

**A BIOPSYCHOSOCIAL EVALUATION
OF READMISSIONS TO A
MENTAL HOSPITAL**

by

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Abstract

Since deinstitutionalization many patients, instead of remaining in the community, revolve through the doors of psychiatric facilities resulting in the "Revolving Door Syndrome". Hence a biopsychosocial evaluation of readmissions was undertaken to see what processes came into play once a patient was discharged from a mental hospital and subsequently readmitted. Seventy Indian patients admitted to the Midlands hospital complex, Pietermaritzburg were interviewed and the data was collected. This comprised 40 readmissions and a control group of 30 first admissions. The diagnosis was made according to DSM-III-R. The results obtained were statistically analyzed and a chi square analysis was done to ascertain if there were any significant differences between the 2 groups.

The following were the major findings :

1. Most of the patients were in age group 20-29 years.
2. There was a preponderance of males in both groups.
3. Most of the patients in the readmitted group were unemployed and were receiving a disability grant.
4. The majority of patients was single or separated.
5. Most of the patients were discharged on a combination of drug and depot preparation.
6. A large percentage had two and more previous admissions.
7. Length of stay was less than 1 month in a large number of patients.
8. Community tenure was less than 1 year in most of the

patients.

9. Even though the majority of patients reported regular attendance, a fair percentage reported irregular attendance at the community clinic.
10. The reason for readmission was mainly aggressive behaviour and aggressive behaviour associated with substance abuse.
11. The discharge diagnosis was schizophrenia in a large number of patients.

This study has several important implications for the community care of the patient and various recommendations are made to curtail the revolving door, as follows :

1. There is an urgent need for community based resources. eg. sheltered workshops, supervised housing, industrial and occupational therapy, halfway houses and day hospitals, which would help the chronically mentally ill patients lead more meaningful lives following discharge.
2. The family of the chronically mentally ill patient needs to be actively involved in the management of these patients and mental health workers must solicit the family's support, by educating them about schizophrenia, helping them to increase coping mechanisms and to decrease stress. It is recommended that support groups be held in the community for the families of patients.
3. The patient's family needs to be advised that when the patient show signs of decompensation, they should take the patient to the community clinic, rather than to the

District Surgeon to avoid unnecessary rehospitalization.

4. The importance of maintenance medication cannot be overemphasised. There is a need to change the attitude of the patient and family with regard to their negative attitude about medication.
5. The high rate of readmission due to aggressive behaviour (which is aggravated by substance abuse) needs intervention. Substance abuse groups must be held in the community and the community needs to be educated about the consequences of substance abuse in the mentally ill.

Supporting Services

In this research the statistical planning and analyses, and recommendations arising from these analyses, have been done with the support of the Institute for Biostatistics of the Medical Research Council.

Preface

This study represents original work by the author and has not been submitted in any form to another university. Where use was made of work by others, this was duly acknowledged.

The data collection and analysis in this thesis were carried out in the Midlands hospital complex, Pietermaritzburg under the supervision of Dr. S.V. Moodley.

Signed SMoodley

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CHAPTER 1

INTRODUCTION

"The introduction of effective psychopharmacological treatments for psychiatric patients in the 1950's has revolutionized psychiatry and psychiatric care" (Joyce et al 1981), which resulted in rapid resolution of psychotic states and early discharge of patients from hospitals. This also made it possible for patients with severe pathology to be maintained in their community of residence (Schweitzer and Kierszenbaum 1978). This trend towards early discharge of patients from hospitals had developed under the banner of "community care" and has given rise to the so called "revolving door patient" (Joyce et al 1981).

Deinstitutionalization began with little fore-thought and planning and has failed to live up to its promise (Gralnick 1985). The aim was to help patients receive community services and help them adjust and integrate into the community, but the sad reality is that many patients return to hospital (Solomon et al 1984). Deinstitutionalisation has heralded the arrival of the new chronic patient (Caton 1981), the young adult chronic patient (Pepper et al 1981) or the revolving door patient (Franklin et al 1975). These patients are difficult to work with as they lack insight into the circumstances that have led to their rehospitalisation and demand immediate discharge upon which they fail to comply with treatment (Morin and Seidman 1986). The young chronic patients have difficulty in social functioning due to "their acute vulnerability to stress, their difficulty in making stable and supportive relationships, their inability to get and keep something good in their lives, and their repeated failures of judgement, which can be seen as an inability or refusal to learn from their experiences" (Pepper et al 1981). The high rate of readmissions questions the efficacy of community based aftercare services (Solomon et al 1984) as many patients fail to adapt to community living and

revolve through the doors of psychiatric facilities (Dincin and Witheridge 1982).

Joyce et al (1981) reviewed the literature on recidivism up to 1974 and found that the number of previous admissions constantly predicted rehospitalizations. This is supported by Dincin and Witheridge (1982) and Holmes-Eber and Riger (1990). Joyce et al (1981) also found that patients with a diagnosis of schizophrenia were more likely to have had previous admissions. Eaton et al (1992) reports that patients with a diagnosis of schizophrenia are unlikely to have only one episode in the course of their lives and that earlier age of onset predicts increased risk for rehospitalization. Males were more likely to be admitted, not only for first admissions but for readmissions (Woogh 1986). The relapse rates for schizophrenic men were greater than that of women (Brown et al 1972, Vaughn and Leff 1976) and these patients were more likely to be unemployed, single, separated or divorced (Franklin et al 1975). Safer (1987) found that substance abuse was the cause of readmissions in the young adult chronic patient.

Non-compliance with outpatient treatment after a psychiatric hospitalization is closely related to recidivism and rehospitalization (Stickney et al 1980, Carpenter et al 1985). Non-compliance especially with oral medication is a major problem in psychiatry (Diamond 1983, Gilles et al 1987, Chen 1991, Wistedt 1991). According to Van Putten (1974) and Ford (1980) readmissions are precipitated by drug refusal which is related to extrapyramidal side effects. Birley and Brown (1970) in South East London reports that stopping or reducing of phenothiazines resulted in relapse.

The patient's family environment also plays a crucial role in the readmission of patients. Vaughn and Leff (1976) found that a high percentage of patients who relapsed came from high expressed emotion families, i.e. families with a high degree of critical comments, hostility and over involvement.

In South Africa, the increase in readmissions relative to new admissions is causing concern, and in some hospitals the number of readmissions exceeds first admissions (Sandler and Jakoet 1985). Readmissions form 45% of the intake in South African psychiatric hospitals and is a great burden to staff and the facilities (Gilles et al 1990). Many factors have been evaluated as predictors of readmission (Sandler and Jakoet 1985). These include limited accommodation, short periods of hospital stay, socio-economic conditions and cultural considerations (Gilles 1986). Gilles et al (1985) concludes that a major factor associated with rising admissions is increased patient turnover which is associated with a reduction in accommodation and shorter periods of hospital stay. Sandler and Jakoet (1985) report that a history of past psychiatric illness was the most important predictor of readmission in the "coloured" population. They found that patients who had 4 or more previous admissions had a readmission rate of 83%. Poor compliance and substance abuse are also major factors in readmissions (Gilles et al 1985). Substance abuse destabilizes existing schizophrenic or manic symptoms and facilitates psychiatric breakdown (Gilles et al 1986).

In a study in a psychiatric hospital in Cape Town, Gilles et al (1987) investigated non-compliance in 406 psychiatric patients. They found that non-compliance with psychotropic medication especially with oral phenothiazines was a major problem. The situation with intramuscular fluphenazine injections was better due to fixed appointments. A single home visit limited to giving instructions about medication doubled the compliance rate to 65% (Gilles et al 1989).

The high rate of readmissions questions the efficacy of aftercare and outpatient services. There is a paucity of services such as protected or sheltered employment, psychiatric day hospitals, hostel accommodation and rehabilitation programmes as well as support for the families of the mentally ill (Gilles et al 1985).

Several variables appear to account for the revolving door syndrome. Hence a study was designed to look at possible causal factors which will predict which patients are at high risk of readmissions with the aim of recommending intervention strategies to curtail this ever increasing phenomenon.

OBJECTIVES

The aim of the study is as follows :

1. To identify factors that result in readmission.
2. To make recommendations that would curtail the revolving door syndrome.
3. To reveal whether the factors responsible for readmission to the Midlands Hospital are any different compared to other studies.

IMPLICATIONS OF STUDY

Taking into account the high cost of hospitalization, any study that would identify the factors responsible for rehospitalization would be justified. Besides reducing cost more important would be the implication of the study on patient care. One can envisage the psychological trauma that results with each readmission. There is a need to know what processes come into play once a patient is discharged from a mental hospital and results in readmission. It is envisaged that this study will identify many of these factors.

CHAPTER 2

REVIEW OF THE LITERATURE

Since deinstitutionalization there has been a rise in hospital admissions, and a pattern of frequent rehospitalization which is an unexpected consequence of the deinstitutionalization policy (Solomon et al 1984). It is a major problem and many patients pass through the revolving door (Stickney et al 1980).

The revolving door phenomenon of hospitalization, brief treatment, discharge and relapse leading to readmission shows the inefficiency of the aftercare of the chronic mentally ill (Lieberman 1986). Patients improve when committed to hospital but fail to follow through with treatment and are rehospitalized (Bursten 1986). Readmissions of mental patients "are the result of interactions in and between a host of personal and environmental factors that influence a patient's life after discharge" (Franklin et al 1975). This review concentrates on some of these factors which are discussed under the following headings :

2.1 TERMINOLOGY

2.1.1 Recidivism

2.1.2 Relapse

2.2 PATIENT VARIABLES

2.2.1 Age

2.2.2 Sex

2.2.3 Marital status

2.2.4 Employment status

2.3 FAMILY VARIABLES

2.3.1 Family Composition

2.3.2 Family Size

2.3.3 High EE Families

2.4 CLINICAL VARIABLES

- 2.4.1 Diagnosis and readmissions
- 2.4.2 Number of previous hospitalizations
- 2.4.3 Length of stay of last hospitalization
- 2.4.4 Substance Abuse
- 2.4.5 Aggressive behaviour and Section under which admitted

2.5 POST DISCHARGE VARIABLES

- 2.5.1 Community services
- 2.5.2 Non-compliance with aftercare
- 2.5.3 Non-compliance with medication
- 2.5.4 Stress, life events and social support

2.1 TERMINOLOGY

2.1.1 Recidivism

Recidivism of chronic patients is defined as readmission to hospital care as a result of change in the patient's clinical condition (Edell et al 1990), or as a return to inpatient psychiatric treatment (Weltman et al 1988).

2.1.2 Relapse

There are various definitions of relapse (Goldstein et al 1978, Kane et al 1983, Wistedt 1991), but for the present study the definition by Crow et al (1986), who define relapse as readmission to psychiatric care for any reason, is considered most appropriate.

