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# A study to identify factors associated with readmission to a psychiatric hospital in adults attending a partial care program

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# A STUDY TO IDENTIFY FACTORS ASSOCIATED WITH READMISSION TO A

# PSYCHIATRIC HOSPITAL IN ADULTS ATTENDING A PARTIAL CARE

# PROGRAM

by
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A Thesis

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# ABSTRACT

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A Study to Identify Factors Associated With Readmission to a Psychiatric Hospital in
Adults Attending a Partial Care Program
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The purpose of this research was to identify the factors which lead chronic

mentally ill adults to be rehospitalized when compared to other chronic mentally ill

adults, attending the same partial care program, who have not been rehospitalized. The

sample included 108 subjects attending a particular partial care program. The subjects

ranged between the ages of 20-80+. Each of the subjects has met the criteria for a DSM-

IV diagnosis.

The researcher reviewed each of the subject's charts to determine if he/she has

been readmitted to a psychiatric hospital while attending the partial care program. The

subjects were then grouped accordingly readmitted vs. non-readmitted. In addition,

several factors were accounted for, regardless of the subject's grouping.

The results of this study were significant. The subjects who had readmissions

were found to have had more than one contributing factor that resulted in the relapse and

a hospital readmission. Meanwhile, those without a relapse were dominant in one factor,

having a psychotic diagnosis. It was also discovered that attending a partial care program

might decrease an individual's probability of having a relapse.

# ACKNOWLEDGEMENTS

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# CHAPTER I
## Introduction to the Study

### Need

The need for this research is to have a more clear understanding of what may contribute to a psychotic relapse. The subjects in this research are adults who have been treated for psychiatric reasons at some point in their lives, and have been given a DSM-IV diagnosis. Most of the subjects have been hospitalized while receiving initial treatment. Upon the subjects' discharge from the hospital, these subjects began attending a partial care program, either mandated by a facility or by their own choice. The length of admissions for each individual subject will vary. Some subjects have been attending the program for several years, while other subjects have only been attending for a short time.

This research is looking for an understanding as to why some of the subjects have a psychiatric relapse, and others do not. The term relapse in this study is to include a second hospitalization, after being in the partial care program, and a return back to the same partial care program. Each of the subjects is offered the same level of care from the program's staff. It is entirely up to the subject how much he/she gets out of the program based on his/her level of participation. Some of the subjects would rather spend their time sleeping or outside smoking cigarettes, while the other subjects are partaking in the program groups and being educated on their mental illnesses.

The researcher felt this study was needed to have an understanding why some mentally ill adults end up back in the hospital, even when they are receiving services. The

researcher has observed many of the subject's return to the hospital because of a relapse. What is not fully clear is why some of the subjects maintain a functioning lifestyle and other subjects spend their lives in and out of hospitals.

## Purpose

The purpose of this research is to identify the factors to which lead a chronic mentally ill adult to be rehospitalized, when compared to other chronic mentally ill adults attending the same partial care program, who are not re-hospitalized.

## Hypothesis

It is hypothesized that patients attending a partial care program, who relapse during their services will have similar contributing factors among each other that have been rehospitalized while receiving treatment.

## Background

The partial care facility that was used for this study was specifically designed to treat multi-problem adults suffering from various psychiatric disabilities. This population includes severely mentally ill with maladaptive behavior problems, resistant to services, non-compliance with medications, in repeated psychiatric crises, which requires intensive and comprehensive treatment and innovative programming. The program provides and/or arranges a full range of services necessary to meet the comprehensive needs of the individual; experiences and opportunities to enable a client to recover, maintain, or increase his/her current level of functioning; and as part of the total program, clients shall

be assisted in seeking and utilizing natural support systems and community resources outside of this partial care program facility. The partial care program combines close observation, psychiatric evaluation, medication monitoring, and education in a supportive milieu with group activities designed to increase functional abilities. Therefore, the major goal of this partial care program is to strive towards maximizing our clients' independence and community living skills, with a concurrent effort to reduce unnecessary hospitalizations.

Some of the programs' specific goals include maximizing the clients locus of control, orientation to reality, and emotional/psychological stability, thereby reducing the need for re-hospitalization. The program also assists all clients at the point of their own individual level of functioning without bias or preconception regarding any characteristics or traits. The treatment will be holistic in nature, ensuring the needs and rights of all clients mentally, psychologically, physiologically, socially, spiritually, and culturally. Lastly the program will be a model of compassion, integrity and professionalism within the mental health field, and within the community.

The partial care program facility in this study has certain criteria for admission. First and foremost, the program will serve those with severe and persistent mental illness. Other criterion includes those individuals that have a history of a mental illness as identified by the ICD9CM and/or DSM-IV. This may include individuals with a diagnosis of mental retardation and/or substance abuse, but not as their primary diagnosis. Next would be an individual that has a history of psychiatric hospitalizations or is at risk of a psychiatric hospitalization. Another point to admission criteria is that a person that is experiencing significant functional limitations. Lastly are adults, with exceptions to be

individually assessed by staff.

This partial care program facility is geared to prevent re-hospitalization and psychiatric decompensation through the various groups and services offered.

Definition of Terms

Partial Care Program: "provision of a planned therapeutic program for six hours a day to persons who need broader programs that are possible through outpatient visits, but don't require twenty-four hour hospitalization." (Marshall and Demmler, 1990, pg.27)

Mental Illness: individual that meets the criteria for a diagnosis, according to the DSM-IV

Relapse: fall back into a former state, especially into illness after an apparent recovery

Psychotic diagnosis: a diagnosis presenting hallucinations or delusions

Assumptions

It is assumed by the researcher, that each relapse was warranted by a recognizable factor. It is also assumed that the hospital documentation is accurate based on either self-report from the subject, or by the hospital staff, and that there are no typographical errors.

