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The Revolving Door Syndrome Comparing Service Versus Private Patients in a Psychiatric Hospital

Alcid M. Pelletier

Western Michigan University

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THE REVOLVING DOOR SYNDROME
COMPARING SERVICE VERSUS PRIVATE PATIENTS
IN A PSYCHIATRIC HOSPITAL

by
Alcid M. Pelletier

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
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Alcid M. Pelletier

ii
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# Table of Contents

Acknowledgements 11

Index of Tables iv

Introduction 1
- Survey of the Literature 1
- The Present Problem 7

Method 10
- Pilot Study 10
- Sample 11
- Design 11
- Procedure and Statistical Analysis 12

Results 15

Discussion 29

References 34

Appendices 38
# Index of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Service and private patients by nosologies</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>A comparison of ages, races, and previous and subsequent hospital admissions for service versus private patients</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>A comparison of types of hospital admissions and treatment modalities for service versus private patients</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>A comparison of types of hospital discharge and follow-up treatment for service versus private patients</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>Recommended major medication dosages</td>
<td>21</td>
</tr>
<tr>
<td>6</td>
<td>Recommended minor medication dosages</td>
<td>22</td>
</tr>
<tr>
<td>7</td>
<td>Relationship between previous, present, and subsequent hospitalization for service versus private patients</td>
<td>27</td>
</tr>
</tbody>
</table>
Introduction

Survey of the Literature

There is a growing body of literature indicating concern for recidivism rates in neuro-psychiatric hospitals and community mental health centers. Although total resident population has steadily decreased in the past 20 years (Paul, 1969), there have been increased admissions (Minnick, 1973). Hospitalization tends to be for shorter periods but readmission rates continue to be high.

It was noted by Smith, Kaplan, and Siker (1974) that 74% of a sample followed in an Illinois community mental health region had been previously hospitalized. Another study (Strauss, Sirotkin, & Grisell, 1974) found that 58% of a sample of 147 patients in Lafayette Clinic had previous psychiatric hospitalization.

A number of studies have examined many independent variables to explore the revolving door syndrome. Lorei and Gurel (1973) suggested that the number of previous psychiatric hospitalizations was the most useful predictor of readmission to a neuro-psychiatric hospital. Readmission rates tend to be higher for patients who were previously hospitalized for longer periods (Arnone, Caboara, Liotta, & Pisseri, 1966) since long-term hospitalization and readmission foster dependency and hinder full rehabilitation (Purvis & Miskinmins, 1970).

Minnick (1973) studied a sample of 42 patients (27 psychotics and 15 neurotics) who were hospitalized in a southwestern Veterans...

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Administration Hospital for an average of 57 days. He examined patient, environmental, and treatment variables. Differences were not noted in any of the three variables between the group of 23 (54.8%) patients who improved with hospitalization and the group of 19 (45.2%) patients who remained unchanged in spite of hospitalization. He hypothesized that patients who improve do so in spite of treatment rather than because of it. Eysenck (1952, 1965) similarly concluded that there is a two-thirds remission rate for psychoneurotics whether they receive psychotherapy or not.

The results of Minnick's (1973) study were contrary to results obtained in other studies which showed that environmental variables such as marital status, employment, living arrangements, and socioeconomic status do have an effect on treatment outcome (Farina, Barry, & Garmezy, 1963; Gorden & Groth, 1961; Miller, 1965, 1967; Peretz, Alpert, & Friedhoff, 1964). However, marital status, alone, is of no independent value as a prognosticator of recompensation for the mentally ill (Rosen, Klein, & Gittleman-Klein, 1971). Chimenz (1968) and Freeman and Simmons (1963) indicated that the broader community to which a patient returns is an important variable and that the hospital staff's estimate of a patient's condition at the time of discharge is not directly related to his subsequent progress in that community to which he returns.

Miller (1965, 1967) summarized a number of studies which suggest that patients who are younger, have higher socioeconomic status, are employed, and have a successful marriage are hospitalized for shorter
periods and less frequently readmitted to a hospital. Chimenz (1968) drew similar conclusions in his study of 300 mentally ill patients and added that lack of adequate treatment is most often related to rehospitalization. Most studies may be criticized for merely examining the effects of psychotherapy offered hospitalized patients, without evaluating the effects of chemotherapy, occupational therapy, electroconvulsive shock therapy, and hospital milieu (Garfield, 1974).

Many studies show the effects of outpatient follow-up psychotherapy in reducing the revolving door syndrome. Beavers and Blumberg (1968) found that 80% of those who continued in outpatient psychotherapy and 41% of those who discontinued, against medical advice, after receiving some outpatient psychotherapy continued to improve and did not require rehospitalization. Gossett and Lewis (1969) showed that 70% of those who continued in outpatient services and 31% of those who discontinued after obtaining some outpatient follow-up improved significantly. Avery and Kris (1968) discovered that outpatient follow-up psychotherapy was significantly effective in preventing rehospitalization within one to two years after hospital discharge.

It has been recommended that the follow-up clinic be located in the community from which the patient comes (Reidda, 1972; Richmond, 1968). Psychiatric aftercare reduces readmission rates (Sheldon & Jones, 1967) and community based aftercare clinics have been shown to significantly reduce recidivism (Anthony, Buell, Sharrett, & Althoff, 1972; Chimenz, 1968; Drieman & Minard, 1971; Kasser & Cohen, 1966; McGee & Racusen, 1968; Purvis et al, 1970; Zolik, Lantz, & Sommers,
1968; Zolik, Levin, & Hubek, 1970). Treatment in the clinic should be brief and flexible to meet individual patient needs and patients should be encouraged to return to the clinic if symptoms reappear (Safirstein, 1971).

The aftercare clinic is the agency appointed to watch over all of its discharged patients and may send psychiatric social workers and nurses to visit former patients in their homes. This practice has been shown to reduce rehospitalization (Miller, Dawson, & Barnhouse, 1966; Safirstein, 1971). Individual and group psychotherapy and family therapy, offered in follow-up clinics, have been shown to be effective in preventing rehospitalization and reducing the length of rehospitalization (Haven & Wood, 1970; Rubenstein, 1972; Safirstein, 1971; Scoles, 1971). Scoles' (1971) 18-month follow-up study noted that there was only a 9% hospital recidivism among patients given psychotherapy in follow-up clinics. Medications were reduced for 63% of the patients and cost for outpatient services were one-third of those for hospitalization.