2.2 PATIENT VARIABLES

2.2.1 Age

Schizophrenia strikes during young adulthood hence preventing the patient from mastering critical social and developmental

tasks associated with heterosexual and job skills (Bellack et al 1990). It is not surprising therefore that younger age of onset increases the risk of rehospitalization (Carpenter et al 1985, Eaton et al 1992). Lamb (1982) reports that younger patients are rehospitalized more as they strive for independence, relationships and a sense of identity. They cannot withstand the stress resulting in anxiety and depression which leads to psychotic relapse and hospitalization. Older patients are hospitalized much less as they have had time to lower goals and accept lower levels of functioning. As the patients mature much of the pressures that result in psychotic decompensation are removed.

It is clearly revealed that patients who develop schizophrenia at an early age, are at a higher risk of rehospitalization.

2.2.2 Sex

Lewine et al (1981) report that the effect of sex has not been a major concern in schizophrenic research, but Angermeyer et al (1990) report that there has been a growing recognition of gender differences during the last decade.

Various studies have revealed that male schizophrenics have earlier age of onset (Lewine et al 1981, Tien and Eaton 1992, Eaton et al 1992), and earlier age of first hospitalization (Lewine et al 1981, Folgenović et al 1990, Woogh 1986). Folgenović-Šmalc et al (1990) found no difference between age of onset between males and female schizophrenics but noted that for females the interval between age of onset and admission was longer. Loranger (1984) reports that males had onset 5 years earlier than females and that this age sex difference remained even when patients were divided into first and readmissions. This gender age difference was found specifically for the diagnosis of Schizophrenia (Lewine et al 1981, Glick et al 1985, Folgonivić et al 1990).

Males with diagnosis of schizophrenia are more often readmitted (Woogh 1986, Angermeyer et al 1990, Eaton et al 1992). Relapse rates for men are twice that of women (Brown et al 1972, Vaughn and Leff 1976, Voinekos and Denault 1978). Appleby et al (1993) in their study of fifteen hundred schizophrenic patients from 10 state hospitals found that men returned to the hospital more rapidly than women within the first 30 days.

It is suggested that male preponderance of readmissions are due to :

- i) adolescence and early adult years being stressful for men (Loranger and Levine 1978).
- ii) men being more sensitive to stress and may show a genetic predisposition to schizophrenia (Lewine et al 1981).
- iii) greater cultural pressures for men to achieve social and financial independence (Lewine et al 1981).

Males with a diagnosis of schizophrenia show a high risk for readmission, as revealed by the literature review.

2.2.3 Marital Status

Studies by Brown et al (1972) and Vaughn and Leff (1976) show that the relapse rate for the unmarried were greater than the relapse rate for married persons in both men and women, with unmarried men having the greater risk for relapse. In support of this Tien and Eaton (1992) report that unmarried males have 50 times the risk of developing schizophrenia compared to 14 times the risk in unmarried females and married females were least vulnerable, which may be due to premorbid personality and different role expectation (Brown et al 1972). Marriage appears to have a protective effect for females whereas for men, schizophrenia is a deterrent to marriage (Loranger 1984).

2.2.4 Employment Status

Employment is an important factor in facilitating recovery in

schizophrenia, but resumption of work is a problem as patients are handicapped by a history of mental illness and psychiatric hospitalization which have negative effects on the employer (Lin and Kleinman 1988). Employers are reluctant to hire persons with mental illness due to stigma and discrimination (Anthony and Liberman 1986).

Unemployment has deleterious effects on mental health as it is a severe life stress that overwhelms the individual and threatens his self esteem (Dressler 1986). Patients who are unemployed are more likely to be readmitted than patients who receive income from their employer or from the employment of others within the household (Ahr et al 1981). Sullivan et al (1992) found that 95% of the severely mentally ill in the community were unemployed and more than half had not worked in the last 3 years and 85% were receiving social security.

Job rehabilitation is important to re-integrate patients into the community and reduce readmissions. Liberman et al (1986) mention that a fruitful programme to overcome obstacles to employment has been the establishment of a Job-finding Club. They found that 66% of all the patients who entered the Club obtained employment or were enrolled in full time job training programmes. Lamb and Rogawski (1978) recommend vocational rehabilitation which focuses on work therapy to increase the patients self esteem. Barter et al (1984) used a psychoeducational approach in work readiness seminars to help patients gain meaningful employment. This approach focuses on problem areas such as the lack of a positive attitude towards work, lack of basic work habits, lack of self confidence and self esteem, and, lack of motivation. Anthony and Liberman (1986) advocate sheltered workshops, transitional employment, halfway houses and psychosocial clubs.

The review of the literature reveals that unemployment is a significant risk factor for readmission. It is thus recommended that there should be more vocational rehabilitation programmes

to cater for the needs of the chronically mentally ill in the community.

2.3 FAMILY VARIABLES

2.3.1 Family composition

Indian South African families are in transition from extended to nuclear structure (Landau-Stanton et al 1982, Mason 1987). It is easier for large extended families in non industrialized societies to tolerate someone who in the West would be called "mentally ill" and hospitalized (Waxler 1979). The author found that not one of the 31% of the schizophrenic patients found to be psychotic at follow up was in a hospital. All were living with their families even though some had serious management problems. The families tolerated the patient even though they (the families) reported that others had to do extra work because of the patient's illness. The extended family system is hence an important source of support for the mentally ill patient.

2.3.2 Family size

Waxler (1979) notes that large families make the care of the sick person easier and this prevents crisis and rejection. No psychiatric patient is isolated or rejected by his family who do not give messages that reject or alienate them, and social support is available for the patient within his own family.

2.3.3 High EE (expressed emotion) families

Several studies have indicated a strong relationship between the families' emotional atmosphere and outcome of schizophrenia in a member of the family (Brown et al 1972, Vaughn and Leff 1976).

Brown et al (1972) used a standardized method to assess the relationship between the schizophrenic patient and the relative with whom he lives. They found that they could predict relapse of schizophrenia during a nine month period following discharge by using an index of expressed emotion shown by the relative during an interview shortly after the patient was admitted to hospital. This index of expressed emotion had three components, the most important was the number of critical comments made by the relative when talking about the patient and his illness. The other two components were hostility and marked emotional over-involvement. The level of relatives' expressed emotion was associated with risk of relapse in schizophrenic patients 9 months after discharge. The authors examined patients who spent 35 hours a week with their families compared to those who spent less than 35 hours a week. It was found that 79% of patients who spent more than 35 hours a week in high EE families relapsed. In contrast to this, only 29% of patients who spent less than 35 hours a week in high EE families relapsed. In low EE families the amount of contact was unrelated to relapse.

The relationship between medication and relapse was also investigated by Brown et al (1972). Patients going to high EE families were less likely to relapse if they received regular medication and decreased face to face contact. Vaughn and Leff (1976) replicated the study of Brown et al (1972), but extended the EE findings to persons hospitalized with neurotic depression. For schizophrenic patients the authors confirmed earlier findings, EE again predicted relapse, and high EE, high contact families, produced the most relapse. Drugs were found to protect against the bad effects of EE.

Kavanagh (1992) states that from the social interaction model, relapses associated with high EE would be reduced if patients and relatives develop more effective coping strategies. Consistent with this view it was found in various studies that skills orientated family interventions improved the course of schizophrenia when they are compared to routine or individual

treatment (Strachan 1986, Smith and Birchwood 1987, Birchwood et al 1992).

Family intervention studies included educating the families about schizophrenia and methods of controlling stress which operate after the patient has left the hospital after an acute episode of illness (Cozalino et al 1988). They educated the family about schizophrenia, discussing signs and symptoms and the role of medication and stress reduction. The role of supportive social interactions in reducing relapse was emphasised.

The most recent studies by Birchwood et al (1992) on specific and non specific effects of education intervention for families living with schizophrenics, noted that education programmes led to increased knowledge about schizophrenia, increased the optimism concerning the family's role in maintaining the well being of patients and a reduction in fear of the patient and also improved the stress management in the family. The impact of education intervention replicated many of the findings of an earlier study (Smith and Birchwood 1987) especially gains in knowledge and a decrease in "fear of the patient". Relatives found that information about schizophrenia, eradicating the myths and misconception, reduces fear as the illness becomes more understandable.

Intagliata (1986) writes that "it is time for professionals to acknowledge the important contribution already being made by family workers and to do whatever they can to enhance and support this contribution".

The above studies clearly illustrate two important points : Firstly, the effect of a positive family environment, secondly, the importance of involving the family in the treatment of the schizophrenic patient. It is thus recommended that the family become involved in the treatment of the patient from the onset to help maintain the patient in the community.

2.4 CLINICAL VARIABLES

2.4.1 Diagnosis and Readmission

The most common diagnoses reported in various studies at risk for readmission are schizophrenia and affective disorder (Harvessey and Hopkin 1989, Gilles et al 1985), affective disorder (Joyce et al 1981), personality disorder (Woogh 1986, Harvessey and Hopkin 1989, Leff et al 1990), and alcoholism (Joyce et al 1981). In contrast to the above, Lambert et al (1983) and Schanding et al (1984) report that diagnosis was not found to be a risk factor for recidivism. Nevertheless patients with a diagnosis of schizophrenia are more vulnerable to readmission.

Various studies have reported a relationship between diagnosis and time of readmission. It was found that schizophrenic patients were at high risk for readmission within the first 12 months with the critical period being the first month after discharge. This is supported by the following :

- i) Voinekos and Denault (1978) - one half to one third of patients were readmitted within the first twelve months, the most critical period being the first month after discharge.
- ii) Haupt and Erlich (1980) - the majority of readmissions occur within six months.
- iii) Caton et al (1984) - 58% of chronic schizophrenics were readmitted within the one year follow up, 14% were readmitted within the first thirty days.
- iv) Gilles et al (1985) - the greatest risk was within the range of three to twelve months.
- v) McGlashan (1988) - 68% of patients were readmitted within the first two years' follow up.

Readmissions were due to :

- i) Exacerbation of schizophrenia (Pryce 1982)

ii) Psychiatric relapse (Pietzker and Gaebel 1987)
Pietzker and Gaebel (1987) mention that when schizophrenic patients relapse they are more likely to be readmitted in comparison to affective disorder where relapse does not lead to readmission. Furthermore, they found that schizophrenic patients on continuous medication are rehospitalized less (28%) compared to patients not on continuous medication (55%). This was most obvious for patients with multiple readmissions.

