ACCURACY OF NURSES ASSESSING PATIENTS USING AMERICAN PSYCHIATRIC ASSOCIATION CRITERIA

by

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SUPERVISORY COMMITTEE APPROVAL

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This thesis has been read by each member of the following supervisory committee and by majority vote has been found to be satisfactory.

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3-10-98
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I have read the thesis of Deborah G. Butte in its final form and have found that (1) its format, citations, and bibliographic style are consistent and acceptable; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the supervisory committee and is ready for submission to The Graduate School.

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ABSTRACT

This descriptive study investigated the accuracy of nurses in assessing Axis I and Axis II disorders using criteria of the American Psychiatric Association. The diagnosis given by the nursing staff on the psychiatric unit of a regional medical center was compared to the Millon Clinical Multiaxial Inventory-III (MCMI-III) and the diagnosis given by the psychiatrist. Ten nurses assessed 50 patients admitted to an inpatient psychiatric hospital for the first time. Results were reported in tabular form. The influence of other variables such as number of years worked in psychiatric nursing, educational level, age, and psychiatric certification was also assessed. Educational level had the most influence on diagnostic accuracy. The baccalaureate nurses matched the MCMI-III 82% of the time, associate nurses 59%, and licensed practical nurses 69%. In this study, the variable "years worked as a psychiatric nurse" did not seem to influence diagnostic accuracy but was probably confounded with educational level. The nurses who had worked in psychiatry for more than 10 years scored 68%, whereas those who had worked between 5 and 10 years scored 83%. This group, however, also had the highest level of education. Possible explanations for these differences were explored.
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In the past several years, health care reform efforts have led to a number of changes in inpatient psychiatric nursing. The length of stays has been markedly reduced. When once a typical length of stay was 2 weeks, 1 week or less is now common. Discharge planning begins the day of admission. Through attrition, experienced psychiatric nurses are being replaced by less expensive psychiatric technicians. The following question is frequently asked by nursing staff: “Is using more psychiatric technicians really cost effective, and how can we best utilize nursing staff?”

Nurses are perhaps in the best position for observing patients. Nurses are with patients at least 8 hours a day and, therefore, become part of the milieu. Patients are usually not on their best behavior when seen by their doctors. Curtin (1993), in an article about multiple personality disorders, stated, “Nurses are often the first to observe the behavioral, clinical, and physiological symptoms associated with multiple personality disorder” (p. 30). Curtin reported that individuals with multiple personality disorder “will receive more prompt and appropriate treatment” the earlier the disorder is recognized. It makes sense, then, that this would also be true for other mental illnesses.
McGihon (1994) conducted a study directed towards investigating the importance of using nursing staff in the assessment and diagnostic process. She found that because of shorter hospitalizations and increasing acuity using nursing staff to begin treatment planning assisted with keeping the hospital competitive while maintaining costs.

Three studies have been conducted using nursing staff to assess and diagnose patients (Fabrega, Mezzich, & Ulrich, 1989; Fabrega, Ulrich, Pilkonis, & Mezzich, 1993; Gonzalez, 1996). Fabrega and colleagues (1989) dealt with evaluating the use of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (American Psychiatric Association, 1994) as a natural taxonomy in initial evaluations. Whereas Fabrega and colleagues (1993) investigated the prevalence of personality disorders in persons seeking treatment at public psychiatric facilities using nurses as assessors. Only 12.9% of patients seeking admission were diagnosed with a personality disorder. The low prevalence rate was attributed to the need for making rapid assessments in public facilities. Finally, the third study (Gonzalez, 1996) examined critical thinking and accuracy in the assessment of depression. This study showed a statistically significant relationship between nurses’ educational level and critical-thinking ability. Results of the Gonzalez study showed that the nurses’ education was positively related to critical-thinking ability and that critical-thinking ability was positively related to accuracy of nursing assessment of depression. The baccalaureate nurse scored higher than the associate or diploma nurse in critical-thinking ability. Similar
results were obtained in studies conducted by Pardue (1987) and Kintgen-Andrews (1991).

Several studies have been conducted to test the concordance between various disciplines for making psychiatric diagnoses (Anthony et al., 1985; Helzer et al., 1985; Wuerker, 1996). Wuerker (1996) investigated the concordance of a psychiatric diagnosis for 280 clients selected for case management in a county mental health system. These clients were given diagnoses for the first 5, first 10, last 5, and last 10 visits. The clinicians (doctors, nurses, and social workers) frequently agreed on the psychiatric diagnosis of the client with depression and schizophrenia. They agreed less frequently about the diagnosis of clients with disorders such as schizoaffective and atypical psychotic disorders. Blacker and Tsuang (1992) suggested that there are "boundary areas of bipolar disorder." An incorrect diagnosis may be made because of similar characteristics among several disorders such as schizophrenia, schizoaffective, unipolar depression, and personality disorders.

Anthony and colleagues (1985) and Helzer and colleagues (1985) did not deal specifically with nurses. They compared the differences obtained through using the Lay Diagnostic Interview Schedule with psychiatrists' clinical impressions. Helzer and colleagues identified a concordance range of 79% to 96% between the Lay Diagnostic Interview Schedule and the psychiatrist's diagnosis. Whereas in the Anthony and colleagues investigation, the diagnoses were significantly different. The concordance was moderate for alcohol
abuse/dependence disorders and lower for other mental disorders.

**Objectives**

The studies conducted by Fabrega and colleagues (1989) and Fabrega and colleagues (1993) used nurses in initial assessment and diagnosis, but they did not determine if the nurses were making the correct DSM diagnosis. Gonzalez (1996) was interested in the relationship of critical-thinking ability in making an accurate diagnosis of depression but not other mental illnesses. If nurses correctly diagnose patients with a DSM diagnosis, treatment strategies could begin immediately. The purpose of this study was to investigate the accuracy of nurses working in a regional hospital psychiatric unit in assessing patients using DSM-IV criteria. This study also investigated how variables such as educational level, number of years employed in psychiatric nursing, age, gender, and psychiatric certification affected the accuracy of the nurse in making a diagnosis. The two questions this study wanted to answer were the following:

1. How accurate are nurses at making Axis I and Axis II diagnoses using DSM-IV criteria?

2. What role do variables such as educational level, years spent in psychiatric nursing, age, gender, and having psychiatric certification play, if any, in making a correct DSM-IV diagnosis?