Limitations

A limitation to this study may be that a subject doesn't choose to return to the same partial care facility after his/her relapse. This would prohibit the researcher from gathering the subject's data on what triggered the relapse. Another limitation to this study

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is that much of the data reported is directly from the subjects. Therefore, there is no way to tell for sure if the subjects are disclosing accurate information, as to why a relapse occurred. A third limitation is that the sample size only represents the clients attending this one partial care program, and that they are all basically from the same socioeconomic area.

## Overview

In the next chapter, a review of the literature regarding partial care programs and psychiatric relapses will be done. In chapter three, the design of the study will be explained. Next, an analysis of the results will be presented. Chapter five, the final chapter, will be a summary and conclusion of the study.

# Chapter II
## Review of the Literature

Mentally ill adults, who are readmitted frequently, are often referred to as the revolving door patients. This may infer that these patients are being discharged too soon, and therefore, a relapse may occur, resulting in rehospitalization. Along with premature discharge, other factors have been the focus of what may predict a relapse. Research has performed various studies on different variables such as diagnosis, gender, living arrangements, substance dependence, and level of care, to assess which one may predict future readmission. Along with predictive factors, research has also focused on outpatient care facilities and the level of services provided to decrease readmission rates. The following is a review of previous studies reflecting significant findings on factors associated with rehospitalizations among mentally ill adults, and the level of care that may be provided.

### Review of Revolving Door Patients and Factors for Hospital Readmission

Langdon, Yagues, Brown, and Hope (2001) investigated British psychiatric patients and the factors that cause some of them to have multiple hospital readmissions. Langdon used the term revolving door patients and defined as such, " patients who have had three or more hospital readmissions" (Langdon et al, 2001, pg.530). Langdon et al compared the revolving door patients with patients that had less than three readmissions to

a psychiatric hospital, and labeled them as the non-revolving door patients. Geller (1992) stated that we are "truly in the era of the revolving door". At no time has it been harder to be admitted to a psychiatric hospital within the last 15 years. However, so many patients have acquired multiple admissions. Langdon's et al study collected data from 128 patients that had at least one admission to a particular London hospital in the year 1997. Langdon's et al data collection focused on several possible factors. These factors include personal characteristics (age, gender, living situation...), diagnosis, and medication compliance. After collecting the data from the hospital records, Langdon et al reported no significant difference between the two groups of gender, age, and employment (almost all of them were unemployed). Peretti (1974) interviewed mentally ill adults after readmission to a psychiatric hospital. These adults had completed services that included vocational training. These subjects reported that the major factor for their readmission was unemployment. Although Langdon's et al study did not find any significance in diagnosis, it was noted that non-revolving door patients were more likely to be diagnosed with schizophrenia, while the revolving door patients had an affective disorder. Pokorny, Kaplan, and Lorimor (1983) argued that schizophrenics have the highest readmission rates over all other diagnoses. The biggest factor difference was that revolving door patients had been diagnosed with psychoactive substance misuse. The non-revolving door group represented 4.8%, while the revolving door was 20.0% (p=0.009). Langdon et al, research also reports that the revolving door patients were more likely to be living alone. This would result in a poor social support system for these individuals, which is possibly why their readmission rate is higher than the non-revolving door patients are. Breier and Strauss (1984) reported that one of the functions in social

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relations with the mentally ill, in improving psychosis, is social integration and acceptance. Psychotic patients with large social networks have fewer hospitalizations. Lastly, Langdon et al research indicates that relapse of psychosis is a major factor to consider in readmission. The revolving door patients represented 20.0% of the sample as having a psychotic relapse, as the non-revolving door patients represented 4.8%.

Although Langdon's et al research was able to find a few factors that can be measured highly as possible factors for re-hospitalization, none of these factors will predict a hospital readmission. Also, this study was limited to one hospital, which only represents a small portion of psychiatric patients.

A similar study done by Bernardo and Forchuk (2001) reviewed the charts of patients in a Canadian psychiatric hospital. Bernardo and Forchuk randomly selected 200 charts to be reviewed. Using their own 150- item data-collecting instrument, Bernardo and Forchuk tested associations between continuous variables and the readmission rates. The differences were compared between those that had been readmitted verse those that did not have a readmission. Bernardo and Forchuk's findings report that the only variable that was consistent between the readmitted subjects was their history of readmissions. It was noted that those who did have several admissions, all had several factors that warranted a readmission. Thornicroft, Gooch, and Dayson (1992) concluded in their research that the most consistent finding for readmission is the number of previous admissions. Fason, Melton, Johnson, and Mahrer (1966) found in their study that 50% of the beds occupied in a psychiatric hospital were from readmissions. Bernardo and Forchuk continue that first these patients reported having difficulty coping with the demands of life and managing their illnesses. In addition, aggression, behavioral problems,

and alcohol/drug abuse were significantly high in the readmitted subjects. Bernardo and Forchuk reported that they believe the hospital staff is ignoring these secondary disorders and only focusing on treating the major psychiatric diagnosis (Bernardo and Forchuk, 2001). Therefore, Bernardo and Forchuk research indicates that the system and the system's variables may be a factor in readmissions, in conjunction with the patient's factors. Wan and Ozcan (1991) feel that the studies of psychiatric hospitals haven't used data from different sources to show a comprehensive outlook of psychiatric care at all levels. Kumar, Robinson, and Sinha (2002) agreed that the system plays a role in readmissions. Kumar, Robinson and Sinha reported that support available for treatment, days in the hospital, and the cost of the treatment were significant variables for readmission in their research.