The revolving door syndrome may be reduced significantly by the appropriate use of psychotropic drugs. It has been found that most formerly hospitalized schizophrenics who discontinue medications require rehospitalization while 61% who continue medications are not rehospitalized (Grozier, 1971). Odegård (1968) studied 17,000 first admissions of psychotics to psychiatric hospitals in Norway during the period of 1936-1958. The data of his study support the effectiveness of chemotherapy provided in outpatient clinics to reduce rehospitalization. Because many patients stop taking medications

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after discharge from a hospital, it is recommended that long-acting intramuscular neuroleptics be administered (Grozier, 1971) and phenothiazines be reviewed and prescribed in outpatient clinics (Ehrenwald, 1970; Engelhardt, Rosen, & Freeman, 1967; Grozier, 1971; Odegaard, 1968; Shpilovich, Fuke'lm'an, & Rykova, 1966).

A number of studies have shown how rehospitalization of chronic psychotics may be reduced by innovative aftercare programs. Hott (1971) utilized ward therapists in a follow-up clinic to continue the treatment of 467 formerly hospitalized patients. It was noted that the ward therapists served as prime catalysts in supporting a positive transference which maintained the patient outside of the hospital.

In a three-year follow-up study, readmissions were reduced significantly. The use of group therapy with relaxation exercises begun on the ward and continued with the same therapists for the same patients after discharge has been effective in sharply reducing the revolving door syndrome (Bovill, 1972; Kasser et al, 1966). McGee et al, (1968) studied 31 discharged schizophrenics who formed an "alumni group" to obtain group therapy from the same therapists who treated them when in the hospital. The twelve patients who continued in group therapy were not rehospitalized.

The community may be effectively utilized in reducing hospital recidivism. Better communications between the mental hospital and the community was felt to be a significant factor in a sharp reduction of readmission rates for 112 patients formerly hospitalized in a state hospital (Drieman & Minard, 1971). Their study showed that only 9.8% of the patients were rehospitalized compared to the usual
40-70% prior to the utilization of community resources.

Wienman, Sanders, Kleiner, and Wilson (1970) effectively utilized indigenous community members trained by professional staff to supervise and instruct psychotic patients in social and instrumental behavior and discovered a sharp reduction in rehospitalization. Rubenstein's (1972) study of 853 former mental hospital patients shows the positive effects of instructing patients in social and instrumental behavior. He mobilized the patient's family to work with a psychiatric team in follow-up treatment. In a five-year period there was a marked reduction of recidivism and shorter hospitalizations for those who were rehospitalized. The importance of the patient's resocialization process is noted in a study which found that 88.9% of the patients rehospitalized had an extremely low degree of social and leisure activities in their communities (Stewart, Selkirk, & Sydiaha, 1969).

Langsley, Flomenhoft, and Machotka (1969) studied 150 family crisis therapy cases and 150 hospital treatment cases, in a six-month period, and found that rehospitalization is less likely if admission were avoided initially and the patient were treated as an outpatient before the pathology became too pronounced. Purvis et al, (1970) support this view.

The effects of family crisis therapy were shown to be effective in reducing hospitalization. Patients from this group who were hospitalized recompensated much more rapidly. The costs for family crisis therapy for 300 families with a psychiatric member were reduced to one-sixth of the cost of hospitalization (Langsley,

David (1971) found that the rehospitalization rate of 99 former hospital patients was only 8% after one year of follow-up in an outpatient clinic. She describes an effective low cost aftercare program as one that includes: (a) a smooth transition from the hospital to the community, (b) resocialization of the patient, (c) vocational and/or educational rehabilitation, (d) continuing crisis intervention, (e) psychotherapy, and (f) supervision of medications. While an outpatient clinic may not offer all the direct services recommended by David (1971), it can serve as a coordinator of a network among other community agencies to provide complete care and rehabilitation for discharged patients. Zolik et al. (1970) showed how hospital readmission was reduced to 27% among 99 patients obtaining services from a clinic which served to coordinate a network among other agencies.

Other aftercare programs which have been shown effective in reducing hospital recidivism are: Half-way houses, day centers, rehabilitation workshops (Lamb & Goertzel, 1971), nursing homes (Stotsky, 1966), social clubs made up of formerly hospitalized psychiatric patients (Bill, 1970), and lay organizations such as Recovery, Inc. (Low, 1971). Low started Recovery, Inc. in 1937 with 30 former psychiatric hospital patients. Members meet for socialization and self-help and now have groups in most states and several Canadian provinces. Recovery, Inc. has proven effective in reducing the incidence of decompensation among psychiatric patients.
The Present Problem

A review of the literature reveals a universal concern over the revolving door syndrome, varied reasons for it, and recommendations to decrease psychiatric hospital recidivism. The present study explored environmental, patient, and treatment variables and their effects on psychiatric hospital readmission rates (Minnick, 1973).

The effect of previous hospitalization as a prognosticator of rehospitalization was also measured (Arnone et al, 1966; Kaplan et al, 1974; Lorel et al, 1973; Strauss et al, 1974; Purvis et al, 1970).

The literature was critical of the lack of adequate treatment (Chimenz, 1968) and researchers' failures to measure the effects of total hospital treatment (Garfield, 1974) as possible indicators of recidivism. Taking note of these criticisms, the present research studied the effects of length (days) of hospital admission and the effects of chemotherapy, psychotherapy, occupational therapy, day center, and electroconvulsive shock therapy upon recompensation.

One of the purposes of the present study was to explore the effectiveness of the outpatient clinic in reducing rehospitalization by providing psychotherapy (Beavers et al, 1968; Gossett et al, 1969) and supervision of medications (Ehrenwald, 1970; Engelhardt et al, 1967; Grozier, 1971) for patients discharged from the hospital.

Unique to the present study is the comparison of the aforementioned variables for patients who were treated by private therapists versus patients treated by service therapists (those on the hospital payroll).
The present research, designed to explore, clarify and compare some of the issues noted in the literature, resulted in the formulation of four hypotheses:

1. Previous psychiatric hospitalization (number of times and number of days) is a predictor of the revolving door syndrome.

2. The nature of hospital treatment (psychotherapy, occupational therapy, electroconvulsive shock therapy, chemotherapy, and day center) has an effect on reducing hospital recidivism.

3. There are differences in the length of hospital treatment (days in present hospital) for patients treated by service versus private therapists, but there are no differences between the two groups in the percentages of patients returning to psychiatric hospitals.

4. Post-hospital follow-up, to provide continuing outpatient psychotherapy and medications, has a positive effect in reducing rehospitalization.

Data to test the aforementioned hypotheses were obtained from a sample of patients in a County-owned (Michigan) Psychiatric Hospital.
Method

Pilot Study

The purpose of the pilot study was to determine if differences did exist between the many variables under consideration for service versus private patients and to narrow the larger study to an examination of pertinent variables.

Thirty-six psychiatric patients were randomly selected from a population of 817 who had been admitted to Kent Oaks Hospital (Grand Rapids, Michigan) during the twelve-month period of August 1, 1971, to July 31, 1972. There were, in the pilot sample, 19 males and 17 females ranging in age from 15 to 75 (M age=38.4). There were 32 Caucasians and four third-world members (three blacks and one Spanish-American).

