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# The comprehensive care of the moderately to severely head injured patient

**Abelson, Nadine Michele**

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1. In order to establish a baseline.
2. To assess patient dependency.
3. To assess progress and recovery.

In order to obtain a comprehensive picture of the patient after injury retrospective auditing of the following records was undertaken:

1. Notes from the referring doctor/institution.
2. Accident and emergency records.
3. Medical and nursing records of the admitting unit.

The use of one record only was not possible as all the relevant information was seldom included in one document. Information not noted in the records is represented by the term 'Not recorded'.

## PRESENTATION OF FINDINGS

### PROVISIONAL DIAGNOSIS OF PATIENTS

**TABLE 5:45**

**Classification of the neurological disorders on admission**

| Neurological disorder | Number of patients (N=20) | | |
|---|---|---|---|
| | Confirmed | Query | Not recorded |
| Cerebral oedema | 13 | - | - |
| Contusion | 5 | - | - |
| Diffuse head injury | 9 | - | - |
| Fractured base of skull | 3 | - | 4 |
| Cerebrospinal fluid leak | 4 | 2 | 2 |
| Fractured vault of skull | 5 | 1 | 2 |
| Intracranial haemorrhage/haematoma | 13 | 14 | - |
| Non-specific | 1 | - | - |
| Extradural | 1 | - | - |
| Subdural | 2 | - | - |
| Subarachnoid | 2 | 1 | - |
| Intraventricular | 3 | - | - |
| Intracerebral | 4 | - | - |
| Seizure activity | 0 | - | 2 |

Nine patients suffered from a diffuse head injury;

Six of the patients with a diffuse head injury also had intracranial bleeding and five presented with cerebral oedema.

Thirteen patients presented with intracranial bleeding.

## THE PRESENCE OF ASSOCIATED INJURIES

**TABLE 5:46**

**Associated injuries on admission**

| Associated injury | Number of patients (N=20) | |
|---|---|---|
| | Confirmed | Suspected |
| Lacerations (excluding face) | 16 | - |
| Facial (including laceration) | 11 | - |
| Chest | 3 | 1 |
| Abdominal | 2 | - |
| Fractures | 9 | - |
| Spinal injury | 1 | 3 |

All 20 patients presented with associated injuries:

Seven patients presented with one associated injury.

Of these patients five patients presented with lacerations only.

13 patients suffered more than one associated injury.

Lacerations were the most frequent type of injury (16) followed by facial injuries (12) and fractures (nine).

## PRE-EXISTING DISORDERS

**TABLE 5:47**

**Pre-existing disorders of patients**

| Case number | Pre-existing disorder (N=6) |
|---|---|
| 9 | Drug abuser* |
| 10 | Gastric ulcer |
| 12 | Open heart surgery |
| 13 | Congenital clubfoot on right |
| 19 | Gastric ulcer |
| 20 | Heavy drinker* |

Six patients suffered from pre-existing conditions. At the time of selecting the patients the pre-existing conditions did not preclude the patients from the study. *In two patients pertinent information was withheld until 18 months after the head injury had occurred. At this stage it was too late to exclude the patients from the study.

## NEUROLOGICAL ASSESSMENT

### Level of consciousness

**TABLE 5:48**

**Summary of the level of consciousness on admission**

| Case number | Recording level of consciousness | | | | |
|---|---|---|---|---|---|
| | Glasgow Coma Scale score | | | | Other |
| | Eye opening | Best motor response | Best verbal response | Total score | |
| 1 | - | - | - | - | Deep coma |
| 2 | 1 | 2 | t* | 3/10 | - |
| 3 | 1 | 1 | 1 | 3/15 | - |
| 4 | - | - | - | - | Unconscious |
| 5 | 1 | 2 | 1 | 4/15 | - |
| 6 | 1 | 2 | 1 | 4/15 | - |
| 7 | 1 | 2 | 1 | 4/15 | - |
| 8 | - | - | - | 5/15 | Deeply unconscious |
| 9 | 1 | 4 | 1 | 6/15 | - |
| 10 | 1 | 4 | 1 | 6/15 | - |
| 11 | - | - | - | - | Unconscious |
| 12 | 1 | 4 | 2 | 7/15 | - |
| 13 | 1 | 3 | 1 | 5/15 | - |
| 14 | 1 | 4 | 1 | 6/15 | - |
| 15 | - | - | - | 7/15 | Unconscious |
| 16 | 2 | 4 | 2 | 8/15 | - |
| 17 | - | - | - | 4/15 | Comatosed |
| 18 | 1 | 3 | 1 | 5/15 | " |
| 19 | 1 | 5 | 1 | 7/15 | - |
| 20 | 1 | 4 | 1 | 6/15 | - |

* t = tracheostomy/endotracheal tube in situ.

There was no standard method used to record the level of consciousness, therefore auditing of records was difficult. The most popular means of recording the level of consciousness was the Glasgow Coma Scale:

14 patients were described in terms of the complete Glasgow Coma Scale;
Three patients were described in terms of the Glasgow Coma Scale Total Score only.
Three patients were described only in broad terms such as 'unconscious' or 'comatosed'.
According to the above table, all patients suffered a severe head injury when assessed after injury. 'Level of consciousness' was often confusing as the admitting officer stated that the patient was both concussed and unconscious. The use of the Glasgow Coma Scale would eliminate confusion and establish a scientific baseline for viewing progress and recovery.

### Pupil response

TABLE 5:49

Summary of the pupil responses on admission

| Case number | Recording pupil response | | | | |
|---|---|---|---|---|---|
| | Size | | Reaction | | Other feature |
| | Left | Right | Left | Right | |
| 1 | Equal | Equal | Reacting | Reacting | - |
| 2 | Equal | Equal | Reacting | Fixed | - |
| 3 | Equal and pinpoint | Equal and pinpoint | Reacting | Reacting | Positive doll's eye response |
| 4 | Constricted | Dilated | Reacting | Fixed | Cloudy |
| 5 | Equal and pinpoint | Equal and small | NR | Fixed | - |
| 6 | 1.5mm | 2.5mm | Reacting | Fixed | - |
| 7 | Midway dilated | Midway dilated | Sluggish | Sluggish | Continually roving |
| 8 | NR | NR | NR | NR | NR |
| 9 | 3mm | Dilated | Reacting | Fixed | Conjuctival haemorrhage |
| 10 | Equal and small | Equal and small | NR | Sluggish | Positive doll's eye response |
| 11 | Left larger than right | Left larger than right | Reacting | Fixed | - |
| 12 | Normal | Dilated | Reacting | Fixed | Disconjugate gaze |
| 13 | Constricted | Dilated | Reacting | Fixed | - |
| 14 | Dilated | Midway dilated | Fixed | Reacting | Roving right eye movements |
| 15 | Equal | Equal | Reacting | Reacting | - |
| 16 | Normal | Dilated | Sluggish | Fixed | Deviated |
| 17 | Equal and small | Equal and small | Reacting | Reacting | - |
| 18 | Equal | Equal | NR | NR | - |
| 19 | Equal | Equal | Reacting | Reacting | - |
| 20 | Left larger than right | Left larger than right | NR | Fixed | - |

KEY: NR = Not recorded

There was no uniform method of recording pupillary response.

In three patients the size and reaction of the pupils after injury were within normal limits.

In two patients the pupil size was equal but small and both pupils were reacting.

In five patients the size was equal and within normal limits.

In 10 cases one pupil was dilated:

Three patients: left > right.

Six patients: right > left.

In one patient both pupils were mid-dilated.

In five patients the reaction was normal .

In two patients the reaction was sluggigh unilaterally and in one patient the reaction was sluggish bilaterally.

In 11 patients one pupil was fixed:

One patient: left

10 patients: right

**Motor function**

**TABLE 5:50**

**Summary of motor function on admission (vide p229)**

There was no uniform method of recording motor function. Much of the information in relation to the patient's motor function was not recorded.

Nine patients were able to move all four limbs.

Five patients had positive Babinski responses.

Seven patients presented with extensor rigidity.

TABLE 8:50

Summary of motor function on admission

| Case number | Recording motor function | | | | |
|---|---|---|---|---|---|
| | Limb movement | Reflexes | | | Tone |
| | | General reflexes | Plantars | Gag/cough | |
| 1 | Moves all four limbs | Present and equal | Decreased | " | Equal |
| 2 | " | Brisk in all limbs | Decreased | " | " |
| 3 | Occasional non-purposeful response to pain | " | ↑ bilaterally | Present | Slightly ↑ in legs |
| 4 | Moves all four limbs | " | " | " | " |
| 5 | Moves all four limbs | Normal bilaterally | " | " | " |
| 6 | Moves all four limbs | " | ↑ bilaterally | " | ↑ on L > R and arm > leg |
| 7 | Moves all four limbs | ↑ +++ on R leg | ↑ on right | " | " |
| 8 | NR | NR | NR | NR | NR |
| 9 | Moving spontaneously non-purposefully | " | " | Present | " |
| 10 | Moves all four limbs | " | ↑ on right | " | Clonus on R ↑ |
| 11 | Moves all four limbs spontaneously | " | " | " | " |
| 12 | Moves all four limbs L > R | " | " | " | " |
| 13 | Right side non-purposeful | " | " | " | " |
| 14 | Moves L > R purposefully | " | ↑ bilaterally | " | " |
| 15 | Moves purposefully to pain | " | " | " | " |
| 16 | No movement on R arm and leg | " | " | " | " |
| 17 | Decreased movement on right side | ↑ bilaterally arms > legs | " | " | " |
| 18 | Moving R leg > L leg power ↓ | ↑ bilaterally | " | " | Spontaneous spasm ↑ |
| 19 | Moving all four limbs | Normal bilaterally | " | " | Normal bilaterally |
| 20 | Moves both sides spontaneously R > L, movement L arm, no movement L leg | ↑ on L normal on R | " | " | ↑ bilaterally |

KEY: L = left, R = right, ↑ = increased, ↓ = decreased, NR = Not recorded

**Sensory Function**

Sensory function was mentioned as being 'grossly intact' in cases number 5 and 6. There was no mention of sensory function for the other patients.

**Cerebrospinal fluid leak**

Six patients presented with cerebrospinal fluid leakage:
Ottorrhea occurred in cases 4, 17 and 20.
Rhinnorhea occurred in cases 14, 16 and 19.

## RESPIRATORY STATUS

**TABLE 5:51**

**Means of airway maintenance on admission**

| Means of airway maintenance | No. of patients (N=20) |
|---|---|
| Maintained own airway | 6 |
| Oxygen therapy prescribed:<br>Breathing spontaneously<br>T-tube circuit | 4<br>3<br>1 |
| Required assistance with airway maintenance:<br>Endotracheal intubation<br>Mechanical ventilation | 14<br>14<br>9 |

Blood gases were performed as part of the initial assessment of 12 patients. For the remainder there was no record of blood gas estimation having been undertaken.
Five patients were said to have aspirated gastric contents.

## ALCOHOL CONSUMPTION PRIOR TO THE INJURY

**TABLE 5:52**

**Record of alcohol consumption**

| Alcohol | No. of patients (N=20) |
|---|---|
| Consumed<br>Not consumed<br>Not recorded<br>N/A | 6<br>1<br>12<br>1* |

* This question was not applicable to the patient who suffered a non self-inflicted gunshot wound.

There was no record of serum alcohol estimation for any of the patients.

## MANAGEMENT OF THE PATIENTS

Aspects of management that were initiated on admission to the referring unit or the accident and emergency department of The Hospital are highlighted.

