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Psychiatric diagnosis vs medical diagnosis: Are mental health professionals aware?

Sanchez, Phyllis Nancy, Ph.D.

The University of Arizona, 1989
PSYCHIATRIC DIAGNOSIS VS MEDICAL
DIAGNOSIS: ARE MENTAL HEALTH PROFESSIONALS AWARE?

by
Phyllis Nancy Sanchez

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A Dissertation Submitted to the Faculty of the
DEPARTMENT OF PSYCHOLOGY
In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF PHILOSOPHY
In the Graduate College
THE UNIVERSITY OF ARIZONA

1989
As members of the Final Examination Committee, we certify that we have read the dissertation prepared by Phyllia N. Sanchez entitled PSYCHIATRIC DIAGNOSIS VS MEDICAL DIAGNOSIS: ARE MENTAL HEALTH PROFESSIONALS AWARE? and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

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Dissertation Director Marvin W. Kahn
STATEMENT BY THE AUTHOR

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ACKNOWLEDGMENT

My gratitude to M.W.K., O.E.S., R.J.P., D.M.D., and R.D.H. their support and knowledge in this and other projects that I have undertaken.
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ABSTRACT

For years research has demonstrated a varying incidence of medical disorders manifesting with psychiatric symptoms. A relatively conservative estimate of such so-called "medical masquerades" is around 10%. It is important to ascertain whether health care professionals are aware of possible medical masquerades perhaps most especially in a mental health center outpatient setting where non-medically trained clinicians are the first line therapists for treatment in the majority of cases. This study set about to find out how aware three types of health care clinicians (psychiatrists, nonpsychiatrically trained medical doctors, and non-medically trained mental health psychotherapists) are of the prevalence of medical masquerades, and whether these three types of clinicians perform differently on three types of clinical vignettes (psychiatric, somatoform, and medical masquerades). Results revealed that all health care professionals surveyed are aware that there are a percentage of medical masquerades in the clinical population. Results also revealed that the three types of clinicians performed differently on the case vignettes.
CHAPTER 1
INTRODUCTION

Humans typically see the environment around them in ways they have been, either inately endowed to see it or, as they have been trained to see it. Knowledge and experience can act as filters to the environment and it is these filters that help organize the world for the individual. As situations arise in everyday life humans typically base choices and solutions on previous experience. Even in the novel situation, the solution may still be based, at least in part, on previous knowledge.

When faced with something like the diagnosis and subsequent treatment of an individual however, previous knowledge or experience may prove to be inadequate. A clinical orientation can be helpful by allowing us to organize our thoughts about, and observations of the client. Yet, this can also create blind spots. The following paper describes research on the topic of how aware and knowledgeable mental health professionals are of medical disorders that can masquerade as psychological disorders. There is a growing awareness that such disorders are fairly common and that the mind and body cannot be easily separated either diagnostically or in treatment. Since therapists do not usually receive any type of medical training or understand medical terminology, it may be argued that they can be excused
from such knowledge when dealing with their clientele. A related argument is that such masquerades are rare and if they do occur they are rarely passed over by medically trained practitioners such as psychiatrists or other medical doctors or medically trained personnel. And lastly, it may be argued that such medically based knowledge, disseminated to psychotherapists, would only open a Pandora's box of malpractice insurance and legal complications for those therapists. All of these arguments may seem valid, but as one progresses through the literature on the topic such arguments one is left with the distinct feeling that there may be a defect in typical psychotherapy practice and training as it stands today. As will be shown in the following literature review, medical masquerades are not rare (10%), medically oriented professionals don't always discern even obvious signs of physical disorder, and even the most superficial knowledge of common medical disorders that present with psychiatric symptoms may serve patients in the mental health setting a great deal.

The literature in the topic of medical disorders that masquerade with psychological symptoms is in three domains. The first is on the incidence of medical disorders that masquerade as psychological disorders. The second is on the role of the psychiatrist and general medical practitioner. The third is about the various
medical illnesses that can and do often present with psychological disturbance. After the review of the literature, there is a description of the methodology that was used in the present research, results and a discussion of the results.

Incidence of Medical Masquerades Research Literature

As early as 1951, Tissenbaum, Harter, and Friedman stated that out of 395 patients with documented organic brain disease, 53 or 13% had been previously diagnosed with psychological reactions such as hysteria, schizophrenia, hypocondriasis, psychopathic personality disorder, obsessive compulsive disorder, or anxiety disorder. On the average these individuals had been treated for 4 years for these symptoms prior to the correct diagnosis. Waggoner and Bagchi (1954) cite previous literature that reports 40% to 100% of those individuals with brain tumor show some mental symptoms at one stage or other in the development of the tumor. They stress the importance of practitioners being "brain tumor conscious" when dealing with their clientele. In this same vein, Remington and Rubert (1962) did an archival study of all patients discharged from a Syracuse psychiatric facility over a 30 year period. Of those with the diagnosis of "psychosis due to brain tumor", there were 34 cases. Only 10 of the cases however were
diagnosed on admission, the others were diagnosed and treated for functional psychiatric disorders. The correct diagnosis became apparent only after the person had been hospitalized and clear cut sensorimotor symptoms were apparent.