Information was obtained from hospital records and telephone interviews with discharged patients, or their family members.

The results indicated that there were no differences between service and private patients in relationship to the following variables: level of education, sex, admitting diagnosis compared to diagnosis at time of discharge, percentages diagnosed depressive, percentages of patients who had other family members with diagnosed psychiatric histories, and number who reported a need for more psychotherapy.

Differences were observed between service and private patients in the following variables: marital status, age, race, type of
admission to the hospital (voluntary versus involuntary), type of medications prescribed, number of previous hospitalizations, type of discharge from hospital, follow-up outpatient treatment, and readmission rates.

Therefore, the results of the pilot study failed to reveal significant differences in six variables and there were differences in nine variables between service and private patients. Thus, the larger study could be devoted to a more comprehensive study of pertinent variables.

Sample

A random sample of 151 psychiatric patients was drawn from a population of 817 who had been admitted to Kent Oaks Hospital during the twelve-month period of August 1, 1971, to July 31, 1972. The deliberate selection of this period allowed for a two-year follow-up study.

Randomization was assured by shuffling 817 index cards, scattering them across the floor, selecting three cards, regathering the remaining cards, reshuffling them, and scattering them across the floor to repeat the process until the sample of 151 had been obtained.

There were, in the sample, 87 females and 64 males ranging in age from 14 to 75 (M age=38.67). The sample included 133 Caucasians and 18 third-world members.

Design

Patients from the sample were assigned, according to diagnosis,
to one of five homogeneous nosologies: (a) psychosis, (b) neurosis, (c) personality disorder, (d) organic brain syndrome, and (e) situational reaction. Each of these nosologies was divided into two groups: (a) patients treated by service therapists and (b) patients treated by private therapists. A matrix of the patients' assignments is noted in Table 1 on page 13.

To study the effects of outpatient follow-up treatment on hospital readmission rates the data from the hospital were divided into categories for three groups of patients: (a) those who were discharged from the hospital for whom no follow-up treatment was prescribed, (b) those who dropped out of follow-up treatment, and (c) those who continued in follow-up treatment until termination was agreed upon by the mutual consent of the patient and therapist.

Procedure and Statistical Analysis

A flow chart was designed to obtain data, by nosologies, for the patients on the following variables: service or private therapists, type of admission to the hospital, age, race, marital status, psychiatric treatment received during present hospitalization, number of days spent in present hospitalization, number of days spent in previous hospitalization, type of discharge from present hospitalization, type of outpatient follow-up services received, and whether patients returned to a psychiatric hospital during a two-year period.

The variables to be studied were obtained from hospital records and telephone interviews with former hospital patients or members of their families. The identical questions were asked, in the telephone
Table 1
Service and Private Patients by Nosologies

<table>
<thead>
<tr>
<th>Nosology</th>
<th>Service Patients</th>
<th>Private Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Psychosis</td>
<td>55</td>
<td>69.62</td>
</tr>
<tr>
<td>Neurosis</td>
<td>14</td>
<td>17.73</td>
</tr>
<tr>
<td>Character Disorder</td>
<td>6</td>
<td>7.59</td>
</tr>
<tr>
<td>Organic</td>
<td>2</td>
<td>2.53</td>
</tr>
<tr>
<td>Situational Reaction</td>
<td>2</td>
<td>2.53</td>
</tr>
<tr>
<td></td>
<td><strong>79</strong></td>
<td>100.00</td>
</tr>
</tbody>
</table>

interviews:

1. Were you discharged from the hospital by your doctor or did you demand to leave?

2. Did you continue in outpatient treatment after your discharge from the hospital? Where, and with whom? How many sessions did you have? Did you drop out of therapy against medical advice?

3. Were you discharged from the hospital with medications? Are you still taking your medications if your doctor has so advised you?

4. Have you ever been rehospitalized in a psychiatric unit since you were discharged from Kent Oaks on (date of discharge)? If yes, then where? When? For how many days? For how many times?

Some consideration had been given to utilize volunteers to conduct the telephone interviews. It was decided that, in the interest...
of patient confidentiality, the professional doing the research should personally conduct the interviews with the 151 patients of the sample.

The data obtained were organized into the aforementioned design. Chi squares were used to analyze differences in nonparametric variables between service and private patients. Differences in parametric variables between the same two groups were measured by t tests and analysis of variance. Multiple linear regression and chi squares were utilized to explore the predictive value of previous and present hospitalization upon readmission rates. Multiple linear regression was used to examine the relationships of various types of treatment provided during present hospitalization and to recidivism. A chi square measured the differences in hospital readmission rates between those who were discharged from the hospital for whom no follow-up treatment was prescribed, those who dropped out of follow-up treatment, and those who continued in follow-up treatment until termination was agreed upon by the mutual consent of the patient and the therapist.

The .05 level of statistical significance was selected as the criterion for all tests, as was the case in most of the comparative studies cited in the present study. The dependent variable was identified as hospital readmission; other treatment, environmental, and patient variables were identified as independent variables.
Results

Responses obtained from interviewing former hospital patients, or their family members, were in 97% agreement with hospital records regarding type of discharge, medications, and recommended aftercare. The reliability of self reports has been shown by other studies (Agnew, 1964; Berecz, 1972; Pelletier, 1971; Pinneau & Milton, 1958).

It was noted that data from the categorizations of organic brain syndrome (n=12) and situational reaction (n=3) skewed the statistical results of the study. Patients diagnosed organics tended to be hospitalized for inordinately longer periods. Seven of these 12 patients were still institutionalized two years after the sample was drawn. Therefore, the organic group was deleted from the study and the situational reaction nosology was rejected due to its small n. Statistical comparisons were computed for psychosis (n=88), neurosis (n=27), and personality disorder (n=21), N=136.