**TABLE 5:53**

**Insertion of intravenous therapy**

| Intravenous therapy | No. of patients (N=20) |
|---|---|
| Commenced | 8 |
| Not commenced | 1 |
| Not recorded | 11 |

**TABLE 5:54**

**Insertion of nasogastric drainage**

| Nasogastric tube | No. of patients (N=20) |
|---|---|
| Inserted | 5 |
| Not inserted | 8 |
| Not recorded | 12 |

**TABLE 5:55**

**Insertion of urinary drainage system**

| Urinary drainage | No. of patients (N=20) |
|---|---|
| Inserted | 8 |
| Not inserted | 1 |
| Not recorded | 11 |

Thus it can be seen that there was no uniformity in recording or managing these aspects of patient care. A set protocol of implementing and documenting care needs to be established. Information must be recorded diligently and management must be consistent.

TABLE 5:56

**Investigations performed on admission**

| Investigations | Performed (N=20) | Not performed | Not recorded |
|---|---|---|---|
| X-ray skull | 16 | - | 4 |
| X-ray chest | 16 | - | 4 |
| X-ray spine | 12 | 1 | 7 |
| CT scan | 19 | - | 1 |

16 of the cases had skull and chest X-rays.

12 patients had X-rays of the spine. X-rays of the spine were not taken in Case 14 (gunshot).

Computerised scanning was performed in 19 patients, either after admission or transfer of the patient to The Hospital.

TABLE 5:57

**Summary of the medications recorded as prescribed on admission**

| Name of medication | No. of patients (N=19)* | Not recorded |
|---|---|---|
| Analgesic (not in combination with sedatives) | 0 | 3 |
| Ant-acid/Tagamet (Cimetidine) | 4 | 2 |
| Antimicrobial agent | 7 | 2 |
| Decadron (Dexamethasone) | 14 | 2 |
| Epanutin (Phenytoin) | 10 | 1 |
| Mannitol | 4 | 1 |
| Sedation | 9 | 2 |

*There was no medication record available for Case 8.

19 patients received some form of medication.

## DISCUSSION

The presentation of findings demonstrates the fact that there was no set protocol of assessing or managing the head injured patient on admission, nor was there a standard method of recording relevant data. The introduction of an admission document similar to that used by the researcher to audit the data is recommended (APPENDIX E1). Retrospective auditing of medical and nursing records was extremely difficult as the patient records were culled and microfiched, thus important information was lost.

## 4.2 DESCRIPTION OF PATIENTS ON DAY OF OBSERVATION

Comprehensive assessment of the moderate and severely head injured patient entailed obtaining a detailed overview of the patient's status on the day of the observation. Where possible the researcher observed the patient and/or conducted an examination to assess the patient's status. (This was performed while nursing staff were not in the patient's cubicle.) It was also necessary to obtain some information (e.g. medications) from the patient's management chart.

### PRESENTATION OF FINDINGS

**TABLE 5:58**

**Length of time post head injury in relation to the period of observation**

| Time post head injury | No. of patients (N=20) |
|---|---|
| 12 - 24 hours | 3 |
| 25 - 72 hours | 6 |
| 73hrs - 7 days | 2 |
| 8 - 15 days | 6 |
| 16 - 21 days | 2 |
| ≥1 month | 1 |

Using the criteria for selection the following cases were included in the study:
11 patients who were seen within one week of the head injury;
Eight patients who were seen within eight to 21 days after the injury;
One patient who was seen one month after injury.

**TABLE 5:59**

**Maintenance of airway on the day of observation**

| Mode of airway maintenance | No. of patients (N=20) |
|---|---|
| Maintained own airway | 2 |
| Endotracheal tube | 13 |
| Tracheostomy tube | 5 |
| Ventilator | 7 |
| T-Tube/CPAP circuit | 11 |

Only two patients were able to maintain an adequate airway without some form of assistance (Patients 3 and 12).
After admission another four patients required assistance with ventilation thus:

18 patients needed assistance with airway maintenance:
Seven patients required mechanical ventilation / endotracheal tube/tracheostomy;
11 patients required assisted ventilation (T-tube/CPAP).

## NEUROLOGICAL STATUS

### Level of consciousness

Although 18 of the patients had endotracheal tubes or tracheostomies in situ the unit staff persisted in assessing the level of consciousness, by means of the Glasgow Coma Scale out of a total score of 15 ( Eye Opening : 4, Best Motor Response : 6, Best Verbal Response : 5). For these patients the scores on the Glasgow Coma Scale were calculated by the researcher out of a total score of 10 (Eye Opening : 4, Best Motor Response : 6). As the remaining two patients were not mechanically ventilated and no endotracheal tube or tracheostomy was in situ the Glasgow Coma Scale was calculated out of a total score of 15.

**TABLE 5:60**

**A comparison of the the nursing personnels' and researcher's assessment of the Glasgow Coma Scale Total Score**

| Patient's G.C.S. score total | Total G.C.S. score | | No. of patients in category | |
|---|---|---|---|---|
| | Staff | Researcher | Staff | Researcher |
| 2 | 15 | 10 | - | 3 |
| 3 | 15 | 10 | 3 | 3 |
| 4 | 15 | 10 | 3 | 3 |
| 5 | 15 | 10 | 3 | 3 |
| 6 | 15 | 10 | 3 | 4 |
| 7 | 15 | - | 3 | - |
| 8 | 15 | 10 | - | 1 |
| 9 | 15 | - | 3 | - |
| 10 | 15 | 10 | - | 1 |
| 11 | 15 | - | 2 | - |
| 6 | - | 15 | - | 1 |
| 9 | - | 15 | - | 1 |

According to the staff's calculation, nine patients had a Glasgow Coma Scale score of ≤5/15 and five patients had a Glasgow Coma Scale score ≥9/15. The researcher found the number of patients with a Glasgow Coma Scale score ≤5/10 to be 12. Thus according to the researcher, in order for the Glasgow Coma Scale to be used effectively it requires further explanation and understanding (vide p46).

Motor function

TABLE 5:61

**Status of limbs on the day of observation**

| Limbs | | Fracture | Plaster of paris | Splint | Muscle spasm | Other |
|---|---|---|---|---|---|---|
| ARM | Left | 2 | 0 | 1 | 6 | - |
| | Right | 2 | 2 | 0 | 6 | - |
| LEG | Left | 0 | 0 | 0 | 7 | - |
| | Right | 2 | 1 | 0 | 8 | 1 (Traction) |

Four patients suffered from fractured limbs:

Fractures of the upper limbs only occurred in two cases (one patient had bilateral fractures).

One patient presented with fractures of the right arm and right leg;

A fracture of the right leg occurred in one other patient.

Muscle spasm was found in nine of the patients:

Four patients presented with muscle spasm in all four limbs;

One presented with bilateral upper limb muscle spasm;

Two presented with bilateral lower limb muscle spasm;

One presented with right sided upper and lower limb muscle spasm;

One presented with spasm of the left arm and both lower limbs.

TABLE 5:62

**Assessment of motor function on the day of observation by the researcher**

| Limbs | | Motor function | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Power | | | | | Tone | | | |
| | | Normal | Decreased | Paresis | Paralysis | N/A | Normal | Decreased | Increased | N/A |
| ARM | Left | 7 | 10 | 1 | 1 | 2 | 8 | 3 | 7 | 2 |
| | Right | 6 | 8 | - | 4 | 2 | 8 | 3 | 7 | 2 |
| LEG | Left | 7 | 9 | 2 | 2 | - | 7 | 4 | 9 | - |
| | Right | 4 | 10 | 2 | 2 | 2 | 5 | 4 | 9 | 2 |

The assessment of motor function:power revealed the following:

Four patients presented with normal upper and lower limb motor function.

Upper limbs:

Two patients presented with normal power of the upper limbs;

In one patient the power of the limb that could be tested was within normal limbs;

Nine patients had decreased power bilaterally;

Two patients had bilateral paralysis;

One patient had a paralysis on the left, the other a paralysis on the right.

Lower limbs:

Two patients had normal power of the left leg and decreased power on the right leg;

Eight patients had decreased power bilaterally;

One patient had a bilateral paresis;

Three patients had bilateral paralysis of the lower limbs.

In both patients with fractures of the lower limb the power of the remaining limb was decreased.

Tone followed a similar pattern.

**Sensory function**

According to the researcher, except in four patients, the level of consciousness of the patients precluded the accurate assessment of sensory functions of hearing (patients 16 and 20), speech (patients 3 and 12), taste and vision (patients 3 and 20). Yet no sensory assessment was recorded in the patient's file.

According to the medical records, a fractured base of skull was present in one patient only. Two patients (16, 19) presented with frank cerebrospinal fluid rhinnorhea and ottorhea although on admission six patients were said to have cerebrospinal fluid leaks. With regard to the management of the cerebrospinal fluid leak no special precautions were prescribed in the records.

Cerebral oedema was stated in the medical records or latest computerised scan report as being present in 15 patients. Three had no cerebral oedema present and in two patients although a scan had been ordered findings were not stated. Intracranial pressure monitoring was not undertaken in the unit, thus confirmation of increased intracranial pressure except on clinical findings, was not possible.

Cranial nerve deficits were recorded in two patients - 14 (Cranial nerve: II) and patient 15 (Cranial nerve: VII). No other recordings of cranial nerve function or deficits were available.

**Medications**

**TABLE 5:63**

**Summary of the medications administered to the patients on the day of observation**

| Name of medication | No. of patients (N=20) |
|---|---|
| Epanutin (Phenytoin) | 13 |
| Decadron (Dexamethasone) | 10 |
| Mannitol | 1 |
| Amphogel | 9 |
| Tagamet (Cimetidine) | 2 |
| Antibiotics: | 12 |
| Ampicillin | 1 |
| Penicillin | 4 |
| Sulphadiazine | 1 |
| Other | 10 |
| Sedation: | 11 |
| Rohypnol | 3 |
| Lytic cocktail/Largactil | 5 |
| Omnopon/Morphine titration | 3 |
| Valium (Nitrazepam) | 1 |
| Muscle relaxants: | |
| Pavulon (Pancuronium) | 5 |

All patients received some form of medication.

Sedation was prescribed for 11 patients. 45.46 percent (five) of those requiring sedation also received muscle relaxants.

**Fluid balance and nutrition**

**TABLE 5:64**

**Means of feeding employed**

| Means of feeding | No. of patients (N=20) |
|---|---|
| Per os | 0 |
| Nasogastric tube | 9 |
| Jejunostomy | 3 |
| Intravenous hyperalimentation | 1 |
| No means of feeding employed | 7 |

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| Antibiotics: | 12 |
| Ampicillin | 1 |
| Penicillin | 4 |
| Sulphadiazine | 1 |
| Other | 10 |
| Sedation: | 11 |
| Rohypnol | 3 |
| Lytic cocktail/Largactil | 5 |
| Omnopon/Morphine titration | 3 |
| Vallum (Nitrazepam) | 1 |
| Muscle relaxants: | |
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| Intravenous hyperalimentation | 1 |
| No means of feeding employed | 7 |

On the day of observation:

Nine patients had nasogastric tube in situ for the purpose of feeding;

Three had a jejunostomy tube in situ;

One patient received intravenous hyperalimentation;

In seven patients no means of feeding was utilized.

Intravenous infusion was employed in 17 patients for fluid replacement and drug administration.

**TABLE 5:65**

**Means of monitoring output**

| Drainage tubes in situ | No. of patients (N=20) |
|---|---|
| Nasogastric tube | 5 |
| Jejunostomy tube | 2 |
| Urinary catheter | 11 |
| Sheath drainage system | 9 |
| Other | 1 |

In five patients nasogastric tube drainage was employed;

Two patients had recently had jejunostomy tubes inserted that were not used for feeding as yet;

All patients required assistance with urinary drainage:

11 patients required the insertion of an indwelling urinary catheter;

Nine patients required assistance with a sheath drainage system.