2.4.2 Number of previous hospitalizations

Various studies have reported that the number of previous admissions is a strong prediction of readmissions (Fontana and Dowds 1975, Voinekos and Denault 1978, Joyce et al 1981, Sandler and Jakoet 1985, Appelby et al 1993). Woogh (1986) in a comprehensive review of the literature also found this association.

Axelrod and Wetzler (1989) found that a history of prior hospitalization was associated with better aftercare compliance which implies that patients become receptive to the need for aftercare after having had several hospitalizations. This is probably due to the growing realization of the reality of their illness. Solomon et al (1984) however, report that the number of previous hospitalizations have had minimal effect on community tenure.

Sandler and Jakoet (1985) in a study at Valkenberg Hospital (Cape Town, South Africa) found that the number of admissions in the 5 years preceding index admission could be used as a predictor of readmission in the "coloured" population. They report that patients who had 4 or more previous admissions had a readmission rate of 83% in the year following discharge. Joyce et al (1981) report that the number of previous admissions is a predictor of readmissions within 6 months but only if the number of previous admissions was 5 or more.

2.4.3 Length of stay of last hospitalization

Deinstitutionalization has led to short inpatient care and repeated episodes of illness (Gralnick 1985). Pryce (1982) mentions that the discharge of long-stay inpatients led to marked reduction in bed numbers, and a reluctance to admit patients for more than the briefest stays. Gilles et al (1985) report that one factor that results in readmissions is shorter hospital stays due to decrease in bed status resulting in inadequate plans for discharge. Wasylenki et al (1985) note that many readmissions follow close on discharge as the original discharge was premature due to pressure on inpatient beds. In South Africa, Gilles et al (1987) report that at Valkenberg Hospital, Cape Town, from 1972 to 1984 :

- i) the inpatient bed status decreased by one third
- ii) admissions which included the readmissions increased by 62%
- iii) length of stay decreased from 9.32 months to 3.76 months
- iv) 51% of patients stayed for less than one month and 93.3% stayed for less than three months.

Appelby et al (1993) found that schizophrenic patients hospitalized for short stays were more likely to return within 30 days of discharge than the patients who were treated for longer periods.

De Francisco et al (1980) reports that longer hospital stays decrease the rate of readmissions as it improves post hospital adjustment and found a 55% decrease in readmission rate when length of stay was increased from 9 to 26 days. Axelrod and Wetzler (1989) found that longer lengths of stay in hospital were associated with better aftercare compliance. As patients remained in hospital, they became better stabilised and developed greater insight into the need for aftercare.

2.4.4 Substance Abuse

Liberman and Bowers (1990) report that recreational substance abuse is endemic in American society and is a hazard for vulnerable patients, and the most vulnerable are schizophrenic patients living in the community.

Substance abuse is a major complication in the course of chronic mental illness and this combination is associated with treatment difficulty and poor prognosis (Drake and Wallach 1989). A high rate of substance use and abuse are found in those that are rehospitalized (Knudson and Vilma 1984, Drake and Wallach 1989). Drake and Wallach (1989) found that the young adult chronic patient with substance abuse is twice as likely to be rehospitalized during the 1 year follow up period (59% who abused substance were rehospitalized compared to 35% with no substance abuse). This is supported by Kivlahan et al (1991).

Strauss (1992) mentions that the incidence of substance abuse and associated disorders is high in South Africa and will increase unless preventive measures are lodged. In a large percentage of patients the psychiatric conditions were aggravated or maintained by the continued use of substances. Caton et al (1989) found that substance abuse and psychiatric disorder is associated with a more severe course of the disease.

Substance abuse is associated with exacerbation of illness (Knudson and Vilmar 1984, Safer 1987) and disruptive behaviour (McCarrick et al 1985, Safer 1987), as well as housing instability and frequent hospitalization (Safer 1987, Drake and Wallach 1989, Osher and Kofoed 1989). Drake et al (1989) report that homelessness was strongly associated with abuse of street drugs and rehospitalization. Non-compliance with medication is common in schizophrenic patients who abuse substances (McCarrick et al 1985, Safer 1987, Osher and Kofoed 1989, Drake and Wallach 1989). Pristach and Smith (1990) report that this

may have been a major factor in rehospitalization. Chen (1991) mentions that substance abuse should be suspected in patients who are non-compliant with medication and who do not improve.

Various studies in the sociodemographic variables of mentally ill patients who abuse substances mention that they are more often young male patients (Safer 1987, Drake et al 1989, Caton et al 1989, Szuster et al 1990, Muesser et al 1990, Pristach and Smith 1990, Crowe et al 1991, O'Hare et al 1991, Sanguinetti and Brooks 1992). But Safer (1987) and Toner et al (1992) report that there are no gender differences in the frequency of substance abuse disorders in the chronically mentally ill patients.

Caton et al (1989) mentions that "The need to identify and treat substance use disorder whether abuse or dependence among patients with chronic mental illness is increasingly recognised".

Alcohol abuse is common among psychiatric patients (Szuster et al 1990). O'Hare et al (1991) report that half of chronically mentally ill patients abuse alcohol and they have more alcohol related problems and are intoxicated at the time of admission. They have more medical related problems and are notorious for poor compliance with treatment. Stewart et al (1980) mention that 52% of patients were admitted due to drug abuse, the largest number of drug related admissions involved abuse of alcohol.

Alcohol use in schizophrenics has been related to disruptive behaviour and when in crisis the patients increase use of substances which leads to disinhibitive behaviour and decompensation (Drake and Wallach 1989). This is also associated with housing instability, homelessness, treatment non-compliance (Drake and Wallach 1989, Osher and Kofoed 1989), and increased rates of rehospitalization (Drake and Wallach 1989).

Cannabis use constitutes a risk factor for schizophrenic patients even when the patients are on adequate neuroleptic treatment (Knudson and Vilmar 1984). Solomon et al (1990), in South Africa, studied a 110 consecutive black men admitted to a mental hospital with acute psychiatric symptoms. They found that readmissions accounted for 62% of all admissions with 5% having 5 or more previous admissions. Toxic dagga psychoses was diagnosed in 31% of cases. Solomon et al (1990) recommends routine screening for dagga metabolites to differentiate toxic dagga psychotic patients from the rest which is an invaluable aid to patient management.

In conclusion, it is imperative that chronically mentally ill patients be made aware of the adverse effects of substances on the pre-existing mental problem and its role in relapse. It is thus recommended that substance abuse groups be held in the community to educate patients and their families.

2.4.5 Violent behaviour and section under which admitted

There has been an increasing interest in the occurrence of violent or fear inducing behaviour in psychiatric patients in the last two decades which has been stimulated by the controversy over the use of the word "dangerousness" in involuntary hospitalization of psychiatric patients (Rossi et al 1986). In the current civil commitment laws, psychiatrists make decisions to hospitalize mentally ill patients based on assessment of danger to self or others (Beck and White 1991).

Swanson et al (1990) mentions that violent behaviour is an important diagnostic feature for a number of psychiatric disorders described in DSM-111-R including antisocial personality disorder, borderline personality disorder, intermittent explosive disorder and sexual sadism. In other diagnoses such as schizophrenia, bipolar disorder and substance abuse, it is an associative feature.

However various studies have reported that the most frequent diagnosis associated with the violent patient was schizophrenia (Seeman et al 1985, Greenfield et al 1989, Sheridan et al 1990, Beck and White 1991, Tardiff 1992), and a diagnosis of paranoid schizophrenia was found in a large number of studies (Addad et al 1981, Rossi et al 1986, Sheridan et al 1990). This is contrary to the findings of Swanson et al (1990) who found that substance abuse (mainly alcohol abuse) was the most frequent diagnosis.

Readmission may sometimes be precipitated by some form of violent incident (Wistedt 1990). Chronically mentally ill patients fail to comply with medication and decompensate but cannot be committed until they do something dangerous even though it is known that they become dangerous in the latter stages of decompensation (Hiday and Scheid-Cook 1989). Gove and Fain (1977) report that most patients that were rehospitalized were involuntarily hospitalized and were assaultive prior to hospitalization. Furthermore, the involuntarily committed patients had more previous hospitalizations (Mahler et al 1986, Hiday and Scheid-Cook 1989).

It has been suggested that patients who refuse treatment and who have a history of dangerous behaviour may be treated involuntarily as outpatients (Miller and Fiddleman 1984). Hiday and Scheid-Cook (1989) mention that some States in America recently established outpatient commitment that allowed the state to intervene in these "revolving door patients" in compelling them to take treatment in the community before they became dangerous. To be eligible for outpatient commitment a person must be mentally ill but must have the capacity to survive in the community with support from friends, family and others (Hiday and Scheid-Cook 1989, Fernandez and Nygaro 1990).

Geller (1986) found that involuntary outpatient commitment for patients who were hospitalized repeatedly improved their quality of life and length of stay in the community. Bursten

(1986), however, found no evidence that outpatient commitment reduced readmissions in Tennessee.

It is clearly evident that the chronically mentally ill patients are often involuntarily readmitted due to some form of violent behaviour.

2.5 POST DISCHARGE VARIABLES

2.5.1 Community services

Mental ill health is a common disorder which affects millions of South Africans. The services provided are inadequate, compounded by fragmentation of services with gross inequality of services for the different ethnic groups. This leads to confusion and wastage of resources. Fragmentation is clearly illustrated in community psychiatric care. For psychiatric patients follow up care in the community is essential and successful community care depends on the accessibility, continuity and coordination of the therapeutic programme. But in South Africa, patients are transferred from the provincial hospital to "own affairs" community care on discharge. The fragmentation of health services compromises mental health care delivery and has its roots in apartheid ideology, and efforts to improve mental health must take into account urgent community needs such as education and housing and any new policy must be integrated into the overall national policy for community advancement (Freeman 1989).

The policy of deinstitutionalization over the last 2 decades has presented psychiatry with the challenge of maintaining psychiatric patients at an optimal level of functioning in the community. The high rate of readmissions questions the efficiency of community based after care services (Solomon et al 1984, Gilles et al 1985). Readmission rates have been used as a major measure of effectiveness of psychiatric treatment programmes (Sandler and Jakoet 1985).

The aim of deinstitutionalization was to help patients receive community based services and to help them to adjust and reintegrate into the community but instead resulted in increase in hospital admissions and readmissions (Solomon et al 1984). Community and outpatient services have not reduced readmissions (Gilles et al 1985), and readmission is increasing (Smith 1985). Deinstitutionalization has helped decrease state hospital population, decreased length of stay and did shift the focus of care to the community (Solomon et al 1984), but the sad reality is that many patients revolve through the doors of psychiatric facilities (Dincin and Witheridge 1982, Solomon et al 1984).

