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# Evaluation of revised criteria for the DSM-III substance use disorders diagnoses

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EVALUATION OF REVISED CRITERIA  
FOR THE DSM-III  
SUBSTANCE USE DISORDERS DIAGNOSES



Guy Fish

1985


YALE



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Evaluation of Revised Criteria for the DSM-III  
Substance Use Disorders Diagnoses

A Thesis Submitted to the Yale University  
School of Medicine in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Medicine

by  
Guy Fish  
1985



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It gives me great pleasure to acknowledge my indebtedness:

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ABSTRACT

Evaluation of Revised Criteria for the DSM-III  
Substance Use Disorders Diagnoses

Guy Fish

1985

This study was devised to evaluate a set of new criteria for the diagnosis of substance use disorders advanced for testing by an Ad Hoc committee of the American Psychiatric Association's Work Group to Revise the DSM-III. Forty-one subjects on two general inpatient psychiatric wards were interviewed using The Diagnostic Interview Schedule (DIS) for making DSM-III substance use diagnoses and The Structured Clinician Interview for the DSM-III (SCID) for making substance use diagnoses with the revised criteria (DSM-III-R). Rates of diagnoses using these two systems were compared and bases for discrepancies sought. Rates of interview derived diagnoses were also compared with chart diagnoses. Finally, correlations between types of major psychiatric disorder diagnoses and types of substance use disorder diagnoses were sought. DSM-III-R substance use diagnoses were found to have a high correspondence with DSM-III and were easier to use and more theoretically coherent. Chart diagnoses were shown to be largely insensitive for identification of those with substance use disorders. Although no strong trend was found for an association of particular psychiatric disorders with types of substance use, small sample size indicates the need for further investigation of this relationship.



This work is dedicated to my parents

John and Juanita Fish

"And though I have the gift of prophecy  
and understand all mysteries, and all  
knowledge; and though I have all faith,  
so as to move mountains, and have not  
love, I am nothing."

1 Corinthians 13:2



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The purpose of this project is to field test and evaluate new proposed criteria for Substance Use Diagnosis (SUDs) to be included in the revised Diagnostic and Statistical Manual, third edition (DSM-III-R).

Since the Diagnostic and Statistical Manual, third edition (DSM-III) was published in 1980, it has had a major impact on diagnostic practices in psychiatry.<sup>(1)</sup> However, for all of the diagnostic areas covered in the manual, shortcomings have become apparent; thus, a work group to revise the DSM-III has been organized and a revised version, the DSM-III-R, is being prepared for publication in 1987. One section of the DSM-III which has undergone considerable change is the Substance Use Disorders Section. Because of the scope of these changes, field testing is critical before they are adopted. To place this study in context we will first review the background of the DSM-III and DSM-III-R in general and the approach taken to diagnosing SUDs in specific.

#### THE DSM-III

In 1974, the American Psychiatric Association's Committee on Research and Development commissioned a taskforce on Nomenclature and Statistics to develop the DSM-III. This project sought to create a guide for making psychiatric diagnoses compatible with the World Health Organization's International Classification of Diseases, 9th Revision (ICD-9). It was to be used by clinicians, researchers, and administrators of various theoretical



persuasions for diagnosis and to facilitate professional communication about psychiatric disorders.(1, 18)

Ironically, after five years of open, controversial development including historically unique field trials (1, 21), the critiques leveled against the finished product included terms such as reliability vs. validity, clinical usefulness, an atheoretical system, and abandonment of "time honored distinctions" (8): the same set of characteristics the authors of the DSM-III claim are its landmark strengths (8, 1, 18, 21). This paradox points to the dilemma of attempting the classification of terms and disorders which are not fully defined. Given our similar task in this paper it is, again, pertinent to understand historically how we arrived at this point.

#### DISEASE CLASSIFICATION

Actually under study here are the recent histories of two concepts: disease, and classification. A classification of diseases must adjust when the concept of what a disease is, and therefore how they are related to one another, alters.(24) This is seen quite commonly in internal medicine. Understanding details of a disease process like pancreatitis leads to the assembly of several key features like mid-epigastric pain and elevated enzyme levels as criteria by which to classify cases with similar clinical findings and, hopefully, pathophysiology. But in absense of



of this understanding of the process, the set of criteria may change, for example ignoring enzyme levels, and thus this disorder may, on the basis of similar other findings, end up classified with disorders of some other system. The same can be said in a general way regarding the understanding of psychiatric disorders and the resultant classificatory system.

Early in the 1800's, the limited understanding of psychiatric disease processes was evident in that the only major psychological nosologic distinction was between insanity and idiocy as documented by Dr. Edward Jarvis' 1855 survey of Massachusetts. (24) Late in the 1800's the medical model of discrete multiple disorders crystallized (often termed the classic European or Kraepelinian concept). According to Klerman:

"The highest principle for diagnosing and classifying disorders is the evidence for causation. This principle was accepted after a hard battle in the nineteenth century, primarily because of the impact of discoveries in biology: first, the discovery of bacteria and other microorganisms by the generation of Pasteur and Koch and, second, the examination of body tissues at autopsy... These techniques were applied to psychiatric syndromes with great success by our forerunners in the nineteenth century. So successful were these efforts that most of the disorders that were unraveled are no longer with us. With the discovery of the spirochete and the advent of penicillin, general paresis, which accounted for about 10% of admissions to mental hospitals, is no longer a clinical problem. Pellagra, dementia, and delirium associated with nutritional



deficiency accounted for more than 40% of admissions to mental hospitals in the South." (8)

Meanwhile Neurology had taken claim to all disorders of the CNS involving sensation and motor disturbances.

Yet, just after World War I numerous psychiatric disorders remained which could not be explained by biological principles through the Kraepelinian concept of causation. Though European and Scandinavian studies continued in this tradition, by the post-WWII era American and Canadian psychiatry by and large explicitly rejected the classical medical model of discrete multiple disorders.

Instead, America began to substantiate its unitary disease concept with Adolf Meyer's theory of social causation. The concept postulates that degrees of mental health and/or sickness are dependent upon the interaction of various factors (economics, social class, stress) upon the individual, as elucidated in a statement by the National Advisory Mental Health Council in 1955. (24) Alternatively, psychoanalysis, then at its most influential point, also de-emphasized descriptive classification of discrete disorders in favor of psychodynamics formulations.

However, around the same time, the advent of psychopharmacological therapeutics such as chlorpromazine led to a neo-Kraepelinian era. (8, 24) Therapeutic response to these psychotropic drugs supported anew the concept of discrete and heterogeneous psychiatric disorders.

