Factors in the hospitalization of mental patients: ward behavior and its relation to medication and discharge.

Nancy J. McMurtry  
*University of Windsor*
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**LA THÈSE A ÉTÉ MICROFILMÉE TELLE QUE NOUS L'AVONS RÉCU**
FACTORS IN THE HOSPITALIZATION OF MENTAL PATIENTS:
WARD BEHAVIOR AND ITS RELATION TO MEDICATION AND DISCHARGE

by
Nancy J. McMurtry

B. A. University of California, Santa Cruz, 1976

A Thesis
Submitted to the Faculty of Graduate Studies
through the Department of Psychology
in Partial Fulfillment of the
Requirements for the Degree
of Master of Arts at
The University of Windsor

Windsor, Ontario, Canada

1977
ABSTRACT

The main purpose of this study was to determine whether patients' overt behavior on the psychiatric ward influences decisions about their medications and their length of stay. It was expected that decisions would reflect a need to make the ward run smoothly, and that there would be a tendency to suppress disruptive behavior. The hypotheses stated that there would be a greater use of antipsychotic than of antidepressant drugs, that the frequencies of usage of these drugs would not match the frequencies of schizophrenic and depressed patients, that disruptive patients would be discharged sooner than non-disruptive ones, and that disruptive patients would not be transferred to longer-term facilities as often as non-disruptive ones.

Subjects were 60 patients from the two adult psychiatric wards of a hospital in Windsor. Each patient's symptoms were rated on a Brief Psychiatric Rating Scale (BPRS), after an 18-minute interview. From the scores on the BPRS patients were classified as schizophrenic or depressed, and as disruptive or non-disruptive. Nursing notes were also used to assess disruptiveness. Other information, including length of stay, medications prescribed, and diagnoses, was recorded from medical charts. Inter-rater reliability on the BPRS was found to be significant at the .01 level for all scales except Hostility and Blunted Affect.
The first hypothesis was not supported. The second hypothesis was supported; usages of the two types of drugs did not match frequencies of schizophrenic and depressed behavior. A further analysis showed that there was no relationship between classification on the BPRS and the type of medication predominantly received. The third hypothesis was not supported; no significant correlations were found between the measures of disruptiveness and length of stay. The fourth hypothesis could not be tested, since only one patient was transferred.

When compared with doctors' diagnoses and with patients' actual presenting symptoms at the time of admission, the BPRS was found in many cases to be an inadequate measure of behavior. Indications of thinking disorder and of other psychotic disturbance may have been so obliterated by the medication given to patients that the BPRS interview was incapable of detecting these. An analysis of doctors' diagnoses of schizophrenia and of depression and type of medication predominantly received, showed that there was a relationship between diagnosis and medication, \( \chi^2 (1) = 13.1, p < .001 \), which finding contradicted the findings with BPRS classifications. We may account for this contradiction by assuming either that the doctors' diagnoses made use of valid behavioral indications that were not available from the BPRS interview, or that the diagnosis, though not valid, provided the justification for using whatever medication was used.
To Mom and Dad,
for their love and encouragement
throughout the years.
ACKNOWLEDGEMENTS

I wish to express my gratitude to the following people, without whose help this study would have been impossible. First, I would like to thank the chairman of my thesis committee, Dr. Frank Auld, for the many hours he spent helping me to formulate ideas, carry out the research, and analyze the data both statistically and theoretically. I would also like to thank the members of my thesis committee, Dr. Dale Woodyard, Dr. John LaCaipa, and Mrs. Janet Rosenbaum, for their helpful suggestions and interest in this project. I am very grateful to the staff at Windsor Western Hospital Centre, particularly Dr. Robert Mason, Chief Psychiatrist, and Dr. Robert Carom, Chief Psychologist, who not only gave permission for the study to be done but were helpful in dealing with official matters of hospital policy. I would also like to thank the nursing staff, especially Miss Ruth Labute and Mrs. Marg Calder, for their help in obtaining patients for the study. To the secretaries who spent several hours finding medical records for me, I give special thanks; without their patient efforts, the research could not have been finished. I would also like to thank a fellow student and good friend, Christine Ransom, for her help in the research and for her encouragement. Finally, I would like to thank the patients who participated as subjects in the study.
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CHAPTER I
INTRODUCTION

It has become evident over the years, as mental hospitals and psychiatric wards have been studied from various viewpoints, that the career of a mental patient in the hospital is not determined solely by the official dictates of the institution; nor is there usually a consensus among those involved as to exactly what does determine the patient's course, official or otherwise (Stanton & Schwartz, 1954; Caudill, 1958). Rather, what happens to the patient in terms of his treatment and length of hospitalization is a result of both official policy and unofficial interactional processes that occur among the patient, the staff, and the institution. To document some of these processes and to observe some of the resultant patterns of patient care is the purpose here.

More specifically, the areas of interest of this research are the following: (1) the documentation of certain factors in the patient's hospitalization pertaining to referral, admission, treatment, and discharge, and (2) the testing of hypotheses about the relationship between a patient's overt behavior, as defined by a Brief Psychiatric Rating Scale (Overall & Gorham, 1962), and two of the factors, medication prescribed and length of stay. It is expected that this information will provide a better understanding of the psychiatric ward by revealing certain patterns of functioning.
through observation of unofficial interactional processes (viz., the effect of a patient's overt behavior on decision-making).

One of the best ways to study the functioning of an institution, especially as that functioning relates to those served by the institution, is to study the people that utilize the services and what happens to them. Previous studies of mental hospitals, such as those of Stanton and Schwartz (1954), Candill (1958), and Stotland and Kobler (1965), have taken such an approach, and so it was thought to be applicable in this case.