A study completed by Haywood et al (1995) also looked at the revolving door phenomenon. However, unlike Langdon et al, Haywood et al looked at specific diagnoses. Three major diagnoses were identified for this study: schizophrenia, schizoaffective, and affective disorders (this included unipolar major depressive disorder and bipolar disorder). In addition, Haywood et al used a slightly different definition for the term revolving door patients. Haywood et al used a four-level categorical variable: 1 hospitalization, 2-4 hospitalizations, 5-10 hospitalizations, and more than 10 hospitalizations. The 135 subjects were current patients in one of the four hospitals used for the study. 11% of the 135 patients had not been previously hospitalized. Therefore, this group of patients became the reference group. Each subject was interviewed during their hospitalization to assess possible variables. The interviewers were trained and had good interrater reliability. The results of this study showed that men have more

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readmissions than woman. 64% of the men had five or more hospitalizations. Martial status was not shown as a factor for readmission, although most of the patients (64%) had never been married. Haywood's et al research also found that diagnosis characteristics were not predictors of readmission. Pedersen and Aarkrog (2001) testify that the diagnosis made during a first-time admission was a significant predictor of future multiple readmissions. However he did note that patients with a diagnosis of schizoaffective disorder usually had five or more hospitalizations. Haywood et al noted that unlike previous research, his study did not associate criminal records as a factor for rehospitalization.

Haywood's et al research did find two variables that are important in identifying factors for readmission. Those with an alcohol/drug problem had high numbers of readmissions. 28% of the patients with an alcohol/drug problem had 2-4 admissions, 30% had 5-10, and 40% had more than ten readmissions. Caan and Crowe (1994) indicated in their research that patients with a dual diagnosis and dependence to a substance had the highest rate of readmission, over those with dual diagnosis without dependence and those with a single diagnosis. The other variable was patients' non-compliance with prescribed medications. 29% of the 2-4 admissions were non-compliant, as was 30% of the 5-10 readmissions, and 34% of the more than 10 readmissions group. Sullivan, Wells, Morgenstern, and Leake (1995) found that comorbid alcohol abuse and medication non-compliance were predictors for readmission. Sullivan, Wells, Morgenstern, and Leake suggest that interventions that include medication education, alcohol reduction education, and education for family members on mental illness could reduce future admissions. Spiegel and Wissler (1986) concluded

a mentally ill patient that lives with a family member and is having conflicts upon their discharge was found to be associated with relapse and readmission. A positive family environment strongly decreases rehospitalization during the first year after discharge. Haywood et al emphasizes the importance of patient education of their medications and the treatment to abstain from alcohol/drugs. With this education and treatment, patients may be able to decrease their number of readmissions. Radford (1992) feels that the copernican revolution is replacing the revolving door. This revolution includes care and treatment that revolves around the patient, rather than shoving a patient through the system.

Korkeila, Lehtinen, Tuori, and Helenius (1998) also did a similar study that attempted to identify factors that predict readmission. In addition, Korkeila et al also looked at the intervals between readmission. Korkeila et al had observed a particular time frame in Finland where there was rapid deinstitutionalization from 1990 to 1993. Data was collected from the national register of all discharges from a psychiatric hospital. Korkeila et al reported that some research indicates that the increase in readmission is due to the deinstitutionalization policies. However, Korkeila et al cited Lyons et al (1997) that although it is possible to identify the patients at risk of hospital admission, readmissions should not be used as a quality indicator for hospital care.

Korkeila et al had similar results as the other research cited. The research indicated that a diagnosis of psychosis or a personality disorder had twice as many readmissions over those with an organic disorder. Hodgson, Lewis, and Boardman (2001) found that a psychotic diagnosis was the greatest influential predictor for readmission in their research. Korkeila et al reported that the patient's length of stay showed a greater

risk of readmission, the longer it was. The group admitted for at least three to six months was more likely to have an increased risk of rehospitalization and at a rapid rate. Korkeila et al felt that these patients would benefit more from long-term hospitalization, than from an outpatient based facility.

Korkeila's et al research showed that generic psychiatric outpatient facilities did not have an effect on decreasing rehospitalization. Sayce et al (1993) and Saarento et al (1995) supported this research. It was suggested that more specialized and targeted interventions are needed in psychiatric outpatient care to decrease the need for hospitalization (Korkeila et al, 1998, pg.532). However, Li-Yu, Biegel, and Johnsen (1998) found four variables that they felt were reliable predictors for readmissions. One of those four variables included that those subjects that did use services such as partial care, community services, and residential treatment, were less likely to be readmitted into a psychiatric hospital.

An interesting factor mentioned by Korkeila et al is that a patient who voluntarily admits him or her self to a psychiatric hospital is more likely to have multiple admissions. Korkeila et al stated that it is possible that the patient may have a preference over the length of stay. Perhaps those who voluntarily admit themselves prefer short hospitalizations within short intervals, as opposed to long-term hospitalizations.

Outpatient Facilities Role in Decreasing Hospital Readmission Rates

Vaughan, McConaghy, Wolf, Myhr, and Black (2000) investigated readmission rates of mentally ill adults in New South Wales, Australia that had been given a community treatment order. Community treatment orders are used to decrease readmissions of those who exacerbate their symptoms. Community treatment orders are

presented to patients upon discharge with requirements to accept the medication and to attend outpatient appointments. If a patient does not comply with the community treatment order, they may be brought back into the hospital. In the hospital, the patient is detained as an involuntary admission and is forced to take the medication. The United States believes that community treatment orders are unconstitutional and are against the American Psychiatric Association guidelines. Anderson, Wing, and Womack (2000) stated that patients have access to many outpatient care facilities. However, there is no effective way to enforce patients to receive treatment. Mental health workers and advocates frown upon outpatient commitment, as they feel it fringes upon the patient's civil liberties.

There were two groups involved in Vaughan's et al study. First was the community treatment order group (n=123), the second was the comparison group (n=123), which were also discharged patients, but without a community treatment order. For each patient discharged without a community treatment order, a patient with a community treatment order of comparability (gender, age, number of pervious hospitalizations, and admission dates that were close in time) was paired. 48% of the community treatment order patients were readmitted, while a close 37% in the comparison group were also readmitted. In both groups, most of the readmissions were within the first three months after discharge. However, 61% of the readmissions for the community treatment order group were involuntary, while only 33% were involuntary for the comparison group. Vaughan et al reported that the community treatment order group's rehospitalizations were shorter and less aggressive, suggesting that the readmission was at an earlier stage of relapse, when the patient is more likely to accept

treatment. Vaughan et al comments that this is supported by the findings that duration of non compliance and disturbed behavior was reduced in the period prior to hospitalization during community treatment orders in the comparison period prior to the first admission. Preston, Kisely, and Xiao (2002) found that community orders reduce admission rates and bed days, but the effect is no greater than that seen in a group of patients who are not on an order.