For purposes of this study, “accuracy” was defined as concordance with the Millon Clinical Multiaxial Inventory-III (MCMI-III) (Millon, 1994) test results and with the diagnosis given by staff psychiatrists.
CHAPTER II

LITERATURE REVIEW

In this chapter, the literature is reviewed in three areas. The first two sections describe research related to nurses’ diagnostic abilities. First, the few studies investigating nursing and the diagnosis of mental illness are discussed, followed by a section describing studies investigating diagnostic agreement across disciplines. In the final section, studies using the MCMI-III are described.

Diagnostic Ability of Nurses

Several researchers have investigated nurses’ ability to diagnose a mental illness or to identify criteria for diagnosis. The main focus of two studies conducted by Fabrega and colleagues (1989) and Fabrega and colleagues (1993) was to ascertain what type and how many patients with personality disorders were being seen and how effective it was to use the DSM-III as a natural taxonomy. These studies used nurses to diagnose, but their accuracy in making a diagnosis was not examined. Fabrega and colleagues found that the DSM-III was useful as a “natural taxonomy” and that a relatively small number of patients (12.9%) was given the primary diagnosis of personality disorder.

Relatively few studies have dealt specifically with the ability of nurses to make an accurate diagnosis. Gonzales (1996) examined critical-thinking ability and
the relationship between perceived amount of self-disclosure by patients and accuracy of the nurses in the assessment of depression. This study matched 120 nurses with 120 patients in a convenience sample. The nurses were asked to complete the Watson-Glaser Critical Thinking Appraisal. Then they were asked to assess their patients for depression. The patients were asked to complete the Zung Self-Rating Depression Scale. Results of the Self-Rating Depression Scale were compared with the nurses' assessment. These results showed that the nurses' education was positively related to critical-thinking ability and that critical-thinking ability was positively related to the accuracy of the nurses' assessment of depression.

Another nursing study surveyed nurses' knowledge and assessment practices (Proffitt, Augspurger, & Byrne, 1996). In this study, 149 registered nurses were surveyed to test their knowledge of DSM diagnostic criteria for depression in the elderly. Results showed that not only were the nurses able to identify the traditional signs and symptoms of depression but they also identified irritability and blaming others, symptoms that are often associated with depression. Proffitt and colleagues believed that nurses provide extensive physical and verbal care over longer time periods for patients in inpatient and home settings than other professionals. As a result, nurses were more likely to recognize these behaviors associated with depression.

Some researchers have presumed the accuracy of nurses in making an accurate diagnosis (Fabrega et al., 1989; Fabrega et al., 1993), whereas others
have tested the ability of nurses to identify diagnostic criteria for depression (Gonzales, 1996; Proffitt et al., 1996). These studies did not examine whether or not nurses are able to make an accurate Axis I and Axis II diagnosis using DSM-IV criteria. The present study examined not only the ability of nurses to identify diagnostic criteria for depression but also other Axis I and Axis II disorders.

**Concordance of Diagnosis**

Studies that used concordance of diagnosis are examined here. Two studies that investigated concordance rates were Anthony and colleagues (1985) and Helzer and colleagues (1985). Both studies compared the use of the Lay Diagnostic Interview Schedule to the standardized DSM-III diagnosis given by psychiatrists. In the Helzer and colleagues study, the Lay Diagnostic Interview Schedule was comparable to the diagnoses given by psychiatrists 79% to 96% of the time. Lay Diagnostic Interview Schedule results showed a bias in two diagnostic areas: (a) Major depression was underdiagnosed and (b) obsessive illness was overdiagnosed. Unfortunately, this study referred the reader to another article in which the methods used were discussed. The investigators suggested several hypotheses for the discrepancies between diagnoses such as ambiguities between diagnostic criteria that could be interpreted differently by clinicians. Another potential problem was that the patients' responses and ability to disclose symptoms could vary from one visit to the next.

Results of the Anthony and colleagues (1985) study showed only moderate agreement of the Lay Diagnostic Interview Schedule and the psychiatrist for
alcohol abuse disorders, with lower agreement on other mental illness disorders. Anthony and colleagues used a probability sampling of 175,200 adults in eastern Baltimore. A Lay Diagnostic Interview Schedule was performed on 3,481 subjects. A psychiatrist interviewed 810 subjects after completion of the schedule. Ninety-three percent of the subjects were interviewed by psychiatrists within 90 days of having completed the Lay Diagnostic Interview Schedule. The examiner speculated that disagreements between the Lay Diagnostic Interview Schedule and the psychiatrist could be attributed to insufficient information to make a diagnosis, recency of the disorder, incomplete coverage of criteria to make a diagnosis, reliance on subject symptoms reported, or the overinclusive Lay Diagnostic Interview Schedule questions. The investigator also noted that the schedule or the psychiatric diagnoses were unreliable. Neither article defined who conducted the Lay Diagnostic Interview Schedule (Anthony et al., 1985; Helzer et al., 1985).

Wuerker (1996) examined the concordance of patients diagnosed and followed in a county mental health system. All system records were analyzed. The diagnosis was compared for the first 5, first 10, last 5, and last 10 visits made by the client. As with the investigations of Anthony and colleagues (1985) and Helzer and colleagues (1985), it was not explicit who made the psychiatric diagnoses. Wuerker reported that clinicians agreed on diagnosis frequently, despite the fact that they were from varied disciplines. Results showed a high concordance rate for schizophrenia and depression. Concordance rates were lower for schizoaffective disorder and atypical psychosis.
Concordance studies showed mixed results. Helzer and colleagues (1985) found a concordance rate of 79% to 96%, depending on the diagnosis. Anthony and colleagues (1985) identified moderate concordance rates for alcohol abuse disorders and lower concordance rates for other mental illness disorders. None of these studies was explicit in naming the type of clinicians responsible for making the psychiatric diagnosis (Anthony et al., 1985; Helzer et al., 1985; Wuerker, 1996). However, Anthony and colleagues and Helzer and colleagues used the psychiatrist to judge for accuracy. However, neither study used any measure to verify the accuracy of the diagnosis given by the psychiatrist. The present research addressed this issue by comparing the nurses' DSM-IV diagnoses to those of the MCMI-III and to the diagnoses given by the psychiatrists by examining concordance between the psychiatrists' diagnoses and MCMI-III results.