The specific areas of interest here have not been studied extensively by previous researchers; this is especially true of the hypotheses regarding patient behavior. However, there has been research done in related areas whose findings support the theoretical propositions underlying this study. Essentially, these propositions are that patterns of functioning on the psychiatric ward are determined by both official and unofficial processes and that these patterns are, at least in part, an outgrowth of attempts to make the ward run smoothly and efficiently.

The major study by Stanton and Schwartz (1954) cited earlier revealed that these propositions were true. Staff tended to make decisions about patients that would allow them to carry out their routines without interference, as, for example, the seclusion of certain patients by nurses (Stanton & Schwartz, 1954, p. 255). Schwartz and Schwartz (1964), in their long-term study of several types of mental patient care, found that decisions about patients
were often made with regard to the institution's needs rather than the patient's (Schwartz & Schwartz, 1964, p. 114). Rock, Jacobson, and Janopaul (1968) studied several different mental institutions in an attempt to identify critical stages in the process of hospitalization; they also found that classification and location of some patients in state mental hospitals were based on patient characteristics that were important to the administration of the institution rather than on medical grounds (Rock et al., 1968, p. 70).

Since patients' overt behavior on the ward has been found to be one of the most important factors influencing ward functioning, it is expected that decisions made about patient treatment will reflect the need for controlling that behavior. Two types of decisions are focused on in this study—decisions about medications and about length of hospitalization. Generally, based on the above propositions, it is expected that the decisions made about medications and length of hospitalization will be based, at least in part, on the consideration of ward functioning; i.e., decisions will be made that will maximize the smoothness and efficiency of the ward's operation. (Concern for each patient's welfare also is an important part of the decision-making process, of course, but this is not the focus here.)

There is another important factor which makes the ward's functioning more influential in the decision-making process than it otherwise might be. This is that the doctors who must make decisions, specifically about medication and discharge, do not have time to get to know individual patients well enough to decide what is really best
for them. Instead, the doctors do what they can under the circumstances. Their decisions become based, at least in part, on institutional needs, because there is not opportunity to adequately assess patients' needs.

That doctors in psychiatric settings do not know individual patients well was shown in a study by Walker and Dempsey (1967) about ward behavior in schizophrenics and its relation to release or further hospitalization. Part of the study involved staff ratings of patients' readiness for discharge. Nurses showed significant ability to differentiate between those patients who left within two months and those who did not, while physicians and other staff could not differentiate beyond a chance level.

Schwartz and Schwartz (1964), in the study cited earlier, found it true that doctors were often absent from the wards and that consequently some decisions were made on the basis of brief contact (Schwartz & Schwartz, 1964, p. 127), an abstract image of the patient, and the institution's needs and problems (Schwartz & Schwartz, 1964, p. 114).

It is expected, then, that specific decisions regarding medication and discharge will be influenced by concern with hospital functioning, and therefore with patient behavior on the wards. Since the concern is to maintain smooth functioning, it is expected that decisions will be made that tend to minimize disruptive behavior.

It is believed that medications are prescribed on the basis of the patient's diagnosis. It is also believed that the diagnosis is
often made on the basis of brief contact with the patient and is influenced by the demands of the institution. Since doctors must base their decisions on incomplete knowledge about patients, they will tend to err on the side of caution. That is, they will tend to view patients as more severely disturbed than they might if they had more information, and they will prescribe medications accordingly. This is a natural outgrowth of concern for the hospital's smooth functioning. To err in the other direction might result in patients not being adequately controlled, and this could have a disrupting effect on the ward's functioning. Since antipsychotic drugs tend to suppress behavior and provide some control, it is expected that there will be a significantly greater use of these drugs than of antidepressant drugs overall. Furthermore, since decisions must often be made with a sketchy knowledge of the patients' problems, it is expected that there will sometimes be a discrepancy between the types of medication prescribed and the needs of the patients. More specifically, it is anticipated that the frequencies of usage of antipsychotic and antidepressant drugs will not parallel the frequencies of schizophrenic and depressed behavior.

It is also expected that discharge decisions will be partially influenced by a concern with ward functioning. Disruptive patients are expected to be discharged sooner than others and are not expected to be referred to longer-term facilities. Presumably staff on the ward will generalize their concern about efficient functioning to sister facilities. The latter contention was supported by a study
done in 1975 by Doherty. Through relating a series of patient behavior ratings, demographic information, and diagnostic data to patient referral patterns, Doherty found that those patients who were younger, more conforming, and more adhering to standards of right and wrong were referred to inpatient treatment more than others. These characteristics were of greater significance in the referral process than were diagnostic or demographic variables. Thus, it is expected that patient behavior will affect the discharge and transfer decisions.

It should be emphasized that the point here is not to criticize the staff or the administrators of the psychiatric ward. These people generally are doing their best to balance the needs of patients and those of the institution with the way the system functions at this time. Rather, the purpose of this study is to better understand the functioning of the hospital and the subsequent effects it has on the careers of mental patients. Of particular interest is the way in which both official and unofficial factors interact and influence decisions.

More specifically, the following hypotheses were tested:

(1) There will be a significantly greater use of antipsychotic drugs than of antidepressant drugs overall.

(2) The frequencies of schizophrenic and depressed behavior, as measured by the BPRS, will not match the frequencies of usage of antipsychotic and antidepressant drugs.

(3) Disruptive patients, as measured by the BPRS, will be discharged sooner than patients who are not disruptive.
Disruptive patients will not be referred to longer-term facilities as often as non-disruptive patients.

The BPRS was used to assess patient behavior. It is a scale which has been found to exhibit sufficient reliability and validity (Overall & Gorham, 1962). It has been used to identify frequently occurring symptom and behavior patterns in previous studies (Overall & Woodward, 1975), so it was believed to be applicable here.
CHAPTER II

METHOD

Subjects

The subjects for this study were chosen from the in-patient population on the adult psychiatric wards of Windsor Western Hospital Centre's I.O.D.E. Unit. The hospital is located in Windsor, Ontario and provides service to the surrounding community.