To many patients, life in the community is intolerable (Dincin and Witheridge 1982), they lead lonely and inactive lives with no structure (Lamb 1980, Geller 1982), with no recreational facilities (Tessler et al 1982), which leads to decompensation and rehospitalization. The chronically mentally ill patients most problematic areas were transportation, managing money, adhering to prescribed medication and preparing and obtaining meals (Tessler et al 1982). Furthermore they led lonely lives with no daytime activities and with no friends. Here social vegetation can occur in the community as readily as it did in the state hospital. The more problems the discharged patients experience with regards to getting medication, employment, housing, meeting people, shopping or transportation, the more likely they would seek rehospitalization (Kinard 1981). For many life in the community has no meaning and young patients become drifters to leave problems and failures behind, to try to find or to avoid closeness, or to avoid involvement in treatment programmes (Lamb 1982).

Zitrin et al (1976) mention that the community facilities have not kept up with the discharge of large numbers of chronic mentally ill patients. There are paucity of services like sheltered employment, psychiatric rehabilitation programmes and support for the family of the chronic mentally ill in the

community. The heavy burden of readmissions will continue unless these services are available (Gilles et al 1985). The present psychiatric clinics are not geared for rehabilitation which many of the readmitted patients require. There are facilities for occupational therapy and industrial therapy in psychiatric hospitals but few day centres have these facilities (Gilles et al 1986). Gilles (1986) reports that functionally impaired patients need supervised occupation like day care centres, protected workshops, sheltered employment schemes and industrial therapy in the community. Accommodation is a problem in the community and many chronic patients need not be in hospital if adequate accommodation like supervised hostels, group homes or foster care is available in the community (Gilles 1986). This is supported by Dax (1992).

Psychiatric rehabilitation inspired by success of physical rehabilitation has its own conceptual base from the "vulnerability - stress coping competence model of mental disorder", (Lieberman 1986) and Anthony and Lieberman (1986) say that the field of "psychiatric rehabilitation" has begun to take its place as a viable and credible intervention approach to treat psychiatric disorder with severe and persisting disability. Gilles (1986) notes that "rehabilitation of the psychiatric patient is part of treatment, not just an afterthought".

These patients need a comprehensive and continuous variety of services and social support to avoid rehospitalization (Cutler 1992). Gagiano (1992) suggests a comprehensive health service at primary care level will most benefit patients.

The care of psychiatric patients will be inadequate if community care continues in its current fashion and cuts in spending will severely aggravate the situation. Unless action is taken the mental health field will be in crisis. (Gralnick 1985)

2.5.2 Non-compliance with aftercare

Aftercare compliance is defined as patients keeping the initial follow up appointment (Stickney et al 1980). Non-compliance with outpatient treatment after a psychiatric hospitalization is closely related to recidivism and rehospitalization (Carpenter et al 1985).

An important form of non-compliance is missed patients' appointments which has far reaching costs, affecting the patient, physician and society (Campbell et al 1991). Gilles et al (1990) found that 95% of patients failed to attend booked appointments. Campbell et al (1991) found that patients with a history of previous missed appointments and who live a distance from the clinic are more likely to be non-compliant. Karon (1984) also found that due to transportation problems patients did not keep appointments.

A critical factor in aftercare is continuity of care (Kjenas 1980), and patients are lost to treatment due to lack of continuity of care (Avison and Speechley 1987). Continuity of care was associated with increased compliance (Axelrod and Wetzler 1989). Smith (1985) notes that in order to reduce the revolving door there has to be continuity of care. Efficient communication between mental health workers help to improve continuity of care (Morrel et al 1982). Smith (1985) mentions that during hospitalizations members of the multidisciplinary team collect an enormous amount of information about the patient and this knowledge should be shared with the outpatient staff. Routine discharge forms are insufficient and should be accompanied by personal contact. Certain staff members can act as coordinators or as case managers or patients can be followed up by the hospital staff at the hospital or at outpatient clinics in the period immediately after discharge which is the most vulnerable period for these fragile patients.

Bogin et al (1984) found that the introduction of a referral coordinator helped increase compliance with aftercare. Kjenas (1980) reports that when there were minimal referral procedures less than half of the discharged patients received aftercare, when patients were contacted by the referral agency before discharge or soon after, 83% received aftercare and if patients had contact with the referral source before hospitalization and before discharge all received aftercare. The outpatient staff had access to and input into the plans for discharge of the patient, and met with the patient within one month of discharge. Gilles et al (1990) found that home visits by trained community staff reduced readmissions.

The cycle of the revolving door existence of acute disturbance, rehospitalization, discharge, discontinuation of treatment and relapse can be interrupted, which has potential for reducing the human and financial costs of psychiatric care (Sullivan and Bonovitz 1981).

The importance of adequate outpatient services to maintain patients in the community cannot be overemphasised.

2.5.3 Non-compliance with medication

The most difficult patients to treat in the community are patients with a history of non-compliance (Huxley and Warner 1992). There is a strong correlation between non-compliance and multiple hospitalization (Carpenter et al 1985).

Studies have shown that non-compliant patients were often males (Bender 1986, Gilles et al 1987). Bender (1986) found that young, chronic male patients were 6 times more non-compliant and were more likely to prematurely terminate treatment. Furthermore Gilles et al (1987) found that non-compliers were patients in the younger age groups - 59% in age group 0 to 29 years.

Failure to take drugs is related to extrapyramidal side effects (Van Putten 1974, Ford 1980), which precipitates readmissions (Van Putten 1974). Studies have shown that the drug reluctant patient had more akathisia, more akinesia, more dystonia and more tremor (Van Putten 1974). Dysphoric responders are patients who claim that the medication is not helpful and made them feel bad (Van Putten 1974, Van Putten et al 1984). A dysphoric response early in treatment is a powerful predictor of non-compliance (Van Putten et al 1981, Van Putten et al 1984).

Other adverse effects of antipsychotics which may increase risk for non-compliance are sexual side effects (Sullivan and Lukoff 1990). Seeman et al (1990) mention that sexual side effects of neuroleptics interferes with patients' adherence to treatment and contributes to psychotic relapse. Ejaculatory disturbances have been found to occur as a side effect of antipsychotic medication (Nininger 1978). Drug induced sexual dysfunctions can have important consequences for compliance (Ghadirian et al 1992).

A lack of understanding of effects and side effects of medication leads to non-compliance (Falloon 1984). If patients fail to know what medications they are taking and when to take them, they will not know what adverse side effects to expect and what to do about them leading to decreased compliance, relapse and rehospitalization (McMahon et al 1987). Ratey and Salzman (1984) report that when patients can understand the drug side effects and can discuss the dysphoria with the treating psychiatrist, compliance improves. Brown et al (1987) found that increased knowledge about side effects decreased the subsequent impact of unpleasant medication effects and a decrease in the incidence of side effects was reported. Falloon (1984) recommends educating families about side effects to improve compliance.

Other barriers related to treatment compliance are :

- i) Long term maintenance medication (Diamond 1983, Corrigan et al 1990).
- ii) Complexity of drug regimes (Blackwell 1976, Diamond 1983, Chen 1991).
- iii) The number of divided doses per day (Blackwell 1976, Diamond 1983).
- iv) Multiplicity of treatments prescribed (Blackwell 1976, Diamond 1983).
- v) Change in the physical composition of drug due to generic substitution by the pharmacy (Olarte et al 1981).
- vi) Difficulty following labelling instructions (Blackwell 1976).
- vii) Poor Doctor-patient relationship (Chen 1991).
- viii) Oral medication (Blackwell 1976, Devito et al 1978, Gilles et al 1987, Wistedt 1991).

Depot antipsychotics which were introduced in the 1960's heralded a major advance in long term treatment for schizophrenia (Wistedt 1991). Wistedt (1991) found that depot antipsychotics were more effective than placebo in preventing relapse and readmission to hospital (62% relapse on placebo compared to 27% on depot).

Falloon (1984) reports that when patients do not attend clinics despite prompting, effective outreach service is provided. The clinic nurse visits the patient, investigates the reason for non attendance and provides the patient with medication and tries to establish regular attendance. Gilles et al (1990) found that home visits by trained community staff improved compliance and decreased readmissions.

Non-compliance with medication leads to decompensation and precipitates readmission.

2.5.4 Stress, life events and social support

Stress is defined as an altered state of an organism which produces ill effects on the mental and/or physical well being of an individual (Warheit 1979). It is produced by changes in the psychological, social, physical or cultural environments. Psychological stress may increase an individual's vulnerability to mental and physical illness which can be prevented if the individual receives social support in mastering the stressful situation (Caplan 1981).

The role of environmental stress in precipitating the onset, relapse or exacerbation of schizophrenia was investigated by Birley and Brown (1970). The authors enquired about life events that could be dated to a definite point in time from the patient and one other informant. A significant concentration of independent events (60%) was found in the 3 weeks preceding the onset or relapse of schizophrenia. Dincin and Witheridge (1982) support this view and report that rehospitalized patients had encountered higher levels of stress during a six month follow up period.

The emotional well being of individuals depends on the support of significant others (Galanter 1988). The term "social networks" refers to a set of linkages and interactions between an individual and his family, friends, co-workers and neighbours (Flaherty et al 1983).

Strauss and Carpenter (1977) note that patients with higher levels of social contact before hospitalization have better outcomes which stress the importance of network size. The authors further found that larger networks provide patients with access to greater number of resources - if one member cannot provide support he can turn to another. The social and symptomatic states of a person with a biological vulnerability to schizophrenia depends on the manner that he and his social support network are able to modulate the impact of

interpersonal, financial and biological stresses as too many stresses lead to breakdown (Lieberman et al 1985). Dozier et al (1987) found that a network of moderate density is optimal for patients who are frequently hospitalized. These networks are most stable as they are most maintainable under stress.

Small social network leads to greater amount of stress and likely to lead to decompensation (Breir and Strauss 1984). With each readmission the network size decreases and reduces the resources available to enable the patient to return to community life (Morin and Seidman 1986).

Dozier et al (1987) proposed that the strength and stability of a vulnerable patient's social network is important in successfully keeping the patient in the community and rehospitalization is reflected as a breakdown in social network.

Holmes - Eber and Riger (1990) report that in their study of patients who had frequent readmissions, the patients lacked friends and relatives and were dependent on mental health professionals. In times of trouble, lacking other social resources, these patients turn to the only social support system they know - the mental hospital. Morin and Seidman (1986), suggest that social network intervention will break or curtail the revolving door pattern.

A stable and supportive social network helps to buffer stress related events and increases the patients' coping mechanisms and prevents decompensation. Hence the importance of a stable social network cannot be over emphasised.

CHAPTER 3

PATIENTS AND METHODS

3.1 TYPE OF STUDY

An exploratory, descriptive, prospective study was undertaken. The prospective nature of the study ensured a more accurate diagnosis according to DSM-111-R (American Psychiatric Association, 1987) as well as more accurate information regarding the factors leading to readmissions.