**Studies Using the Millon Clinical Multiaxial Inventory-III**

Research using the MCMI-III as a concordance for diagnosis and the validity of the MCMI-III is investigated in this section. The MCMI-III has been used in empirical comparisons. In a study conducted by Piersma (1987), 151 consecutively admitted inpatients to a private psychiatric hospital were given the MCMI after admission and then again shortly before discharge. Results obtained from admission and discharge were compared with the clinicians' Axis II diagnosis. The attending psychiatrist or psychiatric resident performed the initial intake interview. The patients were given a DSM-III diagnosis on admission and
on discharge by the attending psychiatrist. The clinicians' discharge diagnosis was compared to the MCMI because Piersma believed that it would be more accurate than the diagnosis given on admission. Piersma found that clinicians diagnosed Axis II disorders less frequently than the MCMI. When clinicians did diagnose an Axis II disorder, it had a low concordance rate with the MCMI. Piersma also found that when the admission MCMI Axis II diagnosis was compared with the discharge MCMI Axis II diagnosis, it, too, had a low concordance rate. He speculated that the low concordance rate was related to prominent Axis I symptoms, which had necessitated admission to an inpatient setting. As the Axis I symptoms abated, the Axis II symptoms (considered to be personality and, thus, remain constant over time) were more discernable.

Piersma (1987) attributed the low rate of Axis II diagnoses by clinicians to several factors. He reasoned that clinicians carefully investigate Axis I disorders but not Axis II disorders. One possible explanation is that insurance companies will reimburse for an Axis I diagnosis but not for an Axis II diagnosis. Piersma also reasoned that the MCMI is programmed to diagnose Axis II disorders too routinely.

Overholser (1990) reported on two studies that examined retest reliability of the MCMI-III (Millon, 1994). In the first study, psychiatric inpatients were retested an average of 1 year after taking the MCMI. Results suggested stability of the personality disorder subscales. A separate sample of depressed inpatients diagnosed as having an Axis II disorder by the MCMI was assessed again 6 weeks
later. These results also suggest stability in personality disorder subscales.

Validity of the MCMI-III on the Depressive Personality scale was the focus of a study conducted by Davis and Hays (1997). Two hundred eighty-three psychiatric inpatients were given the MCMI-III to determine its validity. The redundancy and incremental validity between Depressive, Avoidant, and Self-Defeating personality scales were examined. Results demonstrated that the Depressive Personality scales were good indicators in predicting an Axis I diagnosis of Depression.

Blais, Benedict, and Norman (1995) examined the concurrent validity of the MCMI-II modifier indices. They investigated the relationship between three modifier indices of the MCMI-II (Disclosure X, Desirability Y, and Debasement Z) by comparing the Minnesota Multiphasic Personality Inventory-2 (MMPI-2). Psychiatric inpatients (N = 125) were given the MCMI-II and the MMPI-2 within 1 week of admission. A Pearson correlation coefficient supported the three MCMI-II modifier indices.

Studies conducted by Overholser (1990), Davis and Hays (1997), and Blais and colleagues (1995) all demonstrated validity on the MCMI personality scales and modifier indices. Davis and Hays (1997) suggested that the Depressive Personality scales were good indicators in predicting an Axis I diagnosis of Depression. Piersma (1987) found that clinicians were much less likely to diagnose an Axis II disorder than the MCMI. Several explanations were suggested such as prominence of Axis I symptoms, making it difficult to assess for Axis II
disorders. Another possibility was that clinicians carefully investigate Axis I disorders because insurance companies will reimburse for Axis I but not for Axis II disorders.

Fabrega and colleagues (1989) and Fabrega and colleagues (1993) utilized nurses to diagnose patients, but their ability to make an accurate diagnosis was not examined. Other studies tested the nurses’ ability to identify diagnostic criteria for depression. However, they did not ascertain whether or not nurses could correctly identify other Axis I and Axis II disorders (Gonzales, 1996; Proffitt et al., 1996).

The concordance studies reviewed did not disclose who was making the psychiatric diagnosis (Anthony et al., 1985; Helzer et al., 1985; Wuerker, 1996). Two studies used psychiatrists to judge accuracy, but they had no measures to validate the psychiatrists’ diagnoses (Anthony et al., 1985; Helzer et al., 1985).

The present investigation did not replicate any of the studies identified in this literature review, but it did contain some components of all the reviewed studies. In order to test the ability of nurses to make a DSM-IV Axis I and Axis II diagnosis accurately, their diagnoses were compared with those of the MCMI-III and the psychiatrists’ diagnoses. Concordance of the psychiatrists’ diagnoses with those of the MCMI-III was also investigated in order to provide a more complete picture. Several variables assumed to be related to diagnostic accuracy were also examined to determine whether or not a causal relationship existed such as educational level, practice experience, psychiatric certification, age, and gender.
CHAPTER III

METHODS

Research Setting

The study was conducted at the psychiatric unit of a regional medical center in the Intermountain West. The hospital is the regional trauma center for parts of several surrounding states and is a medium-sized facility with a capacity of 300 beds. The psychiatric unit is separated from the main hospital, which is located less than a mile away, and consists of three separate units (32-bed capacity) and an outpatient department. The adult open unit consists of four bedrooms, each containing four beds. The adult locked unit has three bedrooms, with eight available beds and two seclusion rooms. The adolescent unit has a capacity of eight.