Psychiatry continued on as a descriptive discipline as





evidenced by the emergence of the first DSM in 1952. However the evidence of clinical trials with chlorpromazine et.al. mandated closer scrutiny of the psycho-social and biological characteristics which indicate the presence of a particular clinical disease in a person since now particular diseases could be linked to specific treatment regimens.(24)

Early on reseachers discovered much of the confusion over their findings was based on non-uniformity among clinicians and researchers in diagnosing patients. Ward, Beck, et.al. examined reasons for diagnostic disagreement in 1961 and found the major factors to be: 32.5% due to diagnostician inconsistency (weighing symptoms differently, various interviewing techniques); and 62.5% due to an inadequate classification system (overly restrictive categories and unclear criteria).(23) In a classic set of papers, Kramer and Zubin showed in 1969 that the cross national difference in the rates of schizophrenia and depression between the U.S. and the U.K. was largely artifactual due to differences in and useage of diagnostic criteria (9, 26).

Though the DSM-II, published in 1968, organized itself to conform with the diagnostic categories outlined in the ICD-8 for increased cross-national reliability, it continued to use a descriptive glossary as a classification system. As Spitzer, Endicott, and Robius indicate:

"The clinician is forced to rely heavily upon his own concepts of the diagnostic categories because there are no formal definitions



offered for most of them: features that are invariably present in the disorder are often not clearly distinguished from features that are commonly but not invariably present. In addition, there is no clear indication of which features distinguish a particular condition from similar conditions. There are usually few, if any, guidelines as to which diagnoses are mutually exclusive or should be joint diagnoses to help the clinician faced with a patient with clinical features suggesting two different conditions. Sometimes the classification forces the clinician to choose between competing classificatory principles without a clue as to which takes precedence. Frequently, a classificatory principle is a function of tradition or of some hypothesized causal factor with little research evidence to support its validity. Finally, even when concepts are clearly presented, there are no operational rules that the clinician can apply to a given case to determine whether or not the criteria of a particular diagnostic category have been met."(20)

Meanwhile, Feigner, Robins, and Guze at University of Washington, St. Louis, developed a set of operational criteria for psychiatric diagnosis which was published in 1972.(6) The criteria were a distillate of many years of clinical research experience and were developed according to the "five phases" for establishing psychiatric diagnostic validity by Robins & Guze: 1.) clinical description, 2.) laboratory studies, 3.) delimitation from other disorders, 4.) follow-up studies, 5.) family studies. An expanded version of the "Feigner criteria" was created by the Clinical Research Branch of the NIMH and titled the Research Diagnostic Criteria (RDC).

Trials of these criteria led to higher than previously obtained reliability.(20) In a review of advances in



psychiatric diagnosis Spitzer, Endicott et.al. in 1975(20) categorized sources of unreliability as falling into five categories similar to those of Ward, et.al.(23) They recognized the improvement standard interview schedules brought by decreasing observer variance. However the largest source of unreliability remained criterion variance. Thus they recommended that the future DSM-III adopt operational criteria, similar to Feigner and RDC, based on research evidence. The problem with adopting RDC criteria outright was that its development for research led to stringent criteria to assure a homogeneous sample which is too exclusive for general clinical use.

In summary, for a long while psychiatric diagnosis was solely descriptive and inadequately operationalized. When support of descriptions of discrete disorders waned at the end of the Kraepelinian era theories of social causation and psychoanalysis took prominence. Then the weight of evidence for the theory of multiple discrete psychiatric disorders was inalterably shifted by the discovery of psychotropic medications. Research to identify groups which could benefit from specific drugs evidenced the need to develop a more reliable system of psychiatric diagnosis and classification. It was recognized that these goals are preferable in clinical psychiatry also and as such the DSM-III, incorporating many of the advances such as the inclusion/exclusion criteria seen in research, was developed as described below.



## DSM-III: GOALS, MERITS, AND CRITICISMS

The DSM-III was developed to reflect psychiatry's renewed commitment to systematic study of different disorders, and to provide accurate diagnosing with which to plan treatment programs. It also was needed to provide a common language for clinicians and researchers to communicate about disorders, assured that they spoke of comparable patient groups.(1) To that end the commissioned Task Force developed the following specific goals.

- "-clinical usefulness for making treatment and management decisions in varied clinical settings;
- reliability of the diagnostic categories;
- acceptability to clinicians and researchers of varying theoretical orientations;
- usefulness for educating health professionals;
- maintaining compatability with ICD-9, except when departures are unavoidable;
- avoiding the introduction of new terminology and concepts that break with tradition, except when clearly needed;
- reaching consensus on the meaning of necessary diagnostic terms that have been used inconsistently, and avoiding the use of terms that have outlived their usefulness;
- consistency with data from research studies bearing on the validity of diagnostic categories;
- suitability for describing subjects in research studies;
- being responsive during the development of DSM-III to critiques by clinicians and researchers." (1)

Other aspects commented on in the introduction of the manual include: its extensive field testing to demonstrate clinical acceptability and usefulness; its atheoretical approach in attempting to describe mental disorders by their clinical manifestations rather than etiology when such is unknown; and similarly its descriptive approach in classifying





disorders on the basis of shared clinical features.

The DSM-III does attempt a definition of the term, mental disorders. However the introduction is quite clear in stating that "there is no assumption that each mental disorder is a discrete entity with sharp boundaries (discontinuity) between it and other mental disorders, as well as between it and No Mental Disorder."<sup>(1)</sup> It also denies the view that all individuals with the same disorder are alike in all important ways, but rather show at least the defining features of the disorder. The manual then attempts a systematic description of the disorder marshaling current knowledge regarding: essential features, associated features, age at onset, course, impairment, complications, predisposing factors, prevalence, sex ratio, familial pattern, and differential diagnosis.<sup>(1)</sup> Also important is the use of a multiaxial system to ensure representation of the patient as a whole and interactive individual with significant personality, biological, and social functioning dimensions.