3.2 RESEARCH DESIGN

3.2.1. 70 Indian patients were evaluated (40 readmissions and 30 first admissions) at the Midlands Hospital complex, Pietermaritzburg. The study was conducted while the author was a registrar in training in the acute admission ward at Town Hill Hospital.

3.2.2. Data pertaining to demographic and clinical variables, as well as patients' attitudes were completed by the author by interviewing the patients and/or a member of the family (Appendix A).

3.2.3. Details regarding rehospitalization and continuity of care were obtained from the patients and/or the relatives. When information was lacking it was obtained from the clinic sister at the community clinic (Appendix A).

3.2.4. This data (Appendix A) was computerized and analyzed.

3.3 STATISTICAL ANALYSIS OF RESULTS

The data recorded on the designed protocol (Appendix A) was analyzed by computer and presented, describing the data comparatively and with reference to the review of the literature. Descriptive statistics consisting of frequency and percentages for the two groups were analyzed. Univaried analysis of the two groups were compared using the chi square analysis, and in addition stepwise logistic regression was used to determine which factors contributed independently to readmissions.

3.4 INFORMED CONSENT

The patients were informed of the nature of the study and were included in the study if signed consent (or thumb print) was obtained on the prescribed form (Appendix B). None of the informants is recognisable from the main demographic data. The results are presented in group figures rather than individual figures. There was no attempt to disguise the location of the study or the communities that were involved.

CHAPTER 4

RESULTS

Descriptive data consisting of frequency and percentages of the two groups were analyzed. Univariate analysis of the two groups were compared using the chi square analysis to demonstrate whether there were any significant differences between the 2 groups. These differences are only referred to when found to be statistically significant. In addition stepwise logistic regression was used to determine which factors contributed independently to readmissions.

4.1 PATIENT VARIABLES

4.1.1 Age

Table I Frequency Distribution of patients according to age (N = 70)

AGE GROUP IN YEARS	1ST ADMISSION	READMISSION	TOTAL
< 20	4 (13.3%)	2 (5 %)	6 (8.6%)
20-29	11 (36.7%)	15 (37.5%)	26 (37.1%)
30-39	6 (20 %)	12 (30 %)	18 (25.7%)
40-49	7 (23.3%)	9 (22.5%)	16 (22.9%)
50 +	2 (6.7%)	2 (5 %)	4 (5.7%)
	30(100 %)	40(100 %)	70(100 %)

As illustrated in Table I there was an almost equal distribution of patients in all age groups in both the first admission and the readmission groups. Most of the patients (40% - 50%) in both groups were below 30 years old.

4.1.2 Sex

Table II Frequency distribution of patients according to sex (N =70)

SEX	1ST ADMISSIONS	READMISSIONS	TOTAL
MALE	19 (63.33%)	33 (82.5%)	52 (74.29%)
FEMALE	11 (36.67%)	7 (17.5%)	18 (25.71%)
TOTAL	30(100 %)	40(100 %)	70(100 %)

The number of males was higher in both the readmitted (82.5%) and first admission group (63.33%) as shown in Table II.

4.1.3 Marital status

Table III Frequency distribution of patients according to marital status (N = 70)

MARITAL STATUS	1ST ADMISSIONS	READMISSIONS	TOTAL
SINGLE	15 (50 %)	24 (60 %)	39 (55.7%)
MARRIED	11 (36.67%)	11 (27.5%)	22 (31.4%)
SEPARATED	4 (13.33%)	5 (12.5%)	9 (12.9%)
TOTAL	30(100 %)	40(100 %)	70(100 %)

There was an almost equal distribution of patients who were either single, separated or married in both the first admission and the readmission groups as shown in Table III. The single patients constituted about 50% of the sample in both the groups.

4.1.4 Employment status

Table IV Frequency distribution according to employment status (N = 70)

EMPLOYMENT STATUS	FIRST ADMISSION	READMISSION	TOTAL
*Employed	9 (30 %)	2 (5 %)	11 (15.7 %)
Unemployed	17 (56.67%)	14 (35 %)	31 (44.30%)
Disability Grant	4 (13.33%)	23 (57.5%)	27 (38.6 %)
Sheltered Employment	-	1 (2.5%)	1 (1.4 %)
TOTAL	30(100 %)	40(100 %)	70(100 %)

* CHI SQUARE = 17.969

P < .0001

Thirty percent of the first admissions were employed compared to only 5% of the readmitted patients. This was found to be statistically significant ($p < .0001$) as illustrated in Table IV. Logistic regression confirmed that unemployment is the single most important contributory factor resulting in readmissions ($P = 0.001$). 57.5% of the readmitted patients were in receipt of a disability grant. Only one patient of the readmitted group had attended a sheltered workshop.

4.1.5 Patients' attitude towards medication

Table V Frequency distribution according to patients' attitude to medication (N = 70)

PATIENTS' ATTITUDE	1ST ADMISSIONS	READMISSIONS	TOTAL
*Needs medication	7 (23.33%)	19 (47.5%)	26 (37.14%)
Does not need medication	23 (76.67%)	21 (52.5%)	44 (62.86%)
TOTAL	30(100 %)	40(100 %)	70(100 %)

* CHI SQUARE = 4.288

P = 0.038

As shown in Table V, 47.5% of the readmitted patients felt that they needed medication, whereas only 23.33% of the first admissions felt that they required medication. This was statistically significant (p=0.038).

4.1.6 Average time spent at home

Table VI Frequency distribution according to the number of hours the patient spends at home (N = 70)

TIME IN HOURS	1ST ADMISSIONS	READMISSIONS	TOTAL
Up to 12 hours		1 (2.5%)	1 (1.43 %)
12 - 16 hours	11 (36.67%)	4 (10 %)	15 (21.43%)
16 - 20 hours	5 (16.67%)	3 (7.5%)	8 (11.43%)
20 - 24 hours	14 (66.67%)	32 (80 %)	46 (6.77%)
TOTAL	30(100 %)	40(100 %)	70(100 %)

As is evident in Table VI, 80% of the readmitted patients spent almost the entire day at home (20-24 hours).

4.1.7 Residential area of patients

Table VII Frequency distribution according to residential area of patients (N = 70)

AREA	1ST ADMISSION	READMISSION	TOTAL
PMB	5 (16.67%)	7 (11.50%)	12 (17.14%)
Durban	19 (63.33%)	25 (62.50%)	44 (62.86%)
Other	6 (20 %)	8 (20 %)	14 (20 %)
TOTAL	30(100 %)	40(100 %)	70(100 %)

Almost two thirds of the patients in both the readmitted and the first admission groups were from the Durban area (Table VII).

4.2 FAMILY VARIABLES

4.2.1 Family composition

Table VIII Frequency distribution of patients according to family composition (N = 70)

COMPOSITION OF FAMILY	1ST ADMISSIONS	READMISSIONS	TOTAL
Nuclear	22 (73.33%)	24 (60 %)	46 (65.71%)
Extended	8 (26.67%)	16 (40 %)	24 (34.29%)
TOTAL	30(100 %)	40(100 %)	70(100 %)

Table VIII illustrates that approximately two thirds of the patients in the readmitted and first admission groups belonged to a nuclear family.

4.2.2 Family size

Table IX Frequency distribution of patients according to family size (N = 70)

FAMILY SIZE	1ST ADMISSIONS	READMISSIONS	TOTAL
< 5	15 (50 %)	20 (50 %)	35 (50%)
5-8	10 (33.3%)	11 (27.5%)	21 (30%)
8 +	5 (16.7%)	9 (22.5%)	14 (20%)
TOTAL	30(100 %)	40(100 %)	70(100%)

Fifty percent of the entire sample came from small families (less than 5 members) as shown in Table IX.

4.2.3 Family history of mental illness

Table X Frequency distribution of patients according to family history of mental illness (N = 70)

MENTAL ILLNESS	1ST ADMISSION	READMISSION	TOTAL
Present	8 (26.67%)	18 (45%)	26 (37.14%)
Absent	22 (73.33%)	22 (55%)	44 (62.86%)
TOTAL	30(100 %)	40(100%)	70(100 %)

Forty five percent of the readmitted patients reported a family history of mental illness compared to only 26.67% of the patients admitted for the first time (Table X).

4.3 CLINICAL VARIABLES

4.3.1 Previous admissions

4.3.1.1 Previous discharge diagnosis

Table XI Frequency distribution of readmissions according to previous diagnosis (N = 40)

DIAGNOSIS	READMISSION
Schizophrenia	13 (32.5%)
Schizophrenia & substance abuse	13 (32.5%)
Substance abuse	3 (7.5%)
Mood disorder - manic	5 (12.5%)
Other	6 (15 %)
TOTAL	40(100 %)

32.5% of the readmitted patients had a previous diagnosis of schizophrenia. A further 32.5% had a combined diagnosis of schizophrenia and substance abuse as shown in Table XI.

Table XII Frequency distribution of diagnosis of first admission patients who were attending a community mental health clinic prior to admission as inpatients (N = 13)

DIAGNOSIS	1ST ADMISSION
Schizophrenia	5 (16.67 %)
Schizophrenia & substance abuse	1 (3.33 %)
Substance abuse	2 (6.66 %)
Mood disorder - manic	2 (6.66 %)
Other	3 (10 %)
Not Applicable	17 (56.68 %)
TOTAL	30 (100 %)

Seventeen of the 30 first admission patients did not attend a community mental health clinic prior to their admission. Of the 13 who attended a community mental health clinic prior to their admission to hospital, 16.67% were diagnosed as schizophrenic (Table XII).

4.3.1.2 Medication on Discharge

Table XIII Frequency distribution according to the medication the readmitted patients were discharged on (N = 40)

MEDICATION	READMISSION
Drug only	11 (27.5%)
Drug and depot	20 (50 %)
Depot only	4 (10 %)
Combination	1 (2.5%)
None	4 (10 %)
TOTAL	40 (100 %)

The medication the readmitted patients were previously discharged on is shown in Table XIII. 50% of the patients were discharged on drug and long acting depot preparation and 27.5% were discharged on drug only.

Table XIV Frequency distribution according to the medication the first admission patients were receiving at the mental health clinic (N = 13)

MEDICATION	1ST ADMISSION
Drug only	7 (53.8%)
Drug and depot	5 (38.5%)
Depot only	1 (7.7%)
Combination	-
None	-
TOTAL	13 (100 %)

In the sample of patients who were admitted to hospital for the first time but who were attending a community mental health clinic prior to their admission revealed that more than half of the patients (53.8%) were receiving a drug only and only 7.7% were on a depot preparation (Table XIV).