One patient had an underwater drain in situ.

**Patient mobility**

17 patients were confined to bed and three were permitted to get out of bed on the day of the observation.

**Use of restrainers**

**TABLE 5:66**

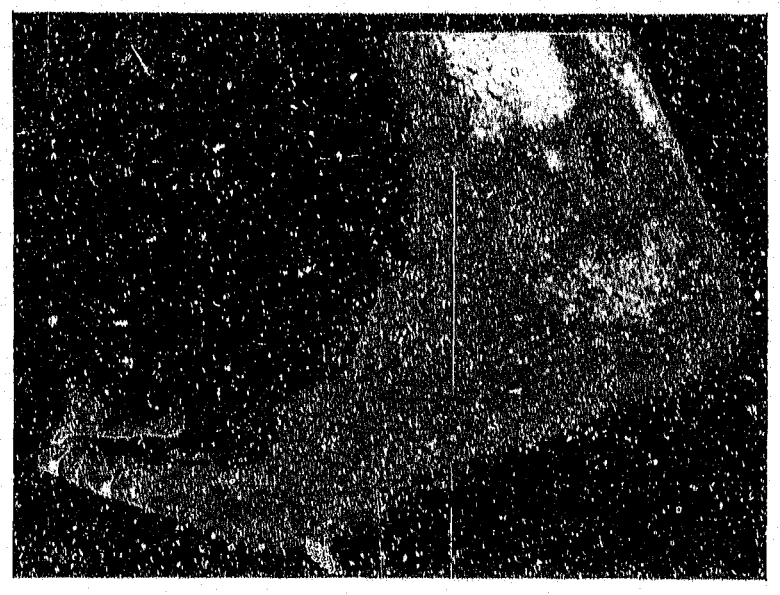
**Means of restraint**

| Means of restraint | No. of patients | |
|---|---|---|
| | Left arm (N=10) | Right arm (N=9) |
| Gloved hand | 2 | 2 |
| Finger restrainer | 5 | 5 |
| Wrist restrainer | 3 | 2 |

One or other form of upper arm restrainer was used in nine (right arm) and 10 (left arm) patients. In one patient only one arm was restrained as the other was considered to be immobile in a plaster cast. None of the patients were restrained with a leather and sheepskin restrainer. Damage caused by the use of crepe bandages alone, as a means of restraint, is evident in the following photographs. The scars are still present two years after injury.



Right forearm



Left ankle

Fig. 5:3 Scarring as a result of incorrect restraint of PATIENT 18

## SKIN LACERATIONS

These were present in 18 patients.

## PERMISSIBLE STIMULATION

**TABLE 5:67**

**Permissible stimulation**

| Means of stimulation | No. of patients (N = 20) |
|---|---|
| Allowed out of bed | 3 |
| Talking | 20 |
| Radio/Tape recorder | 7 |
| Television | 1 |

According to the researcher, only one patient (patient 3) should have been allowed out of bed as a means of stimulation. The other two patients (patients 1 and 4) should have been at bedrest because of severe associated injuries.

Talking to the patient as a means of stimulation was permitted for all patients.

Although the radio was stated as a means of permissible stimulation for seven patients, it was used for 13 patients and should have only been used for two patients (patients 3 and 4). It was not employed for patient 3.

## DISCUSSION

The data provides an overview of the patients included in the study and should be used:

1. To calculate patient dependency in order to allow for effective utilization and allocation of staff.
2. To calculate practice norms.
3. When allocating case assignment.

   Factors to be considered when calculating patient dependency, practice norms and allocating case assignment include:

   - Airway maintenance.
   - Fluid balance and nutrition.
   - Level of consciousness.
   - Medication.
   - Mobility.

- Neurological status.
- Permissible stimulation.
- Use of restraints.

4. To assess recovery.

Knowledge concerning patient status is fundamental to the organisation, planning, delegation and supervision of quality nursing. Assessment of the patient daily or per shift as a basis for the scientific approach in nursing is necessary. As Fölscher (1974) amongst others states the early management of the patient affects morbidity and mortality.

## 4.3 PATIENT DEPENDENCY RATING

The calculation of patient dependency on the day of observation assisted with the formulation of patient care standards for the 20 individual patients.

**TABLE 5:68**

**Summary of dependency rating per patient**

| Level of dependence | Case number | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Assessment of patient status | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Activities of daily living | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Intervention | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Drug therapy | 3 | 3 | 1 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 2 | 4 | 3 | 4 | 4 | 4 | 4 |
| Psychosocial needs | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Discharge planning/Rehabilitation | 2 | 3 | 3 | 4 | 3 | 3 | 2 | 4 | 3 | 3 | 4 | 4 | 1 | 4 | 3 | 3 | 3 | 3 | 3 | 4 |
| TOTAL SCORE | 20 | 21 | 17 | 23 | 22 | 22 | 21 | 23 | 22 | 22 | 23 | 22 | 21 | 21 | 22 | 21 | 22 | 22 | 22 | 23 |

(Use in conjunction with APPENDIX E3.1, E3.2).

TABLE 5:69

**Classification of patients according to the dependency rating**

| Dependency rating | Case number | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Category I | | | | | | | | | | | | | | | | | | | | |
| Category II | | | | | | | | | | | | | | | | | | | | |
| Category III | | | • | | | | | | | | | | | | | | | | | |
| Category IV | • | • | | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |

All patients included in the study required intensive, skilled nursing on a 24 hour basis (APPENDIX E3.1).

## 4.4 PATIENT CARE STANDARDS

Patient care standards for the 20 individual patients were established by utilizing :
The assessment of the patient on the day of admission;
The assessment of the patient on the day of observation;
The patient dependency rating.

The patient care standards (i.e. the ideal prescription for care) are regarded by the researcher as the care that constitutes safe, effective, therapeutic practice that is required by head injured patients according to their individual status and self-care ability i.e. what should be prescribed for the patient in terms of both modalities and frequency of care. (For further discussion of patient care standards vide p155).

TABLE 5:70
**Summary of the patient care standards per patient as established for the day of observation by the researcher (vide p244)**

According to the patient care standards 95 percent of the patients required hourly assessment of patient status. In relation to patient care, all patients in which the modality of care was relevant required two hourly eye care, oropharyngeal care and bronchial toilet and six hourly urogenital care. As far as patient independence was concerned mobility and exercise therapy should have been performed two hourly or more frequently, whereas motivation and stimulation, communication and the promotion of independence should have been performed continuously within the scope of the particular shift.

TABLE 5:70

Summary of the patient care standards per patient as established for the day of observation by the researcher

| Case number | Dependency rating | Modality of care (to nearest hour) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Patient assessment | | | | | | | | | Patient care | | | | | Patient independence | | | | |
| | | Neurological assessment | | | | | Vital signs | | | | | | | | | | | | | |
| | | L.O.C.* | Pl* | Ll* | O.S.F.* | S.A.* | BP* | P* | R* | T* | E* | O* | B* | U* | O.o.P.* | Mob* | Ex* | Com* | M&S* | P.o.l.* |
| 1 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 2 | IV | 1 | 1 | 1 | - | prn | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 3 | III | 6 | 6 | 6 | - | - | 4 | 4 | 4 | 4 | 2 | 2 | N/A | 4+prn | 2 | 2 | 2 | Continuously | | |
| 4 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 5 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 1-2 | 6 | 2 | 2 | 2 | Continuously | | |
| 6 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 7 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 8 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 9 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 10 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 11 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 12 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | N/A | 6 | 2 | 2 | 2 | Continuously | | |
| 13 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 14 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 15 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 16 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 17 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 18 | IV | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 19 | IV | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |
| 20 | IV | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | Continuously | | |

* See list of abbreviations p (iv)

## 4.5 ASSESSMENT OF THE PRE-INJURY STATUS OF THE PATIENTS AND FAMILY KNOWLEDGE

The assessment of the pre-injury status of the patient was concerned primarily with the home, psychosocial, religious, cultural, educational and economic environment of the patient and significant others prior to the injury as well as the extent of the family's knowledge.

### PURPOSE

1. Pre-injury assessment was required:
a. To establish a baseline.
b. For comparative purposes.
c. To assess post-injury recovery.
2. To establish educational needs of the family.

**Thus with this in mind the pre-injury assessment of the 13 patients alive 12 months after injury is described.**

### FAMILY ENVIRONMENT

**TABLE 5:71**

**Marital status of patients**

| Marital status | No. of patients (N=13) |
|---|---|
| Single | 8 |
| Married | 2 |
| Common-law wife | 1 |
| Divorced | 2 |

**Family**

12 patients had stable family relationships, getting on well with parents and family members;

Five patients got on well with parents and parents-in-law;

Six patients got on well with children;

Four of the patients had children.

TABLE 5:72

**Religious affiliation of patients**

| Sect | No. of patients (N=13) |
|---|---|
| Apostolic | 4 |
| Congregational Church | 1 |
| German Protestant Church | 1 |
| Methodist | 2 |
| Nederduitse Gereformeerde Kerk | 3 |
| Roman Catholic | 2 |

All 13 patients were of the Christian faith.

**Home conditions**

TABLE 5:73

**Place of residence prior to injury**

| Accommodation | No. of patients (N=13) |
|---|---|
| Lived in: | |
| Own accommodation | 9 |
| Rented accommodation | 4 |
| Lived in a house | 11 |
| Lived in a flat: | 2 |
| With lift | 1 |
| With stair access only | 1 |
| Accommodation on one level | 13 |

Seven patients had no domestic help in the home;

Five patients had one full-time domestic helper in the home;

One patient had a part-time helper.

TABLE 5:74

**Living arrangements**

| Lived with | No. of patients (N=13) |
|---|---|
| Parents | 6 |
| Spouse | 2 |
| Common-law wife | 1 |
| Family | 3 |
| Friends | 1 |

## ASSESSMENT OF PERSONALITY, MOOD AND MOTIVATION

**TABLE 5:75**

**Description of patient's personality and mood**

| Mood | No. of patients (N=13) |
|---|---|
| Aggressive | 2 |
| Cheerful | 6 |
| Depressed | 1 |
| Extrovert | 1 |
| Introvert | 1 |
| Moody | 3 |
| Pleasant | 9 |

The majority of patients were described as pleasant and cheerful prior to the injury.

**TABLE 5:76**

**The assessment of motivation in terms of betterment, enjoying life and desire to achieve needs**

| Level of motivation | Betterment (N=13) | Enjoyment (N=13) | Needs (N=13) |
|---|---|---|---|
| Unmotivated | 1 | - | 1 |
| Slightly motivated | - | 2 | - |
| Normally motivated | 5 | 4 | 4 |
| Highly motivated | 7 | 7 | 8 |

12 patients have been described as persons in whom the motivational force is strong;

12 are determined types of people;

11 will try and do as well as possible.

## PERSONAL PRACTICES

### Alcohol consumption

Six patients consumed alcohol and were described as social drinkers.

18 months after the injury (when the family was facing severe problems), one patient was described as a heavy drinker.

Six patients did not consume alcohol.

The question was not applicable to case 14.

### Cigarette consumption

Eight patients smoked regular cigarettes/pipe.
One patient smoked mandrax and marijuana. This fact was only discovered 18 months after the injury.

### Medications

No patients were on prescribed drugs.
One patient used non-prescription addictive drugs. This fact was only discovered 18 months after the injury.

## SOCIALISATION PATTERN

**TABLE 5:77**

**Frequency of socialisation**

| Frequenoy | No. of patients |
|---|---|
| 1 per week | 1 |
| 2 x week | 5 |
| 3/4 x week | 4 |
| Daily | 1 |
| Weekends only | 2* |

* This applied to the students who attended school.