Included in the study were 60 patients, of whom 34 were women and 26 were men. Since the study took place on adult wards, the youngest subject was 18 and the oldest 61.

With the exception of one subject, patients were chosen from those admitted during the period of the study. Patients already on the ward when the study began were not considered. Because of ethical considerations and hospital policy, selection of subjects was based upon consent; patients' names were obtained from the head nurse within a few days of admission, and those who were willing to sign a consent form were used (see Appendix A).

Materials

Patient Information Sheet. On this form were recorded all the data about the patients relevant to the study except the ratings of their symptoms. One information sheet was completed for each subject. Complete information was not obtained for three subjects, so that they could not be used in some of the subsequent data analyses.
The following information was recorded:

(1) patient's name;
(2) patient's sex;
(3) patient's age;
(4) patient's marital status;
(5) date of admission;
(6) date of discharge or transfer;
(7) who referred the patient;
(8) names of staff who signed the official admission papers;
(9) patient's diagnosis;
(10) name of the doctor to whom the patient was assigned;
(11) whether the patient was assigned to individual therapy and with which therapist;
(12) whether the patient was assigned to group therapy and with which therapist;
(13) whether the patient was assigned to any other therapeutic activities;
(14) medications given the patient;
(15) whether the patient received ECT and when;
(16) number of disruptive acts committed by the patient, according to nurses' notes;
(17) who made the decision to discharge or transfer the patient;
(18) name of the staff member who signed the official discharge papers;
(19) if the patient was transferred, where he or she was sent;
(20) follow-up activities offered the patient.

**Brief Psychiatric Rating Scale.** The BPRS was used to rate patients' behavior. At least one form was filled out for each subject. Two forms were filled out for the 30 patients rated by two interviewers.

The BPRS consists of a series of 16 symptoms on which the patient was rated as to how much he or she exhibited each symptom. The possible ratings were "Not Present," "Very Mild," "Mild," "Moderate," "Moderately Severe," "Severe," and "Extremely Severe."

The 16 symptoms were as follows: (1) Somatic Concern; (2) Anxiety; (3) Emotional Withdrawal; (4) Conceptual Disorganization; (5) Guilt Feelings; (6) Tension; (7) Mannerisms and Posturing; (8) Grandiosity; (9) Depressive Mood; (10) Hostility; (11) Suspiciousness; (12) Hallucinatory Behavior; (13) Motor Retardation; (14) Un cooperativeness; (15) Unusual Thought Content; and (16) Blunted Affect.

**Procedure**

Establishing reliability for the BPRS. The reliability of the rating procedure was established by having two raters perform the task simultaneously with 30 of the subjects. (For practical reasons, this could not be done with all of the subjects.) In each case, each rater rated the patient individually, although both raters did the preliminary interview together. (See "General design" for a description of the interview procedure.) Afterwards the raters discussed their ratings. This procedure is suggested by Overall and Corsham (1962) in order to standardize the approach to rating subjects and
thereby improve the reliability of the Scale.

The first 10 subjects were interviewed and rated by the researcher and one assistant, and the other 20 subjects were interviewed by the researcher and a different assistant. The remaining 30 subjects, not included in the reliability calculations, were rated by the researcher only. A composite reliability coefficient was calculated for each scale using the two separate groups of scores.

General design. Patients whose names had been supplied by the head nurse were approached one at a time and asked if they would consent to participate in the study by being interviewed. If the patient signed the consent form, the BPRS interview was conducted immediately. An attempt was made to approach patients within a few days of their admission, but sometimes this was not possible.

The interview was conducted according to the standard procedure suggested by the authors of the BPRS. It lasted about 18 minutes; approximately 3 minutes were devoted to establishing rapport, 10 minutes to non-directive interaction, and 5 minutes to direct questioning. During the first part of the interview the rater tried to make the patient more at ease and explained that the purpose of the interview was to gather information that would be used to help the patient. This was explained in the consent statement also. The patient was not told that he or she was being rated, however.

The second segment was devoted to obtaining most of the necessary information about the patient's behavior through his or her spontaneous verbalizations and actions. Such questions as, "How can we be
of help to you?" or, "What bothers you most about your illness?" were asked initially.

Finally, the last portion of the interview was used to obtain missing information by direct questioning. Examples of such direct questioning were, "Has such-and-such occurred recently?" or, "You have told me about this, now could you tell me a bit about this?" The actual ratings were done immediately following the interview, but not in the presence of the patient. These took only 2 or 3 minutes.

After the BPRS rating had been done on a patient, other information was recorded on the Patient Information Sheet as it became available during the patient's hospitalization. The major source of information was the patient's chart, but some information which was not recorded in the chart came from the nursing staff. Nurses were also asked to clarify relevant information in the charts which was difficult to interpret (e.g., medication notation). Data-gathering continued until all the relevant data had been collected for each patient up to the time of discharge.
CHAPTER III

RESULTS

In general, the results of the study did not bear out the hypotheses. Two of the hypotheses were not supported, and another could not be tested because a basis for separating subjects into groups for comparison did not exist. However, one hypothesis was supported by the data.

Before beginning a detailed presentation of these findings, it is necessary to examine the reliability data for the BPRS, since the Scale provided important information for the testing of three of the hypotheses. Generally the Scale was found to be reliable with correlations between raters' results on most symptoms significant at the .01 level.