Nelson, Maruish, and Axler (2000) hypothesized that patients who kept an outpatient appointment after being discharged from an initial admission would have lower rehospitalization rates at 90-days, 180-days, 270-days, and 365-days intervals, than patients who did not keep an outpatient appointment. The longer window of time for examination rates was used to determine the long-term impact of discharge planning. Nelson, Maruish, and Axler believe that when care is continued after a discharge, patients would progress in treatment instead of decompensating and needing rehospitalization. Ray (2001) reported that from 1993 to 1997, partial hospitalization outlays went from $60 million to $369 million. Nelson, Maruish, and Axler stated that most research examines predictors of readmission that focuses primarily on factors associated with the initial hospitalization and not with the risk factors associated with the aftercare services, such as those provided at community mental health centers.

Nelson, Maruish, and Axler collected data on 3,113 admissions in 1998. Results of their study indicate that a total of 542 patients had readmissions within the year. The rates were calculated for patients who kept at least one follow-up appointment after the initial hospitalization and also for those that did not. Of the 542 patients hospitalized, 136 kept at least one outpatient appointment, and 406 did not keep an appointment. Nelson,

Maruish, and Axler's study found a high association between keeping an outpatient

appointment and being less likely to be rehospitalized at the 270-day rate and at the 365-

day rehospitalization rate. Nelson, Maruish, and Axler's research supports the benefits of

continued outpatient care for recently hospitalized patients, at least for those patients that

continue to receive care upon discharge. Owen, Rutherford, Jones, Tennant, and

Smallman (1997) feel that given the lasting pressures on mental health service

development, we need to develop better tools to understand the patient's motive to use

services.

Edwin D. Huff (2000) examined Massachusetts's outpatient facilities and the

utilization of these facilities by recently discharged patients from a psychiatric hospital. In

addition, Huff explored if there was a decrease in psychiatric relapse if patients used the

recommended services. This was measured by whether or not these patients returned to

the hospital within thirty days of the initial discharge. Even if a patient did return for an

acute episode, they were not accounted in the relapse category, if their stay was two days

or less.

Results of Huff's study were in favor of outpatient care. Anderson, Lyons, and

West (2001) found that family & social contact and involvement in structured activities

were associated with the likelihood that the mentally ill patient would use mental health

services. Os (2000) feels that delays in obtaining appropriate support and treatment can

have profound effects on both the patient and the family, and may be associated with poor

long-term outcomes. Huff felt that any form of psychotherapeutic service received within

thirty days of the patient's discharge, as compared to those patients who did not use any

services, significantly decreased the risk of relapse. Similar results appeared for patients

who received medication management, over those that did not. The risk of relapse also appeared lower for those that were diagnostically evaluated after discharge, when compared to the patients that were not. Lastly, relapse rates significantly decreased when the patient uses outpatient services within five days of the initial discharge.

Huff's study demonstrates a great need for outpatient services to be available for patients upon discharge from a psychiatric hospital. Kruse and Rohland (2002) feel that the period between discharge and returning to the community is a vulnerable time for the continuity of care of patients. Without outpatient care, readmission rates increase.

Karniel-Lauer, Szor, Livne, Melamed, Spiro, and Elizur (2000) conducted a study between two groups to compare the structure of a patient's discharge into one of two outpatient facilities. Karniel-Lauer et al named several outcome variables that were measured. The variables included absorption of patients into the clinic, continued therapy, compliance with treatment, rehospitalization, level of knowledge regarding their mental illness and medications, quality of rehabilitation, and attitudes towards receiving treatment.

Karniel-Lauer et al included 75 mentally ill patients being discharged from an Israeli hospital. These subjects were randomly divided into two groups. First was the experimental group (n=42), which were referred to an outpatient facility using a psychoeducational approach. The second group was the control group (n=33), which were referred using the standard absorption procedure. The results in all variables show a high significance to patients that receive a psychoeducational based after-care service. The percentage of patients who continued in therapy was 85.7% for the experimental group, while only 51.5% in the control group continues in therapy. After a year, the percentages went from 78.1%(experimental group) to 36.4%(control group). In addition,

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the control group had a higher rate of rehospitalization (24.2%), while the experimental

group was at 7.1%, both after three months.

Karniel-Lauer et al was able to show a high significance to reducing

rehospitalization when patients attend an outpatient facility that is geared towards the

psychoeducational approach. The psychoeducational approach provides structure for

these vulnerable patients upon discharge. In addition, patients are able to gain stability

through the support of the clinical staff. This then would overall reduce the relapse rate

and keep patients out of the hospital.

Swartz et al (1999) recognizes that many efforts have been made to decrease

relapses in mentally ill adults by treating them in community outpatient programs.

However, many of these patients do not take to the treatment and end up back in the

hospital. Moreover, the need to decrease the risk of violent acts in the community has

lead to court ordered treatment, or involuntary outpatient care to the mentally ill adults

after discharge. Swartz et al reported that outpatient treatments are most associated with

decreased readmission rates and length of stay. However, most research has not looked at

the variables between the outpatient facilities and the services. Therefore, it is unclear for

whom outpatient care will be successful.

Swartz et al study looked at a key component when researching outpatient

commitment to reducing rehospitalization. His subjects were patients that had been

admitted to the psychiatric hospital involuntarily. Swartz et al noted that in North

Carolina, 90% of admissions to a psychiatric hospital were involuntary, therefore making

this population representative. The subjects were randomly assigned to either continue

their outpatient commitment orders (n=129), or to be released from outpatient

commitment by notifying the court. Results show that the patients who had longer

involuntary commitment care had approximately 57% fewer hospital readmissions. The

research also showed that outpatient care appeared to be more effective for patients with

psychotic disorders. Swartz et al believed that longer outpatient services meant higher

intensity of the services, ultimately decreasing readmissions. In addition, Swartz et al

suggested that the duration of the services, whether short or long, is better at decreasing

multiple hospitalizations, than not receiving any services.