Again, one of the main goals of this undertaking was to increase diagnostic reliability. It is most significant to note that the authors of the DSM-III recognized that the criteria presented have not been fully validated.<sup>(1, 18)</sup> Rather, these specified criteria "provide explicit definitions for the categories, which would enable investigators to better study the comparative validity of alternative criteria."<sup>(20)</sup>

Two years following the acceptance of the final draft



of the DSM-III by the APA a debate over its merits and faults took place at the annual APA convention. General criticisms of the manual are most succinctly stated in the transcript of that debate and are as follows:

- 1.) The manual is not valid cross-culturally.
- 2.) DSM-III ignores the nature of many disorders to exist as continua rather than as discrete entities.
- 3.) It ignores the role of clinical course (state vs. trait) in distinguishing between disorders .
- 4.) The axes are without a true biopsychosocial dimension and as such ignore pathogenesis in defining a symptom complex (adynamic).
- 5.) DSM-III compromises validity for reliability and thereby misrepresents the theoretical diversity present in American psychiatry by being atheoretical.(8)

Those critiques were refuted individually by the defense team of the debate. However it suffices here to recognize the strongest argument for the DSM-III's defense originates in a remark by the opposition. "The strategy of science is to construct hypotheses that seem to be good candidates for validity - decisions based on theory about the subject matter - and then to make these hypotheses as reliable as possible without relinquishing their relevance"(8) Then note the defense's statement: "we did not insist that there be evidence that a diagnostic category was reliable before it could be included in the classification. In fact, our basic concern was clinical relevance."(8)

We are thus left with a document which strove for both validity and reliability in diagnosis, but whose strongest feature remains its self-admitted need for revision based on



data from tests of its hypothesized operational criteria. Let us turn our attention to the Substance Use Disorders Section's operational criteria.

#### BRIEF HISTORY OF SUBSTANCE USE DISORDER DIAGNOSIS

In this section we will outline the background developments leading to the revision of the Substance Use Disorders section of the DSM-III.

Accurately defining substance use disorder has obvious legal importance. As well, it shares the importance of correct diagnosis for any disorder, namely: identifying subject groups for research comparison, identifying those with the disorder or at risk for developing it, channeling these groups to proper treatment modalities, and directing public allocation of funding to support these projects.

The DSM-III section on Substance Use Disorders(SUDs) replaces the DSM-II Drug Dependence section and incorporates also the DSM-II Alcoholism category. This is significant for not only underscoring that the effects of the maladaptive use of alcohol are similar to those of other substances, but to recognize that the concept of SUDs owes much to the history of the development of the concept of alcoholism.(1) In our society the use of illegal substances has led many to presume that partakers are automatically abusers and addicts, thereby precluding the need for investigation as a disorder. However, given the wide social acceptance and use of alcohol, defining what is use vs. misuse has been the object of much research and



debate. This work can be considered as representative of the larger category of SUDs. Hence, we will focus this review on definitions of alcoholism.

Babor details the history of the concept of drunkenness from colonial times onward.(2) Once viewed as a moral vice via free will, or, in the post-Revolutionary Era, as a disease caused by an agent (alcohol) or a process (like addiction), its first major step occurred in the early 19th century when it was viewed in a semi-medical way as a moral-physical condition called intemperance. After being medicalized, the disease eventually made its way to become the physical and psychological entity we describe today.

In terms of scientific definition of this entity, E.M. Jellinek is credited with having made the first major strides in this century.(2) After a review of the literature, Jellinek supported the distinction between alcoholism and alcohol addiction. Further, he defined relationships between these two entities and characterized their sub-classes based on descriptions in the literature. This work culminated in the publishing of his theories in the Disease Concept of Alcoholism.(1960) Babor posits that since Jellinek's influential book, the efforts to redefine alcoholism have continued at the hands of various special-interest groups.

These groups have by and large defined alcoholism and related terms (such as addiction, dependence, drug, tolerance, withdrawal, and consequences, among others) in ways that support their particular interest. For example,





the American Medical Association has proposed classification of alcoholism under both the psychiatric and medical sections of the ICD. This not only downplays the stigma of alcoholism as a psychologic disease, but broadens the class of those qualified to treat alcoholics to include non-psychiatrists. Parenthetically, this also broadens the class of those eligible to receive insurance repayment for treating the alcoholic. Others, for similar reasons, have defined alcoholism in terms of behavioral, pharmacologic, and medical models. Unfortunately, many of "those involved in the generation of definitions have been remiss in explaining the scientific assumptions, semantic rules and practical objectives entering into their choice of words" leading to confusion within and between groups.(2)

While these varying lines of thought were being pursued, changes in psychology, described earlier, began to have their effect on substance use diagnosis in two specific ways. First, the work of Feigner(6), the RDC, and others lead to the promulgation of formal inclusion and exclusion criteria for substance use diagnosis. This aided communication by assuring that different groups were talking about similar subject populations, but did not aid in clarifying terminology since there was still no unifying conceptual perspective. The most notable product of the addition of inclusion criteria to defining alcoholism was the development of the DSM-III section on Substance Abuse. However this could be succinctly critiqued as a set of criteria in search of theoretical underpinnings.



Secondly, the World Health Organization concurrently developed its concept of the Alcohol Dependence Syndrome: a theoretical model of substance abuse including biologic, social, and psychologic dimensions around which terms such as "dependence" and "impairment" could take their meaning.(25) Likewise this might be termed a model without direct application to clinical and research work. It would seem logical to attempt to combine the atheoretical DSM-III criteria with the unapplied WHO model. Those involved in the creation of the DSM-III-R have attempted this to a large extent. But first let us take a brief look at the WHO model and examine the specific problems with the DSM-III Substance Abuse section.

#### THE WHO MODEL

The WHO was just one of many of the above mentioned groups working on defining terms in the area of substance abuse. As early as 1951 WHO attempted to define "alcoholism" and, for drugs under international control, addiction.(25) Many stages of revision occurred, including: defining drug addiction versus habituation, replacing both of those with the concept of dependence, and distinguishing between psychic and physical dependence. In 1977 a synthesis was announced by a WHO subcommittee which proposed a dependence syndrome.(25)

"The alcohol dependence syndrome is manifested by alterations at the behavioral, subjective, and psychobiological levels with, as a leading symptom, an impaired control over the drug ethyl alcohol. The alcohol dependence syndrome exists in degrees.



Its varied manifestations are influenced by modifying personal and environmental factors so as to give many different presentations ... Not all people manifesting alcohol related disabilities are alcohol dependent,..." (25)

This alcohol dependence syndrome was expanded upon in a later WHO monograph on nomenclature and classification.(25) The model was used to explain initiation, continuation, and discontinuation of drug and alcohol use. Also several terms were either modified, added, or dropped. For example, drug abuse was changed to the more defined collective terms: unsanctioned use, hazardous use, dysfunctional use, and harmful use; neuroadaptation was added to describe patients maintained on drugs causing tolerance and withdrawal but who have not the desire to continue taking drugs. But the most noteworthy distinction of the dependence syndrome model was the concept of there being a constellation of disabilities which occurred across different categories of drugs and that these disabilities could exist in varying degree: a major departure from the Kraepelinian "all or-none" concept of discrete diseases.