Since there were two different assistants involved in making the ratings with the researcher, a composite reliability score for each symptom scale had to be computed using the reliability scores from the two separate rating teams (viz., the team which rated 10 patients and the team which rated 20 patients). This was done by calculating the reliability coefficients for each team separately, transforming these correlations to \( z \)-scores using Fisher's transformation, combining these \( z \)-scores into single \( z \)-scores for each symptom scale, and finally reconverting these composite \( z \)-scores back into composite reliability coefficients.
Table 1 shows the final results of these computations for each symptom scale. All the scales were found to be reliable at a significant level except Hostility and Blunted Affect. A correlation coefficient could not be calculated for Mannerisms and Posturing since there was perfect agreement that no one had the trait and therefore no variance. The same situation was true for one team’s ratings on the Hallucinatory Behavior and Uncooperativeness scales, so that the reliability coefficients for these were based solely on the other team’s scores.

The first hypothesis, which stated that there would be a significantly greater use of antipsychotic than of antidepressant drugs, was not supported by the data. There was more usage of antidepressant medications than of antipsychotic ones, although the difference was not great.

In order to determine how much each type of drug was used, the number of days that each type was administered to each patient was totalled. If any antipsychotic or antidepressant drugs were given to a patient on a particular day, that day was counted as one administration of that type of drug, regardless of dosage, number of administrations in one day, whether the drug was mandatory or “PRN,” or whether the patient received more than one kind of antipsychotic or antidepressant drug on that day. (For example, if a patient received both Elavil and Surmontil on the same day, this was still counted as one day of administration of antidepressants.) It was felt that these factors were not important in this instance, since
<table>
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<th>Symptom</th>
<th>Composite $a$</th>
<th>Composite $\bar{a}$</th>
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</thead>
<tbody>
<tr>
<td>Somatic Concern</td>
<td>1.00</td>
<td>.76**</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.49</td>
<td>.45*</td>
</tr>
<tr>
<td>Emotional Withdrawal</td>
<td>.63</td>
<td>.56**</td>
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<td>Conceptual Disorganization</td>
<td>.66</td>
<td>.58**</td>
</tr>
<tr>
<td>Guilt Feelings</td>
<td>1.04</td>
<td>.78**</td>
</tr>
<tr>
<td>Tension</td>
<td>.84</td>
<td>.69**</td>
</tr>
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<td>Mannerisms and Posturing</td>
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<td>--- a</td>
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<tr>
<td>Grandiosity</td>
<td>1.20</td>
<td>.83**</td>
</tr>
<tr>
<td>Depressive Mood</td>
<td>.88</td>
<td>.71**</td>
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<td>Hostility</td>
<td>.25</td>
<td>.23</td>
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<tr>
<td>Suspiciousness</td>
<td>1.17</td>
<td>.83**</td>
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<td>Hallucinatory Behavior</td>
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<td>Motor Retardation</td>
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<td>Uncooperativeness</td>
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<tr>
<td>Unusual Thought Content</td>
<td>.92</td>
<td>.73**</td>
</tr>
<tr>
<td>Blunted Affect</td>
<td>.04</td>
<td>.04</td>
</tr>
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*There was perfect agreement among all raters that this symptom was not present in any subject.

**This $\bar{a}$ is based on results of only one pair of raters; the other pair had perfect agreement that the symptom was not present in the subjects they interviewed.

* $p < .05$.

** $p < .01$. 
they had to do with effectiveness of the drugs in individual cases. Of more importance was the staff's assumption of a need to administer antipsychotic or antidepressant drugs overall, regardless of individual adjustments for the sake of effectiveness.

Based on the total number of days that each type of drug was given to the 58 patients for whom information was available, the use of antidepressant drugs was approximately equal to the use of antipsychotic drugs. Antidepressant medication was given 598 days and antipsychotic medication was given 585 days.

The second hypothesis stated that the frequencies of schizophrenic and depressed behavior, as measured by the BPRS, would not match the frequencies of usage of antipsychotic and antidepressant drugs. This was supported by the data; while the number of patients exhibiting depressed behavior far exceeded the number exhibiting schizophrenic behavior, the usage of the two types of drugs was nearly equal, as shown for the previous hypothesis.

Since no single symptom scale on the BPRS was an adequate indicator of a tendency toward schizophrenia or depression by itself, two methods were used for sorting patients into these categories using combinations of symptoms. The first method was suggested by the authors of the BPRS themselves (Overall & Klett, 1972) and employed the following formula:

\[(\text{Conceptual Disorganization} + \text{Unusual Thought Content} + \text{Hallucinatory Behavior}) - (\text{Depressive Mood} + \text{Guilt Feelings} + \text{Anxiety}) = \]
Using this formula, a number was calculated for each patient; the number ratings that the patient received for each symptom (from 1 to 7) were substituted into the equation for this purpose. The first three symptoms indicated schizophrenia and the second three depression, so a positive result placed the patient in the schizophrenic category. According to this sorting method, 55 patients were depressed, 3 were schizophrenic, and 2 were indeterminate (the equation yielded a zero for these two patients).

Because so few patients were found to be in the schizophrenic category when this method was used, another procedure for sorting was employed additionally to ensure that those patients who should be in the schizophrenic category would be placed there. It was felt that high ratings on the Anxiety scale, which many patients had, might "override" actual schizophrenic symptoms and move the patient into the depressed category. Therefore, a system of symptom priorities was established according to the World Health Organization's International Pilot Study of Schizophrenia (1973). Simply stated, the study found that certain symptoms, if present, took precedence over others in diagnosis, and a hierarchy of symptoms was established. At the top of the hierarchy were such symptoms as conceptual disorganization, unusual thought content, and hallucinatory behavior; if these were present, a patient was placed in a schizophrenic category, regardless of other symptoms. On this basis, it was decided for the purposes of the present study that if a patient had two of these symptoms with a rating of three or more, or one with a rating of four or more,
he or she would be placed in the schizophrenic category, regardless of the number yielded by Overall and Klett's formula. This resulted in a reclassification of 2 patients, putting 53 in the depressed category, 5 in the schizophrenic category, and 2 still in the indeterminate category.