All 13 cases got on well with friends, eight of the patients had many friends and 10 patients led an active social life.

**TABLE 5:78**

**Involvement of patients in community work**

| Activity | No. of patients (N=4) |
|---|---|
| Civil defence | 1 |
| Religious organisations | 2 |
| Scouts | 1 |

## HOBBIES OF PATIENTS

All 13 patients had one or more hobbies. The frequency of participating in the hobby varied from patient to patient.

TABLE 5:79

**Hobbies of patients**

| Males | | Females | |
|---|---|---|---|
| Hobby | No. of patients (N=10) | Hobby | No. of patients (N=3) |
| Chess | 1 | Crocheting | 1 |
| Darts | 1 | Films | 2 |
| Electronics | 1 | Gardening | 1 |
| Films | 3 | Needlework | 1 |
| Fishing | 1 | Reading | 3 |
| Gardening | 2 | Television | 2 |
| Lego | 1 | Writing | 1 |
| Motorcycles | 2 | | |
| Motor cars | 4 | | |
| Music | 3 | | |
| Reading | 4 | | |
| Repairs | 1 | | |
| Stamp collecting | 1 | | |
| Television | 4 | | |
| Woodwork | 2 | | |

SPORTS ACTIVITIES

Nine patients (seven males and two females) participated in sports activities.

TABLE 5:80

**Sports undertaken**

| Sport | No. of patients (N=9) |
|---|---|
| Body building | 1 |
| Golf | 1 |
| Gymnastics | 1 |
| Jogging | 1 |
| Netball | 1 |
| Roller skating | 1 |
| Rugby | 1 |
| Soccer | 2 |
| Swimming | 3 |
| Tennis | 1 |

TABLE 5:81

**Frequency of participation in sport**

| Frequency | No. of patients |
|---|---|
| 1 per week | 1 |
| 2/3 per week | 5 |
| Daily | 1 |
| At school only | 1 |
| Occasionally | 1 |

## EDUCATIONAL ASSESSMENT

**TABLE 5:82**

**Educational standard achieved**

| Educational standard | No. of patients (N=13) |
|---|---|
| Standard 5 | 1* |
| 6 | 1 |
| 7 | 1 |
| 8 | 4 |
| 9 | 1* |
| 10 | 5 |

Two patients were scholars:

One was in primary school*;

One was in secondary school*.

11 patients have completed their schooling:

- One patient was involved in military service.
- Six other patients have undergone further education:

  Four at Technikon;

  Two at College.
- Two patients were undertaking tertiary education:

  One at Technikon;

  One at Nursing College.

## ECONOMIC ASSESSMENT

**TABLE 5:83**

**Employment status**

| Employment | No. of patients (N=13) |
|---|---|
| Employee | 6 |
| Self-employed | 1 |
| Military training | 1 |
| Studying | 4 |
| Unemployed | 1 |

TABLE 5:84

**Occupation of patients**

| Occupation | No. of patients (N=13) |
|---|---|
| Cabinet maker | 1* |
| Chef | 1* |
| Electrician | 1* |
| Housewife | 1 |
| Mechanic | 1 |
| Military training | 1 |
| Salesman | 1** |
| Storekeeper | 1* |
| Student | 3 |
| Student nurse | 1* |
| Welder/Driver | 1* |

* Six of the patients will and ** one may lose their job as a result of the accident.

**Economic situation of patients**

Economic assessment of the patient and family circumstances revealed the following:

Seven of the patients were breadwinners.

One patient was in the defence force.

Five patients obtained financial assistance from their families:

- Four patients were studying.
- One patient obtained funds from her spouse.

10 patients belonged to a Medical Aid Scheme.

No patient had a personal accident/death/disability insurance policy.

TABLE 5:85

**Income per month**

| Scale | Patient income (N=13) | Overall family income (N=13) |
|---|---|---|
| Pocket money | 1 | 1 |
| < R200 | 1 | 1 |
| R200 - 400 | 1 | 1 |
| R401 - 600 | 1 | 1 |
| R601 - 800 | 1 | 1 |
| R1 001 - 1 200 | 2 | 2 |
| R1 601 - 2 000 | 2 | 2 |
| R2 501 - 3 000 | 1 | 1 |
| > R3 001 | - | 1 |
| Not applicable | 3* | 2* |

* Cases 16 - housewife
14/16 - students

The majority of the patients were in the lower income group; an important factor to consider with regard to available resources of the family for rehabilitation of the patient. The daily cost of hospitalisation varied according to the income of the patient.

## INFORMATION PROVIDED

Communication with the patients and family is an important aspect of care and rehabilitation. All 13 families were told about the patients condition. One family member stated the explanation by the doctor was "very good". The most explaining was done by combined medical and nursing staff (six), nurses (four), medical staff (two), combined medical staff and physiotherapist (one). The families believed that sufficient information and explanation was supplied in eight cases, whereas insufficient information and explanation was supplied to five families.

**TABLE 5:86**

**Aspects of information provided to families**

| Situation | No. of patients (N=13) |
|---|---|
| Present condition | 13 |
| Chances of recovery | 6 |
| Rehabilitation | 2 |
| Hospital support group | 0 |
| HEADWAY | 0 |

Areas that the families thought needed more explanation included:

The care needed:

- Two families believed that they should have been allowed to assist with the patient's care.
- 12 families stated that they would like to learn more about the care and rehabilitation of head injured patients.

Management of patient after discharge.

The patient's prognosis.

Progress.

The recovery process.

Stimulation of the patient.

**Social services**

No referrals to the support group or HEADWAY were made, nor were information booklets available.
Seven families stated their interest in joining a club for head injuries;
Three stated that distance precluded their attending meetings;
Three were not interested.

## 4.6 PATIENT RECOVERY

The assessment of the patient after the injury included such factors as hospitalisation, physical, psychological, social, educational, economic recovery, knowledge and rehabilitation.

**SAMPLE**

The recovery of 13 patients alive 12 months after injury was assessed.
Three patients died while still in The Hospital and another four died within three months of being transferred from The Hospital. The recovery of the patients at three months, six months, 12 months and two years after injury will be discussed simultaneously.

**PRESENTATION OF RESULTS**

**TABLE 5:87**

**Recovery of patients based on the Glasgow Outcome Scale**

| Glasgow Outcome Scale Category | Length of time after injury | | | |
|---|---|---|---|---|
| | On discharge (N=20) | At 6 months (N=20) | At 12 months (N=20) | At 2 years (N=20) |
| Good recovery | - | 4 | 4 | 3 |
| Moderate recovery | - | 5 | 6 | 7 |
| Severe disability | 15 | 4 | 3 | 3 |
| Persistent vegetative state | 2 | - | - | - |
| Dead | 3 | 7 | 7 | 7 |

The outcome category of one patient improved 12 months after injury. Except for PATIENT 9 the remainder of the patients were in the same category at six months, 12

months and two years after injury (vide p266). This supports the belief of Jennett, et al. (1977) that patients seldom alter their outcome category after six months. 35 percent of the patients (7) included in the study died. This is similar to the findings of 36 percent of Minteer-Convery (1985: 215).

**TABLE 5:88**

**Placement (on discharge from the trauma unit)**

| Placement | Placement after injury | | |
|---|---|---|---|
| | Primary (N=17) | Secondary (N=13) | At 2 years (N=13) |
| Own home | - | 2 | 3 |
| Home of relative | 3 | 7 | 7 |
| Home of friend | - | - | 1 |
| Interhospital transfer | 10* | 1 | - |
| Edenvale rehabilitation unit | 2 | 1 | - |
| Kensington Clinic | 2 | - | - |
| Comprehensive rehabilitation unit | - | 2 | - |
| No fixed abode | - | - | 2 |

* These two patients stayed in the unit for less than one week and were then transferred (one to a provincial hospital and the other home) at the request of the family.

Primary placement

(Refer to Chapter 4 p131 for definitions)

14 (70 percent) patients were transferred to other hospitals on discharge from the trauma unit.

Three patients (15 percent) were discharged home. One patient was discharged to his parents overseas.

Secondary placement

On discharge from the primary placement:

One patient, a foreign national, went to a rehabilitation centre overseas for further assessment and training.

Two patients were sent to progressive rehabilitation facilities in South Africa (Edenvale Hospital (one) Military Hospital (one)).

10 patients attended no comprehensive co-ordinated rehabilitation facility.

**TABLE 5:89**

**Length of stay in primary and secondary placement centres**

| Case number | Length of stay | |
|---|---|---|
| | Primary placement | Secondary placement |
| 1 | - | - |
| 2 | Died - 9 weeks | - |
| 3 | Died - 11 weeks | - |
| 4 | - | - |
| 5 | Died - 8 weeks | - |
| 6 | 5 days | 5.5 months |
| 7 | 4 weeks | 3 months |
| 8 | 3 weeks | Until present |
| 9 | 6 weeks | 6 months |
| 10 | Died - 6 weeks | - |
| 11 | 3 days | 7 months |
| 12 | Until present | - |
| 13 | - | - |
| 14 | 4 days | Until present |
| 15 | 6 weeks | Until present |
| 16 | 4 weeks | 3 months |
| 17 | 6 weeks | Until present |
| 18 | 8 weeks | Until present |
| 19 | 3 days | Until present |
| 20 | 4 weeks | 8 weeks |

The average daily programme in the above varied from:

A comprehensive organised therapeutic rehabilitation programme;

A basic care programme with little/no therapeutic rehabilitative input;

A home programme with/without therapeutic rehabilitative input.

## ATTENDANCE AT OUT-PATIENT FACILITIES

**TABLE 5:90**

**Attendance at out-patient facilities**

| Health personnel | No. of patients (N=4) |
|---|---|
| Nurse consultant | 0 |
| Occupational therapist | 2 |
| Physiotherapist | 3 |
| Psychologist | 1 |
| Social worker | 1 |
| Speech therapist | 2 |

Of the 10 patients who did not attend a live-in rehabilitation facility four patients attended out-patient services after discharge from the secondary placement. The frequency of attendance varied from one to three times per week.

## HEALTH PERSONNEL INVOLVED IN THE CARE OF THE HEAD INJURED PATIENT

**TABLE 5:91**

**The involvement of the health professionals at various intervals since injury**

| Health personnel | Time after injury (N=13) | | |
|---|---|---|---|
| | 3 months | 6 months | 12 months |
| Dietician | 1 | 1 | 4 |
| Occupational therapist | 8 | 5 | 2 |
| Physiotherapist | 12 | 7 | 3 |
| Psychologist | 3 | 2 | 2 |
| Rehabilitation liaison officer | 0 | 0 | 0 |
| Religious minister | 3 | 5 | 1 |
| Social worker | 3 | 2 | 2 |
| Speech therapist | 4 | 3 | 3 |

Two of the health professionals who attended to the patient were private professionals, the others were employed by provincial institutions. The health professionals attending to the patient were referred by other health personnel, family and/or friends.

## FORMAL ASSESSMENT OF THE PATIENT

**TABLE 5:92**

**Formal assessment of the patients since injury**

| Speciality | No. of patients (N=13) |
|---|---|
| Occupational therapist | 4 |
| Physiotherapist | 5 |
| Psychologist | 4 |
| Social worker | 3 |
| Speech therapist | 3 |

Of the 13 patients only the three who attended the live-in rehabilitation facility had been formally, comprehensively assessed. Some of the other patients have undergone

assessments in the various specialities. The progress of only one patient was documented by the physiotherapist in the patient's file.

## FAMILY EDUCATION

## INFORMATION ON TRANSFER

Two families stated that they were not informed of the patients pending transfer.
11 families were informed of the patients pending transfer/discharge from The Hospital:
Seven were informed by medical and four by nursing personnel;
Seven families were informed timeously of the patients discharge.