#### SPECIFIC DSM-III SUBSTANCE ABUSE CRITICISMS

An overview of the DSM-III Substance Use Disorder section is provided by Spitzer, Williams, and Skodol(21):

"This section of the DSM-III includes disorders in which there are behavioral changes associated with more or less regular use of substances that affect the central nervous system and that in almost all subcultures would be viewed as undesirable. This category combines the DSM-II categories of Drug dependence and Alcoholism to emphasize that the effects of the maladaptive use of all substances of potential abuse and dependence are similar.



The Substance Use Disorders are divided into two major types: Abuse and Dependence. In general, Substance Abuse is defined by a pattern of pathological use for at least one month that causes impairment in social or occupational functioning. Examples of pathological use include inability to reduce or discontinue use or remaining intoxicated throughout the day. Substance Dependence is defined by the presence of tolerance or withdrawal. For Alcohol and Cannabis Dependence, impairment in social or occupational functioning is also required....

Many substances are associated with both abuse and dependence, including alcohol, barbituates or similarly acting sedatives or hypnotics, opioids, amphetamines or similarly acting sympathomimetics, and cannabis.... Substances for which abuse but not dependence has been demonstrated include cocaine, phencyclidine (PCP) or similarly acting arylcyclohexylamines, and hallucinogens. (Phencyclidine is distinguished from hallucinogens despite some similarities in their effects.)... Polysubstance Use may be classified as such when it is not possible to identify each of the substances involved.

For each substance Use Disorder in the DSM-III, the pattern of use or course of the disorder is coded in the fifth digit as continuous, episodic, or in remission.

Rounsaville, Spitzer, and Williams, in conjunction with an advisory committee on the Substance Abuse section to the Work Group to Revise the DSM-III, have advanced a number of proposals for modification of the above in response to solicited critiques.(16) The critiques were(14):

1.) The term "Substance" in the class title Substance Use Disorders is believed to be too broad and easily misinterpreted to include non-psychoactive substances such as food or water.

2.) Difficulties with the current distinction between abuse and dependence including: problems using social and occupational consequences to define "abuse"; weakness of tolerance or withdrawal as a required criterion for dependence; and inconsistencies in the relationship of abuse to dependence for different substances.

3.) The requirement of a duration of substance use for one





month to meet criteria for "abuse" does not specify which diagnostic criteria need to be present for that month, and it is insensitive to the discontinuous though pathologic pattern of use associated with some drugs, e.g. PCP.

4.) Current fifth digit coding (to describe the course of the disorder as 1 = continuous, 2 = episodic, 3 = in remission, and 0 = unspecified) is limited in utility as categories are frequently not mutually exclusive and remission is often incomplete in these disorders.

5.) The poly-substance use diagnoses are inadequate in being overly specific and in not conveying the commonly seen pattern of an individual indiscriminately using various drugs singly or in combination for frequent intoxication.

The advisory group's proposals hinge on the modification of the terms "abuse" and "dependence" . As this change impacts most on this paper, it is listed last in the below proposals and is presented in most detail. The proposals are:

a.) Replace the term "substance " with "psychoactive substance"; thus "Psychoactive Substance Use Disorders".

b.) Eliminate the duration criterion since the new criteria for dependence imply a clinically significant duration of the disorder.

c.) For individuals not in remission the clinician is asked to specify the severity of the dependence as mild, moderate, or severe.

d.) Replace the three categories of mixed substance abuse or dependence with a new category - Poly-Psychoactive Substance Dependence for when there is indiscriminant use of more than one drug without any one drug predominating.

E\*) 1. Remove the "abuse" category and broaden the definition of dependence to a syndrome of clinically significant behaviors that indicate a serious degree of involvement with a psychoactive substance. The proposed list of criteria (Table 1) will apply to each class of psychoactive substances. Individuals meeting three of more of these criteria would receive a diagnosis of dependence. Note that social and occupational consequences are not included in the proposed criteria. When these behaviors are implicated it is the drug-using behaviors and not the consequences that are considered in determining whether or not a given criterion is met.

2. Create a new category of "Psychoactive Substances Neuroadaptation Syndrome" for individuals whose



physiological adaptations to high doses of psychoactive substances did not arise from their own behavior and for whom the dependence syndrome as defined in Table 1 is not present (e.g., heroin dependent newborns).

3. For individuals who have experienced adverse social consequences of substance use but who do not have sufficient symptoms to qualify for a diagnosis of the expanded dependence category, the clinician can diagnose individual episodes of intoxication using the criteria listed under Substance-Induced Organic Mental Disorders. Most such individuals would not have qualified for a DSM-III diagnosis of substance abuse because of the requirement for a "pattern of pathological use."

#### PRO'S AND CON'S OF THE PROPOSED SYSTEM

As Rounsaville, et.al.(16) point out, the proposed system meets the major critiques described by: removing social consequences from the criteria for diagnosing substance use disorders; retaining tolerance and withdrawal symptoms as indices of dependence but placing far less emphasis on these physical symptoms in detecting and describing a pervasive and complex syndrome of pathological behavior; and making the criteria consistent across different substance use categories.

For substances other than alcohol, the broadened concept of dependence is consistent with earlier definitions utilized in DSM-II. It also reflects the theoretical and empirical advances found in the above described "dependence syndrome" which underlies compulsive use of all classes of psychoactive substances. It is hoped that nearly all of those individuals who met DSM-III criteria for substance "abuse" would also meet the proposed criteria for "dependence" because "abuse" required a "pattern of pathological use" which is represented by several of the proposed criteria in Table 1. Failure to do so would be a serious drawback.



Also the broadened term "dependence" may confuse those accustomed to the DSM-III definitions or appear inferior due to the loss of the ability to denote severity without the term "abuse". It should be noted that the distinction between "abuse" and "dependence" was new with DSM-III. The new criteria allow for denoting severity by use of the fifth digit.

Finally, the new criteria, relative to DSM-III, may fail to provide a diagnosis for certain individuals with a significant, in terms of adverse social consequences, but episodic pattern of substance abuse. Yet, such individuals could receive a diagnosis for the individual episodes of intoxication. Moreover, such individuals would not have met DSM-III criteria for abuse because of the need to demonstrate a "pattern of pathological use" (with the one month requirement).