4.3.1.3 The number of previous hospitalizations

Table XV Frequency distribution of readmitted patients according to the number of previous hospitalizations (N = 40)

NUMBER OF PREVIOUS HOSPITALIZATIONS	NUMBER OF PATIENTS
1	13 (32.5%)
2	5 (12.5%)
3	9 (22.5%)
4	2 (5 %)
5+	11 (27.5%)
TOTAL	40(100 %)

A large percentage of patients (67.5%) had 2 and more previous admissions. Of this 27.5% had 5 and more previous admissions.

4.3.1.4 Length of stay of last hospitalization

Table XVI Frequency distribution of patients according to length of stay of last hospitalization (N = 40)

LENGTH OF STAY	READMISSION
Less than 1 month	21 (52.5%)
1 - 12 month	17 (42.5%)
12 months	2 (5.0%)
TOTAL	40(100 %)

Table XVI shows that the length of stay of last hospitalization of the majority of patients was less than 1 month. Only 5% of patients stayed in hospital for a period of more than 12 months.

4.3.1.5 Duration since last hospitalization

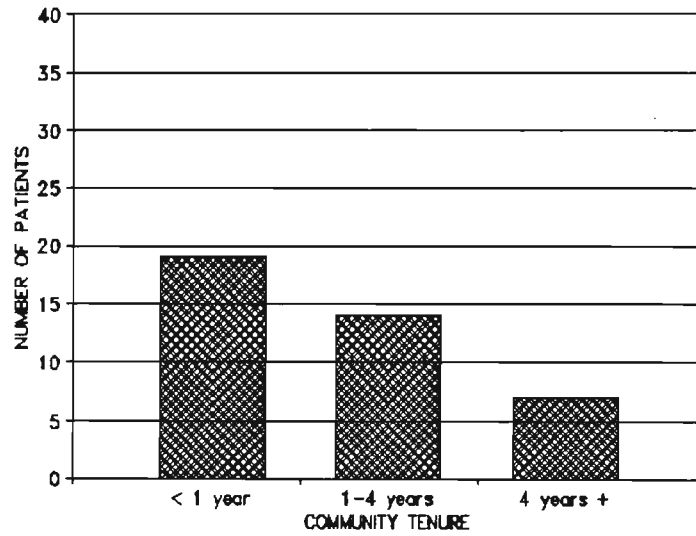


Figure 1 Frequency distribution of readmitted patients according to duration since last hospitalization (N = 40)

The community tenure of almost half of the readmitted patients (47.5%) was less than one year (Figure 1).

4.3.2 Current Admission

4.3.2.1 Reason for admission

Table XVII Frequency distribution of patients according to reason for admission

REASON FOR ADMISSION	FIRST ADMISSION	READMISSION	
Aggressive Behaviour	10 (33.3%)	15 (37.5%)	25 (36%)
Aggressive behaviour and substance abuse	5 (16.7%)	6 (15 %)	11 (16%)
Substance abuse	6 (20 %)	6 (15 %)	12 (17%)
Refused treatment	8 (26.7%)	11 (27.5%)	19 (27%)
Suicidal	1 (1.3%)	1 (2.5%)	2 (3%)
Placement problem	-	1 (2.5%)	1 (1%)
TOTAL	30(100 %)	40(100 %)	70(100%)

Table XVII illustrates that there was an almost equal distribution of patients in both the readmitted and first admission groups, where the reasons cited for admission were :

aggressive behaviour

aggressive behaviour and substance abuse

substance abuse

refused treatment

However most of the patients in both the groups were admitted on account of aggressive behaviour and aggressive behaviour associated with substance abuse.

4.3.2.2 Substance abuse

Table XVIII Frequency distribution of patients according to history of substance abuse (N = 70)

SUBSTANCE ABUSED	1ST ADMISSION	READMISSION	TOTAL
None	15 (50 %)	17 (42.5%)	32 (45.7%)
Alcohol	5 (16.7%)	3 (7.5%)	8 (11.4%)
Dagga	4 (13.5%)	5 (12.5%)	9 (12.9%)
Mixed	6 (20 %)	15 (37.5%)	21 (30 %)
TOTAL	30(100 %)	40(100 %)	70(100 %)

A high percentage of patients ($\pm 50\%$) reported a history of substance abuse in both groups. Furthermore a significant proportion of patients in both groups reported a history of mixed drug abuse, i.e. alcohol and dagga (20% in first admissions, 37.5% in readmitted group) as shown in Table XVIII.

4.3.2.3 Diagnosis

Table XIX Frequency distribution of patients according to diagnosis (N = 70)

DIAGNOSIS	1ST ADMISSION	READMISSION	TOTAL
Schizophrenia	8 (26.7%)	14 (35 %)	22 (31.4%)
Schizophrenia and substance abuse	3 (10 %)	15 (37.5%)	18 (25.8%)
Substance abuse	7 (23.3%)	1 (2.5%)	8 (11.4%)
Mood disorder	4 (13.3%)	6 (15 %)	10 (14.3%)
Other	8 (26.7%)	4 (10 %)	12 (17.1%)
TOTAL	30(100 %)	40(100 %)	70(100 %)

The majority of patients in the readmitted group (72.5%) were diagnosed as having schizophrenia and schizophrenia and substance abuse as compared to 36.7% of the patients with a similar diagnosis in the first admission group.

4.4 POST DISCHARGE VARIABLES

4.4.1 Attendance at clinic

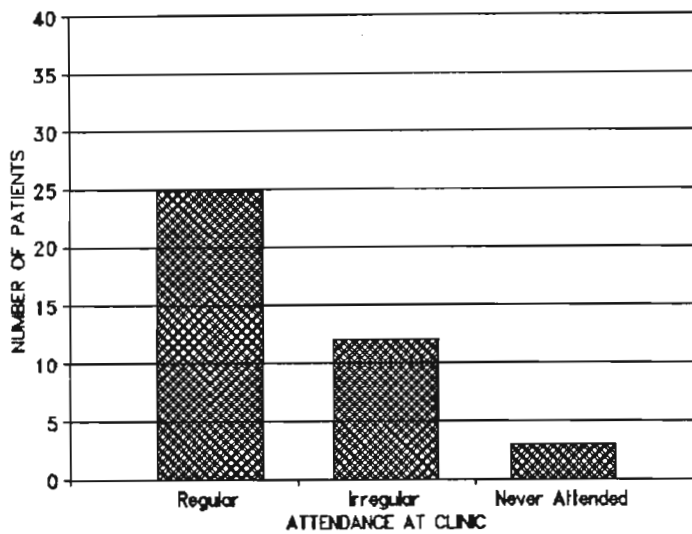


Figure 2 Frequency distribution of the readmitted patients according to clinic attendance (N = 40)

Approximately two thirds of the readmitted patients reported regular clinic attendances. However a fair number (12) reported irregular attendance (Figure 2).

4.4.2 Time between last attendance at clinic and readmission

Table XX Frequency distribution of patients according to last attendance at clinic and readmission (N = 40)

TIME OF LAST ATTENDANCE	READMISSION
< 1 month	27 (67.5%)
< 12 months	10 (25 %)
> 12 months	3 (7.5%)
TOTAL	40 (100 %)

The majority of readmitted patients (67.5%) reported attending a community mental health clinic at least one month prior to admission and only 7.5% reported their last attendance as being more than one year previously (Table XXI).

CHAPTER 5

DISCUSSION OF RESULTS

The results of this research revealed several risk factors for readmission and these are discussed below.

5.1 PATIENT VARIABLES

5.1.1 Age

As shown in Table I, (page 31) 40%-50% of the patients in both the first admission and the readmission groups were below 30 years old. This is consistent with the review of literature (Loranger 1984, Carpenter et al 1985, Eaton et al 1992), reflecting that schizophrenic patients who become ill at an earlier age have poor prognosis. This is due to young adulthood being a very stressful period as patients have various tasks to fulfil, and due to their poor coping mechanisms and vulnerability to stress, psychotic decompensation occurs which results in rehospitalization.

5.1.2 Sex

The results of this research showed that there was a predominance of males (Table II, page 32) in both the first (63.33%) and readmitted groups (82.5%). Several studies support these findings (Levine et al 1981, Woogh 1986, Angermeyer et al 1990, Eaton et al 1992). Meer (1969) mentions that the role of South African Indian men and women are distinctive and that men are the breadwinners. One can postulate that men lead more stressful lives and hence are more likely to be readmitted. Chetty (1987) mentions that with westernization of Indian culture, women are now sharing the breadwinning role. Women's role in society can be as stressful which could result in more females being readmitted.

5.1.3 Marital status

Most of the patients in both the first admission and readmitted groups were single (50%-60%). This is consistent with Franklin et al (1975) who found that most of the readmitted patients were single, separated or divorced. The findings of this study show that single parents do not have a good prognosis as shown by the high readmission in unmarried patients. Rehospitalization is more likely if patients are discharged to their parents rather than to their spouses and, as explained by Brown et al (1972), that more expression is expressed which leads to relapse. If a patient is married he may be more motivated in fulfilling a breadwinning and parental role (Vaughn and Leff 1976, Anthony and Liberman 1986, Kavanagh 1992).

Various studies have reported that relapse is reduced if relatives developed effective coping mechanisms (Anthony and Liberman 1986, Kavanagh 1992). It is recommended that the families of schizophrenics receive greater support services to improve their coping mechanisms and coping skills in order to reduce the risk of rehospitalization.

5.1.4 Employment status

This study showed that 71.43% of the readmitted patients were unemployed. The finding of the present study is consistent with various other studies that reported the association between unemployment and readmission (Ahr et al 1981, Lambert et al 1983, Test et al 1985, Harvessey and Hopkin 1989). It was found that the majority (57.5%) of the readmitted patients were receiving disability grants. This compares favourably with Sullivan et al (1992). Only 1 patient in the readmitted group was in sheltered employment. The lack of resources, like sheltered employment, means that many chronically mentally ill patients lead largely inactive lives in the community with no employment, and no recreational activities.

It is recommended that resources such as protected workshops, sheltered employment, and facilities such as industrial and occupational therapy should be available to improve the quality of life of these chronic patients.

5.1.5 Patients' Attitude towards medication

47.5% of the readmitted patients reported that they felt that they needed medication in comparison to 23.3% of the patients who were admitted for the first time (Table V). This is consistent with a report by Axelrod and Wetzler (1989) which mentions that patients become receptive to aftercare after having several hospitalizations as they gain insight into the reality of their illness and have a positive attitude with less denial of their need for treatment and a greater perceived need for aftercare.

The patient's family needs to be educated about the need for medication. When families have positive attitudes about medication, patients' compliance increases (Falloon 1984, Corrigan et al 1990).