Swartz's et al research would suggest that outpatient commitment is not enough,

on its own, to significantly affect hospital outcomes. Although outpatient commitment

can provide some benefit, it is only really beneficial when the programs' commit to offer

intensive treatment to these involuntary patients.

Armstrong and Cox (1991) compared two approaches that may be used in a

psychiatric day facility. These two approaches, psychoeducational and psychotherapeutic,

are both rehabilitative in orientation. Bellack, Turner, Hersen, and Luber (1984) stated

that it is unclear which approach is more effective, and for which patients' it will be

successful. Armstrong and Cox used 97 patients that consented to receive treatment in an

outpatient day facility. These subjects were randomly assigned to either the life skills

program or the supportive psychotherapeutic milieu. The life skills program includes

social skills training, life management, problem solving techniques, and self-control skills.

The basis to the life skills program is psychoeducational. The supportive

psychotherapeutic milieu has similar goals to the life skills program. However, the

difference is the fostering of therapeutic relationships between the clients and the staff.

Mares and McGuire (2000) found that residential treatment environment and community-

based case management intervention does influence the outcome of mentally ill patients. Patterson and Myung-Shin (1998) reported that intensive case management improved medication compliance, social functioning and social support, which then may decrease rehospitalization.

The results of Armstrong and Cox's research reported that there was no significant difference in the dropout rate between the two groups. However, the length of enrollment was significantly different. The patients in the life skills program attended an average of 6.3 months, while the supportive psychotherapeutic milieu attended an average of 3.1 months (ANOVA, $F (1,25)=7.01$, $p< .014$). Because of these results, the life skills program received more services (52.9) over the supportive psychotherapeutic milieu patients (28.1) (ANOVA, $F (1,25)=6.01$, $p< .022$). The overall intensity of the services showed no differences between the two groups. Armstrong and Cox's did not find a significant difference in rehospitalization rates among the two groups. However, patients with schizophrenia or affective disorders were rehospitalized more from the psychoeducational group, but patients fitting the "other" category (33% had borderline personality disorder) were rehospitalized more from the supportive psychotherapeutic track. Armstrong and Cox suggests further research on a larger sample since the life skills program had twice as much treatment over the supportive psychotherapeutic milieu. Weinman and Kleiner (1978) found that high expectancy environments did not decrease hospitalization rates and may increase them, but that they have favorable effects upon psychosocial functioning.

Specific Treatments Used in Efforts to Decrease Hospital Readmissions

Techniques have been developed to assist in relapse prevention. These include pharmacological, cognitive-behavioral therapy, and self-monitoring. Hewitt and Birchwood (2002) investigated the effectiveness of self-monitoring in an intervention known as Back in the Saddle. Back in the saddle is a self-monitoring approach that educates the client on early signs of relapse. The collective components include constructing a relapse signature, relapse drills, and to have the client gain an understanding and control over their illness. When the client is actively involved and educated, the progression of psychosis can be impacted. It is hoped that relapse prevention training will decrease rehospitalization rates.

Hewitt and Birchwood used the clinical term prodrome phase, which is when the initial symptoms of an illness will show, before it becomes full blown. The prodromal phase refers to the low-level, dysphoric symptoms like poor appetite & sleep, and anxiety. This phase can help identify a psychotic relapse. Beiser et al (1993) referred to the prodromal phase of psychosis as the period from the first noticeable symptoms to the concluding stages of psychotic symptoms.

Back in the Saddle is a relapse prevention technique taught in six sessions, which educated the clients on self-monitoring their own signs for relapse. The prodromal phase is seen as an at risk mental state, where a full psychotic relapse is possible. Therefore, relapse prevention techniques are looked upon as taking an active response to early signs. Environmental factors are also reviewed with a client, so that if things are changed or adapted, relapse can be decreased.

After reviewing the evidence, Hewitt and Birchwood concluded that relapse prevention techniques could help decrease readmission rates. Herz et al (2000) also found that relapse prevention programs are effective in detecting prodromal symptoms earlier on in the episode, and therefore, interventions can occur. Approaches such as Back in the Saddle can help clients take control over their illness and reduce relapse. Although these self-monitoring techniques are helpful, they are not a cure. Rather, the patient learns to live and function with their illness.

Conley, Love, Kelly, and Bartko (1999) examined the pharmacological aspect related to readmissions. They looked at the rehospitalization rates of patients receiving Risperidone or Clozapine upon discharge from a psychiatric hospital. However, noncompliance with medications is high among schizophrenics, leading to relapse and readmission. Glazer and Ereshefsky (1996) agree that schizophrenics are among the revolving door patients. Their symptoms range from acute symptoms to exaggerated psychotic episodes. Non-compliance rates are almost 50% in outpatient settings among schizophrenics. One of the main reasons for this is the medication's side effect. However, Clozapine and Risperidone are newer, and have fewer side effects, as compared to the traditional anti-psychotics.

Conley, Love, Kelly, and Bartko found that patients with non-schizophrenic diagnoses discharged on Risperidone were significantly less likely to be rehospitalized than those patients discharged on Risperidone with schizophrenia. Conley, Love, Kelly, and Bartko reported that patients on Risperidone, doubled in readmissions during the second year after their discharge (17% to 34%). The patients discharged on Clozapine, which all

had the diagnosis of schizophrenia, remained consistent on readmissions (13%).
Clozapine patients were more likely to be rehospitalized, if at all, within the first ten
months. After ten months, the patient's likelihood of remaining out of the hospital was
significantly high.

This study did have several limitations. First was that the patients were not
randomly assigned. Second is that Clozapine has restrictions to whom it is prescribed
(those with intolerance to other medications), whereas Risperidone has no limitations to
who it is prescribed. Lastly, there was no control group to compare. A control group of
patients taking conventional anti-psychotics would have improved this research.