#### AIMS OF THIS STUDY

The purpose of this study is to evaluate the proposed DSM-III-R substance use dependence criteria in a field trial with psychiatric inpatients. The major aim is to assess the level of agreement between the proposed DSM-III-R criteria and the existing DSM-III criteria. The changes present in the DSM-III-R are not without potential effects on the rates of diagnosis of the psychoactive substance use disorders. In general one could predict the revised criteria to have:

- a.) No agreement with DSM-III
- b.) Poor agreement with DSM-III



- c.) Good agreement with DSM-III and DSM-III R proving more restrictive
- d.) Good agreement with DSM-III and DSM-III R proving less restrictive

Specifically, these are arrived at by combining a number of factors which could alter rates:

- 1.) As "abuse" was defined by social consequences, removal of said criteria could result in those who would have been diagnosed as abusers being missed. Thus DSM-III R rates could be lower.
- 2.) The merging of the "pathological pattern of use" portion of the DSM-III abuse criteria with the criteria for dependence in DSM-III R reduces reliance on tolerance and withdrawal for dependence and leads to greater theoretical coherence. But it may also greatly increase the rates of those being diagnosed as dependent.
- 3.) Removal of the one month duration criteria may yield an increase in rates without this restrictive element.
- 4.) Creating a common set of criteria for all drug classes may, again, favor concepts of a dependence syndrome for all drugs, but in criteria not being "tailored" rates of diagnosis of dependence may change unpredictably from one drug class to the next.

It is the purpose of this paper to discover through field testing of these two sets of criteria the consequences the above changes will have on rates of diagnoses. Specific aims are:

- A. To assess the extent to which proposed new (DSM-III-R) criteria agree with old (DSM III) criteria regarding the presence or absence of substance use disorders, and to investigate the types of disagreement.
- B. To assess the agreement between DSM-III and DSM-III-R diagnoses versus chart diagnoses as an evaluation of source of data as a factor in determining rates. (7, 11, 12)
- C. To assess the relationship between primary psychi-





atric diagnoses and classes of substance abuse.

## METHODOLOGY

### 1. Subjects and setting

Subjects for this study were 41 inpatients on a mixed general psychiatry short term unit. On this ward approximately 20-30% of patients are treated for problems related to abuse of psychoactive substances. For field testing purposes, this sample was useful because it enables a comparison of methods for discriminating those with a diagnosis of substance use disorders from those with other psychiatric diagnoses.

Patients for this study were interviewed 7-14 days after admission to the ward and were approached for interview only after psychotic symptoms or severe affective pathology had abated. Before approaching a patient for participation in the study, the interviewer first ascertained from the primary clinician that the patient was not currently psychotic or otherwise unable to give informed consent to be interviewed. The patient was then approached by the interviewer, the nature of the study explained, and the written consent obtained before proceeding with the interview.

### 2. Assessments

#### A. Diagnosis of Substance Use Disorders

The criteria used for making the substance use diagnosis were the currently utilized criteria from the



American Psychiatric Association's DSM III and the proposed criteria for the revised form, the DSM III-R. Structured interview schedules have been developed for making the DSM III and DSM III-R diagnoses which allow for consistency and thoroughness of coverage. For the DSM III the Substance Use portion of the Diagnostic Interview Schedule (DIS) was used (13); for the DSM III-R the Substance Use section of the Structure Clinician's Interview for the DSM III-R (SCID) was used (22).

#### B. Substance Use Related Problems

Evaluation of substance use related problems were performed using the Addiction Severity Index (ASI; 10) a structured clinician's interview which assesses objective and subjective information about impairment in six areas: substance use problems, medical problems, social problems, psychological symptoms, occupational problems, and legal problems.

#### C. Handling of Completed Forms

For protection of subjects from legal reprisal, no names or identifying codes were used on the forms. Forms displayed a case number (APT#) randomly assigned independent of subject identity or order in the study solely for the purpose of distinguishing between sets of responses. No record of which subject used which forms were kept. Information collected in the interview was kept confidential from all those outside the research staff including the patient's clinicians. The completed forms were kept locked in research files.



### 3. Raters

Ratings were performed by one of two graduate level evaluators who were trained for consistency in interview technique by Dr. Bruce Rounsaville.

### 4. Data Analysis

This was be designed to achieve the three aims of the study listed on page 20.

To assess agreement between DSM III and DSM III-R computation of sensitivity and specificity were performed using DSM III as the criterion against which DSM III-R was evaluated.

To assess the agreement between DSM-III and chart diagnoses cross-tabulations of sensitivity and specificity were performed, again, using DSM-III as the rule.

To assess the relationship between primary psychiatric and substance use disorders a significant findings from a cross-tabulation will be submitted to Chi-square testing.



## RESULTS

## Question #1: Agreement between DSM-III and DSM-III-R

Of the 41 subjects interviewed, approximately 70.4% of those diagnosed by DSM-III (N=19) and 68.9% of those by DSM-III-R (N=20) were polysubstance users.

Subject classification by DSM-III diagnoses (table 2) indicates Alcohol as the most commonly used agent as assessed by having the most abusers/dependent overall (N=22). Opiates were the second most commonly used (N=14) followed by Cocaine ( N = 9 ). Cannabis, Barbituates, Amphetamines, and "Other" were all less commonly used at about the same rate ( N = 6 ). Hallucinogens were the least commonly used ( N = 1 ). Rates of dependence given DSM-III criteria resulted in an order from most to least dependence causing of: Alcohol (N=17 ), Opiates (N=14 ), Barbituates (N=6 ), and Amphetamines (12.2%).

-----  
 Table 2 about here  
 -----

According to the DSM-III-R format (table 3), the order of highest dependence is: Alcohol (N=22 ), Opiates (N=14 ), Cocaine (N=11 ), Other (N=8 ), Barbituates (N=7 ), Amphetamines (N=6 ), and Hallucinogens (N=2 ).

-----  
 Table 3 about here  
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Comparison of DSM-III with DSM-III-R diagnoses for presence or absence of abuse or dependence for each individual in each substance class was performed. Counts of subjects falling into the "diagnosis/no diagnosis" categories allowed are presented in table 4.

-----  
 Table 4 about here  
 -----

Sensitivity/specificity measurements, using DSM-III as the rule by which DSM-III-R was judged, were performed. In four out of eight substance categories, DSM-III-R showed perfect sensitivity (100%) with high (>93%) specificity. In the remaining four categories, sensitivity ranged from 91% for Alcohol to 67% for Barbituates with Cannabis and Amphetamines holding the mid-ground at 86% and 83% respectively. Specificity of DSM-III-R for diagnosing these four categories remained high (>89%).