To return to the hypothesis, it is clear that the frequencies of schizophrenic and depressed patients did not match the frequencies of administration of antipsychotic and antidepressant drugs. From these results it can be seen that much of the administration of antipsychotic drugs was to patients falling in the depressed category. Table 2 makes this apparent:

TABLE 2

Total Number of Days of Antipsychotic and Antidepressant Drug Administration to Schizophrenic and Depressed Patients

<table>
<thead>
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<th>Classification</th>
<th>No. of Patients</th>
<th>Antipsychotic</th>
<th>Antidepressant</th>
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<tr>
<td>Schizophrenic</td>
<td>5</td>
<td>89</td>
<td>35</td>
</tr>
<tr>
<td>Depressed</td>
<td>53</td>
<td>443</td>
<td>552</td>
</tr>
<tr>
<td>Indeterminate</td>
<td>2</td>
<td>53</td>
<td>11</td>
</tr>
</tbody>
</table>

A further analysis of this data was done in order to establish whether or not there was any relationship between the patient's
classification on the BPRS and the types of drug he or she predo-
nomantly received. Table 3 is the contingency table showing the number
of patients within each classification receiving mostly antipsychotic
or antidepressant drugs. There were 49 patients classified as either
schizophrenic or depressed who were receiving predominantly one type
of drug (based on the number of days the drugs were administered).
A chi-square analysis revealed that there was no significant relation-
ship, $\chi^2 (1) = .48$.

**TABLE 3**

Number of Patients in Each Class Receiving
Predominantly Antipsychotic or Antidepressant Drugs

<table>
<thead>
<tr>
<th>Classification</th>
<th>Predom. Antipsychotic</th>
<th>Predom. Antidepressant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizophrenic</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Depressed</td>
<td>21</td>
<td>23</td>
</tr>
</tbody>
</table>

The third hypothesis, which said that disruptive patients, as
measured by the BPRS, would be discharged sooner than patients who
were not disruptive, was not supported by the data. Several different
measures were used as indicators of disruptiveness in patients, and
none of these yielded significant results when correlated with the
length of the patients' stay in the hospital.
The first of these measures was the Hostility scale rating on the BPRS; patients who scored high on this scale were thought to be more disruptive than those who scored low. The low reliability of this scale brought into question its usefulness here, but the correlation was calculated anyway. The rating received by each patient (from 1 to 7) was correlated with the number of days the patient was in the hospital. This yielded an insignificant correlation coefficient of $r = -0.019$, based on data from 57 patients. (Information regarding length of hospitalization was not available for 3 patients.)

The second measure was the Uncooperativeness scale rating on the BPRS. The rationale behind its usage was the same as that for the Hostility scale; patients scoring high were considered potentially more disruptive than those scoring low. The correlation of this with the number of days in the hospital for 57 patients produced a coefficient of $r = -0.029$, which was clearly insignificant.

The third measure was taken from Overall and Klett (1972), who suggested a formula for determining from the BPRS whether a patient fit into a "coping" or "resigned" category. The coping type of patient was thought to be more aggressive and less accepting of his or her situation than the passive, resigned patient. For this study, patients in the coping category were felt to be potentially disruptive, so this was used as a measure of disruptiveness. The formula was the following:

$$\frac{\text{(Hostility} + \text{Suspiciousness} + \text{Unusual Thought Content})}{\text{(Emotional Withdrawal} + \text{Motor Retardation} + \text{Blunted Affect})}$$
As with the previous formula for differentiation of schizophrenic and depressed patients, the rating numbers for each symptom for a particular patient were substituted into the equation and the patient's coping-resignation index was calculated. Since the first three symptoms indicated coping and the second three resignation, a positive number put the patient into the coping category and a negative number placed him or her in the resigned category.

Using this formula, 27 patients were found to be in the coping category, 27 in the resigned category, and 9 indeterminate (the formula yielded a zero for these last patients). Patients in the coping group were assigned a 1 and patients in the resigned group were assigned a 0. A point biserial correlation between these numbers and the number of days in the hospital was computed, which yielded an insignificant correlation, $r_{pb} = .037$. The actual number of patients involved was 49; the patients in the indeterminate group were not included, and for two others in the resigned group, information on the length of hospitalization was not available.

The final measure of disruptiveness did not come from the BPRS but rather from the nursing notes which were written daily in the patients' charts. The number of seriously disruptive acts recorded by nurses was counted for each patient, and this number was correlated with the number of days the patient was in the hospital. The correlation was insignificant but higher than the previous ones, $r = .27$.

The fourth hypothesis, which stated that disruptive patients
would not be referred to longer-term facilities as often as non-disruptive patients, could not be tested. There was no basis for dividing the subjects into groups of those who had been discharged and those who had been transferred, because only one patient was transferred to a longer-term facility.

There were further observations made that were not directly related to the testing of the hypotheses. Some of these became relevant in the analysis of the results, so they will be produced here and referred to in the next section.

Table 4 shows the final diagnoses of 58 patients, made by their doctors according to the classifications of the Diagnostic and Statistical Manual of the American Psychiatric Association. Each of the 58 patients was given a primary diagnosis, and 12 of them also had a secondary diagnosis. There were more patients found to be schizophrenic by their doctors than were rated as such on the BPRS. There were fewer patients diagnosed as depressed by doctors than were rated as depressed on the BPRS, because the doctors were using other diagnostic categories as well. These facts were important for interpreting the results of the first two hypotheses.