Summary

The literature discussed in this chapter has indicated that there are indeed factors
that are predominant in rehospitalization. Although no specific diagnosis was found to be
a predictor, those individuals with a psychotic disorder were more likely to have multiple
readmissions. Along with psychotic disorders, substance misuse/dependence ranked high
among many studies as an indicator for rehospitalizations. A third variable that showed to
be an indicator was a patient's non-compliance with prescription medications and
regimens. Lastly, research has revealed that a usefulness predictor of readmission is a
patient's history of multiple admissions.

The literature also reviewed the effectiveness of outpatient facilities in their role of
decreasing rehospitalizations. Research indicated that when patients utilize the services
available, rehospitalization rates significantly decrease. When patients defer in receiving

these services, their long-term outlook is poor. Along with receiving these services, patients favor a psychoeducational approach. Through this approach, patients are able to gain stability and expand their social support system, which is critical in decreasing readmission rates.

Overall, research has agreed upon several variables that are good predictors of those that may relapse and be rehospitalized. Studies have also agreed, for the most part, that outpatient care upon discharge will help mentally ill adults decrease the possibility of a relapse. Although research has found many factors that may suggest a relapse of a mentally ill adult, it must be remembered that these factors are different for each individual and will not predict a rehospitalization for all patients.

# CHAPTER III
## Design of the Study

Sample

The subjects in this study were clients that have been in attendance to a particular partial care facility, as of January 1, 2003. 108 subject's charts, 52 female and 56 male, were used to collect the data. The subjects range in age from 20 years old to 80+ years old. Each of the subjects have a chronic mental illness and has met the criteria for an axis I or axis II DSM-IV diagnosis. The subjects reside in one of the three South Jersey counties the facility serves: Gloucester, Salem, and Camden counties. Most of the subjects have been referred to the program by a hospital upon discharge. However there is a small percentage that is self-referral.

Measures

Data was collected on all of the active members of a partial care facility. A chart review was conducted to collect data on each member regarding readmission rates. In addition, other variables were recorded, such as admission date to the program, and the subject's diagnosis. The researcher reviewed each chart independently. The subject's charts are broken into three sections. Within the first section, the hospital discharge papers were located. The researcher noted the subjects' admission date to the partial care facility, and then reviewed the dates on the hospital discharge summaries to see if any of these dates of hospital readmissions were during the course of time he/she was receiving

treatment at the partial care facility. If the subject did not have hospital readmission during the time he/she was receiving treatment, the researcher then examined section three of the subject's chart. This is the section where the subjects' weekly progress notes are collected. The researcher reviewed these notes to see if the subject had been affected by any of the dependent variables. A simple data sheet that was designed by the researcher was used to record the information on each subject.

Design

The design of this study was a clinical chart review. There was one researcher to collect data on subjects that are receiving treatment at a partial care facility reviewed 108-subject charts. The researcher reviewed each chart independently. First the researcher noted the subject's admission date to the partial care facility. Next, all hospital discharge summaries in the chart were reviewed to see if the subject has had a readmission to a psychiatric hospital while receiving treatment at the partial care facility. Depending on this response, the subject would be placed into one of two categories, readmission or no readmission. This is the independent variable. Next the researcher wanted to identify if certain factors may have contributed to the relapse and resulted in a readmission. The dependent variables in this research were organized in rank. That is, each variable was assigned a number, to which it was referenced. These dependent variables are substance misuse/dependence (1), non-compliance with prescription medications (2), and having a psychotic diagnosis (3). A fourth and fifth category were also added. The fourth was labeled "other". This was used if the subject who had a readmission did not match any of the other variables that were being looked upon. The fifth category was defined as having

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more than one. This was used when the subject fit more than one of the categories. If the subject was noted as having a hospital readmission, the researcher reviewed the hospital discharge papers for the reason of readmission and documented one of the five categories accordingly. If the subject did not have a readmission, the researcher reviewed the subject's progress notes and documented which of the five categories best suited the individual. Once all of the data was collected from each of the 108 charts, the research's results were not changed, even if there was a readmission of one of the subjects.

Testable Hypothesis

$H_o$ : No difference will be found in the factors that will predict a hospital readmission.

$H_1$ : There is a difference found in the factors that predict a hospital readmission

Analysis

Once all of the data was collected, the Mann-Whitney U test was applied to conclude if there are factors that can assist in predicting a hospital readmission among mentally ill adults.

Summary

108 subjects that are active members at a partial care facility had their charts reviewed by one researcher. The researcher noted if the subject had a hospital readmission during the time frame to which he/she was receiving treatment at the partial care facility. Once that was determined, each subject was reviewed on three variables: substance misuse/dependence, non-compliance with prescription medications, and reporting if the

subject's diagnosis was a psychotic diagnosis. Once all the data was compiled, the Mann-

Whitney U test was applied.

# CHAPTER IV
## Analysis of Results

Data was collected on 108 subjects that attend a partial care program. This data included whether or not the individual had a readmission to a psychiatric hospital, since attending this partial care program. Along with the readmission rates, several factors were considered. Data was taken from each subject, which included diagnosis, compliance with prescribed medications, and current substance use. It was hypothesized that patients attending a partial care program, who relapse during their services will have similar contributing factors among each other that have been rehospitalized while receiving treatment. The collected data supported this hypothesis. Those individuals who have had a relapse were most represented in the *more than one* category; meaning that more than one factor may have contributed to his/her relapse. Meanwhile, those who have not been rehospitalized were highly representative in the *psychotic diagnosis* category.

| | | RANK | | | | | Total |
|---|---|---|---|---|---|---|---|
| | | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | |
| Readmitted | 1.00 | | 1 | 8 | 5 | 9 | 23 |
| Nonreadmitted | 2.00 | 1 | | 62 | 16 | 6 | 85 |
| Total | | 1 | 1 | 70 | 21 | 15 | 108 |

Table 4.1 Dispersion of subjects within factors

Table 4.1 indicates that the factors that may predict a rehospitalization are different in the two groups (readmitted vs. not readmission). Group 1 was those who have had a readmission and Group 2 were those who have not. This correlational study showed a high relationship between individuals who had a psychiatric relapse, and more than one contributing factor to that rehospitalization (as symbolized by the number 5).

