehicle was very aggressive after the collision, and wanted to hit patient. Patient stopped at stop street and looked for oncoming traffic before crossing. He was hit by a car passing at a very high speed. His own car was spun around and faced the direction he came from.

SEAT BELT : There was no confirmation whether it was worn or not.

INTERVIEWER : Patient appeared very wary of answering any questions. It appeared that the patient is normally an extroverted, outspoken and aggressive person.

POLICE REPORT : It was a stop street for patient and he crossed the street without ensuring that it was safe. The tarmac was wet, it was twilight and visibility was poor.

HOSPITAL REPORT : Abrasions on left knee and fracture of left leg below the knee. Patient spent 21 days in hospital and had to attend the orthopedic clinic as an out-patient after discharge.

CASE NUMBER 28

PATIENT : A 54 year old male driver of a motor car. A manager of a firm selling motor spares.

TIME OF ACCIDENT : 01h20.

PATIENT'S DESCRIPTION : The patient was quite sure that he did not drive the car at the time of the accident. It was, however, confirmed by the police that he did. The patient said that he went to friends the previous evening. They all had a few drinks and then went to a hotel where they had more drinks. He cannot remember the accident but he admitted that, if he was really the driver, the accident could have been prevented had he not had so much to drink.

SEA ELT : No medical evidence that it was worn.

INTERVIEWER : "A depressed and overworked person. A despairing man with an obsessive fear that he may lose his job". He has a history of alcoholism and has seen his friends losing their jobs. He was emotionally upset at the time of the accident. He describes his family as 'beautiful people' whom he does not want to disappoint.

POLICE REPORT : Driver, for no apparent reason collided with a robot pole in the centre of an island. Road well-lit, tarmac dry. No mention of alcohol intake.

HOSPITAL REPORT : Concussion, internal injuries. X-rays show T.B. scars. Patient was very much under the influence of alcohol when admitted. Patient spent 3 days in hospital.

CASE NUMBER 29

PATIENT : A male driver of a motor car. A salesman aged 25 years. At present unemployed.

TIME OF ACCIDENT : 24h30.

PATIENT'S DESCRIPTION : "I was travelling from east to west along a main road. I know the road and I know that I will get all the robots green if I travel at 55km/h. Since I drove at that speed, the robot must have been green for me. The driver of the other vehicle must have crossed on the red and he collided with me". The accident would not have occurred if the other driver stopped at the robot.

SEAT BELT : Not worn because the patient does not believe it is a good thing to wear.

INTERVIEWER : A very anxious person. Has recently divorced his second wife. The patient did not know whether he was emotionally upset at the time of the accident.

POLICE REPORT : Patient ignored a red robot and collided with another vehicle at an intersection. Both drivers sober. Tarmac dry, street well-lit.

HOSPITAL REPORT : Patient had a fractured spine and multiple abrasions.

He was treated in hospital for 3 days and received medical treatment at home for a further 22 days.

CASE NUMBER 31

PATIENT : A female pedestrian. A housewife aged 60 years.

TIME OF ACCIDENT : 11h00.

PATIENT'S DESCRIPTION : I crossed the street at a pedestrian crossing. The robot was green for me. I was hit by a bus just as I had crossed and was putting my foot on the opposite pavement. At this time the robot was still green.

INTERVIEWER : The patient became deaf 5 years ago as a result of meningitis. She was, at the time of the accident, very upset after a domestic argument.

POLICE REPORT : The accident occurred in daylight at a robot controlled intersection. The bus was travelling straight and according to statements by the driver and an eye-witness the pedestrian blindly walked in front of the bus. She was crossing the street while the robot was red for her. Both driver and pedestrian sober.

HOSPITAL REPORT : Patient suffered concussion, a cut on her head and on her left leg. She spent two days in hospital.

CASE NUMBER 32

PATIENT : A male driver of a motor car. A salesman aged 23 years.

TIME OF ACCIDENT : 01h30.

PATIENT'S DESCRIPTION : The patient can only recall driving home and waking up in hospital.

SEAT BELT : Patient never wears seat belt.

INTERVIEWER : The patient had received injuries in 3 previous accidents. But, he said, these were when he was hooked on main-line drugs. He had

a very unhappy and unstable childhood and was, at the time of the accident living with a minister of religion and was under the supervision of a social worker. While in hospital there were numerous arguments between the patient and the hospital staff. He was unco-operative and made exaggerated statements about having been forced to suffer severe pain without anaesthesia. The patient said he was terrified of pain of any sort.

POLICE REPORT : The patient was travelling along a main road. He turned left, left the road and collided with a stationary vehicle parked right off the road on a side-walk. Tarmac wet, road lit and visibility good.