The data combining the three nosologies showed that there were significantly more unmarrieds (environmental variable) in the service patients group (42.7% versus 19.7%; \( \chi^2 = 10.032, \ df = 4, p < .05 \)). There were statistically significant differences between service and private patients in respect to a number of patient variables. A comparison of these patient variables for service versus private patients is reported in Table 2 on page 16. It can be noted that private patients are significantly older than service patients. Service patients were previously hospitalized for significantly longer periods than were private patients but significant differences were
# Table 2

A Comparison of Ages, Races, and Previous and Subsequent Hospital Admissions for Service Versus Private Patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Service (n=75)</th>
<th>Private (n=61)</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>35.29</td>
<td>40.6</td>
<td>(t=2.039^*)</td>
</tr>
<tr>
<td>SD</td>
<td>14.24</td>
<td>16.12</td>
<td></td>
</tr>
<tr>
<td>Race (3rd world) %</td>
<td>18.7</td>
<td>4.9</td>
<td>(x^2=60.99^*)</td>
</tr>
<tr>
<td>Previous hospital admissions (days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>47.05</td>
<td>17.64</td>
<td>(t=2.151^*)</td>
</tr>
<tr>
<td>SD</td>
<td>40.82</td>
<td>16.92</td>
<td></td>
</tr>
<tr>
<td>Hospital readmissions:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st year (days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>10.64</td>
<td>8.69</td>
<td>(t=.646) N.S.</td>
</tr>
<tr>
<td>SD</td>
<td>8.37</td>
<td>8.42</td>
<td></td>
</tr>
<tr>
<td>2nd year (days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>8.03</td>
<td>4.25</td>
<td>(t=1.427) N.S.</td>
</tr>
<tr>
<td>SD</td>
<td>7.21</td>
<td>4.01</td>
<td></td>
</tr>
<tr>
<td>2 years combined (days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>18.67</td>
<td>12.93</td>
<td>(t=1.13) N.S.</td>
</tr>
<tr>
<td>SD</td>
<td>16.15</td>
<td>11.13</td>
<td></td>
</tr>
</tbody>
</table>

Note. Significance levels on \(t\) are based on two-tailed tests, \(df=134\).

\(\chi^2_{df=1}\).

\(*p<.05\).
not found between the two groups in readmission rates.

Differences between service and private patients, in a number of variables, lost significance when analyzed by nosologies. Percentages of unmarried patients did not differ between the two groups in any nosology. Similarly, the mean number of days of previous psychiatric hospitalization and hospital readmissions during the first and second years did not differ between service versus private patients when examined by nosologies. A summary of these data may be found in Appendix A.

The mean age of psychotic patients in the service group was significantly lower than it was for the private group (35.38 versus 43.09; \( t = 2.22, \text{df} = 86, p < .05 \)). However, significant differences were not found in mean ages between the two groups for neurotic patients (36.42 versus 32.69; \( t = .832, \text{df} = 25, p > .05 \)) and personality disorders (31.83 versus 42.0; \( t = 1.35, \text{df} = 19, p > .05 \)).

There were significantly more third-world psychotic patients who were treated by service therapists than by private therapists (23.6% versus 6.1%; \( \chi^2 = 6.01, \text{df} = 2, p < .05 \)). However, differences in races were not observed between the two groups for neurotic patients (7.1% versus 1.1%; \( \chi^2 = .964, \text{df} = 1, p > .05 \)) and for patients diagnosed personality disorders (1.11% versus 6.7%; \( \chi^2 = .42, \text{df} = 1, p > .05 \)).

An analysis of treatment variables combining the three nosologies to compare hospital treatment for service patients versus private patients may be noted in Table 3 on page 18 and Table 4 on page 19. It can be seen (Table 3) that involuntary hospital admissions for service patients is significantly higher than it is for private patients.
Table 3

A Comparison of Types of Hospital Admissions and Treatment Modalities for Service Versus Private Patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Service (n=75)</th>
<th>Private (n=61)</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admissions (Involuntary) %</td>
<td>33.3</td>
<td>18.0</td>
<td>$\chi^2=4.046^*$</td>
</tr>
<tr>
<td>Days in hospital</td>
<td></td>
<td></td>
<td>$t=.981$ N.S.</td>
</tr>
<tr>
<td>M</td>
<td>18.64</td>
<td>16.05</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>14.78</td>
<td>15.96</td>
<td></td>
</tr>
<tr>
<td>Medications (strength)</td>
<td></td>
<td></td>
<td>$t=2.103^*$</td>
</tr>
<tr>
<td>M</td>
<td>2.16</td>
<td>2.64</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>1.19</td>
<td>1.47</td>
<td></td>
</tr>
<tr>
<td>Psychotherapy+</td>
<td></td>
<td></td>
<td>$t=1.656$ N.S.</td>
</tr>
<tr>
<td>M</td>
<td>.40</td>
<td>.45</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>.19</td>
<td>.20</td>
<td></td>
</tr>
<tr>
<td>Occupational Therapy+</td>
<td></td>
<td></td>
<td>$t=2.447^{**}$</td>
</tr>
<tr>
<td>M</td>
<td>.34</td>
<td>.46</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>.30</td>
<td>.26</td>
<td></td>
</tr>
<tr>
<td>Electroconvulsive Shock+</td>
<td></td>
<td></td>
<td>$t=.265$ N.S.</td>
</tr>
<tr>
<td>M</td>
<td>.01</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>.06</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Day Center+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>.04</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>.11</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Note. Significance levels on $t$ are based on two-tailed tests, $df=134$. ($\chi^2$) $df=1$.
+computed on a per day basis.

$^*p<.05.$  $^{**p<.025.}$
Table 4
A Comparison of Type of Hospital Discharge and Follow-Up Treatment for Service Versus Private Patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Service (n=75)</th>
<th>Private (n=61)</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Discharge (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Advice</td>
<td>61.3</td>
<td>77.0</td>
<td>(X^2=8.95^*)</td>
</tr>
<tr>
<td>Transfer</td>
<td>36.0</td>
<td>14.8</td>
<td></td>
</tr>
<tr>
<td>Against Medical Advice</td>
<td>2.7</td>
<td>8.2</td>
<td></td>
</tr>
<tr>
<td>Follow-up (%):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychotherapy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terminated Medical Advice</td>
<td>50.7</td>
<td>27.9</td>
<td>(X^2=16.84^{**})</td>
</tr>
<tr>
<td>Terminated Against Medical Advice</td>
<td>36.0</td>
<td>27.0</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>13.3</td>
<td>44.3</td>
<td></td>
</tr>
<tr>
<td>No. Psychotherapy sessions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\bar{X})</td>
<td>12.09</td>
<td>5.33</td>
<td>(t=3.193^{***})</td>
</tr>
<tr>
<td>SD</td>
<td>13.39</td>
<td>10.77</td>
<td></td>
</tr>
<tr>
<td>Medications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\bar{X})</td>
<td>3.16</td>
<td>4.53</td>
<td>(t=4.266^{***})</td>
</tr>
<tr>
<td>SD</td>
<td>1.77</td>
<td>1.95</td>
<td></td>
</tr>
</tbody>
</table>

Note. Significance levels on \(t\) are based on two-tailed tests, \(df=134\).
\((x^2)df=2\).

*\(p<.025\).

**\(p<.005\).

***\(p<.002\).
patients (.05 level). Private patients, in the present sample, were not referred to the Day Center, therefore, a comparison could not be statistically computed. Service patients tended to receive heavier psychotropic drugs than did private patients. To compute t tests, numbers were assigned to the strength of medications: heavy major dosages=1, moderate major=2, light major=3, heavy minor=4, moderate minor=5, light minor=6, no medications=7. Therefore, the higher computed means indicate lighter medications. Tables 5 and 6 on pages 21 and 22 show the dosages for the medication classifications.