There were nine subjects that fell into the *more than one* category. The combination that occurred most frequently were the subjects' having a psychotic diagnosis and a non-compliance with prescribed medications. Seven out of the nine subjects in the more than one category held this. The other combination that occurred was the subjects having a psychotic diagnosis and current substance use. This was held by two of the subjects. In almost all of the twenty-three subjects that were readmitted while attending a partial care program, each held a diagnosis that was psychotic in nature.

Table 4.1 also indicated that the majority of the subjects who had not been rehospitalized only had one factor. The most common factor held by the subjects who had not had a hospital readmission was a psychotic diagnosis, which includes 62 subjects out of the 85 total subjects in the non-readmission group. There was a strong portion of those 85 subjects that also fell into the *other* category. The *other* category indicated that these subjects held a non-psychotic diagnosis. The predominate diagnoses of the individuals in the *other* category were Impulse control, Panic disorder, Bipolar Affective, and Major Depression.

Graph 4.1 illustrates the differences in the factors that may help predict future psychiatric relapses that result in readmission to the hospital. As seen, it compares each factor between the two groups. No subject in the readmission group (represented by the pink color) had only a substance use problem (represented by 1.00). There were no subjects from the non-readmission group (represented by the green shade) that had been only non-compliant with their prescribed medications.
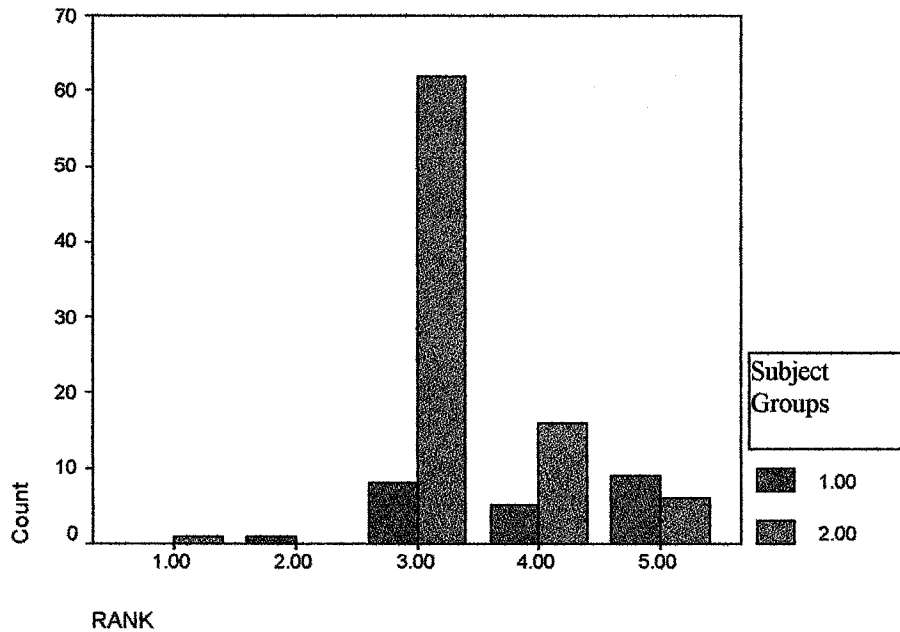
Graph 4.1 Illustration of subject distribution within factors

As clearly demonstrated in graph 4.1, a proportionate amount of the non-readmission group were reported as having a psychotic diagnosis, with no other factors involved in their situation, at this current time. The number was also high for the readmission group in comparison. Eight out of the twenty-three subjects that have had a readmission only had this one factor (psychotic diagnosis), which warranted a rehospitalization. The readmission group subjects that fell into the *other* category totaled five subjects. All five of these subjects did not fit factors 1, 2, or 3. The subjects did all have a non-psychotic diagnosis, which was either Bipolar affective or Depression. The same is true for the non-readmission group. The sixteen subjects did not meet factors 1, 2, or 3. These subjects ranged in diagnosis without psychotic features such as Impulse control, Panic disorder, Adjustment disorder, Bipolar affective, Major Depression, and Dysthymic disorder. The fifth factor was the *more than one* factor. The readmission

group fell highest in this category. The largest combinations were non-compliance with prescribed medications and having a psychotic diagnosis, which was held by 7 of the 9 subjects in this factor. The remaining two subjects in the *more than one* factor had a combination of current substance use and having a psychotic diagnosis. The non-readmission group was not very significant in the *more than one* category. Only six of the eighty-five subjects in the non-readmission group fell into this factor. Their combinations were the same as the readmission groups were.

Summary

The readmission group and the non-readmission group differed in the factor category that their subjects fell into. Subjects that had more than one contributing factor were significant for the readmission group. Subjects in the non-readmission group fell significantly into the factor of having a psychotic diagnosis. Along with the subjects' factors, out of the 108 subjects for which data had been collected, only twenty-three of those subjects have had a psychiatric relapse that resulted in a readmission to the hospital. Overall, those individuals who attend a partial care program after their initial hospitalization decrease their rate of having a second hospitalization. In addition, the factors, which may help predict a relapse, are significantly different among the two groups.

# CHAPTER V
## Summary

The purpose of this research was to identify the factors that lead chronic mentally ill adults to be rehospitalized when compared to other chronic mentally ill adults, attending the same partial care program, who have not been rehospitalized. For this research, it was hypothesized that patients attending a partial care program, who relapse during their services will have similar contributing factors among each other that have been rehospitalized while receiving treatment

The data for this research was collected from the charts of the 108 subjects who attend the same partial care program. The subjects ranged in age from 20-80+ years old. Each of the subjects have been diagnosed with a mental illness and have met the criteria for an axis I or axis II DSM-IV diagnosis.