**TABLE 5:93**

**Detail of information**

| Detail | No. of families (N=11) |
|---|---|
| The place of transfer | 11 |
| The reason for transfer | 11 |
| The condition of the patient | 9 |

**TABLE 5:94**

**Preparation of the families and significant others prior to discharging the patients from The Hospital**

| Topic | No. of families (N=12) |
|---|---|
| Eating | 3 |
| Motivation of the patient | 4 |
| Medication | 4 |
| Personal hygiene | 2 |
| Personality/behavioural changes | 3 |
| Rehabilitation of the patient | 3 |
| Sleeping | 2 |
| Walking | 7 |

For one patient who was to be transferred overseas, where language was a barrier, the local general practitioner offered to explain the above to the family.
According to the families, pre-arranged meetings (four) and informal meetings (two) were the methods used to discuss the information. No special arrangements were made for six families.

## MOTIVATION AND STIMULATION OF THE PATIENT

### TABLE 5:95

**Personnel who advised the families to stimulate the patients**

| Person | No. of families (N=13) |
|---|---|
| Registered Nurse | 3 |
| Paramedical professional | 1 |
| Friend | 1 |

### TABLE 5:96

**Means employed by the families to stimulate the patients**

| Means of stimulation | No. of families (N=13) |
|---|---|
| Crafts | 1 |
| Dice | 1 |
| Family members | 2 |
| Playing games | 7 |
| Playing the radio/tape recorder | 11 |
| Reading to the patient | 4 |
| Talking to the patient | 13 |
| Television | 1 |
| Using magazines, books & pictures | 7 |
| Using photographs | 4 |

In eight cases no one advised the family on how to stimulate the patient.

The families used religion (10), children (two), family (eight) and other aspects (five) as motivating factors.

### Patient's responses

### TABLE 5:97

**Summary of the time of the patient's first responses**

| Time post injury | Response | | |
|---|---|---|---|
| | First time response (N=13) | Opened eyes (N=13) | Tried to speak (N=13) |
| < 3 days after injury | 1 | - | - |
| 4 - 7 days | 2 | 2 | 2 |
| 1 - 2 weeks | 4 | 6 | 2 |
| > 2 - 3 weeks | 4 | 2 | 3 |
| > 3 - 4 weeks | - | - | 3 |
| > 4 - 6 weeks | - | 1 | 1 |
| > 6 weeks | 2 | 2 | 2 |

**TABLE 5:98**

**The nature of the patient's first response to the family/significant others**

| Response | No. of patients (N=13) |
|---|---|
| Squeezed hand | 7 |
| Opened eyes | 2 |
| Moved limbs | 1 |
| Recognised people | 2 |
| Other | 1 |

## MEDICATION

Six of the patients were taking medication (12 months and two years after injury):

Five patients were taking anti-convulsants;

One patient was using Cerebral Forte and Nootropil;

One patient continued taking Mandrax and marijuana 18 months after the injury.

## INDEPENDENCE, MOBILITY AND TRANSPORT

**TABLE 5:99**

**Means of transport used by the patients (12 months after injury)**

| Transport used | No. of patients (N=13) |
|---|---|
| Drives motor car/motorcycle | 5 |
| Some-one else transports the patient | 9 |
| Transport provided by one of social services | 0 |
| Municipal bus | 1 |
| Walks | 7 |

Two patients were under age.

One patient had applied for a learners license.

In one case the doctor refused permission for the patient to drive until two years after injury. Permission had not been sought in the other cases.

Five patients drove their or someone else's motorcar or motorcycle and felt confident when driving.

Only one of these patients received formal driving instruction and was retested since the time of the injury.

Of those who were driving, all patients believed their vision, limb control, co-ordination, concentration and knowledge of road safety to be within normal limits, although formal testing had not occurred.

## KNOWLEDGE OF HEAD INJURY

All of the patients have been told that they have suffered a head injury.

12 patients were told the complete story and one was told some of the story.

12 of the patients have sufficient insight and reasoning ability to understand the ramifications and consequences of the head injury. The extent of the injury precludes this understanding in one patient.

**TABLE 5:100**

**Variations in the patients' attitude to the injury (12 months after injury)**

| Attitude | No. of patients (N=13) |
|---|---|
| Recovery will be slow | 2 |
| Will return to normal | 2 |
| Try and achieve the best possible | 8 |
| No interest in recovery | 1 |

12 of the patients accepted the current situation;

One patient had no interest in recovery.

12 of the families had a positive attitude to the patients recovery.

## PATIENT RECOVERY

**An overall summary of the patients' physical, psychological, emotional, cognitive, social, educational and economic abilities at three months, six months, 12 months and two years after injury is presented.**

It is a known fact that patient recovery depends on the actual injury, the level of consciousness on admission (TABLE 5:48), the individual and other factors (vide p80). As all patients included in the study suffered from a severe head injury and were exposed to varying rehabilitative circumstances patient recovery is described per patient. Thereafter overall recovery is described.

PATIENT 6

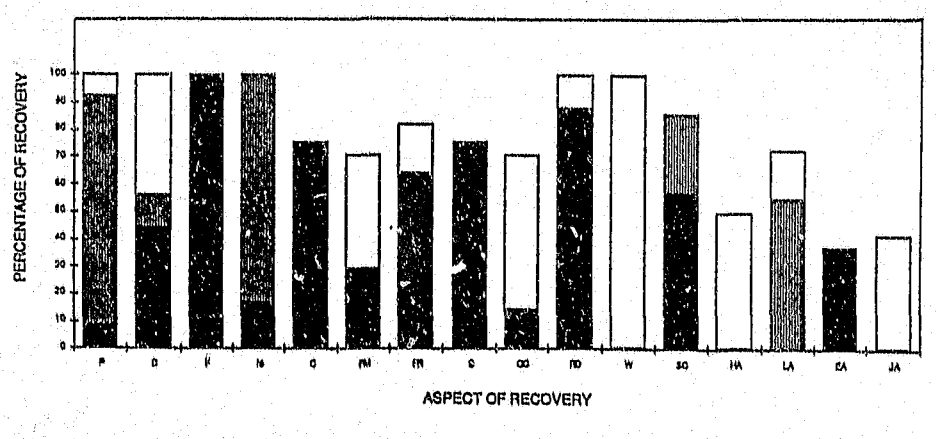



**Fig. 5:4.1 Recovery of PATIENT 6 at three, six and 12 months after injury (expressed as percentages)**

| KEY | PATIENT RECOVERY |
|---|---|
| ■ | Three months |
| ■ | Six months |
| □ | 12 months |

**Key:**

| | | | |
|---|---|---|---|
| P | Personal care | GC | General cognitive skills |
| D | Dressing | RD | Reading |
| F | Feeding | W | Writing |
| M | Mobility | SC | Social assessment |
| C | Communication | HA | Home activities |
| PM | Personality and mood assessment | LA | Leisure activities |
| FR | Family relationships | EA | Economic assessment |
| S | Sleeping | JA | Employment/Job/School assessment |

These abbreviations apply throughout this section of the study.

This patient attended a live-in rehabilitation facility where formal assessment of psychological, home and employment status of the patient was undertaken. It must be noted that recovery occurred in a step-like fashion. Some recovery e.g. personal care and dressing was noted to take place at all three stages i.e. three, six and 12 months

after injury; whereas in other aspects of recovery maximum recovery was achieved by three months (feeding, communication and economic assessment). Recovery of other aspects such as mobility, personality and mood and socialisation occurred within the first six months after injury, thereafter no further recovery in relation to these aspects occurred. Another interesting phenomenon is that certain aspects of recovery such as family relationships, cognitive skills and reading demonstrated an improvement in ability at three and 12 months but not at six months after injury. Writing, home and job ability peaked at 12 months after injury. Prior to this stage no noticeable improvement was demonstrated. This pattern of recovery is evident in other patients as well. 12 months after injury PATIENT 6 had made a full recovery in as far as self-care activities, reading and writing were concerned. Aspects of recovery where more than an 80 percent recovery occurred were family relationships and social assessment. Communication achieved 75 percent within the first three months. Alteration in the tone, volume and speed of talking remained a problem. The patient never returned to his former psychological status. Psychological alteration relating to frustration, irritability, depression and mood changes occurred. After 12 months the sleeping pattern of the patient had not returned to normal, the patient woke frequently at night. The patient had not acquired new skills and his memory remained a problem 12 months after injury. The poorest aspects of recovery were those related to economic and job assessment. The lack of economic and job related recovery is of major concern as the patient is a young adult male desperate to return to work.

Maximum recovery of the patient took place within 12 months after injury particularly within the first three and by 12 months after injury:
Seven aspects of recovery peaked within three months although 100 percent recovery was not achieved in all aspects;
Four within six months;
and four within 12 months.

**RECOVERY CATEGORY: MODERATE RECOVERY**

18 months after injury the patient was still unable to find any form of employment.
Advice given to the patient on consultation:
In order to seek placement contact:

- Association for the disabled.
- Neuropsychologist.
- Department of Manpower.

25 months after injury, as the patient was a British citizen, the family decided to return to Britain after 24 years in South Africa as they believed through the National Health Service and government departments placement there would be easier.

PATIENT 7

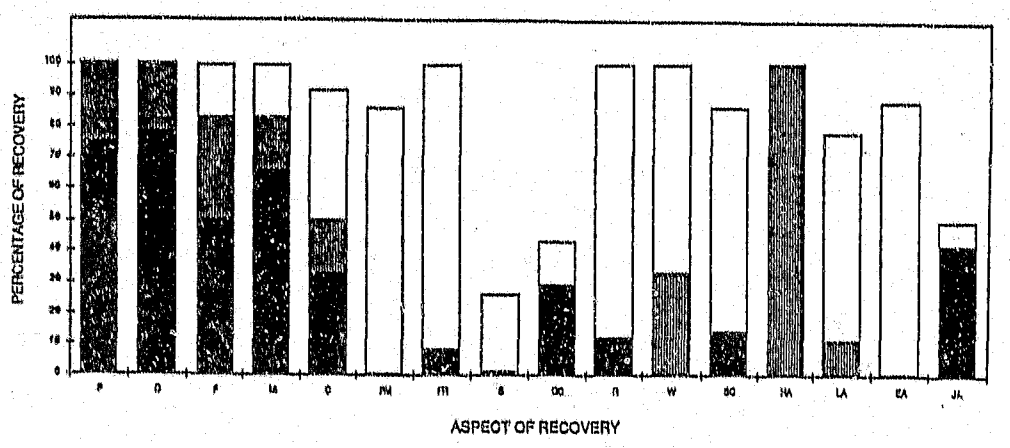



**Fig. 5:4.2 Recovery of PATIENT 7 at three, six and 12 months after injury (expressed as percentages)**

This patient attended a live-in rehabilitation facility overseas where formal assessment of the patient based on a holistic approach occurred. By 12 months he achieved 100 percent recovery in eight aspects, mainly in relation to self-care, reading, writing, family relationships and home activities. The recovery of three aspects (feeding, mobility, communication) occurred in a step-like fashion at three, six and 12 months. The recovery of other spheres occurred on a two stage basis either three and six months (family relationships, cognitive skills, social, reading, job assessment) or three and 12 months (writing, leisure activities) or six and 12 months (personal care, dressing). The majority of this patient's recovery occurred within six months of the injury. Aspects of recovery where full recovery was not achieved included:

Communication: The speed of talking altered in that it was much slower;

Personality and mood: The patient had undergone a personality change and had mood swings;

Cognitive problems relating to attention span, concentration and memory occurred at 12 months after injury. The patient had not acquired new learning skills and did not learn new skills. This patient returned to 86 percent of his former social self. An important point to note as many of the head injured patients become socially isolated after injury. Another aspect where this patient has shown good recovery is in the economic assessment. At 12 months there had been no improvement in the employment situation beyond that of six months.