The study’s third empirical hypothesis stated that there are differences in length of hospital treatment (days in present hospital) for patients treated by service versus private therapists, but there are no differences between the two groups in the percentages of patients returning to psychiatric hospitals. The data do not entirely support this hypothesis. It is noted (Table 3) that there are no statistically significant differences between service and private patients in the length (days) of present hospital treatment (18.64 versus 16.02; $t= .981, df=134, p>.05$) and significant differences were not found in mean days of hospital readmissions (Table 2) between the two groups (18.67 versus 12.93; $t=1.13, df=134, p>.05$).

Significantly more service patients were transferred to other psychiatric institutions for long-term care than were private patients ($p<.025$) as noted in Table 4.

Differences in follow-up categories (Table 4) were at the .005 level of statistical significance between the two groups with more service patients recommended for follow-up psychotherapy (86.7% versus
Table 5
Recommended Major Medication Dosages

<table>
<thead>
<tr>
<th>Medications</th>
<th>Dosage (mgm per day)</th>
<th>Light</th>
<th>Moderate</th>
<th>Heavy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thorazine (chlorpromazine)</td>
<td></td>
<td>75 - 150</td>
<td>200 - 600</td>
<td>800 - 2400</td>
</tr>
<tr>
<td>Mellaril</td>
<td></td>
<td>75 - 150</td>
<td>200 - 600</td>
<td>800 - 2400</td>
</tr>
<tr>
<td>Sparine</td>
<td></td>
<td>100</td>
<td>150 - 300</td>
<td>400 - 800</td>
</tr>
<tr>
<td>Haldol</td>
<td></td>
<td>1.5 - 4.5</td>
<td>4.5 - 9.0</td>
<td>9.0 - 15</td>
</tr>
<tr>
<td>Stelazine</td>
<td></td>
<td>4 - 10</td>
<td>15 - 20</td>
<td>30 - 45</td>
</tr>
<tr>
<td>Navane</td>
<td></td>
<td>2 - 6</td>
<td>10 - 20</td>
<td>30 - 60</td>
</tr>
<tr>
<td>Prolixin</td>
<td></td>
<td>2 - 5</td>
<td>10 - 20</td>
<td>30 - 60</td>
</tr>
<tr>
<td>Triavil</td>
<td></td>
<td>4.20 - 6.30</td>
<td>6.75 - 9.0</td>
<td>12.75 - 17.0</td>
</tr>
<tr>
<td>Etrafon</td>
<td></td>
<td>4.20 - 6.30</td>
<td>6.75 - 9.0</td>
<td>12.75 - 17.0</td>
</tr>
<tr>
<td>Tofranil</td>
<td></td>
<td>20 - 30</td>
<td>75 - 200</td>
<td>over 200</td>
</tr>
<tr>
<td>Elavil</td>
<td></td>
<td>20 - 30</td>
<td>75 - 200</td>
<td>over 200</td>
</tr>
<tr>
<td>Aventyl</td>
<td></td>
<td>20 - 30</td>
<td>75 - 200</td>
<td>over 200</td>
</tr>
<tr>
<td>Vivactil</td>
<td></td>
<td>5 - 10</td>
<td>30 - 40</td>
<td>over 40</td>
</tr>
</tbody>
</table>

55.8%). Service patients also obtained significantly more follow-up psychotherapy sessions than did private patients (12.09 versus 5.33; t=3.193, df=134, p<.002) and service patients continued on significantly heavier dosages of medications (p<.002).

As was the case in environmental and patient variables, differences between service and private patients in a number of treatment variables lost significance when analyzed by nosologies. There were
Table 6
Recommended Minor Medication Dosages

<table>
<thead>
<tr>
<th>Medications</th>
<th>Dosage (mgm per day)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light</td>
<td>Moderate</td>
<td>Heavy</td>
</tr>
<tr>
<td>Librium</td>
<td>5 - 15</td>
<td>30 - 50</td>
<td>75 - 200</td>
</tr>
<tr>
<td>Tranxene</td>
<td>7.5 - 22.5</td>
<td>45.0 - 67.5</td>
<td>70 - 120</td>
</tr>
<tr>
<td>Serax</td>
<td>10 - 20</td>
<td>30 - 60</td>
<td>90 - 180</td>
</tr>
<tr>
<td>Valium</td>
<td>4 - 10</td>
<td>15 - 30</td>
<td>40 - 80</td>
</tr>
<tr>
<td>Meprobamate</td>
<td>100 - 300</td>
<td>600 - 1200</td>
<td>over 1600</td>
</tr>
<tr>
<td>Equanil</td>
<td>100 - 300</td>
<td>600 - 1200</td>
<td>over 1600</td>
</tr>
<tr>
<td>Phenobarbital</td>
<td>30 - 45</td>
<td>90 - 180</td>
<td>over 180</td>
</tr>
<tr>
<td>Dilantin</td>
<td>under 300</td>
<td>300</td>
<td>over 300</td>
</tr>
<tr>
<td>Mysoline</td>
<td>250</td>
<td>500 - 750</td>
<td>1000</td>
</tr>
</tbody>
</table>

no statistically significant differences found in treatment variables between the two groups for the personality disorder nosology. A summary of these data may be noted in Appendix B.

Only two treatment variables were significantly different between the two groups for neurotic patients. Private patients attended more occupational therapy sessions per day than did service patients (.58 versus .05; \( t = 8.488, df = 25, p < .0001 \)). Neurotic service patients received more follow-up psychotherapy sessions than did private patients (15.76 versus 4.32; \( t = 2.07, df = 25, p < .05 \)). A summary of data which fails to reveal statistically significant differences for the other treatment variables in the neurotic nosology can be studied in Appendix B.
There was a significantly greater percentage of involuntary hospital admissions for psychotic service patients (41.8% versus 21.2%; \(x^2=3.898, df=1, p<.05\)), and service patients tended to receive stronger psychoactive medications than did private patients (1.82 versus 2.34; \(t=2.451, df=86, p<.02\)). Other than medications, psychiatric treatment did not differ between the two groups. Treatment variables for psychotics for which statistically significant differences were not found were: (a) the mean number of days a patient spent in the hospital, (b) mean number of psychotherapy sessions, (c) electroconvulsive shock treatment, and (d) occupational therapy. A statistical summary of these data showing no significant differences is included in Appendix B.

Significantly more service psychotic patients were transferred to other psychiatric institutions for long-term care (43.6% versus 21.2%; \(x^2=8.542, df=2, p<.025\)).