Currently, when a patient is admitted to the psychiatric unit, an assessment is conducted by the nursing staff, including licensed practical nurses, registered nurses, and psychiatric technicians. The nursing admission forms include information such as chief complaint, past psychiatric history (previous treatment), past or current suicidal ideation, and self-mutilation. Family history of mental illness or substance abuse (current or past) is also investigated. The nursing staff do not give a DSM-IV diagnosis. The admitting psychiatrist usually will interview the patient the following day and dictate his or her impressions using the multiaxial
system of the DSM-IV. If the psychiatrist believes the patient may have a personality disorder, he or she will then order an MCMI-III. The results are available within 24 hours.

**Design**

This study was descriptive and investigated the nurses' accuracy in assessing patients using DSM-IV criteria. The influence of other variables such as educational level, number of years worked in psychiatric nursing, age, gender, and psychiatric certification was also assessed.

**Procedure**

Fifty first-time admissions to the psychiatric unit were asked to participate in this study as they were admitted. Their initial assessment was conducted by registered nurses and licensed practical nurses only. They decided which Axis I and Axis II disorders, if any, they believed the patient possessed. This information was placed on the questionnaire form, which asked for diagnostic impressions. The patient was given an MCMI-III to complete, and the test was scored. One of six psychiatrists saw the patient later and gave a DSM-IV diagnosis. The results of this inventory were compared with the nurse's diagnosis, and then the multiaxial diagnosis was given by the psychiatrist. Both the nurse and the psychiatrist recorded their diagnosis before results were available from the MCMI-III.

There were three differences between the usual admission procedures and the present study: (a) Only nurses (no psychiatric technicians) completed
admission assessments; (b) nurses were asked to give the patient the Axis I and Axis II disorder they believed to be accurate; and (c) all patients who agreed to participate were requested to complete an MCMI-III.

A research assistant was trained in the collection of data. For the purpose of maintaining confidentiality, only the patients’ initials with the last four numbers of their social security number were used for identification. The nursing staff were also given numerical codes by the research assistant. Data were placed in a locked box and then placed in the unit safe. Only the research assistant and the principal investigator had access to the data.

**Subject Selection Criteria**

The first 50 first-time admissions to the psychiatric unit who agreed to participate were considered potential participants for this study. Only adults (age > 18) were invited to participate. Other inclusion and exclusion criteria included (a) first psychiatric admission to Saint Alphonsus; (b) able to speak, read, and write English; and (c) not so psychotic that they were unable to respond appropriately to assessment. Inclusion criteria for nursing staff included the following: (a) The psychiatric nurse was employed by Saint Alphonsus and was working at least part time on the psychiatric inpatient unit, and (b) the licensed practical nurse had a diploma, an associate degree in nursing, or was in preparation for a baccalaureate degree in nursing.

The hospital granted permission to conduct the research and supported this project by providing signed consent from the chairman of the institutional review
board and the medical director of the psychiatric center. This research was funded, in part, by the participating hospital. The study was also approved by the University of Utah Institutional Review Board.

**Assessment Tools**

The DSM-IV (American Psychiatric Association, 1994) is used by mental health professionals to classify mental illness. The DSM-IV attempts to describe the symptoms of mental disorders by using diagnostic criteria in a multiaxial system. There are five axes. Axis I disorders are usually diagnosed in childhood or adolescence and include major mental illnesses such as schizophrenia, other psychotic disorders, mood disorders, and substance abuse disorders. The Axis II disorders include mental retardation and 10 personality disorders (paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, and obsessive-compulsive). Axis III disorders contain any physical disorder or general medical condition in addition to a mental condition. Axis IV disorders list all of the psychosocial stresses that contribute to or exacerbate the current mental disorder. Finally, the Axis V disorder is the global assessment of functioning and rates the patient's ability to function by using a 100-point scale, with 100 being the highest level of functioning possible. This study focused on the Axis I and Axis II disorders.

Another tool to assist with diagnosing Axis I and Axis II disorders is the MCMI-III (Millon & Davis, 1996). Millon is widely recognized as a leading authority on personality disorders. The MCMI-III incorporates Millon’s Biosocial-
Learning Theory. Briefly, this theory states that “personality and psychopathology develop as a result of the interplay of organismic and environmental forces” (Millon & Davis, 1996, p. 67). To an extent, a person’s biological makeup will have some impact on how environmental situations are perceived.

While supervising a group of psychologists and psychiatrists in the early 1970s, Millon and Davis (1996) developed the Millon-Illinois Self-Report Inventory (MI-SRI). As the DSM was revised, so, too, was the MI-SRI. The MI-SRI evolved into the MCMI-III. While the DSM-III preceded publication of the MCMI-1, Millon was instrumental in the development of Axis II criteria for the DSM-III. The MCMI-II, in which two new personality scales were added, coincided with the release of the DSM-III-R. Posttraumatic stress disorder was added to the MCMI-III so that it concurred with the DSM-IV. The MCMI-III is a self-report test designed to assess DSM-IV-related personality disorders and other clinical symptoms. The DSM-IV consists of 175 true/false questions that take approximately 20 to 30 minutes to complete. The instrument has 24 clinical and 3 modifier scales. The first few sections of the MCMI-III cover all Axis II personality disorders. The last two sections deal specifically with Axis I disorders. The MCMI-III was written at an eighth-grade reading level. The test is widely used for diagnosing Axis II disorders in both inpatient and outpatient psychiatric facilities. The test has validity and reliability (Millon & Davis, 1996).
Analysis

The data are reported in tabular format to facilitate comparisons between diagnoses made by nurses and diagnoses derived from the MCMI-III or given by psychiatrists. Since initial diagnosis may be tentative and more than one may be listed, agreement on any one diagnosis was considered to be an "agreement hit."
CHAPTER IV

RESULTS

Out of 21 full- and part-time licensed practical nurses and registered nurses employed at the psychiatric unit at the time of this study, 14 (2 licensed practical nurses and 12 registered nurses) agreed to participate by signing a consent form (see Appendix A) and filling out the Nursing Questionnaire (see Appendix B). The nurses completed diagnostic assessments on 103 patients (see Appendix C). The first 50 valid MCMI-III tests returned in this study were utilized. The 53 remaining patients did not give consent (see Appendix D) to participate (n = 24), were too psychotic to participate (n = 17), or their MCMI-III was returned as invalid (n = 12). Of the 14 nurses who agreed to participate, 10 had patients with valid MCMI-III tests. These 10 nurses were the sample for this study (see Table 1). Of these 10 nurses, 2 had licensed practical degrees, 5 had associate degrees, and 3 had baccalaureate degrees. Nine of the nurses were female and 1 was male. The nurses ranged in age from 40 to 74, with an average age of 50.9 years. As a group, the nurses had been practicing the profession of nursing an average of 19.2 years, with a 10.4-year average working in psychiatry. Five of the 8 registered nurses had obtained their psychiatric certification. (Licensed practical nurses are not eligible for the psychiatric certification examination.) Six psychiatrists were involved in this study.
Table 1