5.1.6 Average time the patient spent at home

The majority of patients spent most of their time at home (Table VI, page 34), leading lonely and unproductive lives. It is postulated that one of the reasons for this is the absence of adequate community facilities for the chronically mentally ill. Furthermore families should be educated and encouraged to make use of the community facilities that are available.

5.1.7 Residential area of patients

The area from which the majority of patients were admitted was from the Durban area (62.86%). This is not surprising as 40% of the total Indian population live in Durban (Meer 1969). Furthermore most of the patients in this study lived in houses,

around Chatsworth, Phoenix and Springfield in Durban, reflecting the poor socio-economic conditions in which these chronic mental patients live.

5.2 FAMILY VARIABLES

5.2.1 Family composition

Most of the patients (65.71%) belonged to a nuclear family (Table VIII, page 35). As revealed in the literature review the Indian South African families are in a period of transition from extended to nuclear family composition (Landau-Stanton et al 1982, Mason 1989). This places more stress on the nuclear family. As reported by Lin and Kleinman (1988) with the ascendancy of nuclear over the extended family, family members have to face the task of caring for the schizophrenic patient on their own with few familial resources to rely on. This results in unrealistic expectations and disappointment leading to excessive demands and criticism, rendering the mentally ill patient susceptible to relapse and rehospitalization.

5.2.2 Family size

This research showed that up to 50% of the patients had families that constituted less than 5 members. According to the data collected in this study, this is considered as a small sized family unit. This places more stress on the patients which is more likely to lead to decompensation (Breir and Strauss 1984).

5.2.3 Family history of mental illness

This study found a family history of mental illness in 26 patients (37.14%). Alley (1985) found that more than half of the patients (56.7%) had a family history of mental illness and 16.7% of the patients had more than one family member ill. These findings are consistent with DSM-III-R (1987) that

reports that schizophrenia is a familial disorder and there is a high prevalence in first degree biological relatives of patients with schizophrenia.

5.3 CLINICAL VARIABLES

5.3.1 Previous admission

5.3.1.1 Previous discharge diagnosis

64.8% of the patients that were readmitted had a previous diagnosis of schizophrenia, 50% of whom also had a diagnosis of substance abuse disorder. The increased risk of rehospitalization in schizophrenic patients who abuse substances is clearly illustrated in the literature (Drake and Wallach 1989, Pristach and Smith 1990). Schizophrenic patients who abuse substances should be counselled about the ill effects of substances resulting in their decompensation.

5.3.1.2 Medication on discharge

This study showed that 50% of the patients were discharged on a drug and depot preparation and 27.5% were discharged on a drug only (Table XIII, page 38). Research shows that patients on a depot preparation have better compliance than patients only on oral preparation (Devito et al 1978). It is recommended that:

1. patients on oral preparation should be changed to a long acting depot preparation.
2. if patients are already on depot preparation, the dose of depot should be increased.
3. the depot injections should be increased from monthly to two weekly.
4. depot clinics should be run.

5.3.1.3 The number of previous hospitalizations

A number of studies have reported that the number of previous admissions was a strong predictor of readmissions (Joyce et al

1981, Sandler and Jakoet 1985, Appelby et al 1993). It is not surprising therefore that 67.5% of the readmitted group of patients had more than 2 admissions.

5.3.1.4 Length of stay of last hospitalization

The author found that 21 (52.5%) of patients length of stay of previous hospitalization was less than 30 days. Research showed a short hospital stay since deinstitutionalization has been postulated to be one of the factors that result in readmission (Gilles et al 1985). In the hospital where the author worked hospital stay was associated with the pressure to discharge patients prematurely, due to lack of beds and high patient turnover, with inadequate plans for discharge.

It is suggested that patients should have longer hospital stay, to stabilise them better and to improve plans for discharge to enable these patients to cope in the community. Pre-discharge planning should be emphasised. The weekly team meetings should include members from inpatient and outpatient teams, the social worker and wherever possible a close family member. Plans should include proper follow up care, which clinic that patient should attend and who to see.

5.3.1.5 Duration since last hospitalization (Community tenure)

Community tenure was less than 1 year in 47.5% of patients. The fact that approximately half (47.5%) of the readmitted patients in this study were in the community for less than 1 year, questions the availability of services for the chronically mentally ill.

It is recommended that services like rehabilitation for psychiatric patients be improved. There should be supervised hostels, day hospitals, and services to cater for the needs of the family of the chronically mentally ill. There should be more recreational facilities to break the boring monotonous lives these patients lead in the community. It is envisaged

that an improvement in community services will increase the community tenure of mentally ill patients.

5.3.2 Current admission

5.3.2.1 Reason for readmission

Most of the patients in this study were admitted due to aggressive behaviour (36%) and aggressive behaviour that was associated with substance abuse (16%), substance abuse (17%) and refusal to take medication (27%). Extensive review of the literature reveals that violence is frequently associated with male patients with a diagnosis of schizophrenia who also abuse substances. These patients are also more likely to be non-compliant with medication. Most of the patients reported attending an outpatient clinic regularly and most reported attending a clinic 1 month prior to their readmission. In 19 patients the reason cited for readmission or admission is that patients refused treatment. One can postulate that the reason being is that patients abuse substances and they are aggressive and hence have lack of insight and impaired judgement which leads to refusal to take medication, resulting in hospitalization.

Strauss (1992) recommends that primary intervention programmes be handled at the community. The general public should be informed about the destructive effects of drug dependence on physical and mental health. The families should be well informed about the resources that are available in the community. The family should be made aware that with good compliance, prognosis is better. Soon after discharge patients must be involved in substance abuse groups. " The groups can detect at an early stage any signs of relapse, help improve the patients' compliance and act as a social support system". The patients and families need support in the community provided by therapeutic groups in the communities.

5.3.2.2 History of abuse of substances

This study showed that a large percentage of patients reported history of alcohol and drug abuse. The literature clearly shows that alcohol and drug abuse in mentally ill patients eventually leads to decompensation and rehospitalization. They frequently lack insight into the problems leading to the readmission and are poorly compliant with medication.

It is recommended that substance abuse groups be held in the hospital to increase patients' awareness of the deleterious effects of substance abuse on their mental health. Substance abuse groups should also be held in the community.

5.3.2.3 Diagnosis

The most frequent diagnosis was found to be schizophrenia and dual diagnosis of schizophrenia and substance abuse, which is consistent with studies done elsewhere (Drake and Wallach 1989).

5.4 POST DISCHARGE VARIABLES

5.4.1 Attendance at clinic

Even though the majority of patients reported attending the community clinic regularly, a fair percentage reported irregular attendance (30%). This can be postulated as a reason for readmission. It is thus recommended that if patients fail to attend a clinic, home visits should be made by the community staff. The reasons resulting in non attendance should be enquired into and medication, especially depot injections, be given at home. The patients and the family should be educated about the importance of complying with medication.

5.4.2 Time between last attendance at clinic and readmission

The majority of patients in this study reported that they attended the outpatient clinic less than 1 month prior to the hospitalization. This was confirmed by the author who telephoned the sister in charge at the clinic. This study shows that approximately two thirds of the patients attended a community clinic regularly and attended the clinic less than 1 month prior to their hospitalization.

One needs to question that if patients attended the clinics and were on treatment - why were they readmitted?

One can postulate the following :

1. During the research the author found that many of the patients were certified by the District Surgeons of the area and not by the outpatient clinic. When patients relapse the families are not taking the patient for review to the clinic but instead go to the District Surgeon who does not know the patient's history which sometimes results in unnecessary certification of patients. One can postulate that if the patients were taken to their clinics, then the community staff who knows the patient well would intervene and an expensive and at times unnecessary inpatient hospitalization could have been prevented. This would help prevent inappropriate certifications and could help decrease the revolving door.
2. The second postulate is that patients attend a clinic faithfully and are presented with medication. If it is oral medication, patients do not take them but hoard them at home. This was seen in the study where on admission the patient's family or relatives brought packets of unused tablets that were dated even up to two years back. One needs to seriously look at compliance with oral medication and to consider instead long acting depot preparations in patients who are stabilized and discharged on oral medication only.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

A descriptive exploratory study was done to evaluate the critical biopsychosocial factors that were involved in precipitating readmissions of the Indian psychiatric patients to the Midlands Hospital Complex. Seventy Indian patients were evaluated (40 readmissions and 30 first admissions). The data (Appendix A) obtained was computerized and statistically analyzed. Descriptive statistics consisting of frequency percentages for the 2 groups were analyzed. Univariate analysis using the chi square analysis was used to compare if there were any significant differences in the 2 groups. In addition stepwise logistic regression was used to identify the factors resulting in readmission.

6.2 LIMITATIONS OF THIS STUDY

The limitations of this study were as follows :

- 6.2.1 The author did not evaluate the emotional atmosphere of the patient's family. A vast study of research shows that relatives high in expressed emotion had a negative effect on the patient.
- 6.2.2 Factors regarding stresses and life events that could have precipitated the onset or relapse of patients were not enquired into.
- 6.2.3 Upon perusal of the old case notes of the readmitted patients the author found that there were insufficient details and at times even lack of proper working diagnosis. There was hardly any information, about plans for discharge of the patient and follow up care.
- 6.2.4 The author evaluated factors resulting in readmissions in Indian patients only, and did not consider the other race groups.
- 6.2.5 There was a very small number of patients that were

involved in this study (70 patients; 30 first admissions and 40 readmissions).

- 6.2.6 The author found that the study was too broad, and too many variables were looked at. Future research can look at fewer variables, eg. substance abuse or aggressive behaviour and readmissions.

6.3 CONCLUSIONS

6.3.1 Patient Variables

- 6.3.1.1 Most of the patients in the present study were in the age group 20-29 years.
- 6.3.1.2 There was a preponderance of males in both the first admissions and readmissions samples.
- 6.3.1.3 Most of the patients in the readmitted group were unemployed and the majority were receiving disability grants. Only one patient in the readmitted group was in sheltered employment.
- 6.3.1.4 Most of the patients in both groups were single or separated.
- 6.3.1.5 Most of the patients admitted were from the Durban area.

6.3.2. Family Variables

Most of the patients belonged to nuclear family units.

6.3.3 Clinical Variables

- 6.3.3.1 The majority of the patients in the previous admissions were diagnosed as suffering from schizophrenia or dual diagnosis of schizophrenia and substance abuse.
- 6.3.3.2 Most of the patients in the readmitted groups were on drug and depot preparation, whereas the patients who were admitted for the first time, the majority who were attending a community clinic prior to their

admission as an inpatient were on drug only.