**RECOVERY CATEGORY: GOOD RECOVERY.**

18 months after injury the patient returned to South Africa and was employed by his previous employers but not in the same capacity.

Two years after injury the patient was employed in his previous capacity.

PATIENT 8

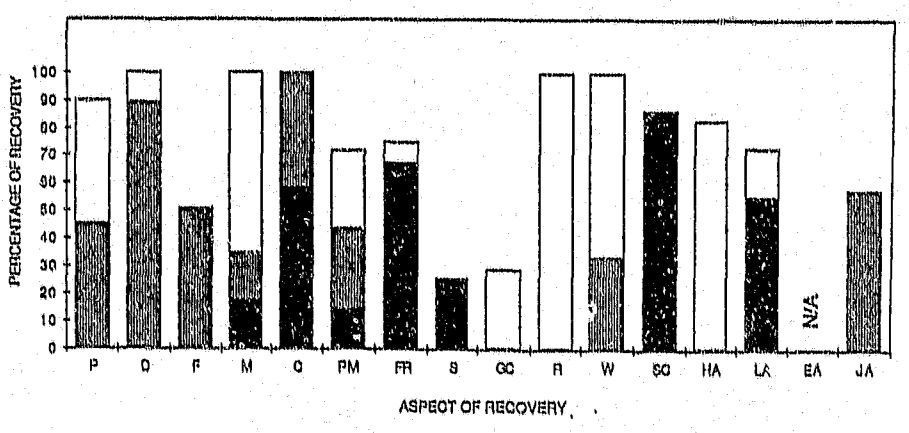



**Fig. 5:4.3 Recovery of PATIENT 8 at three, six and 12 months after injury (expressed as percentages)**

PATIENT 8 did not attend a rehabilitation facility but was rehabilitated by a devoted family in favourable economic, social and environmental circumstances. 100 percent recovery by 12 months occurred in the following: dressing, mobility, communication, reading and writing. Three monthly step-like recovery occurred in mobility, personality and mood assessment. Most of this patient's recovery occurred between six to 12 months after injury. Personal care achieved 90 percent recovery. At 12 months the patient was not concerned about her appearance, cleaning her nails and was unable to hold a fork, spoon and knife correctly. Therefore messy eating was a problem. The family encouraged her not use her fingers but to persist with eating utensils. Sleeping ability and cognitive skills remained a problem. In particular cognitive skills, yet this student returned to school eight months after injury after no formal neuropsychological assessment had been undertaken. She was unable to cope and six months later left school. Personality and mood have not recovered fully nor have family relationships. She was forced to participate in house work and achieved well in this aspect of recovery. As she had been a keen sportswoman (swimming) she returned to gym and enjoyed leisure activities (73 percent). As this patient was a student, economic recovery was not assessed.

**RECOVERY CATEGORY: MODERATE RECOVERY.**

Two years after injury she was able to use the utensils correctly.
Two years after injury she was unsure of her abilities and did not wish to pursue a career; rather to find employment elsewhere. The patient was very dependent on the family, only after two years she started to gain a measure of independence.

The patient was referred by the researcher:

- For neuropsychological and work assessment;
- To HEADWAY.

PATIENT 9

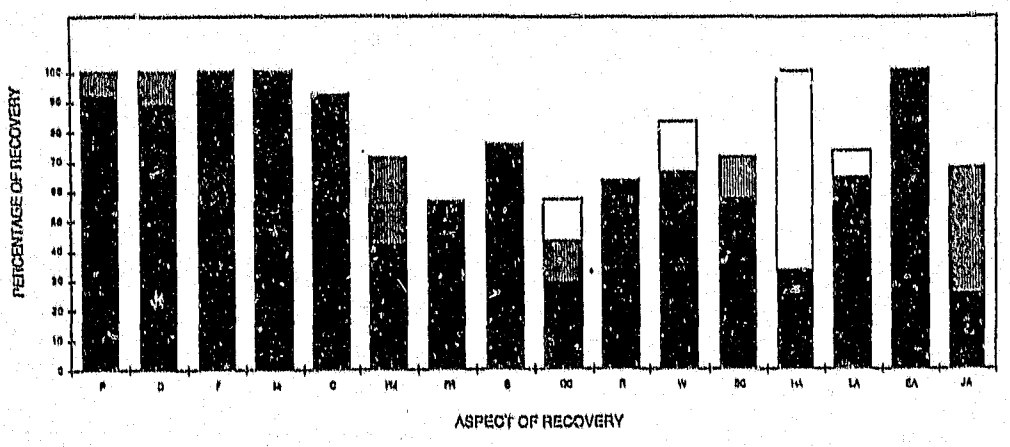



**Fig. 5:4.4 Recovery of PATIENT 9 at three, six and 12 months after injury (expressed as percentages)**

This patient attended a live-in rehabilitation facility where he underwent formal assessment three, six and 12 months after injury. Most recovery of the patient occurred within three to six months after injury. The patient achieved 100 percent recovery in six aspects, namely those related to self-care, the house and economic recovery. Communication remained a problem at 12 months as sometimes the patient was not able to find the correct words. The patient's personality altered in that he was introvert, had mood changes, was frustrated and depressed. The patient's social recovery was greater than that of family relationships. The patient reported that family relationships were a great problem as he had been responsible for causing a fight in which his brother was killed. He stated that the family said it was his fault and wanted nothing to do with him. By 12 months cognitive ability had achieved 57 percent, the problems remaining were in relation to memory, attention and concentration. At 12 months the patient was employed.

RECOVERY CATEGORY: GOOD RECOVERY

Although at 12 months this patient's recovery appeared to be good, his problems were compounded by drug abuse. After two years the patient had no stable family relationships, was unemployed, had no stable income and stated that he earned his money by begging, borrowing or stealing. Thereafter the recovery category of the patient was altered to: MODERATE RECOVERY. Unless this patient accepts help on a drug rehabilitation programme his future appears to be bleak.

The researcher referred the patient to:

- The Crisis Centre;
- Social worker;
- Neuropsychologist;
- HEADWAY.

PATIENT 11

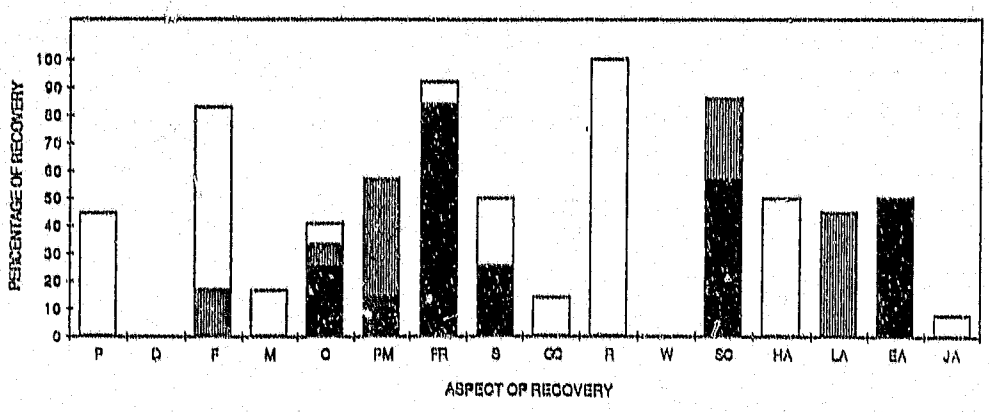



**Fig. 5:4.5 Recovery of PATIENT 11 at three, six and 12 months after injury (expressed as percentages)**

This patient did not attend a rehabilitation facility. He was rehabilitated by his elderly parents, married sister and brothers. The family were struggling to make 'ends' meet and in the situation found it difficult to cope with the physical and psychological problems of the patient. They were supportive of the patient and coped well considering the limited circumstances. Most of the patient's recovery occurred six to 12 months after injury. However this patient was unable to cope with self-care activities, thus placing a burden on the family. The patient achieved ≥ 50 percent recovery in five aspects of recovery that were assessed. As far as dressing, reading and writing the patient showed no signs of recovery.

**RECOVERY CATEGORY: SEVERE DISABILITY.**

Minimal further recovery had taken place by two years.

The researcher recommended that the family contacted:

- The local provincial hospital for district nursing services, physiotherapy, occupational therapy, social work and speech therapy assistance;
- A psychologist.
- HEADWAY.
- Social services:
- Meals on wheels;
- The Association for the Disabled.

PATIENT 12

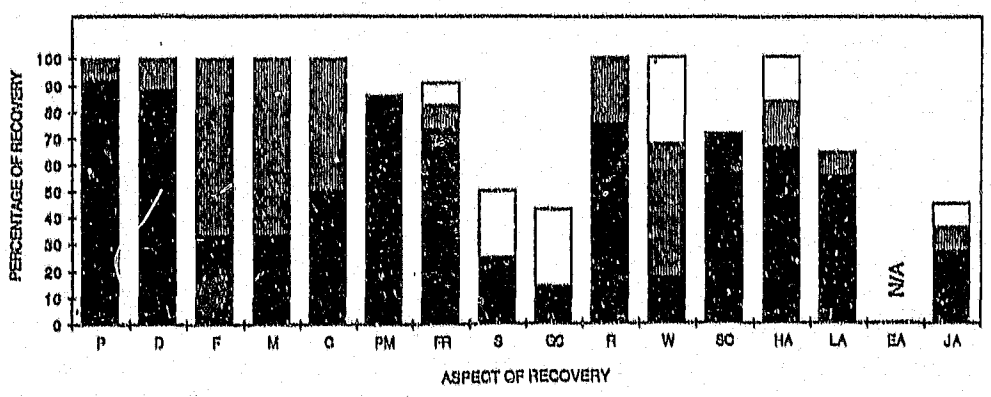



**Fig. 5:4.6 Recovery of PATIENT 12 at three, six and 12 months after injury (expressed as percentage)**

This patient did not attend a rehabilitation facility. She was cared for by a dedicated, supportive family. No formal assessment of the patient was undertaken. The patient achieved 100 percent recovery in eight spheres. The patient's recovery occurred mainly in the first three to six months after injury. Recovery of sleep, cognitive function, leisure activities and job assessment showed the poorest recovery. The patient was unable to return to her former career because of the demands of the job. As she was a student economic assessment was excluded. She was introvert, extremely frustrated and depressed at three months and this showed no signs of abating by 12 months. Her social recovery was limited to 71 percent by three months and did not recover further. Family relationships recovered well.

RECOVERY CATEGORY: MODERATE RECOVERY.

Two years after injury the patient completed a secretarial course, obtained alternate employment and was active on the committee of HEADWAY. She also passed her drivers license in an unmodified vehicle.