Demographic Data

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<td></td>
</tr>
<tr>
<td>Licensed practical</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Associate</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Baccalaureate</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

This study investigated two research questions: (a) How accurate are nurses in making Axis I and Axis II diagnoses using DSM-IV criteria and (b) what role do variables such as educational level, years spent in psychiatric nursing, age, gender, and having psychiatric certification play, if any, in making a correct DSM-IV diagnosis?

1Accuracy in this study was measured by comparing the nurses’ Axis I and Axis II diagnoses compared to those of the psychiatrist and the MCMI-III.
Research Questions

Research Question 1

How accurate are nurses in making Axis I and Axis II diagnoses using DSM-IV criteria? When accuracy was measured as concordance with the diagnosis given by the psychiatrist, nurses accurately diagnosed Axis I disorders 72% of the time; that is, both the psychiatrist and the nurse gave the patient the same Axis I diagnosis. In contrast, concordance on Axis II disorders was only 38%. When agreement on either axis was counted as an “agreement hit,” nurses and the psychiatrist were in concordance 78% of the time (see Table 2).

When the diagnoses given by nurses were compared to those obtained from the MCMII-III, however, concordance was lower: (a) 60% for Axis I disorders and (b) 34% for Axis II disorders. When agreement on either axis was counted, concordance increased to 70% (see Table 3).

Table 2

Concordance Between Nursing Personnel and Psychiatrists' Diagnoses

<table>
<thead>
<tr>
<th>Nursing personnel</th>
<th>Number of admissions</th>
<th>Psychiatrists</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Axis I</td>
<td>Axis II</td>
<td>Hit on either axis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Baccalaureate (n = 3)</td>
<td>17</td>
<td></td>
<td>13</td>
<td>76</td>
<td>7</td>
</tr>
<tr>
<td>Associate (n = 5)</td>
<td>17</td>
<td></td>
<td>10</td>
<td>59</td>
<td>5</td>
</tr>
<tr>
<td>Licensed practical (n = 2)</td>
<td>16</td>
<td></td>
<td>13</td>
<td>81</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td></td>
<td>36</td>
<td>72</td>
<td>19</td>
</tr>
</tbody>
</table>
Table 3

Concordance Between Nursing Personnel and MCMII-III Diagnoses

<table>
<thead>
<tr>
<th>Nursing personnel</th>
<th>Number of admissions</th>
<th>MCMII-III</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Axis I</td>
<td>Axis II</td>
<td>Hit on either axis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Baccalaureate (n = 3)</td>
<td>17</td>
<td>11</td>
<td>65</td>
<td>11</td>
<td>65</td>
</tr>
<tr>
<td>Associate (n = 5)</td>
<td>17</td>
<td>8</td>
<td>47</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Licensed practical (n = 2)</td>
<td>16</td>
<td>11</td>
<td>69</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>30</td>
<td>60</td>
<td>17</td>
<td>34</td>
</tr>
</tbody>
</table>

Diagnostic concordance with the MCMII-III was even lower for psychiatrists. Their diagnoses agreed with the MCMII-III in only 50% of the cases on Axis I disorders and only 22% on Axis II disorders, with an overall concordance of 64% (agreement on Axis I or Axis II). In some cases (n = 17), the psychiatrist deferred a diagnosis for Axis II, eliminating the opportunity to assess correspondence with the MCMII-III and playing a role in the lower “hit rate” for Axis II diagnoses (see Table 4).

Nursing personnel were somewhat more likely to be in accord with the diagnosis given by the psychiatrists rather than the diagnosis obtained from the MCMII-III. The diagnosis for Axis I was the most frequently matched whether or not the measure of “accuracy” was from the MCMII-III or the psychiatrist. Interestingly, psychiatrists had a lower concordance with the MCMII-III than nursing personnel on both axes (see Table 5).
Table 4

Concordance Between Psychiatrists' and MCMI-III Diagnoses

<table>
<thead>
<tr>
<th>Psychiatrist</th>
<th>Number of admissions</th>
<th>MCMI-III</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Axis I</td>
<td>Axis II</td>
<td>Hit on either axis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>2</td>
<td>33</td>
<td>2</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
<td>4</td>
<td>36</td>
<td>2</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>4</td>
<td>40</td>
<td>1</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>8</td>
<td>73</td>
<td>5</td>
<td>45</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>2</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>5</td>
<td>71</td>
<td>1</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>25</td>
<td>50</td>
<td>11</td>
<td>22</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 5

Comparison of Concordance

<table>
<thead>
<tr>
<th></th>
<th>Axis I (%)</th>
<th>Axis II (%)</th>
<th>Hit on either axis (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing personnel concordance with psychiatrists</td>
<td>72</td>
<td>38</td>
<td>78</td>
</tr>
<tr>
<td>Nursing personnel concordance with MCMI-III</td>
<td>60</td>
<td>34</td>
<td>70</td>
</tr>
<tr>
<td>Psychiatrists' concordance with MCMI-III</td>
<td>50</td>
<td>22</td>
<td>64</td>
</tr>
</tbody>
</table>
**Research Question 2**

What role do variables such as educational level, years spent in psychiatric nursing, age, gender, and having psychiatric certification play, if any, in making a correct DSM-IV diagnosis? Because there was only 1 male in the sample, gender was dropped as a variable.