Particularly notable are six cases in the tally where DSM-III diagnosed abuse or dependence and DSM-III-R did not. These six instances were divided among four subjects. In the first two cases, abuse of a substance (Alcohol) was diagnosed in DSM-III by means of social and occupational consequences and a pathological pattern of use; whereas DSM-III-R noted only social/occupational consequences in one case and tolerance with a pathological pattern in the other case. In the next two other cases (Cannabis and Barbituates), the subjects did not meet the abuse criteria, yet dependence was diagnosed by DSM-III where tolerance and



either pathological pattern or soc/occ consequences were present. Similar to the above, tolerance and a pathological pattern were seen in one case using DSM-III-R, and the other case showed only soc/occ consequences. In the last pair of cases, DSM-III made the diagnoses of dependence (Amphetamines and Barbituates) by virtue of tolerance and fully meeting abuse criteria. Tolerance and a pathological pattern was seen by DSM-III-R in one case, and a pathological pattern with consequences and no tolerance characterized the other case. Degree of impairment or consequences were consistent with answers from corresponding ASI questions.

Question #2: Agreement between diagnoses of substance use disorders(SUDs) from interviews versus charts

Only four specific chart diagnoses of SUDs were noted (table 5). The remainder of the subjects received either no drug disorder diagnosis when such was indicated by DSM-III (19.5%) or the diagnoses of "unspecified dependence", "other mixed or unspecified abuse", or "dependence on combination of opioid and other non-alcoholic" (combined total = 26.8%).

-----  
 Table 5 about here  
 -----

Of the specific diagnoses of substance use, Alcohol abuse was highest at 7.3% (N=3) followed by Alcohol and Opioid dependence, both 4.9% (N=2), and finally Cocaine abuse at 2.4% (N=1). All these rates are much lower than those by DSM-III as assessed by comparison in table 6.



-----  
 Table 6 about here  
 -----

Sensitivities range from none (hallucinogens) to 83.3% (amphetamines). Specificity ranges from 73% to 100%.

Question #3: Correlation between primary psychiatric and substance use diagnoses

The primary psychiatric diagnoses among the group of 41 subjects were subsummed under the headings of the major psychiatric disorders: Affective, Schizophrenic, Other psychotic, Adjustment, and "Other" disorders (table 7). All of the 41 subjects carried primary psychiatric diagnoses on Axis I with the exception of one who had a personality disorder without substance use. One item of data was lost leaving 39 diagnosed among the above 5 disorders.

-----  
 Table 7 about here  
 -----

The largest group was those having Affective disorders (31.7%) followed by those with Adjustment disorders (29.3%). The grouping "Other", comprised of six individuals with eating, dysthymic, organic, or anxiety disorders was third largest at 14.6%. Schizophrenics and Other Psychotic Disorders represented 9.7% each.

Regarding each instance of substance abuse as an individual case, a cross tabulation was performed to determine if any systematic pattern of concordance developed between types



of substance use and types of mental disorder (table 8).

-----  
 Table 8 about here  
 -----

In only a few instances did there appear to be an association between categories of psychiatric diagnoses and a substance use disorder. These were analyzed using the Yates correction for Chi-square testing after collapsing datum to fourfold tables. Examples using the most promising datum (those for alcohol and opiates vs. affective disorders) are provided in table 9. For each of these there was no significance as  $p > .10$ .

-----  
 Table 9 about here  
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## DISCUSSION

### Question #1: Agreement between DSM-III and DSM-III-R

The revised DSM-III criteria are found useful in this study due to several strengths. The first strength results from the nature of its design; namely, it is consistent across drugs. This was accomplished by incorporating advances in the understanding of the nature of substance abuse represented by the WHO dependence syndrome. This approach has the advantage of focusing the investigator/clinician on the overall similarity in the pattern of substance dependence rather than highlighting patterns specific to each drug which may not bear upon decision making





for diagnosis or therapy. This should facilitate research by bringing together knowledge on drug use in different substance classes previously separated by probably less important drug-specific details of use/dependence. Although this represents a major break from the atheoretical stance of DSM-III, the manual states it intended to be atheoretical only where wide disagreement in the field on the nature of a disorder dictated that they advance no particular theory. As the WHO model has gained acceptance in research and clinical settings, it is appropriate to incorporate this theoretical understanding into DSM-III-R. As remarked upon earlier in this paper, such a change in the understanding of a disease process necessitates a change in classificatory systems.

This change has a direct result which is the second strength of these revisions: a more practical method of diagnosis across drugs. This results from systematizing and simplifying inquiry regarding patterns of use for different drugs. Further, even with the use of a diagnostic tool such as the DIS, analysis of subject responses to make a diagnosis required sophisticated programming with a complex set of branch and loop decisions. The utility of the DSM-III is seen in its straightforward method of simply counting the number of positive responses for each drug class and assigning a diagnosis of dependence to those with class counts of three or greater. This writer found it a much simpler system to comprehend and utilize. Such should be the experience of both skilled and unskilled interviewers.



Third, despite numerous structural changes, the DSM-III-R showed close agreement with the DSM-III. By gross comparison the rates of diagnoses for each substance class are either equal or DSM-III-R identifies no more than 5% more users than does DSM-III (tables 2 and 3). The analysis represented in table 4 shows that DSM-III-R confirmed a DSM-III diagnosis in 65 cases, found and diagnosed an additional 14 cases, and failed to confirm a DSM-III diagnosis in only 6 instances. With the exception of the Barbituates substance class, the sensitivity/specificity indices for each class are very high. There are notably small ends for Barbituates such that variance in diagnosis similar to that which occurred in the Alcohol analysis led to markedly different sensitivity results (66.7% and 90.1%, respectively).

For half of the substance classes, DSM-III-R is less restrictive than DSM-III (false - = 0% with reasonable false + rates). But for Barbituates, Amphetamines, Alcohol and Cannabis DSM-III-R is apparently more restrictive (false - = 9.1 to 33.3% with reasonable false + rates). The cases accounting for the latter set of data were analyzed. The basic question to be answered was why the DSM-III-R, easier to diagnose dependence with since it merged abuse into dependence, should have failed to detect several cases found by DSM-III. For two of these cases, the fault seems to lie with DSM-III for placing too high a value on the presence of tolerance since these two cases did not make DSM-III criteria for abuse. In two other cases, DSM-III abuse and dependence criteria were met while DSM-III-R



simply registered only two positive responses. It maybe that here DSM-III is not sensitive enough either in defining the best criteria for dependence, or in requiring three (instead of maybe two) positive reponses.