HOSPITAL REPORT : Patient suffered concussion and a bruised ankle. He spent 28 days in hospital and was transferred to another provincial hospital for out-patient treatment.

CASE NUMBER 33

PATIENT : A male driver of a motor car. A security officer aged 20 years.

TIME OF ACCIDENT : 20h00.

PATIENT'S DESCRIPTION : "I had a few beers during the evening. When driving home I collided with a police car. The driver of the police car ignored a red robot."

SEAT BELT : Patient said he did wear a seat belt.

INTERVIEWER : Patient lost consciousness immediately after the collision. He was upset at the time of the accident because he had recently left his wife. He was on military duty at the border and when he returned home he found that his wife had been unfaithful to him.

POLICE REPORT : Described as a "typical yellow light collision" between two vehicles. The patient did not have a driver's licence and was suspected of driving under the influence of alcohol. Empty beer bottles were found in the patient's car. An eye witness reported that two police vehicles were racing and could not stop when the robot changed. The matter was taken to court. The patient was found not guilty of driving under the influence (his blood sample was negative), not guilty of

reckless driving, and he was fined for driving without a licence.

HOSPITAL REPORT : The patient had concussion, suffered brain damage, retinal haemorrhage and multiple cuts and abrasions on his face and body. He also had a fractured arm. The patient spent 15 days in hospital and received orthopedic treatment for about three months. He smelled of alcohol when admitted.

CASE NUMBER 34

PATIENT : A male driver of a motor car. An office worker aged 21 years.

TIME OF ACCIDENT : 02h00.

PATIENT'S DESCRIPTION : He was driving from the city to his home. He saw a car coming from the opposite direction and turning across his way. He swerved, missed the other vehicle but lost control of his car and it left the road. The accident could have been prevented if he did not drive so fast and if he had not been drinking before the accident.

SEAT BELT : The patient did wear a seat belt but it snapped during the accident.

INTERVIEWER : The patient said "I was not upset at all, in fact I was feeling great after a party with my friends."

POLICE REPORT : The patient was travelling on a straight well-lit road when he lost control of the vehicle. It mounted the kerb and collided with a lamp post. The car is a total write-off. The patient had not been drinking.

HOSPITAL REPORT : Patient had concussion, a fractured vertebra and a fractured ankle. He stayed in hospital for five days and was then referred to the fracture clinic for further treatment. Patient was under the influence of alcohol when admitted.

CASE NUMBER 35

PATIENT : Male driver of a delivery type of van. A motor mechanic aged 36 years.

TIME OF ACCIDENT : 23h15.

PATIENT'S DESCRIPTION : He was on his way home after a few drinks with his friends. As he approached a road it turned yellow. He did not stop but lowered his speed. As he started to apply his brakes, he was hit from behind.

SEAT BELT : Patient did not wear a seat belt.

INTERVIEWER: Patient is married with three children. He had an argument with his wife before he left home but he was in a happy mood at the time of the accident. He had been drinking with his friends and he likes drinking in a crowd. He had had three previous motor car accidents. In two of these the cars rolled and were total write-offs. In all three accidents the 'other drivers' were at fault.

POLICE REPORT : The accident occurred at a road intersection on a straight well-lit one-way road. It was raining and the other driver skidded on the wet road and collided with patient's van. Neither parties had taken alcohol.

HOSPITAL REPORT : Patient suffered haemorrhage from the bladder. No other injuries. Patient spent one day in hospital. He was under the influence of alcohol when admitted.

CASE NUMBER 36

PATIENT : A male driver of a motor car. A standard 8 schoolboy aged 17. He did not have a driver's licence.

TIME OF ACCIDENT : 02h30.

PATIENT'S DESCRIPTION : "I hit a puddle of water and the car started to skid. I then lost control but I do not remember an impact. I had a few drinks before the accident but not too many. The accident could have been prevented if I did not drive so fast and if I did not accelerate immediately before the accident".

SEAT BELT : Medical evidence indicates that it was worn.

INTERVIEWER : Patient was in a good mood immediately before the accident. After the accident he became worried about the damage to the car and not having a licence. When the ambulance arrived, he refused , despite extensive injuries , to go to the hospital and was brought to hospital by his father a few hours later.

POLICE REPORT : Patient lost control of his vehicle and collided with a fixed object. No mention was made of alcohol intake or driving without a licence.

HOSPITAL REPORT : Concussion, seat belt injuries on stomach and forehead. Abrasions on arms and chest, cuts on both knees, fractured left ankle and chipped bones in left foot. Left hospital after one day and was treated by his own medical doctor at home.

CASE NUMBER 37.

PATIENT : A male driver of a motor car. A manager of a motor spares department, aged 25 years.

TIME OF ACCIDENT : 02h00.