PATIENT 14

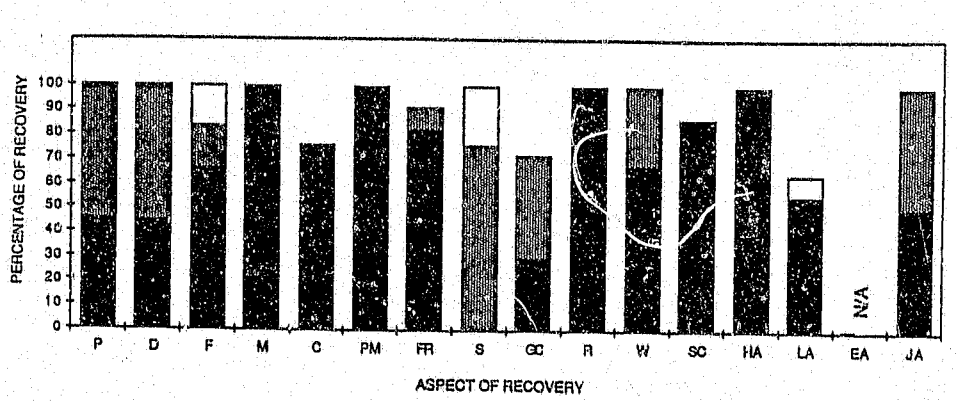



**Fig. 5:4.7 Recovery of PATIENT 14 at three, six and 12 months after injury (expressed as percentage)**

This patient suffered a severe head injury as a result of a bullet wound and has lost vision in the right eye. The patient attended a rehabilitation facility for less than one week and was then cared for by his sister as both parents were killed at the time of the injury. 100 percent recovery was achieved in 10 spheres. The majority of the recovery occurred within three to six months after the injury. At 12 months the patient was experiencing difficulty finding the correct words, making sentences and spoke very rapidly. The patient's memory and concentration span appeared normal but he was unable to make decisions either of a simple or complex nature. All leisure pursuits were not renewed, perhaps as a result of the left-sided weakness, but he continued to show a keen interest in music. 10 months after the injury this patient returned to school and coped remarkably well, achieving A's, B's and C's for his subjects. The subjects with which he had difficulty were mathematics and latin. No formal assessment of the patient, prior to his return to school was undertaken. As he was a student no economic assessment was calculated. As this patient was orphaned at the

time of the injury a trust has been set up for him. It is envisaged that no economic problems will be experienced.

**RECOVERY CATEGORY: GOOD RECOVERY.**

Two years after injury the patient has coped very well and has progressed in his schooling.

The researcher referred the patient to:

- A neuropsychologist;
- HEADWAY.

PATIENT 15

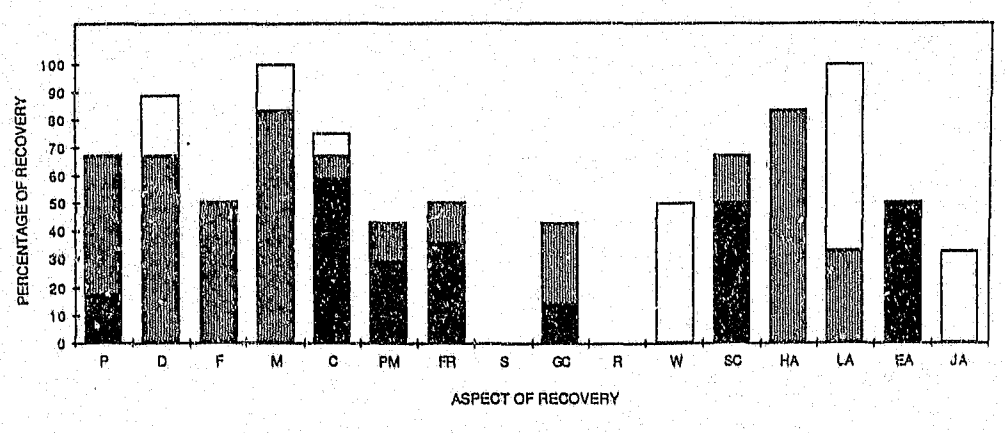



**Fig. 5:4.8 Recovery of PATIENT 15 at three, six and 12 months after injury (expressed as percentages)**

This patient did not attend a rehabilitation facility and was cared for by his common-law wife in an outlying area. The financial circumstances, family and social environment hampered this patient's recovery in that both physical assistance and psychological support were absent. Available social services were not consulted. The wife coped in trying circumstances as she had to care for three children as well. No formal assessment of the patient was undertaken. The recovery pattern shows that the patient achieved 100 percent recovery in mobility and leisure activities only. The patient showed no recovery in as far as sleep patterns and reading were concerned. Reading remained a problem in that the patient reported that he could not see. No assessment of vision was undertaken. Except for mobility, by 12 months the patient was unable to perform self-care activities unaided. Feeding and dressing ability did not improve after six months . Prior to the injury this patient owned his own business, thereafter the business was closed (not sold) in the hope that he would return one day. This does not appear to be realistic as the patient was a motor car mechanic and needs limb dexterity and good vision. Economic recovery of the patient was extremely poor and he was dependent on his family for financial support.

**RECOVERY CATEGORY: SEVERE DISABILITY.**

Two years after injury there has been minimal change in the patient's status. He is determined that one day he will open the garage again.

This patient was referred by the researcher to:

- Social worker;
- Physiotherapist;
- Occupational therapist;
- Speech therapist;
- Neuropsychological assessment;
- Eye specialist;
- HEADWAY.

This patient did not attend a rehabilitation facility and was cared for by his common-law wife in an outlying area. The financial circumstances, family and social environment hampered this patient's recovery in that both physical assistance and psychological support were absent. Available social services were not consulted. The wife coped in trying circumstances as she had to care for three children as well. No formal assessment of the patient was undertaken. The recovery pattern shows that the patient achieved 100 percent recovery in mobility and leisure activities only. The patient showed no recovery in as far as sleep patterns and reading were concerned. Reading remained a problem in that the patient reported that he could not see. No assessment of vision was undertaken. Except for mobility, by 12 months the patient was unable to perform self-care activities unaided. Feeding and dressing ability did not improve after six months . Prior to the injury this patient owned his own business, thereafter the business was closed (not sold) in the hope that he would return one day. This does not appear to be realistic as the patient was a motor car mechanic and needs limb dexterity and good vision. Economic recovery of the patient was extremely poor and he was dependent on his family for financial support.

**RECOVERY CATEGORY: SEVERE DISABILITY.**

Two years after injury there has been minimal change in the patient's status. He is determined that one day he will open the garage again.

This patient was referred by the researcher to:

- Social worker;
- Physiotherapist;
- Occupational therapist;
- Speech therapist;
- Neuropsychological assessment;
- Eye specialist;
- HEADWAY.

PATIENT 16

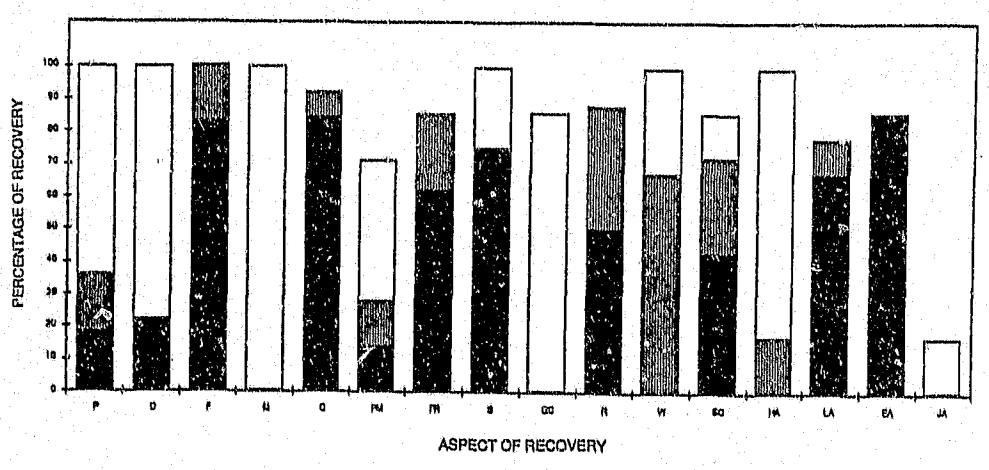



**Fig. 5:4.9 Recovery of PATIENT 16 at three, six and 12 months after injury (expressed as percentages)**

PATIENT 16 did not attend a rehabilitation facility nor undergo formal assessment. The patient was rehabilitated by her family as her husband was killed in the accident. 12 months after injury the patient had recovered fully in seven spheres. Maximum recovery occurred at three and 12 months after injury. 100 percent mobility with the use of a caliper was achieved by 12 months. Prior to that, the patient was confined to a wheelchair as a result of a leg injury sustained in the accident. Self-care ability by 12 months achieved 100 percent recovery, whereas personality and mood after 12 months achieved 71 percent and family relationships 85 percent. The percentage recovery for all areas except job (17 percent) was more than 70 percent. As the patient's financial situation was fair she was unwilling to seek employment.

**RECOVERY CATEGORY: MODERATE RECOVERY.**

The patient has a child (± 14 months old). It took two years for her to realise that the child is hers and to take responsibility for its care. Two years after injury the patient passed her drivers license in an unmodified vehicle.

PATIENT 17

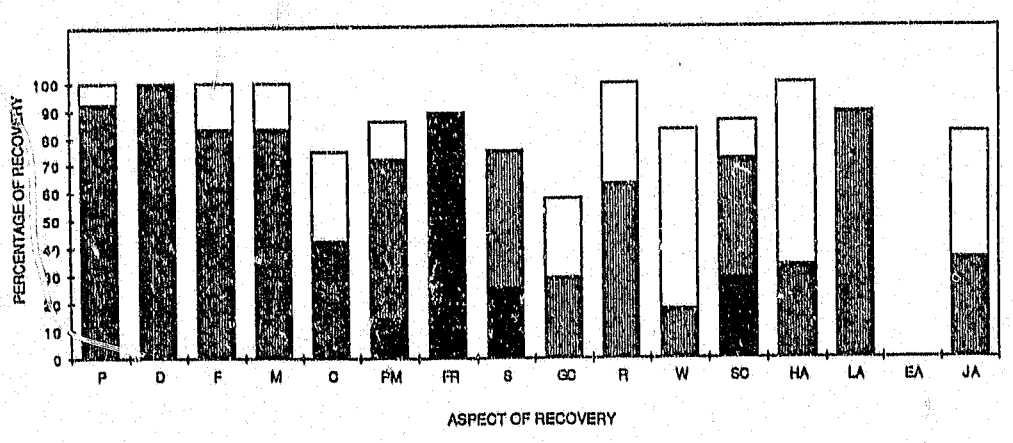



**Fig. 5:4.10 Recovery of PATIENT 17 at three, six and 12 months after injury (expressed as percentages)**

PATIENT 17 was rehabilitated by his family who were dedicated to his recovery. This patient achieved 100 percent recovery in six areas. Maximum recovery of function occurred within 12 months. Self-care activities, family relationships and socialisation achieved more than 86 percent. The least recovery of this patient was in relation to cognitive skills, memory, attention and concentration. The patient was not keen on writing and had a constructional apraxia. The patient showed no economic recovery by 12 months and was totally dependent on his family for financial support. After 12 months the patient returned to his former job but was not able to complete the required amount of work in the time allocated.

RECOVERY CATEGORY: MODERATE RECOVERY.

At two years the patient was able to manage his former job and has returned to his former community activities.