It must be noted that this study has evaluated the methods using a small number of subjects and that the trends noted here would require replication in a larger trial.

The high level of agreement between DSM-III and DSM-III-R may be seen as an indication that the proposed changes are of little import in that they function almost identically in comparison with the original system. However, given the greater theoretical and practical coherence of the revised system, the new criteria may have the benefits of placing emphasis on those aspects of substance abuse which are most salient. Also, it may encourage more systematic investigation of commonalities across types of substance abuse.

Question #2: Agreement between interview and chart diagnoses as sources

As the results indicate (table 6) there is poor agreement between DSM-III interview derived and chart derived diagnoses.

Whereas nearly all of those who received a chart diagnosis of substance use disorder were also diagnosed by DSM-III, only 70.4% of those diagnosed by DSM-III were represented in the chart diagnoses. This indicates that, by comparison with interview derived diagnoses, chart



diagnoses are insensitive. The possible reasons for this are that either the clinicians are not specifically looking for possible existant substance use disorders or that subjects are evading diagnosis by denying symptomology.

Given the nature of the scheduled interviews used for this project (where direct questions concerning substance use were asked subjects), and given the consistency of responses between questions asked for DSM-III and DSM-III-R, one must posit that, if asked directly, many subjects are willing to admit to significant substance use pathology. This is the basis for further justifying the use of standard interview schedules - at least on psychiatric inpatient wards - to better identify those who need to be directed to appropriate therapy, or to identify substance use as a contributing factor to their psychopathology.

Question #3: Correlation between primary psychiatric diagnosis and substance use diagnoses

A careful look at table 8 revealed no strong trends and the sample size was too small to test for statistically significant association between any type of primary psychiatric diagnosis and substance use disorders. Chi-square testing requires an expected frequency of 5 in a cell. Even so, for those groups where sufficient counts were possible after collapsing several categories, there was still no statistically significant concordance.

Yet, even with these shortcomings, the results suggest an interesting trend, namely, substance use disorders are





spread fairly evenly across all categories of primary psychiatric disorders. This seems to indicate that substance use disorders should be suspected in all major classes of psychiatric inpatients. Thus, no major psychiatric diagnostic group is immune from the possibility of concomitant substance use disorder. Even schizophrenics appear sufficiently resourceful to procure and use illicit substances.

#### CONCLUSIONS

Based on findings from this study, the use of the revised DSM-III criteria for psychoactive substance use disorders is substantiated on the basis of:

- High degree of agreement with the current system, DSM-III
- Theoretical coherence (WHO model) underlying criteria
- Greater ease in making the diagnosis with DSM-III-R

It is recommended that standard interview schedules be employed more for improved detection of substance use disorders on general psychiatric wards. Substance use seems to be prevalent among all major psychiatric inpatient groups. Moreover, chart diagnoses appear to reflect an underdiagnosis of substance use disorders in routine practice.



TABLE 1

PROPOSED DSM-III-R CRITERIA FOR DIAGNOSES  
OF PSYCHOACTIVE SUBSTANCE DEPENDENCE

1. Repeated effort to cut down or control substance abuse.
2. Often intoxicated or impaired by substance use when expected to fulfill social or occupational obligations (e.g. doesn't go to work because hung over or high, goes to work high, drives when drunk).
3. Tolerance: need for increased amounts of substance in order to achieve intoxication or desired effect, or diminished effect with continued use of same amount.
4. Withdrawal: substance specific syndrome following cessation or reduction of intake of substance.
5. Frequent preoccupation with seeking or taking the substance.
6. Has given up some important social, occupational or recreational activity in order to seek or take the substance
7. Often uses a psychoactive substance to relieve or avoid withdrawal symptoms (e.g., takes a drink or diazepam to relieve morning shakes) (NOTE: should this include taking a drug to relieve intoxication from another drug? If so, it needs to be added.)
8. Often takes the substance in larger doses or over a longer period than intended.
9. Continuation of substance use despite a physical or mental disorder or a significant social problem that the individual knows is exacerbated by the use of the substance.
10. A mental or physical disorder or condition that is usually a complication of prolonged substance use (e.g., cirrhosis, Korsakoff's Syndrome, perforated nasal septum).



TABLE 2

CLASSIFICATION OF SUBJECTS AS NON-ABUSERS, ABUSERS, OR  
DEPENDENT ACCORDING TO DSM-III

Substance disorder	N	%
Alcohol		
Non-abuser	19	46.3
Abuser	5	12.2
Dependent	<u>17</u>	<u>41.5</u>
	41	100.0
Cannabis		
Non-abuser	34	82.9
Abuser	3	7.3
Dependent	<u>4</u>	<u>9.8</u>
	41	100.0
Amphetamines		
Non-abuser	35	85.4
Abuser	1	2.4
Dependent	<u>5</u>	<u>12.2</u>
	41	100.0
Barbituates		
Non-abuser	35	85.4
Abuser	0	0.0
Dependent	<u>6</u>	<u>14.6</u>
	41	100.0
Opiates		
Non-abuser	27	65.9
Abuser	0	0.0
Dependent	<u>14</u>	<u>34.1</u>
	41	100.0
Cocaine		
Non-abuser	32	78.0
Abuser	<u>9</u>	<u>22.0</u>
	41	100.0
Hallucinogens		
Non-abuser	40	97.6
Abuser	<u>1</u>	<u>2.4</u>
	41	100.0
Other		
Non-abuser	35	85.4
Abuser	<u>6</u>	<u>14.6</u>
	41	100.0



TABLE 3

CLASSIFICATION OF SUBJECTS AS DEPENDENT OR NOT DEPENDENT  
USING DSM-III-R

Substance disorder	N	%
Alcohol		
Not dependent	19	46.3
Dependent	<u>22</u>	<u>53.7</u>
	41	100.0
Cannabis		
Not dependent	32	78.0
Dependent	<u>9</u>	<u>22.0</u>
	41	100.0
Amphetamines		
Not dependent	35	85.4
Dependent	<u>6</u>	<u>14.6</u>
	41	100.0
Barbituates		
Not dependent	34	82.9
Dependent	<u>7</u>	<u>17.1</u>
	41	100.0
Opiates		
Not dependent	27	65.9
Dependent	<u>14</u>	<u>34.1</u>
	41	100.0
Cocaine		
Not dependent	30	73.2
Dependent	<u>11</u>	<u>26.8</u>
	41	100.0
Hallucinogens		
Not dependent	39	95.1
Dependent	<u>2</u>	<u>4.9</u>
	41	100.0
Other		
Not dependent	33	80.5
Dependent	<u>8</u>	<u>19.5</u>
	41	100.0