PATIENT'S DESCRIPTION : "I went to my friends' wedding party and had 7 beers. This is not much for me because I normally drink that much. I lost control of the vehicle and hit a lamp post. I was extremely tired at the time and I think I might have fallen asleep".

SEAT BELT : Patient does not believe in seat belts.

INTERVIEWER : Patient was in a good mood when leaving the wedding party. He said that he works very hard and he had not had a holiday for five years.

POLICE REPORT : The accident was not reported until much later. When they arrived at the scene of the accident the patient and the vehicle had been removed and a damaged lamp post was the only evidence of the accident.

HOSPITAL REPORT : Patient suffered concussion, multiple abrasions and a fractured leg. He spent 2 days in hospital and was referred for further treatment at the fracture clinic. "He smelled of alcohol when admitted and still smelled of alcohol seven hours later".

CASE NUMBER 38

PATIENT : A male driver of a motor cycle. A printer aged 24 years.

TIME OF ACCIDENT : 15h50.

PATIENT'S DESCRIPTION : His fuel tank was nearly empty and he was driving at 50km/h trying to conserve fuel. A car behind him hooted and he looked into his rear view mirror to see who it was. In that split second of not concentrating he went into the back of a police van travelling in front of him. It was his own fault.

INTERVIEWER : Patient was not emotionally upset at the time of the accident. He likes riding a motor cycle and he often takes part in motor cycle rallies. He has had 5 previous motor cycle accidents and said "but I was mostly drunk when I had those accidents". There is no evidence that the patient had consumed any alcohol before the accident under investigation.

POLICE REPORT : The police record confirmed the patient's description of the accident.

HOSPITAL REPORT : Patient had concussion and compound fractures of left leg. Spent 6 weeks in hospital and attended the fracture clinic for a period of 4 months.

CASE NUMBER 39

PATIENT : A male car driver. A bank clerk aged 24 years.

TIME OF ACCIDENT : 22h00.

PATIENT'S DESCRIPTION : The patient said that he could not remember anything about the accident. He was, shortly after the accident, charged with driving under the influence of alcohol and preferred not to say anything about the accident.

SEAT BELT : The patient did wear his seat belt.

INTERVIEWER : Patient seemed to be a stable happily married man. He is an ex-policeman who was in the CID but left three weeks previously to join a firm for a higher salary. He was on his way home from work

when the accident occurred.

POLICE REPORT : Accident took place in a straight well-lit road. Patient was travelling straight and side-swiped another vehicle which was turning right. Tarmac dry. The other driver was turning into his own driveway after slowing down and indicating that he was going to turn, when patient overtook him on his right side. After the collision the patient's vehicle mounted the sidewalk and collided with a street light pole. A blood-test revealed an alcohol concentration of 0,22g per 100ml.

HOSPITAL REPORT : Patient had concussion and a compound fracture of the right leg. He was discharged 25 days later with his leg still in plaster, to be treated at the fracture clinic. He had to wear a specially designed ortho boot after the accident.

CASE NUMBER 40.

PATIENT : A female driver of a motor-car. At present an unemployed, private secretary aged 25 years.

TIME OF ACCIDENT : 02h30.

PATIENT'S DESCRIPTION : "I came from a disco and stopped almost dead at a red robot. I changed gear and was going forward after the lights had turned green when a car collided with mine. The car came from a side street and the driver looked very drunk".

SEAT BELT : Patient did not wear a seat belt.

INTERVIEWER : The patient was emotionally upset at the time of the accident. She has been receiving psychiatric treatment and is an unstable person. Her parents wish to place her under the care of a social worker or in Tara hospital as she is unable to look after herself. According to the hospital file she has previously been treated for attempted suicides.

POLICE REPORT : This accident has not been reported to any police station.

HOSPITAL REPORT : The patient had concussion and was treated for one day before she was discharged. Not sure whether she was under the

influence of alcohol or of drugs .

CASE NUMBER 41

PATIENT : A male pedestrian working as a storekeeper. Age 70 years.

TIME OF ACCIDENT : 07h15.

PATIENT'S DESCRIPTION : He was crossing the street when one car overtook another and "bumped him over". "If the car did not brake suddenly it would have run me over and I could have been killed." The patient uses this route every day and knows every inch of it but his eye-sight is failing. He is blind in one eye and lost over 50% of his vision in the other eye. He is also a diabetic and had an eye haemorrhage a week before the accident.

INTERVIEWER : The patient was very depressed and he was worried about his failing health and his financial problems. He has to regularly obtain insulin at a high cost. He becomes very tense when it rains because the rain gets on his glasses and he cannot see. It was raining at the time of the accident.

POLICE REPORT : No report made to the police.

HOSPITAL REPORT : Patient suffered a bruised arm and was discharged after one day in hospital.

CASE NUMBER 42.