**Educational level.** In this sample, the relationship between educational level and "diagnostic accuracy" is unclear. When "accuracy" is measured as concordance with MCMI-III results, nurses with the highest level of educational preparation (baccalaureate degree) have the highest percentage of accurate diagnoses (82%), followed by licensed practical nurses (69%) and associate degree nurses (59%). When compared to diagnoses given by psychiatrists, nurses with licensed practical nurse preparation have the highest concordance rate (88%), followed by those with a baccalaureate (76%) and associate (71%) degrees (see Table 6).

**Years in psychiatric nursing.** In order to address this question, the nurses were divided into three groups based on years of experience in psychiatric nursing: (a) those who had less than 5 years (n = 3), (b) those who had 5 to 10 years (n = 4), and (c) those who had more than 10 years (n = 3). Nurses with the least experience in psychiatric nursing had a concordance with psychiatrists of 80% but only 40% with the MCMI-III. Nurses with 5 to 10 years of experience had a relatively high concordance with the psychiatrists' diagnoses (78%) and diagnoses obtained from the MCMI-III (83%). Nurses with more than 10 years of
Table 6

Comparison of Educational Level and Concordance With Psychiatrists' and MCMI-III Diagnoses

<table>
<thead>
<tr>
<th>Educational preparation</th>
<th>Number of admissions</th>
<th>Psychiatrist</th>
<th>MCMI-III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Axis I (%)</td>
<td>Axis II (%)</td>
</tr>
<tr>
<td>Licensed practical (n = 2)</td>
<td>16</td>
<td>81</td>
<td>44</td>
</tr>
<tr>
<td>Associate (n = 5)</td>
<td>17</td>
<td>59</td>
<td>29</td>
</tr>
<tr>
<td>Baccalaureate (n = 3)</td>
<td>17</td>
<td>76</td>
<td>41</td>
</tr>
</tbody>
</table>
experience had the lowest concordance with the psychiatrists (77%), whereas their agreement with the MCMII-III was 68% (see Table 7).

Number of years worked in psychiatry was not a significant variable. For example, nurses with between 5 and 10 years of experience had higher concordance rates for the psychiatrists and the MCMII-III than nurses who had worked more than 10 years. However, examining the demographic data of nurses employed in psychiatry between 5 and 10 years, 3 of the 4 nurses were baccalaureate prepared and 3 of the 4 had psychiatric certification, suggesting that education influenced the results related to experience.

**Psychiatric certification.** Four nurses had their psychiatric certification. Their concordance with the psychiatrists was 74%, matching the MCMII-III at 83% (see Table 8). Three of the 4 nurses in this group were baccalaureate-prepared and

Table 7

<table>
<thead>
<tr>
<th>Time in psychiatric nursing</th>
<th>Educational preparation</th>
<th>Number certified</th>
<th>Comparison with psychiatrist hit on Axis I or II</th>
<th>Comparison with MCMII-III hit on Axis I or II</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 years or less</td>
<td>Associate (n = 2)</td>
<td>None</td>
<td>80%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Licensed practical (n = 1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 to 10 years</td>
<td>Associate (n = 1)</td>
<td>3</td>
<td>78%</td>
<td>83%</td>
</tr>
<tr>
<td></td>
<td>Baccalaureate (n = 3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 10 years</td>
<td>Associate (n = 2)</td>
<td>77%</td>
<td>1</td>
<td>68%</td>
</tr>
<tr>
<td></td>
<td>Licensed practical (n = 1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 8

Comparison of Concordance With Psychiatrists and MCMI-III When Nursing Personnel Have Psychiatric Certification

<table>
<thead>
<tr>
<th>Certification</th>
<th>Number of admissions</th>
<th>Psychiatrist</th>
<th></th>
<th>MCMI-III</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Axis I (%)</td>
<td>Axis II (%)</td>
<td>Hit on either axis (%)</td>
<td>Axis I (%)</td>
</tr>
<tr>
<td>Associate (n = 2)</td>
<td>6</td>
<td>67</td>
<td>33</td>
<td>67</td>
<td>83</td>
</tr>
<tr>
<td>Baccalaureate (n = 4)</td>
<td>9</td>
<td>56</td>
<td>22</td>
<td>56</td>
<td>78</td>
</tr>
<tr>
<td>Baccalaureate (n = 5)</td>
<td>1</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Baccalaureate (n = 7)</td>
<td>7</td>
<td>100</td>
<td>71</td>
<td>100</td>
<td>57</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>70</td>
<td>39</td>
<td>74</td>
<td>70</td>
</tr>
</tbody>
</table>
the fourth had an associate degree, with 22 years of experience in psychiatric nursing.

**Age.** Age was negatively related to the percentage of concordance with the MCMI-III and when compared to agreement with the psychiatrists' diagnoses. For purposes of comparison, the nurses were split into three groups. For convenience, the groups were divided according to age breaks in the sample, having no groups with a range of greater than 10 years (see Table 9). Four nurses were in the age group 40 to 45. These nurses completed 32 patient assessments, with a concordance rate of 78% with the MCMI-III and 81% with the treating psychiatrist. Four nurses were in the age group of 46 to 54. These nurses performed 16 of the patient assessments, matching the MCMI-III 63% of the time and the psychiatrists 75%. The last age group consisted of 2 nurses aged 64 and 74, respectively. These nurses finished only two patient assessments, respectively. They concurred with the MCMI-III 50% of the time and with the psychiatrist 50% of the time. Again, the results are probably confounded with other variables. Three of the 4 nurses in the youngest group had psychiatric certification and were baccalaureate prepared. This group also admitted the greatest number of patients overall (n = 32) and per nurse (X = 8), which may have created a “practice effect,” allowing them to become more accurate through practice.