There was some agreement, however, in that 4 of the 5 patients rated as schizophrenic on the BPRS were also diagnosed as schizophrenic by the doctors. The fifth was diagnosed as having a major affective disorder. Nineteen of the patients rated as depressed on the BPRS were also diagnosed as being depressed by the doctors. The agreement ended there.
<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Primary</th>
<th>Secondary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Brain Syndrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-psychotic</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Psychoses (non-organic)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Major Affective Disorders</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Paranoid States</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Other Psychoses</td>
<td>.1</td>
<td></td>
</tr>
<tr>
<td>Neuroses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Depressive</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Other Nonpsychotic Disorders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personality Disorders</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Drug Dependence</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Transient Situational Disturbance</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
The 2 patients rated as indeterminate on the BPRS were diagnosed as schizophrenic by the doctors. The remaining 32 patients, who were rated as depressed on the BPRS, were placed into the following diagnostic categories by the doctors: (1) non-psychotic organic brain syndrome, 1 patient; (2) schizophrenia, 8 patients; (3) major affective disorders, 7 patients; (4) other psychoses, 1 patient; (5) anxiety neuroses, 3 patients; (6) personality disorders, 4 patients; (7) alcoholism, 1 patient; (8) drug dependence, 2 patients; and (9) transient situational disturbance, 2 patients.

It was also of interest whether there was a relationship between a patient's diagnosis of schizophrenia or depression and the type of drug he or she predominantly received. This was particularly important since no relationship was found between the BPRS ratings of schizophrenia and depression and the type of drug predominantly received. Table 5 is the contingency table showing the number of patients within the two diagnostic categories receiving mostly antipsychotic or antidepressant drugs. There were 31 patients diagnosed as either schizophrenic or depressed who were getting predominantly one type of drug. In this case, a chi-square analysis revealed a significant relationship, $\chi^2 (1) = 13.1$, $p < .001$. (For both this chi-square analysis and the previous one in Table 3, a correction factor was used because of the small expected frequencies in some cells.)

Table 6 shows the average number of days that each doctor kept his or her patients in the hospital, based on the hospitalization
TABLE 5

Number of Patients in Each Diagnostic Category Receiving Predominantly Antipsychotic or Antidepressant Drugs

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Predom. Antipsychotic</th>
<th>Predom. Antidepressant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizophrenia</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Depressed</td>
<td>4</td>
<td>13</td>
</tr>
</tbody>
</table>

of 57 patients. In order to establish whether the doctor's personal preferences were a factor in the length of hospitalization, an analysis of this data was done. An analysis of variance showed that there was no significant difference among the doctors in this respect, \( F(4, 56) = 1.55 \).

TABLE 6

Average Length of Patient Hospitalization by Doctors

<table>
<thead>
<tr>
<th>Doctor</th>
<th>No. of Patients</th>
<th>Average Stay (in days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>21</td>
<td>22</td>
</tr>
</tbody>
</table>
CHAPTER IV
DISCUSSION

The results of the study generally do not support the original propositions about the functioning of the psychiatric ward. It cannot be concluded from them that the treatment of patients is influenced by the staff's desire to run the ward efficiently. Because only one hypothesis is supported, there is not sufficient evidence for the contention that the patients' overt behavior on the ward affects decisions about their treatment.

However, the results do not unambiguously disconfirm the propositions, either. Many confounding factors entered in which make the interpretation of the findings less than clear in either direction. An analysis of the confounding factors reveals that some changes in the methodology for testing the hypotheses might yield results more consistent with the hypotheses.

The primary value of this particular study is not in what it reveals about treatment but rather in what it reveals about research in this area. The following discussion will focus on the confounding factors and on their implications for the interpretation of the results as well as for future research.

It is possible to conclude from the results pertinent to the first two hypotheses that the use of antipsychotic drugs is more frequent than one should expect considering the types of patients being treated.
The observation that the use of antipsychotic drugs nearly equals the use of antidepressants becomes significant in the context of the second hypothesis, even though it does not support the first, because there are so many more depressed patients than schizophrenic ones. The use of antipsychotic drugs may not exceed that of antidepressants as the first hypothesis proposes, but it is high given the relative proportions of schizophrenic and depressed patients.

The interpretation of these findings could go a step further. The results could be taken as evidence for the initial proposition that there is a tendency to prescribe tranquilizing drugs, even when they are not indicated, in order to reduce the number of disruptive outbursts and actions on the ward. The results of the analysis of Table 3 show that the drugs are not given on the basis of the person's classification as schizophrenic or depressed. This can be taken as a further indication that something other than the patient's needs affects the decisions. One could safely make this interpretation if there were no serious confounding factors. However, there are some problems which make this explanation of the results a tenuous one.

The first problem is that the BPRS classification of patients as depressed or schizophrenic was based on interviews conducted after patients had already begun receiving drugs. The drugs tended to alter the patients' behavior such that depressive symptoms were abounding while schizophrenic symptoms were masked. Because of this, many patients who were exhibiting schizophrenic symptoms on admission, when their prescriptions were made, showed primarily depressive
symptoms when the BPRS ratings were done. An examination of admission papers, particularly the notes made by emergency-room staff, showed that many more patients presented schizophrenic behavior on admission than were rated as schizophrenic on the BPRS. It is difficult to conclude, then, that the patient sample studied was predominately depressed and that there was a disproportionate use of antipsychotic drugs. The BPRS ratings should have been done immediately upon admission before any drugs could have taken effect.

A comparison of the BPRS classifications with doctors' final diagnoses also revealed a discrepancy. As shown in Table 1, there were 23 patients diagnosed as having some form of psychosis, 14 of whom were schizophrenic. Again, there were more patients who were considered schizophrenic by doctors than were rated as schizophrenic on the BPRS. Although it was stated in the introduction that diagnoses are not necessarily accurate, because they are based on brief contact with the patient and are influenced by the institution's needs, they may reflect valid indications of thinking disorder and other psychotic disturbances because the diagnostician had available to him notes about or, in some cases, was himself present at the admission interview. To circumvent this problem in future research, classification of patients should be based on more extensive, and earlier, observation of and contact with the patients than was used in this study.