PATIENT : A male driver of a motor cycle. Was an apprentice aircraft engineer but left six months before his final exams. He is now unemployed. Age 25 years.

TIME OF ACCIDENT : 23h45.

PATIENT'S DESCRIPTION : "I took the bend too fast. I think it was raining. I was travelling at 170km/h which was probably too fast for the bend. I always travel at a high speed because I like speed". Patient has only one leg but will not ride as a passenger. He wants to

ride the bike "to control whatever is going on".

INTERVIEWER : Patient has had at least 13 previous accidents, some of them quite serious. After an accident in 1974 his one leg was amputated. He likes to boast about the speed he rides at. He told interviewer he does not intend to work again because he does not have to. He is receiving enough money from insurance claims as a result of his accidents. He said he had a few beers before the accident. The interviewer spoke to a social worker at the hospital and ascertained that the patient has a history of main line drugging., mostly heroine and morfine, and was previously in an institution for treatment. He suffered brain damage as a result of one or more of his accidents. He had to re-learn how to write and how to walk and suffers from headaches and loss of memory. He also underwent some personality changes and became more extroverted.

POLICE REPORT : No report made.

HOSPITAL REPORT : Minor injuries. Patient under the influence of alcohol and "probably also drugs". Discharged after one day in hospital.

CASE NUMBER 43

PATIENT : A male scholar aged 17 years driving a motor car without a licence.

TIME OF ACCIDENT : 08h30.

PATIENT'S DESCRIPTION : He was driving in the Magaliesburg mountains area at 130km/h. He came around a slight bend in the road and saw a small bridge ahead. He panicked and lost control of the vehicle. He realises that the accident could have been prevented if his speed was not so high.

SEAT BELT : Did not wear seat belt.

INTERVIEWER : Patient has some family problems. His father was unemployed at the time of the accident. The patient had three previous accidents with the car but they were not serious. In one accident his foot slipped off the brake and he scratched the car. In the other two accidents he dented the car.

POLICE REPORT : No report was made to the police.

HOSPITAL REPORT : Abrasions on head and body and concussion. Patient discharged after one day.

ANNEXURE A

NATIONAL INSTITUTE FOR PERSONNEL RESEARCH
 COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH
POST -TRAUMA CONCUSSION SURVEY QUESTIONNAIRE

Questionnaire No. _____

Date _____

1. Sex Male ☐

Female ☐

2. Home language _____

3. Full description of type of work done by patient :

4. Was patient at accident :

Driver ☐

Passenger ☐

Pedestrian ☐

5. If driver, type of vehicle driven :

Motor car ☐

Moped, motor cycle
Scooter, tricycle ☐

Bicycle ☐

Van, bakkie, kombi ☐

Heavy duty or extra
heavy duty vehicle ☐

Other : Specify _____

- 2 -

6. Street address where accident took place :

7. Residential suburb of patient :

8. Patient's description of accident. (Summarise)

9. Patient's view of how accident could have been prevented if accident situation could be reconstructed :

10. For how many hours had patient been without sleep before accident ?

_____ hours

11. Patient's assessment of own health before accident :

Good

☐

Fair

☐

Poor

☐

60.

- 3 -

12. If health poor, state details : _____

13. Was patient emotionally upset immediately before accident took place ?

Yes

☐

No

☐

Not sure

☐

14. How many road accidents had patient been involved in before, whether it was his fault or not :

15. Patients highest educational level :

Std. 8 or less

☐

Matriculation

☐

Post-matriculation

☐

If post-matriculation, state qualifications :

(Next questions from hospital staff and hospital records)

16. Hospital file No. _____

17. Age of patient _____

18. Annual income of patient _____

19. Date of admission _____

20. Time of admission _____

- 4 -

21. Concussion Yes ☐
- No ☐
- Doubtful ☐
22. Length of stay in hospital days.
23. Duration of out-patient treatment days.
24. How long before patient could return to work
- days.
25. For how long was patient unconscious after the accident :
- days.
26. Pre-trauma amnesia :
- Yes ☐
- No ☐
- Not stated ☐
27. Post-trauma amnesia :
- Yes ☐
- No ☐
- Not stated ☐
28. Blood alcohol concentration %
29. Was patient brought in by :
- Private car ☐
- Ambulance ☐
30. If brought in by ambulance, address where accident took place :

62.

- 5 -

The following information to be obtained from police records.

(Check police station nearest the place of accident.)

31. Police station _____
32. Police file number _____
33. Street address where accident took place :

34. Specify geographically the place of accident, i.e. at robot
controlled intersection, stop street, bend in road, unmarked
intersection, etc.

35. Summarise description of accident according to police file.
(Note vehicle/s involved, speed and direction travelled,
visibility, i.e. rain, night-time or clear and any other
points of interest.)

B. 2-12