Several of the variables examined related to the ability of nurses to diagnose an Axis I or Axis II disorder accurately. Accuracy based on educational level depended on whether or not accuracy was measured as concordance with the
Table 9

**Concordance With Psychiatrists and MCMI-III Diagnoses by Age**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number in group</th>
<th>Number of admissions</th>
<th>Comparison with psychiatrist hit on Axis I or II</th>
<th>Comparison with MCMI-III hit on Axis I or II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (64 to 74)</td>
<td>2</td>
<td>2</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Group 2 (48 to 54)</td>
<td>4</td>
<td>16</td>
<td>75%</td>
<td>63%</td>
</tr>
<tr>
<td>Group 3 (40 to 45)</td>
<td>4</td>
<td>32</td>
<td>81%</td>
<td>78%</td>
</tr>
</tbody>
</table>

MCMI-III or with the treating psychiatrist. Baccalaureate-prepared nurses had a higher concordance rate (82%) when compared with the MCMI-III, whereas licensed practical nurses had a concordance rate of 88% with the treating psychiatrist. Experience in psychiatric nursing at first glance did not appear to be an influencing variable; that is, nurses who had worked in psychiatry between 5 and 10 years scored higher than those with greater than 10 years of experience. Because 3 of the 4 nurses with between 5 and 10 years of experience were baccalaureate prepared, education may have influenced the results. Nurses who had achieved psychiatric certification scored a relatively high concordance with the MCMI-III (83%) and a lower concordance with the psychiatrists' diagnosis (74%). The last variable, age, was negatively related to concordance with the MCMI-III and the psychiatrists' diagnoses.
CHAPTER V

DISCUSSION

Overall, this study demonstrates that the nurses in this sample were able to make "accurate" Axis I diagnoses more than 70% of the time whether or not accuracy was measured by concordance with a psychiatrist or an MCMI-III diagnosis.

Several nursing studies have demonstrated a positive relationship between level of education and critical-thinking ability (Brooks & Shepherd, 1990; Howenstein, Bilodeau, Brogna, & Good, 1996; Miller, 1992; Pardue, 1987). For nurses to be able to diagnose accurately, they must be able to analyze data in a manner that facilitates making categories of criteria. Diagnosing correctly requires critical-thinking ability. In this study, education level was the variable that seemed to have the most influence on the nurses' ability to identify Axis I and II disorders correctly.

The higher percentage agreement on Axis I disorders among clinicians across disciplines and with the MCMI-III suggests that there may be more agreement on diagnostic criteria for Axis I than for Axis II. Inferences can be made that might help to explain the differences between the diagnosis of Axis I and Axis II disorders given by the nurses and psychiatrists (Piersma, 1987; Proffitt et al., 1996). Piersma (1987) suggested that the low prevalence of an Axis II
diagnosis being given by the psychiatrist might be attributed to the practice of insurance companies paying for an Axis I diagnosis only. Another explanation might be that psychiatrists spend most of the intake interview investigating criteria for making an Axis I diagnosis. Proffitt and colleagues (1996) suggested that nurses spend “extensive” time with patients than “other professionals,” making them more sensitive to Axis II disorders. Nurses report that patients are not always on their best behavior when with them as they are with the psychiatrists. Psychiatrists are often reluctant to give a patient an Axis II diagnosis, believing that it may negatively influence how staff relate with the patient, as well as jeopardizing insurance coverage.

The mixed results obtained when diagnostic concordance was examined in relation to percentage of diagnoses matching the psychiatrists and the MCMI-III are most likely due to the greater educational preparation in the midrange group (those who had worked in a psychiatric setting from 5 to 10 years). The more interesting finding here is the high concordance with MCMI-III diagnoses for these nurses. Education whether or not gained through formal schooling or study leading to certification may provide more knowledge of the criteria for detecting an Axis II disorder.

**Nursing Implications**

Because of health care reform, managed care is here to stay. Nurses need to be vigilant in looking for ways in which they can utilize their talent and potential. If, as this study suggests, nurses are able to make correct assessments of
Axis I and II disorders using DSM-IV criteria, it makes good fiscal sense for hospitals or other employers to use nursing staff in a more autonomous way. Curtin (1993) found that nurses were often the first to recognize signs and symptoms of multiple personality disorder. She believed that the sooner these individuals were recognized, the sooner treatment could begin. Proffitt and colleagues (1996) supported Curtin's assessment of nurses' diagnostic skills. They also found that nurses were able to identify the traditional signs and symptoms of depression, as well as irritability and blaming others. Nursing research has demonstrated a link between educational level and critical-thinking ability. The many studies investigating critical thinking reviewed for the present study suggested that educational level is positively related to critical thinking (Brooks & Shepherd, 1990; Gonzalez, 1996; Howenstein et al., 1996; Kintgen-Andrews, 1991; Miller, 1992; Pardue, 1987). The present study also demonstrated the link between education and diagnostic accuracy, which involves critical thinking. Nursing must encourage and support education to build its credibility and effectiveness as health care collaborators.

Limitations of the Study

Several limitations were inherent in this study. The first limitation was the design, which was descriptive and consisted of a small sample size. The number of nurses included in this study (n = 10) and the number of patients (n = 50) were too small to be generalizable. The nurses were on the honor system when completing the patient assessments; in fact, they could have returned the next day
to view the psychiatrists' diagnoses or even look at results of the MCMI-III before turning in their assessment sheets. It was also possible that one shift might have admitted the patient but the next shift filled out the assessment form. Several of the nurses, as well as the psychiatrists, deferred making an Axis II diagnosis. Consequently, agreement hits may have been lower than might be expected for the psychiatrists and the nurses. The nurses could have discussed with other staff their opinions regarding the patient, with the diagnosis being more of a group effort. Last, some of the nurses made more than their share of assessments, with others completing only one or two assessments, thus skewing the results for that group.

Suggestions for Further Research

The lower concordance for nurses and psychiatrists with the MCMI-III indicates a need for further study. There may be differences in the variables considered in making the initial diagnosis or in the diagnostic weight given to various components that enter into the diagnostic decision. The low concordance with the MCMI-III suggests a need for further study later in the course of the patient's illness (perhaps at discharge) in order to assess accuracy of the MCMI-III.

This study needs to be replicated in several hospitals, including greater numbers of nurses and patients. Categories of nurses could be constructed more evenly, the researcher could randomly select 50 nurses from each educational background, and a stronger design could be used to eliminate some of the extraneous variables.
1. Information

Background

You are invited to participate in a study to investigate the ability of nurses to identify Axis I and II disorders correctly using DSM-IV criteria. The results of this study can then be used to implement nursing interventions more rapidly that may be helpful with this patient population.