TABLE 4

COMPARISON OF CLASSIFYING SUBJECTS AS PSYCHO-ACTIVE  
SUBSTANCE USERS USING DSM-III vs. DSM-III-R

SUBSTANCE DSM-III diagnosis	DSM-III-R diagnosis Dependent	DSM-III-R diagnosis None	Sensi- tivity (A/A+C)*	Speci- ficity (d/d+b)	False+ (b/b+d)	False- (C/A+C)
ALCOHOL						
Dependence	17(a)	0(c)				
Abuse	3(a')	2(c')	90.9%	89.5%	10.5%	9.1%
No abuse	2(b)	17(d)				
CANNABIS						
Dependence	3	1				
Abuse	3	0	85.7%	91.2%	8.8%	14.3%
No abuse	3	31				
AMPHETAMINES						
Dependence	4	1				
Abuse	1	0	83.3%	97.1%	2.9%	16.7%
No abuse	1	34				
BARBITUATES						
Dependence	4	2				
Abuse	0	0	66.7%	91.4%	8.6%	33.3%
No abuse	3	32				
OPIATES						
Dependence	14	0				
Abuse	0	0	100.0%	100.0%	0.0%	0.0%
No abuse	0	27				
COCAINE						
Abuse	9	0				
No abuse	2	30	100.0%	93.8%	6.2%	0.0%
HALLUCINOGENS						
Abuse	1	0				
No abuse	1	39	100.0%	97.0%	3.0%	0.0%
OTHER						
Abuse	6	0				
No abuse	2	33	100.0%	94.3%	5.7%	0.0%

\* A= a + a' ; C= c + c'



TABLE 5

CLASSIFICATION OF SUBJECTS BY END-OF-TREATMENT CHART  
 DIAGNOSIS OF SUBSTANCE USE DISORDERS

Diagnoses	N=41	%
Alcohol abuse (30500)	3	7.3
Alcohol dependence (30390)	2	4.9
Opioid dependence (30400)	2	4.9
Cocaine abuse (30560)	1	2.4
Unspecified Substance Dependence (30490)	1	2.4
Other, mixed or unspecified substance abuse (30590)	7	17.1
Dependence on combination of opioid and other non-alcoholic substance (30470)	3	7.3
	19	46.3%



TABLE 6

COMPARISON OF CLASSIFYING SUBJECTS AS PSYCHO-ACTIVE  
SUBSTANCE USERS USING DSM-III vs. CHART DIAGNOSES

SUBSTANCE DSM-III diagnosis	Chart Diagnosis		Sensi- tivity (A/A+C)*	Speci- ficity (d/b+d)	False+ (b/b+d)	False- (C/A+C)
	Drug(+)	Drug(-)				
ALCOHOL						
Dependence	12(a)	5(c)				
Abuse	3(a')	2(c')	59.1%	100.0%	0.0%	40.9%
No abuse	0(b)	19(d)				
CANNABIS						
Dependence	2	2				
Abuse	1	2	42.9%	76.5%	23.5%	57.1%
No abuse	8	26				
AMPHETAMINES						
Dependence	4	1				
Abuse	1	0	83.3%	82.9%	17.1%	16.7%
No abuse	6	29				
BARBITUATES						
Dependence	5	1				
Abuse	0	0	83.3%	82.9%	17.1%	16.7%
No abuse	6	29				
OPIATES						
Dependence	11	3				
Abuse	0	0	78.6%	92.6%	7.4%	21.4%
No abuse	2	25				
COCAINE						
Abuse	7	2				
No abuse	5	27	77.8%	84.4%	15.6%	22.2%
HALLUCINOGENS						
Abuse	0	1				
No abuse	11	30	0.0%	73.2%	26.8%	100.0%
OTHER						
Abuse	4	2				
No abuse	7	28	66.7%	80.0%	20.0%	33.3%

\* A= a + a' ; C= c + c'



TABLE 7

## CLASSIFICATION OF SUBJECTS BY PRIMARY CHART PSYCHIATRIC DX

Disorder diagnosed	N=41	%
Affective	13	31.7
Schizophrenic	4	9.7
Other Psychotic	4	9.7
Adjustment	12	29.3
Other *	6	14.6
No DX **	2	4.9
	41	100.0

\* Eating(2), Dysthymic(2), Organic and Anxiety disorders

\*\* Axis II Personality disorder only(1), Lost data (1)

TABLE 8

## CROSS-TABULATION OF SUBSTANCE USE DIAGNOSES USING DSM-III or DSM-III-R ( ) vs. PRIMARY PSYCHIATRIC DISORDERS

Agent of abuse   or dependence	*(a)N {13}	(b)N {4}	(c)N {4}	(d)N {12}	(e)N {6}	(f)N {2}
Alcohol {III(III-R)}	7(7)	2(1)	2(2)	5(6)	5(5)	1(1)
Cannabis	0(2)	0(0)	1(2)	3(2)	3(3)	0(0)
Amphetamines	2(2)	1(1)	0(1)	1(0)	2(2)	0(0)
Barbituates	1(3)	1(0)	0(1)	2(1)	2(2)	0(0)
Opiates	6(6)	1(1)	1(1)	3(3)	3(3)	0(0)
Cocaine	3(3)	0(0)	0(2)	4(4)	2(2)	0(0)
Hallucinogens	1(1)	0(0)	0(1)	0(0)	0(0)	0(0)
Other	2(4)	0(0)	0(0)	3(3)	1(1)	0(0)

\* a= Affective, b= Schizophrenic, c= Other Psychotic, d= Adjustment, e= Other Disorders(see TABLE 5), f= No Dx





Table 9

CHI-SQUARE TESTING OF ALCOHOL AND OPIATE CORRELATION WITH  
AFFECTIVE DISORDERS

ALCOHOL	count(expected)		Total
	Affective Disorder	Other Disorders	
Use Disorder	7(6.98)	15(15.02)	22
No Disorder	6(6.02)	13(12.98)	19
Total	13	28	41

Chi-square = .104 ; p > .10

OPIATES	count(expected)		Total
	Affective Disorder	Other Disorders	
Use Disorder	6(4.44)	8(9.56)	14
No Disorder	7(8.56)	20(18.44)	27
Total	13	28	41

Chi-square = .563 ; p > .10



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