A larger percentage of service patients in the same nosology were recommended for outpatient follow-up psychotherapy (89.0% versus 48.5%; \(x^2=17.622, df=2, p<.005\)), and service patients were sustained on heavier psychotropic drugs in follow-up treatment (2.73 versus 4.46; \(t=4.386, df=86, p<.0002\)). Service psychotic patients received over twice as many outpatient psychotherapy sessions than did private patients (12.18 versus 6.0; \(t=2.232, df=86, p<.028\)).

It would appear that the data combining both groups support the fourth hypothesis which stated that post-hospital follow-up, to provide continuing outpatient psychotherapy and medications, has a positive effect in reducing rehospitalization. There were 86 (65.66% 

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of the sample) who had been previously hospitalized for a mean of 33.13 days. The mean days of present hospitalization was 17.04. Only 60 (45.8% of the sample) were rehospitalized for a mean of 10.49 days during the two-year follow-up period. The briefer periods of rehospitalization could be the effect of outpatient follow-up since 99 (72.06% of the sample) continued to receive some outpatient services of psychotherapy and medications. However, a statistical analysis rejects the fourth hypothesis by failing to show differences in readmission rates between those who received follow-up treatment and those who didn't. A chi square shows that 39.7% of the patients who continued in follow-up, 33.3% who terminated follow-up, and 27.0% who obtained no follow-up were rehospitalized within two years ($x^2 = .054$, $df=2$, $p > .05$). There were no differences between service and private patients in readmission rates (58.7% versus 41.3%; $x^2 = .609$, $df=1$, $p > .05$).

The mean number of days for those rehospitalized within two years after continuing in outpatient treatment was 19.33, for those who terminated follow-up against medical advice it was 16.3 days, and for those who obtained no follow-up treatment it was 11.06 days. An analysis of variance was computed to observe if there were differences between these means, and discovered that mean differences between the three groups did not reach criterion ($F=0.877$, $df=2/133$, $p > .05$). These combined data do not take the differences of the seriousness of pathologies within the three groups into consideration, they simply fail to reveal statistically significant differences between the three groups in mean days spent in rehospitalization within a
two-year period.

The first hypothesis of the present study stated that previous psychiatric hospitalization (number of times and number of days) is a predictor of the revolving door syndrome. A multiple linear regression examined the strength of the relationship between the independent variable (number of days in previous hospitalization) and the dependent variable (number of days rehospitalized). A chi square studied the relationship between the number of times in previous hospitalization and hospital readmission.

The data combining the three nosologies did not support the hypothesis that the number of days previously hospitalized is a predictor of present hospitalization ($R = .03; F = 1.476, df = 1/134, p > .05$). No relationship was noted between number of days previously hospitalized, presently hospitalized, and rehospitalized ($R_1 = .05, R_2 = .17; F = 2.137, df = 2/133, p > .05$), and relationship between days in present hospitalization and rehospitalization did not reach criterion ($R = .165; F = 3.787, df = 1/134, p > .05$).

Although the number of days previously hospitalized fails to predict rehospitalization, the number of times previously hospitalized is a useful predictor of rehospitalization (62.06% versus 37.94%, $X^2 = 7.55, df = 1, p < .01$). Adding present hospitalization to the number of previous admissions, and the number of readmissions in the two-year period, increases the predictable value of recidivism (44.31% versus 27.01% versus 28.62%; $X^2 = 12.97, df = 2, p < .005$). Thus the number of times previously hospitalized supports the hypothesis regarding readmission rates.
An examination of the readmissions data by nosologies revealed differences in significance levels. A multiple linear regression analysis indicated that the number of days previously hospitalized and the number of days of present hospitalization may be used to predict rehospitalization for neurotics and personality disorders (Neurotics, $R_1^2 = .11$, $R_2^2 = .52$; $F = 4.496$, $df = 2/24$, $p < .025$. Personality disorders, $R_1^2 = .44$, $R_2^2 = .50$; $F = 7.257$, $df = 2/18$, $p < .005$). The relationship was not noted for psychotics ($R_1^2 = .016$, $R_2^2 = .031$; $F = .573$, $df = 2/85$, $p > .05$).

A chi square was used to measure differences in relationship between the number of times previously hospitalized and rehospitalization for service and private patients. A matrix of these data is noted in Table 7 on page 27. Noting that the percentages (number of times) of previous and subsequent hospital admissions were greater for service patients, a $t$ test was used to see if differences did exist. Significant differences were not found between service and private patients, in mean days rehospitalized for only those patients who were rehospitalized (37.84 versus 30.35; $t = .836$, $df = 61$, $p > .05$).

In response to Garfield's (1974) criticism that psychiatric studies fail to measure the treatment effects of total hospital care, the present study obtained data on the number of daily psychotherapy sessions, electroconvulsive shock treatments, occupational therapy, day center attendance, and strength of medications. A multiple linear regression was used to measure the strength of the relationship between combinations of these five independent variables and the dependent variable which was identified as percentages rehospitalized.
Table 7

Relationship Between Previous, Present, and Subsequent Hospitalization for Service Versus Private Patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Service (%)</th>
<th>Private (%)</th>
<th>$x^2$ (df=2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Patients:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous</td>
<td>41.96</td>
<td>39.22</td>
<td>11.16**</td>
</tr>
<tr>
<td>Present</td>
<td>26.22</td>
<td>39.87</td>
<td></td>
</tr>
<tr>
<td>Subsequent</td>
<td>31.82</td>
<td>20.92</td>
<td></td>
</tr>
<tr>
<td>Psychotics:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous</td>
<td>44.35</td>
<td>44.21</td>
<td>5.99*</td>
</tr>
<tr>
<td>Present</td>
<td>23.91</td>
<td>34.74</td>
<td></td>
</tr>
<tr>
<td>Subsequent</td>
<td>31.74</td>
<td>21.05</td>
<td></td>
</tr>
</tbody>
</table>

Note. Data on neurotics and personality disorders were not significant and are reported in Appendix C.

* $p<.05$.

** $p<.005$.

The purpose of this analysis was to test the present study's second hypothesis which predicted that these independent variables would reduce hospital recidivism.

The only variables noted which appear related to reducing recidivism for all patients combined were the number of occupational therapy sessions ($R_s=.21; F=4.379, df=1/134, p<.05$) and a combination of occupational therapy and phenothiazines for psychotics ($R_1=.18, R_2=.10; F=3.988, df=2/55, p<.025$). No relationship was noted between

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the other independent variables and hospital readmission. This may indicate that while the identified variables may prove helpful in bringing about patient recompensation, there do not appear to be sufficient carry over effects to prevent decompensation and rehospitalization. A summary of the data showing no relationship may be reviewed in Appendix D.