The literature related to this research was mostly in agreement with the findings of this research. The literature indicated findings of three predominant factors that may contribute to a rehospitalization. These three factors were; substance misuse/dependence, having a psychotic diagnosis, and a non-compliance with prescription medications. Research also stated that past multiple readmissions were good indicators for future readmissions.

The researcher reviewed each of the subject's charts independently. The first piece of information that was collected was the subject's admission date to the partial care program. Next the researcher looked to see if the subject had a psychiatric rehospitalization while receiving treatment at the partial care program. If so, the hospital discharge papers were examined, to identify the reason for this hospitalization. Once this information was known, that subject was placed into one of the five categories. If the subject did not have a readmission, the subjects' progress notes and incident reports were reviewed to see what category best suited their status. These five possible categories were substance misuse/dependence, non-compliance with prescription medications, having a psychotic diagnosis, other, and more than one factor. The researcher did note each of the subject's diagnosis, regardless if it was a psychotic diagnosis.

The results of this study did show a difference in factors between the two groups: readmitted vs. non-readmitted. The factors that were significantly high for the non-readmission group differed in the factors that affected the readmitted group.

Conclusion

This study agreed with most of the literature presented, in that there are certain factors that may assist in predicting an individual at risk for a relapse and rehospitalization. The current study found that those who have had a psychiatric readmission while receiving treatment were most represented in the *more than one factor* category. The factor that was significant in almost all of those individuals that had been readmitted was having a psychotic diagnosis. The factor that coincided most frequently was a non-compliance with prescription medications. For the subjects that had not been readmitted while receiving

treatment, an overwhelming number of those subjects were found in the category of having a psychotic diagnosis.

Discussion

The intent of this research was to identify factors that may predict future psychotic rehospitalizations. There were 23 subjects that fell into the category of *readmission*. Out of the 23, 18 of those subjects had a diagnosis of a psychotic nature. Out of the five possible categories, the readmission group was most represented in the *more than one factor* category. Most subjects that have been readmitted had more than one contributing factor at the time of his/her relapse. As previously stated, the one factor was having a psychotic diagnosis. The other simultaneous factor that occurred most frequently was a non-compliance with prescribed medications. Therefore, the subjects in this study usually had a psychotic diagnosis and were non-compliant with their prescription medications at the time of the relapse and readmission to the hospital. It can be suggested that subjects in partial care facilities, be educated on their medications, how it stabilizes their mental health, and the importance of compliance. According to the literature reviewed, Sullivan et al (1995) found similar results. In his research, he found that the modifiable factors that have the greatest effect on readmission to a psychiatric hospital were medication non-compliance, family rejection, and alcohol abuse. Sullivan et al (1995) stated in his research, "Medication non-compliance, a problem among the mentally ill, has been linked to lack of insight into mental illness, medication side effects, use of oral over injectable, cost of medications, missed outpatient appointments, negative patient attitude towards taking medications, and various demographic characteristics.

Along with a non-compliance with prescription medications, another factor was identified in this study. Coinciding with a psychotic diagnosis was substance misuse/dependence. Subjects who were taking their prescription medications, but using drugs and/or alcohol while doing so, increased their risk of relapsing and being rehospitalized. The literature reviewed agreed with this factor as an identifiable factor of relapse. Haywood et al (1995) found that alcohol and drugs were the two most important factors in predicting a relapse in mentally ill persons.

This research also looked at the same factors for the group which had not relapsed and been rehospitalized. The non-readmitted group was significantly represented in one category-having a psychotic diagnosis. Out of the 85 subjects in the non-readmitted group, 62 of them have been diagnosed with a psychotic diagnosis. The difference between the non-readmission group and the readmission group was that the subjects in the non-readmission group were not significant in the *more than one factor* category. There were only six subjects that were managing two factors, and not having a relapse that warranted a rehospitalization at that time. In this study, the non-readmitted group did not show to be using substances, or to be non-compliant with their prescribed medications. Therefore, this study can report that most mentally ill adults have a diagnosis of a psychotic nature. It can also be stated that once an additional factor, along with the psychotic diagnosis, is presented in an individuals situation, a relapse is more likely to occur, which can result in a rehospitalization. Therefore careful patient monitoring, and medication education is important for keeping the mental health population out of the hospital.

A limitation to this study was the disproportionate sizes of the two groups (readmitted / non-readmitted). The non-readmitted group had more than three times the subjects, as the readmission group did. Therefore the comparison of the factors among the two groups is not equal. However, the unequal group sizes are good news. The high number of subjects in the non-readmitted group, over the readmitted group, indicates that this partial care program is taking the necessary measures to keep the subjects stabilized and out of the hospital.

Another limitation to this study is that these results are only from one partial care program. Therefore, it is unclear if these results could be generalized for all partial care programs and their subjects.

Lastly, this study only focused on a few factors that may help predict future relapses among mentally ill adults. It is possible that there were co-occurring problems that could have been going on during the time of the subject's relapse and readmission, which were not addressed in this study. These could have included employment, living situations, and family concerns. In addition, this study was not concerned with the subject's history of hospitalizations, which the literature acknowledged as being a good predictor of future hospitalizations.

Implications for Future Research

It would be suggested that future research of factors that may help predict hospital readmission rates among the mentally ill would include a broader spectrum of factors. This study limited its research to three main factors. Results could be more specific if

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other factors were accounted for, such as current living arrangement, presence of a social support system, and the subject's history of readmissions.

A second area that could be addressed is an increase in the subject size. This would be especially true in the readmission group. In this study, the readmission group was significantly smaller than the non-readmission group. Increasing the size of the readmission group to be of similar size with the non-readmission group, would make for a stronger comparison.

Lastly, future studies can expand the data to compare among partial care programs. Research could include what is being offered and educated among different programs, within different socioeconomic areas, and compare among the readmission rates.

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