- 6.3.3.3 The majority of patients had less than 5 previous hospitalizations.
- 6.3.3.4 The community tenure in majority of patients is less than 1 year.
- 6.3.3.5 Most of the readmission group patients stayed in hospital for a short duration (less than 30 days) during their last admission.
- 6.3.3.6 The reason for admission in most of the patients was due to aggressive behaviour and aggressive behaviour associated with substance abuse.
- 6.3.3.7 The patients in the readmitted group were found to have a more positive attitude towards medication as compared to the patients admitted for the first time.
- 6.3.3.8 The discharge diagnosis in the current admission was mainly schizophrenia or schizophrenia plus substance abuse.

6.3.4 Post Discharge Variables

Most of the patients in the present study reported that they had attended a clinic regularly and the majority reported they attended a clinic 1 month prior to their hospitalization.

6.4 RECOMMENDATIONS

The following recommendations are suggested to help reduce readmission and increase community tenure :

- 6.4.1 There should be more services like sheltered employment, supervised workshops, industrial and occupational therapy for the chronically mentally ill in the community. At present there is a dearth of such services.
- 6.4.2 Psychiatric rehabilitation should also focus on job rehabilitation. Chronically mentally ill patients have difficulty in maintaining and obtaining jobs. These programmes should focus on social skills

training and on improving interpersonal relationships.

- 6.4.3 Most of the patients in this study were discharged to their families. Hence the following recommendations are made :
 - 6.4.3.1 Educating the families about schizophrenia would lead to a better understanding of the patient and the disorder. This would help to obtain the families support and hence lead to better patient management and help to increase community tenure.
 - 6.4.3.2 Educating the families about the need for medication and the effects of medication. If the family has a positive attitude towards medication, they influence the patient's attitude towards medication which increases compliance.
 - 6.4.3.3 The patients and the families need to be informed about the side effects of medication and what to do about them.
 - 6.4.3.4 There should be support groups in the community to provide them with advice and information about schizophrenia. Families can discuss their pain and anger, and the problems of caring for mentally ill patients.
 - 6.4.3.5 The importance of the patient's social network and social support must be brought to the attention of the patients' families.
- 6.4.4 It is recommended that the length of stay of the patients should be longer to enable the patient to be properly stabilized and to enable them to be reintegrated into the community. The author found that due to lack of beds and the high patient turnover, patients were discharged prematurely resulting in inadequate plans for discharge.
- 6.4.5 More emphasis should be placed on the pre-discharge planning. The patients considered suitable for discharge, and who are more higher functioning should be in one ward which has a full multidisciplinary

team, including a psychiatrist, ward doctor, clinical psychologist, social worker and nursing staff. Weekly, multidisciplinary team meetings should be held to discuss the patient's further management in the community. It is imperative that at these meetings the community staff is also present. As far as possible, the patient's family should also be present. A smooth transition from inpatient to outpatient facilities would result in better compliance. Plans for discharge, specifically plans to which clinic the patients will attend, day and time of appointment should be discussed.

- 6.4.6 In the hospital, groups should routinely be held to discuss the benefits of medication and the need for long term maintenance medication. Patients should know the name and dose of the drug prescribed and their side effects. Also the advantage of long acting depot preparation cannot be overemphasised.
- 6.4.7 The reasons for their admission need to be discussed, especially the abuse of substances which leads to aggressive behaviour, refusal of medication and the need for rehospitalization.
- 6.4.8 There is an urgent need to improve community services including halfway houses, day hospitals, and supervised hostels.
- 6.4.9 The patient's attendance at the clinics should be monitored and if patients fail to show up, home visits must be made and if necessary treatment should be given at home.
- 6.4.10 At the community clinic, programmes should include substance abuse and schizophrenia groups.

There are many factors resulting in a high rate of readmission and much can be done to increase community tenure.

The model of community psychiatry which is currently implemented in the Orange Free State has been accepted as the

national model for the Republic of South Africa and will eventually be practised nationwide (Gous 1992). This model consists of primary, secondary and tertiary care as well as primary, secondary and tertiary prevention. The primary health team launch preventative programmes with the needs of the community in mind. These should include stress management, marriage enrichment and awareness of substance abuse. Therapeutic groups form the cornerstone for the rehabilitation of patients and their families.

In conclusion, Gagiano (1992) reports that for many years psychiatric services were rendered mainly on a tertiary level, which was expensive and ineffective. The high relapse rate, a lack of early detection of psychiatric illnesses and absence of primary intervention programmes, caused a great deal of concern. Due to stigmatisation the patients were not motivated to attend psychiatric outpatient clinics. He recommends that patients will benefit most from an effective and comprehensive health service at primary care level.

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PERSONAL COMMUNICATION

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THESIS

Alley R. Psychosocial factors and Recidivism of the Indian Schizophrenic Patient. Unpublished thesis in the Faculty of Health Science at the University of Durban-Westville, 1988.

APPENDIX A

DATA SHEET

NAME:

.....

FILE NO:

DISTRICT:

ADMISSION STATUS: FIRST ADMISSION/READMISSION

A. DEMOGRAPHIC VARIABLES

1.	AGE	:	UNDER	20	0
				20-29	1
				30-39	2
				40-49	3
				50-59	4
				60+	5

2.	SEX	:	MALE	0
			FEMALE	1

3. EMPLOYMENT STATUS

	PROFESSIONAL	0
	SKILLED	1
	SEMI-SKILLED	2
	UNSKILLED	3
	UNEMPLOYED	4
	SELF EMPLOYED	5

4. LEVEL OF EDUCATION

	Illiterate to Std 1	0
	Std 2 - Std 6	1
	Std 7 - Std 10	2
	Undergraduate	3
	Diploma	4
	Other	5

5. MARITAL STATUS

	Never married	0
	Married	1
	Divorced	2
	Widow/Widower	3
	Remarried	4
	Living together	5
	Separated/Deserted	6

6. CHILDREN

	Yes	1
	No	2

B. CLINICAL VARIABLES

1. DISCHARGE DIAGNOSIS

Schizophrenia	0
Brief Reactive Psychosis	1
Adjustment disorder	2
Delusional disorder	3
Mood disorders	4
1. Major Depression	
2. Bipolar Affective disorder	
- Mania	
- Depression	
Organic mental disorders	5
Anxiety disorders	6
Epilepsy	7
Mental retardation	8
Personality disorders	9
V Code	10
Substance use disorder	11
Schizophrenia + Substance	12

2. MEDICATION ON DISCHARGE

Drug only	1
Drug + depot	2
Depot only	3
Combination (two and more)	4

3. NUMBER OF PRIOR HOSPITALIZATIONS

PRIOR ADMISSION TO HOSPITAL	DATE:	PERIOD
-----------------------------	-------	--------

1.

2.

3.

4.

5.

6. More than 5

4. Duration since last hospitalization.

5. Length of stay of last hospitalization.

C. CONTINUITY OF CARE

1. ATTENDANCE AT CLINIC

Regular	1
Irregular	2
Never attended	3

2. Time between last attendance and re-admission.

Less than 1 month	0
1 month	1
1 - 3 months	2
3 - 6 months	3
6 - 12 months	4
more than 12 months	5

D. PATIENT'S ATTITUDE

Needs medication	1
Does not need medication	2

E. FAMILY DETAILS

1. COMPOSITION OF FAMILY

Nuclear	0
Extended	1
Single parent	2
Adopted	3
Not known	4

2. FAMILY SIZE

Up to 3	1
4 - 5	2
Medium 6 - 8	3
Large 8+	4

3. PARENTAL HISTORY

a) Occupation : Mother

Housewife	0
Professional	1
Skilled	2
Semi-skilled	3
Unskilled	4
Unemployed	5
Self employed	6
Unknown	7
Deceased	8

Father

Professional	1
Skilled	2
Semi-skilled	3
Unskilled	4
Unemployed	5
Self employed	6
Deceased	7

b) MENTAL ILLNESS

Absent	1
Present	2
Unknown	3

c) HISTORY OF ALCOHOL AND DRUG ABUSE

Absent	1
Present	2
Unknown	3

d) Any other member of the family mentally ill.

Yes	1
No	2
Not known	3

F. PATIENT'S DETAILS

1. WORK SITUATION

Did the patient work during the period that he was away from Hospital?

Employed	1
Unemployed	2
Sheltered employment	3
Disability grant	4

2. AVERAGE TIME SPENT AT HOME

12 hours a day	1
13 - 16 hours a day	2
16 - 20 hours a day	3
20 - 24 hours a day	4

G. CURRENT ADMISSION**1. REASON FOR ADMISSION**

Refused treatment	1
Aggressive	2
Abuses alcohol and drugs	3
Side effects	4
Suicidal	5
Wandering away	6
Placement problems	7
Hallucinations	8
Behavioral problem	9

2. SECTION UNDER WHICH ADMITTED

Urgency	1
Certified	2
Voluntary boarder	3
Consent	4
Back from leave of absence	5

3. HISTORY OF ABUSE OF DRUGS

None	0
Alcohol	1
Dagga	2
Mixed	3
Other	4
Unknown	5

4. DIAGNOSIS

Schizophrenia	0
Brief Reactive Psychosis	1
Adjustment disorder	2
Delusional disorder	3
Mood disorders	4
1. Major Depression	
2. Bipolar Affective disorder	
- Mania	
- Depression	
Organic mental disorders	5
Anxiety disorders	6
Epilepsy	7
Mental retardation	8
Personality disorders	9
V Code	10
Substance use disorder	11
Schizophrenia + Substance	12

APPENDIX B

FORM OF CONSENT

I ,(parent/guardian) do hereby give consent to Dr K Moodley of Midlands Hospital, Pietermaritzburg, to incorporate information obtained from me in her study of readmissions to the Midlands hospital complex. I have been given the assurance that my name and other identifying information will not be used and that complete anonymity and confidentiality will be maintained. The information so obtained will be used for no other purpose and will be communicated to no other person.

SIGNED DATE

WITNESS

APPENDIX C

CHI SQUARE TEST

The data was analyzed by computer using the Chi Square test.

$$\text{i.e. } \chi^2 = \sum \left\{ \frac{(O-E)^2}{E} \right\}$$

where O = observed frequency

E = expected frequency

For example :

Table IV Frequency distribution according to employment status.

(N = 70)

EMPLOYMENT STATUS	FIRST ADMISSION	READMISSION	TOTAL
*Employed	9 (30 %)	2 (5 %)	11 (15.7 %)
Unemployed	17 (56.67%)	14 (35 %)	31 (44.30%)
Disability Grant	4 (13.33%)	23 (57.5%)	27 (38.6 %)
Sheltered Employment	-	1 (2.5%)	1 (1.4%)
TOTAL	30(100 %)	40(100 %)	70(100 %)

* CHI SQUARE = 17.969

P < 0001