While the relationship of a combination of all five independent variables and hospital readmission did not reach criterion, there was a .09 level of significance. Therefore, the hypothesis which predicts that these treatment variables will reduce rehospitalization is not wholly supported at the .05 level of significance. The two exceptions are noted above for all patients combined participating in occupational therapy (.05) and for psychotic patients who receive phenothiazines and participate in occupational therapy (.025).
Discussion

Data for the present study were obtained from hospital records and interviews with former psychiatric hospital patients. Although such a study could not manipulate independent variables, it may be useful in predicting hospital readmission rates and indicating what independent variables might effectively be controlled. The study's four hypotheses were tested by a variety of statistical tests.

It was found that the number of days spent in previous hospitalization was a useful predictor of the revolving door syndrome for neurotics ($p<.025$) and for personality disorders ($p<.005$) but not for psychotics (Arnone et al., 1966; Purvis et al., 1970). In agreement with Lorei et al. (1973), the number of times previously hospitalized was found to be the most useful prognosticator of recidivism ($p<.01$) for all patients.

With the exception of attendance at occupational therapy for all patients and a combination of occupational therapy and the prescription of phenothiazines for psychotics, other treatment variables did not prove significantly related in reducing rehospitalization at the established criterion level. However, a combination of the hospital's five treatment variables did show a relationship at the .09 level in reducing hospital recidivism. Three observations may be noted from these data: (a) perhaps the .10 level of significance would be a more logical criterion in a study where independent variables are not controlled, (b) other studies could account for the seriousness of pathologies within and between groups in relationship to recidivism,
and (c) similar future studies may control treatment variables to measure the strength of the relationship between independent and dependent variables (Garfield, 1974).

Unique to this study was the comparison of environmental, patient, and treatment variables between service versus private patients. It was noted that service therapists tended to treat more unmarrieds (42.7% versus 19.7%, \( p < .05 \)), more third-world members (difference=13.8%, \( p < .05 \)), more psychotics (n=55 versus n=33), more patients involuntarily admitted (33.3% versus 18.0%, \( p < .05 \)), and younger patients (M age difference=5.31, \( p < .05 \)).

The major difference between service and private patients is in the ability to pay for services via insurance or private funds. Service patients are generally those who are unable to pay, and, thus, may indicate a lower socioeconomic status. The findings of the present study are, in part, contrary to Miller's (1965, 1967) findings that persons who are younger, have higher socioeconomic status, and have successful marriages are hospitalized for shorter periods and are less frequently readmitted. Service patients are significantly younger (\( p < .05 \)), may be assumed to be of a lower socioeconomic level, and, indicate more unmarrieds (\( p < .05 \)) than do private patients, yet there are no statistical differences in days spent in present hospitalization between the two groups. However, the present study agrees with Miller (1965, 1967) that these persons are more frequently readmitted to psychiatric hospitals (\( p < .05 \)).

Service patients appear to have more serious pathologies since more are transferred to state and veterans psychiatric facilities for

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longer treatment than are private patients \((p < .025)\), and tend to require heavier dosages of phenothiazines \((p < .05)\).

The present study showed that service and private patients tend to receive basically the same hospital treatment but statistical differences were not found in days spent in present hospitalization. Although more service patients \((86.7\% \text{ versus } 55.8\%, p < .005)\) are recommended for follow-up psychotherapy after being discharged from the hospital, receive more outpatient psychotherapy sessions \((12.09 \text{ versus } 5.33, p < .002)\), and are sustained on heavier medications \((p < .002)\), statistical differences were not found between the two groups in hospital readmission rates. However, the effectiveness of follow-up treatment \((Avery \text{ et al, 1968; Beavers \text{ et al, 1968; Gossett \text{ et al, 1969}}})\) may be implied since the data suggest that service patients tend to have more serious pathologies than do private patients.

The data from the present study, like Minnick's \((1973)\) did not find differences in environmental, patient, and treatment variables between patients rehospitalized and those not rehospitalized. However, there were differences in environmental and patient variables between service versus private patients. Minnick \((1973)\) concluded that patients who improve do so in spite of treatment rather than because of it. The present study does not support his findings since service patients who had more serious pathologies recompensated as quickly and were rehospitalized no more frequently than private patients. This may be an indication of the effectiveness of hospital treatment and aftercare. Further the data indicates that the number of days and the number of times spent in previous hospitalization are the most useful
predictors of recidivism for psychoneurotics ($p < .025$), contrary to Eysenck's (1952, 1965) conclusion that there is a two-thirds remission rate for patients in this nosology whether they receive treatment or not.

While there were differences between service and private patients in those recommended for follow-up services, statistical differences were not found between the two groups in hospital readmission rates. Differences were not found in readmission rates between those who continued in outpatient aftercare, those who terminated follow-up, and those who obtained no follow-up. A cursory conclusion may be that outpatient follow-up is not effective. A more logical conclusion, considering the seriousness of pathologies and previous hospital admission rates is that outpatient follow-up has been effective in reducing the revolving door syndrome, since those who were in follow-up had more previous psychiatric hospital admissions but no more readmissions than did those who did not obtain hospital aftercare (Avery et al, 1969; Haven et al, 1970; Scoles, 1971).

The effective use of psychotropic drugs (Grozier, 1971; Odegaard, 1968; Shpilovich et al, 1966) in outpatient follow-up has also been demonstrated in the present study. Although service patients had more previous psychiatric hospital admissions and more serious psychopathologies than did private patients, differences were not found between the two groups in readmission rates. This may be largely due to the fact that service patients were treated by heavier medications in the hospital ($p < .05$) and in outpatient services ($p < .002$) than were private patients. Another way of saying this is that the differences between service and private patients tended to disappear with hospital
and post-hospital treatment.

Future studies could compare the differences between service and private patients between psychiatric hospitals who have similar staff arrangements. Kent Oaks Hospital has recently started a program of utilizing the therapist who treated the patient in the hospital to treat the same patient in outpatient aftercare (Bovill, 1972; Hott, 1971; Kasser et al, 1966). The same hospital is utilizing more community resources (Driemen et al, 1971; Rubenstein, 1972; Wienman et al, 1970), moving into family crisis therapy (Langsley et al, 1969) and coordinating a network of other agencies to provide services to formerly hospitalized patients (David, 1971; Zolik et al, 1970). Future studies originating in this same hospital to consider the variables of the present study could produce significantly different results.
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Appendix A

A summary of data which failed to reveal significant differences* in environmental and patient variables between service and private patients in three nosologies.

**Unmarried Patients**
- Psychosis (45.5% versus 21.2%; $x^2=7.497$, df=4).
- Neurosis (28.6% versus 15.4%; $x^2=5.166$, df=4).
- Personality Disorders (50% versus 20%; $x^2=2.45$, df=4).