Because of these problems with the BPRS, the results of the analyses in Table 3 are brought into question. It cannot be concluded
that there is no relationship between the patient's classification and the type of medication he predominantly received, if some of the patients have been incorrectly classified. The results of the analysis of Table 5, which is based on the doctors' classification of patients, show that there is a relationship and that doctors do tend to give antidepressants to patients diagnosed as depressed and antipsychotic drugs to patients diagnosed as schizophrenic. We do not know, of course, whether these diagnoses are accurate in every case; it is possible that the agreement between diagnosis and medication expresses a tendency to justify use of antipsychotic drugs by diagnosing patients as schizophrenic more frequently than is appropriate. At any rate, from our data it is difficult to conclude that tranquilizing drugs are given, even when they are not indicated, simply for the purpose of controlling behavior on the ward.

Another problem in interpreting the results is the fact that antipsychotic drugs are used in conjunction with antidepressants to treat some cases of depression, particularly those cases where depression is accompanied by agitation. The therapeutic usefulness of this procedure has been verified by research. Therefore, the fact that antipsychotic drugs were prescribed for depressed patients does not necessarily mean that they were prescribed when they were not indicated. In future research, it would be wise to assess the status of each depressed patient under study to see if antipsychotic drugs would truly be beneficial and then to determine whether the drugs are prescribed for reasons other than individual needs.
Given these particular problems, a clear interpretation of the findings for the first two hypotheses cannot be made. The same is true for the last two hypotheses. It is possible to conclude from the results that disruptiveness in patients does not influence decisions about length of stay and follow-up treatment, at least in the way suggested by the hypotheses. However, more research should be done, taking into account the following problems, before any conclusions are drawn.

One explanation for the lack of support for the third hypothesis might be that length of stay was simply determined by the doctors' personal preferences rather than disruptiveness on the part of the patient. As shown in Table 6, there appear to be differences among the doctors in how long they kept their patients in the hospital. However, these differences are not statistically significant.

With doctors' preferences ruled out as an explanation, the possibility still exists that disruptiveness is a factor affecting discharge decisions; the problem is in finding an adequate measure of it. The first three measures used in this study are based on BFAS symptoms which are indirectly related to disruptiveness. The assumption is made that patients who were rated high on Hostility, Uncooperativeness, or the various symptoms making up the "coping" category have a propensity toward being disruptive. There are problems with this choice of measures. For one thing, the Hostility scale has a low reliability, so it is uncertain whether a patient's rating on this scale is accurate. More importantly, there is no guarantee
that a patient rated high on any of these measures will be disruptive, even if he has a proneness to do so. These measures do not provide an adequate assessment of what really happened. The fourth measure, the nursing notes, is a better indicator of disruptiveness because it is a recording of the patient's actual behavior. Moreover, the notes are particularly valuable because they were made by the staff, and it is the staff's assessment of disruptiveness that is of primary importance since it affects their decisions. However, the staff's actual opinions of the patients' behavior would be of even greater value. This, supplemented by daily observation of patients, would provide the best measure of disruptiveness as it relates to decision-making.

A final consideration is that of the practical situation of demand for services and availability of beds in the system of mental health facilities in a given area. These factors are constantly changing and greatly affect decisions about discharge and aftercare. When this study was begun, there was a high demand for services and low availability of beds at the hospital; presumably this was also true of longer-term facilities in the area. This situation could in part explain the results pertinent to the last two hypotheses. The reason for discharging a patient may have been that there was a shortage of beds rather than that he was particularly disruptive. The fact that only one patient was transferred to a longer-term facility, so that the fourth hypothesis could not be tested, could also have been a result of a shortage of beds. The effects of disruptiveness on
decisions about discharge and transfer can be assessed only after taking this practical situation into account.

In conclusion: (a) The data are consistent with the first two hypotheses, though interpretation of the data is made equivocal by the problem that medication had altered patients' behavior by the time of the RPRS interview. (b) The third hypothesis was disconfirmed. (c) The fourth hypothesis could not be tested because relevant data are lacking.

The present study clarifies some of the confounding factors and problematic areas on the functioning of psychiatric hospitals. Of particular importance is the discovery that a tool like the RPRS, when based on an interview several days after admission, is not sufficient for providing information that will be correlated with patient dispositions. The present research makes clear the necessity of considering the multiple therapeutic uses of certain drugs, the individuality of doctors, and the demands for services being placed upon the hospital. Without consideration of these and other variables that were not included in the present study, dependable conclusions cannot be drawn about the processes determining the career of the mental patient.
APPENDIX A

CONSENT FORM

Windsor Western Hospital Centre
Department of Psychological Services
Adult Inpatient-Service

In order to assist us in planning your treatment and to improve
the delivery of professional services to all patients of the Hospital
Centre, the Psychology Department would like you to participate in
a routine interview and assessment regarding some of your feelings
and your hospitalization. We would be most happy to convey our
results to you personally or through your physician.