PATIENT 18

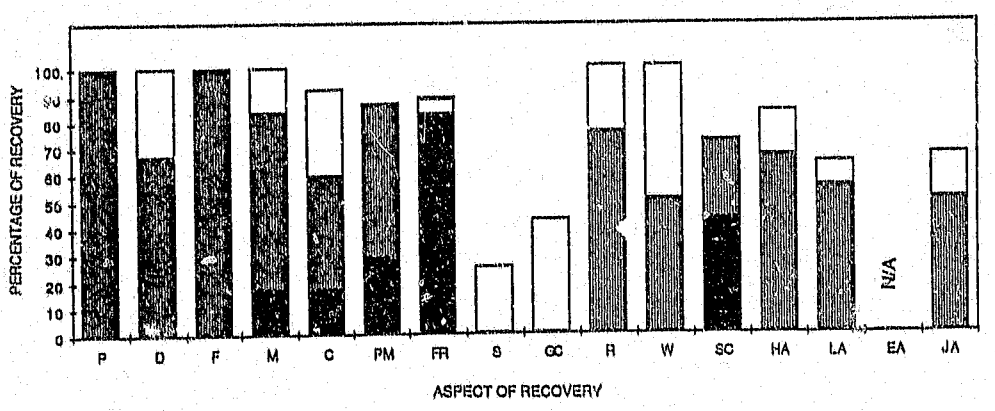



**Fig. 5:4.11 Recovery of PATIENT 18 at three, six and 12 months after injury (expressed as percentages)**

This patient was cared for by a dedicated family. 100 percent recovery was achieved in six areas. The patient spoke slowly after 12 months and memory, concentration and attention span were decreased. Personality and mood assessment and family relationships achieved 86 percent and 89 percent recovery respectively. Socialisation achieved 72 percent and leisure activities 64 percent. The patient after injury became introvert, depressed, frustrated and anti-social; by six months this had improved but there was no further improvement at 12 months. As the patient was a student economic assessment was excluded. The patient underwent no formal assessment and seven months after injury, on the recommendation of the general practitioner, the patient returned to the Technikon. After a further four months the patient was unable to cope and withdrew from the course.

RECOVERY CATEGORY: MODERATE RECOVERY.

Two years after injury the patient although unable to find employment did not want to undergo any assessment or training as he believed he would not cope.

The researcher referred the patient to:

- Neuropsychologist;
- Department of Manpower;
- HEADWAY.

PATIENT 19

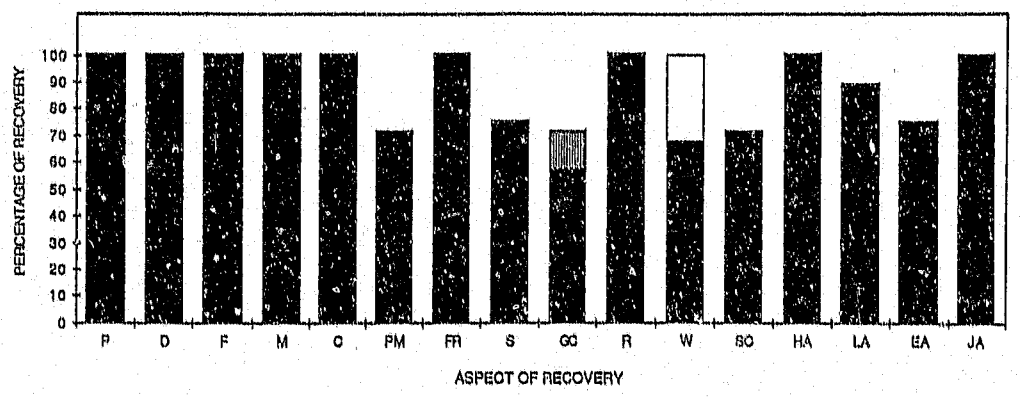



**Fig. 5:4.12 Recovery of PATIENT 19 at three, six and 12 months after injury (expressed as percentages)**

This patient was rehabilitated by a dedicated wife and family. The majority of the patient's recovery occurred in the first three months. The patient achieved 100 percent recovery in 10 areas relating to self-care, communication, family relationships, reading, writing, home activities and employment. The patient achieved more than 70 percent recovery in all other aspects that were examined. Personality and mood changes accounted for the lack of recovery with regard to personality and mood assessment.

RECOVERY CATEGORY: GOOD RECOVERY.

12 months after injury the patient returned to work.

PATIENT 20

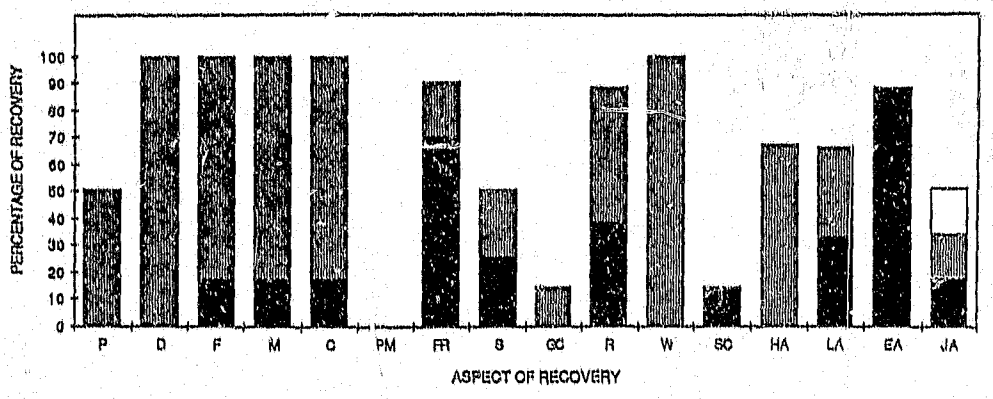



**Fig. 5:4.13 Recovery of PATIENT 20 at three, six and 12 months after injury (expressed as percentages)**

This patient was rehabilitated by his family. No formal assessment of the patient was undertaken nor were any of the social services consulted. Family circumstances (low socio-economic status) did not permit adequate assistance for the patient and the patient was often left alone at his sister's home. The family did rally around the patient in an attempt to offer support but were unable to cope with the patient because of the patient's severe difficulties in relation to personality and mood-violence, aggression, frustration and changes of mood. The family accepted the patient's new role but the patient was resentful of their attitude. The family stated that they were not sure whether he was in touch with reality as he spoke about work and said that he went to work every day although he was not employed and wandered the streets. The majority of the patient's recovery occurred within the first six months of the injury. By six months personal care achieved 50 percent and by 12 months there was no improvement. Cognitive recovery and socialisation achieved 14 percent respectively. The patient received a disability pension. Although unable to manage his finances he refused assistance.

RECOVERY CATEGORY: SEVERE DISABILITY.

After 18 months the patient returned to alcohol abuse and the family were unable to cope with the situation and family relationships deteriorated.
The family/patient was referred to:

- Social worker;
- Psychologist;
- Alcoholics Anonymous;
- Legal aid - The family were extremely concerned and wished to seek legal advise regarding the patient,
- HEADWAY.

In summary only those patients who attended live-in rehabilitation facilities underwent formal psychological assessment. The researcher has recommended that all other patients undergo formal testing to establish a baseline on which to organise further management. No families made use of the social services, an important consideration for discharge planning and follow-up of patients. Cases 7, 9, 14 and 19 achieved the best recovery of function. It appears that the patients who attended rehabilitation facilities and/or had devoted attention from their families achieved a higher level of recovery than those who were not fortunate enough to receive this attention (cases.11, 15 and 20). Most patients, except cases 8, 11, 15 and 20 achieved 100 percent for self-care activities by 12 months after injury. 100 percent recovery with regard to communication occurred in cases 8, 12, 18 and 19, the remainder still had a deficit in this area 12 months after injury. All cases, except case 14, experienced alterations in personality and mood, perhaps this related to the type and extent of patient 14's injury (gunshot). Family relationships were affected in all cases except cases 7 and 19. The sleep pattern of the patients was affected in all except cases 14 and 16. 12 months after injury cognitive skills such as attention, concentration, memory, the learning of new skills and decision making remained a problem in all patients. The ability to read and write returned before other cognitive skills. In those with a moderate/ severe disability the ability to read and write by 12 months was absent in the following cases 9, 11 and 15. Cases 16 and 20 could write but not read and case 17 could read but not write. By 12 months no patients had achieved 100 percent for social recovery and only case 15 had achieved 100 percent for recovery of leisure activities. Cases 7, 9, 12, 14, 16, 17 and 19 achieved 100 percent recovery in as far as home activities were concerned. Only the three patients who attended rehabilitation facilities were formally assessed with

regard to home activities. The percentage recovery of economic function for all patients in which this section was applicable, except patient 9, was below 100 percent (vide p266). After 12 months except for patient 14 and 19 (100 percent) the recovery in as far as employment and/or return to school was concerned was below 100 percent. Six patients' recovery was equal to or below 50 percent. Cognitive ability, and return to work are the lowest for all aspects of recovery.

According to the Glasgow Outcome Scale at 12 months after injury, four patients have made a GOOD RECOVERY, six have made a MODERATE RECOVERY and three have a SEVERE DISABILITY. Perhaps, had all patients been subjected to comprehensive rehabilitation facilities it would have been possible to improve the above figures. As Lewin (1970) so rightly states it is a lack of resources after injury that lead to unnecessary invalidism and economic loss. Jennett (Levin, et al., 1982) goes on to add that the initial cost of treating these patients is exorbitant and all the effort may be wasted as there are insufficient facilities therefore these patients cannot achieve their full potential for recovery. When one considers the statement by Rimel, et al. (n.d.) regarding patients with a Glasgow Coma Scale score of 3/15 (vide p82) some of these patients have done remarkably well.

**TABLE 5:101**

**The future plans of the patients (12 months after injury)**

| Future plans | No. of patients (N=13) |
|---|---|
| To continue working | 3 |
| Return to work | 4 |
| Continue education | 4 |
| Stay at home | 1 |
| No plans | 1 |

One patient when asked about future plans stated that he had no choice but to commit suicide. He was immediately referred to the social and psychological services. This patient's problems were compounded by drug abuse.

## PRESENT STATUS OF PATIENTS

### TABLE 5:102

**Persistent problems of the patients (two years after injury)**

| Sequalae | No. of patients (N=13) |
|---|---|
| Physical disability | 8 |
| Weakness of limbs: | |
| Left | 3 |
| Right | 7 |
| Paralysis of limbs: | |
| Left | - |
| Right | 3 |
| Eyesight disturbance | 6 |
| Double vision | 3 |
| Partial blindness (associated injury) | 1 |
| Headache | 7 |
| Dizziness | 5 |
| Behavioural changes | 9 |
| Personality changes | 9 |
| Altered cognitive functioning | 10 |
| Loss of memory | 8 |
| Loss of concentration | 7 |
| Social | 10 |
| Financial | 5 |

### TABLE 5:103

**Aids required to assist mobility**

| Attitude | No. of patients (N=13) |
|---|---|
| Recovery will be slow | 2 |
| Will return to normal | 2 |
| Try and achieve the best possible | 8 |
| No interest in recovery | 1 |

Three patients required aids to assist mobility; two patients utilized more than one aid.

Nine families believe that the patient still requires the services of various health professionals.

TABLE 5:104

**Services of health professionals needed two years after injury**

| Health professional | No. of patients (N=9) |
|---|---|
| Dietician | 1 |
| Occupational therapist (work assessment) | 5 |
| Physiotherapist | 3 |
| Psychologist (assessment of cognitive ability) | 8 |
| Religious minister | 1 |
| Speech therapist | 4 |
| Social worker (placement and financial assistance) | 4 |

The daily programme of the patients two years after injury was as follows:

Three attended work.

One attended school.

Nine were unemployed:

- Two were unable to work.
- Seven were unable to find employment.

None of these nine patients were suitably occupied.

# 5. QUALITY ASSURANCE

## 5.1 SITUATIONAL ANALYSIS

### 5.1.1 STAFFING

A study of quality assurance must include a discussion on the staff establishment of the unit.

**a. The overall staff establishment for the unit**

During the study the official staffing norms for the unit were altered. Staffing norms based on those established in 1972 and 1984 were used for the months of November, 1983 - January, 1984 and February - April, 1984 respectively. The figures mentioned represent full time staff equivalents not the actual number of nursing staff allocated to the unit per month, as stated on the allocation list.

**Author** Abelson N M
**Name of thesis** The Comprehensive care of the Moderate and Severely Head injured Patient 1987

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