**Mean Number of Days of Previous Hospitalization**
- Psychosis (60.33 versus 26.88; $t=1.58$, df=86).
- Neurosis (5.36 versus 4.23; $t=.41$, df=25).
- Personality Disorders (26.67 versus 8.93; $t=1.45$, df=19).

**Hospital Readmissions in Mean Days (1st year)**
- Psychosis (13.31 versus 9.06; $t=.987$, df=86).
- Neurosis (4.7 versus 12.23; $t=1.434$, df=25).
- Personality Disorders (0 versus 4.8; test not possible because df=0 for service group).

**Hospital Readmissions in Mean Days (2nd year)**
- Psychosis (9.18 versus 6.09; $t=.809$, df=86).
- Neurosis (4.79 versus 4.46; $t=.061$, df=25).
- Personality Disorders (5.0 versus 0; test not possible because df=0 for private group).

**Hospital Readmission in Mean Days (combining two years)**
- Psychosis (22.49 versus 15.15; $t=1.018$, df=86).
- Neurosis (9.5 versus 16.69; $t=.721$, df=25).
- Personality Disorders (5.0 versus 4.8; $t=.041$, df=19).

*In all tests $p>.05$.  

39

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Appendix B

A summary of data which failed to reveal significant differences* in treatment variables between service and private patients in three nosologies.**

Hospital Admissions (involuntary)
Personality Disorders (33.3% versus 26.7%; $\chi^2 = .093, df=1$).
Neurosis (all were voluntary admissions for both groups).

Days in Present Hospitalization
Personality Disorders (6.17 versus 11.27; $t = .885, df=19$).
Neurosis (10.93 versus 14.83; $t = .628, df=25$).
Psychosis (21.96 versus 18.70; $t = .927, df=86$).

Medications (in hospital)
Personality Disorders (4.0 versus 3.33; $t = .733, df=19$).
Neurosis (2.71 versus 2.54; $t = .37, df=25$).

Psychotherapy (in hospital)
Personality Disorders (.38 versus .50; $t = 1.01, df=19$).
Neurosis (.45 versus .46; $t = .207, df=25$).
Psychosis (.38 versus .42; $t = .951, df=86$).

Occupational Therapy (in hospital)
Personality Disorders (.249 versus .392; $t = 1.012, df=19$).
Psychosis (.43 versus .45; $t = .328, df=86$).

Electroconvulsive Shock (in hospital)
Personality Disorders (not used).
Neurosis (not used).
Psychosis (.014 versus .021; $t = .477, df=86$).

Day Center (in hospital)
Personality Disorders (not used).
Neurosis (.05 versus 0; $t$ test not possible because $df=0$ for private group).
Psychosis (.04 versus 0; t test not possible because df=0 for private group).

Hospital Discharge
Personality Disorders (M.A.=33.3% versus 73.3%, Transfer=50% versus 13.3%, A.M.A.=16.7% versus 13.3%; $\chi^2=3.561$, df=2).

Neurosis (M.A.=92.9% versus 100%, Transfer=0, A.M.A.=7.1% versus 0%; $\chi^2=.964$, df=1).

Follow-Up Psychotherapy
Personality Disorders (M.A.=50% versus 26.7%, A.M.A.=33.3% versus 33.3%, None=16.7% versus 40%; $\chi^2=3.561$, df=2).

Neurosis (M.A.=35.7% versus 23.1%, A.M.A.=42.9% versus 46.2%, None=21.4% versus 30.8%; $\chi^2=.607$, df=2).

Number of Follow-Up Psychotherapy Sessions
Personality Disorders (5.17 versus 4.47; $t=.166$, df=19).

Medications Received in Follow-Up
Personality Disorders (4.67 versus 5.07; $t=.413$, df=19).

Neurosis (4.21 versus 4.08; $t=.224$, df=25).

*In all tests $p>.05$.
**Whenever a nosology does not appear, it is reported significant and included in the Results section.
Appendix C

Data which failed to reveal significant relationships between the number of times previously hospitalized and rehospitalization for service versus private patients.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Service (%)</th>
<th>Private (%)</th>
<th>$\chi^2$ (df=2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurotics:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous</td>
<td>24.32</td>
<td>30.0</td>
<td>.82*</td>
</tr>
<tr>
<td>Present</td>
<td>37.84</td>
<td>43.33</td>
<td></td>
</tr>
<tr>
<td>Returned</td>
<td>37.84</td>
<td>26.67</td>
<td></td>
</tr>
<tr>
<td>Personality disorders:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous</td>
<td>55.56</td>
<td>27.59</td>
<td>2.86*</td>
</tr>
<tr>
<td>Present</td>
<td>33.33</td>
<td>51.72</td>
<td></td>
</tr>
<tr>
<td>Returned</td>
<td>11.11</td>
<td>20.69</td>
<td></td>
</tr>
</tbody>
</table>

*p > .05.

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Appendix D

A summary of data which failed to reveal significant relationships* between daily hospital treatment and percentages of patients readmitted within a two-year period (combining three nosologies).

Psychotherapy ($R^2 = .02; F = .458, df=1/134$).

Electroconvulsive Shock Therapy (EST) ($R^2 = .07; F = .58, df=1/134$).

Day Center (DC) Attendance ($R^2 = .09; F = 1.144, df=1/134$).

Medications ($R^2 = .05; F = .328, df=1/134$).

Psychotherapy and EST ($R_1^2 = .02, R_2^2 = .07; F = .300, df=2/134$).

Psychotherapy and Occupational Therapy (OT) ($R_1^2 = .02, R_2^2 = .17; F = 1.904, df=2/134$).

Psychotherapy and DC ($R_1^2 = .02, R_2^2 = .09; F = .582, df=2/134$).

Psychotherapy and Medications ($R_1^2 = .02, R_2^2 = .05; F = .165, df=2/134$).

EST and OT ($R_1^2 = .07, R_2^2 = .17; F = 2.144, df=2/134$).

EST and DC ($R_1^2 = .07, R_2^2 = .09; F = 1.213, df=2/134$).

EST and Medications ($R_1^2 = .07, R_2^2 = .05; F = .493, df=2/134$).

OT and DC ($R_1^2 = .17, R_2^2 = .09; F = 2.582, df=2/134, p < .08$).

OT and Medications ($R_1^2 = .17, R_2^2 = .05; F = 1.951, df=2/134$).

DC and Medications ($R_1^2 = .09, R_2^2 = .05; F = .692, df=2/134$).

Across all five independent variables ($R_1^2 + R_2^2 + R_3^2 + R_4^2 + R_5^2 = .02, R_2^2 = .07, R_3^2 = .17, R_4^2 = .09, R_5^2 = .05; F = 1.312, df=5/130$).

*In all data, $p > .05$.  

43