__________________________________________________________________________
Patient's signature

__________________________________________________________________________
Date

__________________________________________________________________________
Witness
APPENDIX B

PATIENT INFORMATION SHEET

PATIENT'S NAME ___________________________ DATE OF ADMISSION ________________
SEX _________________________________ DISCHARGE __________________
AGE _______________ TRANSFER ________________
MARITAL STATUS _____________________________

PATIENT WAS REFERRED BY: ___________________________
FAMILY PHYSICIAN ___________________________
E.R. PHYSICIAN ___________________________
ATT. PHYS., PSYC. DEPT. ___________________
ATT. PHYS., OTHER SERVICE ___________________
RELATIVE ___________________________
SELF ___________________________
OTHER ___________________________

PATIENT'S DIAGNOSIS (1) ___________________________
(2) ___________________________
(3) ___________________________

WHICH STAFF MEMBER SIGNED THE OFFICIAL ADMISSION PAPERS? ________________

PATIENT'S DOCTOR ___________________________

INDIVIDUAL THERAPY? ________
WITH WHOM? ___________________________

GROUP THERAPY? ________
WITH WHOM? ___________________________

OTHER THERAPEUTIC ACTIVITIES? ________
SPECIFY: ___________________________

NUMBER OF DISRUPTIVE ACTS ________
DESCRIPTION AND DATE: ___________________________

BCT AND DATES: ___________________________

MEDICATIONS: ___________________________
NAME ___________________ DOSAGE ___________________ DATES GIVEN ___________________
<table>
<thead>
<tr>
<th>NAME</th>
<th>DOSAGE</th>
<th>DATES GIVEN</th>
</tr>
</thead>
</table>

For PRN medications, dates given and situations:

Who made the decision to discharge/transfer patient?
Who signed official discharge papers?
If patient was transferred, where?

Follow-up activities:
APPENDIX C

BRIEF PSYCHIATRIC RATING SCALE
by J.E. Overall and D.R. Corham

Directions: Draw a circle around the term under each symptom which best describes the patient's present condition.

1. SOMATIC CONCERN — Degree of concern over present bodily health. Rate the degree to which physical health is perceived as a problem by the patient, whether complaints have realistic basis or not.
   Not Present Very Mild Mild Moderate Mod. Severe Severe Extremely Severe

2. ANXIETY — Worry, fear, or over-concern for present or future. Rate solely on the basis of verbal report of patient's own subjective experiences. Do not infer anxiety from physical signs or from neurotic defense mechanisms.
   NP VM M MOD MS S ES

3. EMOTIONAL WITHDRAWAL — Deficiency in relating to the interviewer and the interview situation. Rate only degree to which the patient gives the impression of failing to be in emotional contact with other people in the interview situation.
   NP VM M MOD MS S ES

4. CONCEPTUAL DISORGANIZATION — Degree to which the thought processes are confused, disconnected, or disorganized. Rate on the basis of integration of the verbal products of the patient; do not rate on the basis of the patient's subjective impression of his own level of functioning.
   NP VM M MOD MS S ES

5. GUILT FEELINGS — Over-concern or remorse for past behavior. Rate on the basis of the patient's subjective experiences of guilt as evidenced by verbal report with appropriate affect; do not infer guilt feelings from depression, anxiety, or neurotic defenses.
   NP VM M MOD MS S ES

6. TENSION — Physical and motor manifestations of tension, "nervousness," and heightened activation level. Tension should be rated solely on the basis of physical signs and motor behavior and not on the basis of subjective experiences of tension reported by the patient.
   NP VM M MOD MS S ES
7. MANNERISMS AND POSTURING - Unusual and unnatural motor behavior, the type of motor behavior which causes certain mental patients to stand out in a crowd of normal people. Rate only abnormality of movements; do not rate simple heightened motor activity here.
NP VM M MOD MS S ES

8. GRANDIOSITY - Exaggerated self-opinion, conviction of unusual ability or powers. Rate only on the basis of patient's statements about himself or self-in-relation-to-others, not on the basis of his demeanor in the interview situation.
NP VM M MOD MS S ES

9. DEPRESSIVE MOOD - Despondency in mood, sadness. Rate only degree of despondency; do not rate on the basis of inferences concerning depression based upon general retardation and somatic complaints.
NP VM M MOD MS S ES

10. HOSTILITY - Animosity, contempt, belligerence, disdain for other people outside the interview situation. Rate solely on the basis of the verbal report of feelings and actions of the patient toward others; do not infer hostility from neurotic defenses, anxiety, nor somatic complaints. (Rate attitude toward interviewer under "uncooperativeness.")
NP VM M MOD MS S ES

11. SUSPICIOUSNESS - Belief (delusional or otherwise) that others have now, or have had in the past, malicious or discriminatory intent toward the patient. On the basis of verbal report, rate only those suspicions which are currently held whether they concern past or present circumstances.
NP VM M MOD MS S ES

12. HALLUCINATORY BEHAVIOR - Perceptions without normal external stimulus correspondence. Rate only those experiences which are reported to have occurred within the last week and which are described as distinctly different from the thought and imagery processes of normal people.
NP VM M MOD MS S ES

13. MOTOR RETARDATION - Reduction in energy level evidenced in slowed movements and speech, reduced body tone, decreased number of movements. Rate on the basis of observed behavior of the patient only; do not rate on the basis of patient's subjective impression of own energy level.
NP VM M MOD MS S ES

14. UNCOOPERATIVENESS - Evidences of resistance, unfriendliness, resentment, and lack of readiness to cooperate with the interviewer. Rate only on the basis of the patient's attitude and responses to the interviewer and the interview situation; do not rate on basis
of reported resentment or uncooperativeness outside the interview situation.

15. UNUSUAL THOUGHT CONTENT - Unusual, odd, strange, or bizarre thought content. Rate here the degree of unusualness, not the degree of disorganization of thought processes.

16. BLUNTED AFFECT - Reduced emotional tone, apparent lack of normal feeling or involvement.
BIBLIOGRAPHY


VITA AUCTORIS

Nancy J. McMurtry was born on December 2, 1954, in Worthington, Minnesota. In June, 1972 she graduated from Villa Park High School, Villa Park, California. In September, 1972 she enrolled at the University of California, Santa Cruz. She graduated with the Bachelor of Arts degree in June, 1976. Since September, 1976 she has been enrolled in the Ph.D. program in clinical psychology at the University of Windsor.