Study Procedure

If you agree to participate in this study, you will be asked to provide some information about yourself, your education, and your experience as a nurse by filling out a questionnaire. When new patients are admitted, you will be asked to do the nursing assessment and then to identify which Axis I or II characteristics you find most prominent. You will also need to give the patient an MCMI-III inventory test. The results can then be compared with the MCMI-III and the diagnosis given in the chart by the psychiatrist. Approximately 20 nurses and 100 patients will be included in the study.

Risks

No significant risks are anticipated as a result of your participation in this study. There may be some inconvenience in spending the time required to complete the questionnaire and to fill out the patient Axes I and II trait form. It is expected that the Nursing Questionnaire will take approximately 5 to 10 minutes to complete. The patient trait form will also take approximately 5 to 10 minutes to fill out.

Cost to Subjects

There will be no cost to you for participating in this study.

Benefits

There are no direct benefits to you from participation in this study. The information you provide in the future may assist with treatment planning for psychiatric patients.

Alternative Procedures

You may choose not to participate in this study. If you choose not to participate, your job or any benefits to which you are entitled will not be affected in any way.
Confidentiality and Participant Rights

All information provided to the researcher or her assistants will be kept strictly confidential. No names will be used in the study or subsequent publications. All forms and questionnaires will be coded by number.

There is no compensation for taking part in this study. You are free to withdraw from this study at any time without prejudice.

Questions and Contact Person

The researcher will answer any questions you might have about this study. Contact the researcher during working hours, 8:00 a.m. to 5:00 p.m. Monday-Friday, at the following telephone numbers: Deborah Butte, (208)367-2176; B. Lee Walker, (801)581-9622 (24-hour voice mail). If you have questions that you do not wish to discuss with the researcher, you may call the University of Utah Institutional Review Board at (801)581-3655.

Medical Treatment or Compensation for Injury: In the event you sustain injury by any unforeseeable risk resulting from your participation in the research project, the University of Utah can provide to you, without charge, emergency and temporary medical treatment not otherwise covered by your own insurance. If you believe that you have sustained an injury as a result of your participation in this research program, please contact the Office of the Vice President for Research, phone number (801)581-7236. The investigator reserves the right to withdraw subjects without notice and to relay any new pertinent information.

2. Consent

I have read the foregoing and my questions have been answered. I have received a copy of this form and give my consent to participate in this study.

(Participant) ____________________________ (Date) ____________

(Witness) ____________________________ (Date) ____________
APPENDIX B

NURSING QUESTIONNAIRE
Date: ______________________
First name: ________________________________
Male: _____ Female: _____
Age: _____

Highest degree in nursing:
   _____ Licensed practical nurse
   _____ Diploma registered nurse
   _____ Associate registered nurse
   _____ Baccalaureate registered nurse
   _____ Master’s or higher

Do you have your psychiatric certification?
   _____ Yes   _____ No

Have you had any formal psychodiagnostic training (DSM-III, DSM-IV, in-services, workshops)?
   _____ Yes   _____ No

(If yes, describe): ______________________________________________________

How many years have you been in nursing? _____ Years
Years in psychiatric nursing _____ Years

Do you have any other college degrees?
   _____ Yes   _____ No

If yes, what is your degree(s) in? ________________________________

Code number: ________________________________
(to be given by researcher)
Date:  

Time of admission:  

Actual time of assessment:  

Patient’s initials:  

Last four social security numbers:  

Nurse’s Axis I diagnosis:  

Traits:  

Traits:  

Nurse’s Axis II diagnosis:  

Traits:  

Traits:  

Psychiatrist’s Axis I diagnosis:  

Traits:  

Traits:  

MCMI-III Axis I diagnosis:  

Traits:  

Traits:  

Axis II diagnosis:  

Traits:  

Traits:
APPENDIX D

PATIENT CONSENT AND INFORMATION
1. Information

**Background**

You are invited to participate in a study to investigate the ability of the nursing staff to identify problem areas that may affect your treatment. The results of this study can then be used to provide nursing interventions that may be helpful with other patients.

**Study Procedure**

If you agree to participate in this study, you will be asked to provide some information about yourself by filling out an MCMI-III inventory test. The results of your test will be compared to what the nurses believe are potential problem areas.

**Risks**

No significant risks are anticipated as a result of your participation in this study. There may be some inconvenience in spending the time required to complete the MCMI-III, even though this inventory usually takes approximately 25 to 40 minutes to complete. If you have any difficulty completing this test or have any questions regarding this inventory test, please ask any staff member for assistance.

**Cost to Subjects**

There will be no cost to you for participating in this study.

**Benefits**

There are no direct benefits to you from participation in this study. The information you provide may be used to assist patients more promptly in the future.

**Alternative Procedures**

You may choose not to participate in this study. If you choose not to participate, it will not affect your relationship with your doctor, any of the hospital staff, or follow-up care.
Confidentiality and Participant Rights

All information provided to the researcher or her assistants will be kept strictly confidential. No names will be used in the study or subsequent publications. All forms and the MCMI-III will be coded by number.

There is no compensation for taking part in this study. You are free to withdraw from this study at any time without prejudice.

Questions and Contact Person

The researcher will answer any questions you might have about this study. Contact the researcher during working hours, 8:00 a.m. to 5:00 p.m. Monday-Friday, at the following telephone numbers: Deborah Butte, (208)367-2176; B. Lee Walker, (801)581-9622 (24-hour voice mail). If you have questions that you do not wish to discuss with the researcher, you may call the University of Utah Institutional Review Board at (801)581-3655.

Medical Treatment or Compensation for Injury: In the event you sustain injury by any unforeseeable risk resulting from your participation in the research project, the University of Utah can provide to you, without charge, emergency and temporary medical treatment not otherwise covered by your own insurance. If you believe that you have sustained an injury as a result of your participation in this research program, please contact the Office of the Vice President for Research, phone number (801)581-7236. The investigator reserves the right to withdraw subjects without notice and to relay any new pertinent information.

2. Consent

I have read the foregoing and my questions have been answered. I have received a copy of this form and give my consent to participate in this study.

(Participant) (Date)

(Witness) (Date)