Herridge (1960), discovered that out of 209 consecutive admissions to a psychiatric unit 21% of the cases were found to have a medical disorder contributing to or causing the presenting psychiatric symptoms. Davies (1965) found an associated medical diagnosis in 1/4 to 1/2 of all admissions seen at a psychiatric hospital. In 1968 Maguire and Granville-Grossman stated that out of 67 patients seen in that mental health facility, about 33% were diagnosed with physical illness. The subjects were chosen at random from incoming patients and were not previously suspected of having a physical illness. Koranyi (1977) found, over a three year period, 28 fatalities in a sample of 2,070 psychiatric outpatients. This was reportedly twice the rate of death in the general population. Koranyi stated that at least four and possibly five of these deaths were judged to have been avoidable by proper medical intervention. He also said that the rate of physical illness in these outpatients was more than 80%, one third of which were inadequately diagnosed by the referring physician. A year later, Hall, Popkin, Devaul, Failace, and Stickney (1978) found that
approximately 46% of 658 psychiatric outpatients had medical diseases contributing to psychological symptoms. Hall, et al. also state that about 9% had an organic disorder that fully accounted for the presenting problem, and once properly diagnosed and treated the psychological symptoms cleared.

In a followup to his 1977 study, Koranyi (1979) found that 18% of the 2090 outpatients he sampled were experiencing psychiatric symptoms directly attributable to (i.e. caused by) organic disease. Hall, in 1980, states that 46% of the psychiatric inpatients he sampled had a medical illness that directly caused or exacerbated the psychiatric symptoms. He also added that there were an additional 34% who were diagnosed as having a previously undiagnosed physical condition not ostensibly connected with the psychiatric illness. Therefore 80% of the patients had a physical illness. Muecke and Krueger (1981), in a study to determine the frequency of previously undiagnosed physical ailments in an outpatient mental health clinic, discovered that 20.4% of these patients had some medical problem that had gone previously undiagnosed. Yet they stated unequivocally that in no case did they see a physical illness that appeared to be entirely responsible for the psychiatric illness. Conversely, in an article on family practitioners that treated patients with psychiatric disorders, 56.6% of
those being seen had psychiatric disorders that either resulted from or contributed to a co-existing physical illness (Orleans, George, Houpt, & Brodie, 1985). When asked to report which physical illnesses were most often associated with psychiatric disorders the physicians most frequently noted chronic pain, gastrointestinal disorders, ill defined symptoms, (such as those associated with early multiple sclerosis) and other life threatening illness.

In each of these research studies, a thorough physical exam of the patient was highly recommended, along with simple laboratory tests to rule out suspected physical disorder before a psychiatric diagnosis was settled on the individual. As will be seen in the next section, a medical or physical examination of a psychiatric outpatient (and in some cases inpatient) is by no means routine, nor is the patient who has been "medically cleared" by a referring physician guaranteed to be free of a masquerading disorder. This is especially likely to happen if the patient has had a prior psychiatric diagnosis.

Taylor (1982) concludes that roughly 10%, which in his opinion is a conservative estimate, of those individuals seen in a regular outpatient setting have a medical disorder masquerading as a mental disorder. This figure is likely to mean that for the average clinician, there is a high probability he/she will see many
masquerades over his/her career.

The Role of the Physician

A typical assumption by a nonmedically trained therapist in psychiatric cases might be that the psychiatrist or referring physician should be able to rule out possible organic causes of psychiatric disorders. Yet in several recent articles, there is evidence that psychiatrists and other physicians do not always identify medical masquerades (Weissberg, 1979). Along with this concern, there is also the problem of psychiatrists either not being required to do a medical rotation, therefore failing to gain experience with a medically ill population or, on the other end of training, a failure to practice acquired medical skills once they complete a residency placement. It is often easy for a psychiatrist to let the skill to perform a physical exam become rusty.

As early as 1972, Engel, a professor of Psychiatry and Medicine at the University of Rochester School of Medicine and Dentistry, voiced his concerns over the then lowering of standards in training and research on the psychological aspects of medical disorders. He called this type of decision by some medical schools as fatal both figuratively and literally. Elder stated that the individual who holds an M.D. degree and undertakes the care of the sick must be qualified to
approach the patient in an holistic manner regardless of his/her specialty. Johnson (1973), in a study on the psychiatrists role in three outpatient departments in Manchester, found that referring physicians, when they referred at all, wanted an emotional or psychological evaluation of the patient in the majority of cases. Johnson states that between one third to one half of the general practitioners surveyed used the out-patient units as a source of primary care or advice, in treatment, without first treating or examining through medical tests, those patients being referred. These practitioners were the initiators of the referral in 51% on the cases. Among the other sources of referrals were social workers, and family members as well as the patients themselves. In a related commentary, Ludwig (1976), stated that it is time psychiatrists got back to their medical roots. The psychiatric physician has the responsibility to: 1) differentially diagnose among functional psychiatric, neuropsychiatric, or medical-psychiatric disorders, 2) have knowledge of and base diagnosis on specific symptoms, laboratory tests, and the history of the condition, including prognosis, 3) have the choice of therapeutic setting, 4) the selection of the therapy milieu, and 5) pose specific recommendations for the type of psychotherapy. Such a broad base of knowledge is admittedly not easy to come by or stay current with busy
day to day practice:

In a textbook on psychiatry (Hollender & Wells, 1975) medical assessment in psychiatric practice was discussed. After stating the controversy over medical evaluation by the psychiatrist and the alarming erosion of medical skills, the authors state "that it is clear at the outset that the medical status of every patient should be considered". The medical evaluation is said to have three objectives, 1) the detection of underlying, and perhaps unsuspected organic pathology that might be primarily responsible for the psychiatric symptoms, 2) an understanding of a known disease as a factor in a psychiatric disability, and 3) a knowledge of somatic symptomatology reflecting primarily psychological rather than organic origin. The examination can be done by the psychiatrist him/herself or by another qualified physician. Some guidelines for a thorough examination will be discussed below.

Given the increased "medicalization" of psychiatry through advances in biological psychiatry, psychopharmacology and psychosomatics, Oken and Fink (1976) comment on how often the psychiatrist in an outpatient setting is the primary or only physician for a given client. He/she often provides the initial and ongoing general medical care as well as psychiatric care. General psychiatrists are viewed as serving an important
role in primary care. It is startling therefore to find that in a survey published a year later by McIntyre and Romano (1977), that most psychiatrists, approximately two-thirds of those surveyed, do not routinely physically examine their patients. Results showed that of those psychiatrists who do a routine exam, 94% of these examinations were seen as useful, with rarely a negative effect on the therapeutic relationship between client and doctor, even though the negative effect on the therapeutic relationship is often cited as the reason such exams are not performed. It is also notable that thirty-two percent of the psychiatrists surveyed stated a felt lack of competence as another reason for not performing a physical exam altogether. Others surveyed delegated this responsibility to another physician.

Patterson (1978) obtained much the same results from his survey of 98 psychiatrists finishing their residency in the years between 1965 and 1974. None of these physicians routinely performed a physical exam on a patient, 69% replied they never performed a physical exam and only 17% routinely sought an exam for the patient on admission to the hospital. In his discussion, Patterson blamed this disuse of medical skills on the possibility that many psychiatrists may feel routine exams: 1) are only needed in the inpatient setting, 2) can be performed more efficiently by another physician, and 3) that physical
signs associated with the "functional" disorders are often seen as minimal or otherwise inconsequential. In light of the above findings, Anderson (1980) stressed the importance of diagnosis of physical illness that first manifest with signs such as disturbance in mood, thinking and behavior. In order to do this, he strongly advocated a physical examination as a routine part of the intake procedure. The emphasis of such a procedure would, of course, depend on the illness and the circumstances of the patient. Anderson stressed that psychiatrists must be confident, and remain competent in medical skills and their capacity to recognize medical illness coexisting with, or causing disturbances in thinking, feeling, and behavior. Routine medical workups and examinations would only help in this endeavor.

In a related area, Weissberg (1979), in his article on medical emergencies where the term "medically clear" is often decided on before referring to the psychiatric unit, states that this term can be misleading to the inexperienced or naive clinician. The term may sound legitimate and precise but is not always what it may appear and can be applied in at least three situations when the patient is referred to a psychiatric service: 1) when it is thought that no medical illness is present, 2) when a medical illness is present but not thought to be the primary cause of the patient's symptoms, and 3) when
thought that the medical illness that was present is no longer in need of medical treatment. Although the term "medically clear" has an authoritative ring and implies exhaustive examination of the patient, neither is necessarily the case, which can offer false assurance to the next professional, likely to be a psychiatrist or other mental health clinician. In at least some cases the term medically clear has been applied prematurely, either to the difficult or odd patient, or to someone previously diagnosed with a psychiatric illness and that patient is then passed straight on the psychiatric service.

To say that psychiatric disorders are readily and often detected by medically trained personnel is not the case either. There is a growing amount of literature stating just the opposite. Although estimates are that upwards of 60% of the total population affected by a mental disorder have had contact with general medical professionals during any given year, (Regier, Goldberg, & Taube, 1978), only about 60% are identified and treated. Identification again seems to be the problem. Goldberg and Blackwell (1970), found that although 30% of those patients seen were later discovered to have some diagnosable psychiatric disturbance only about one-third were recognised by the general practitioner as displaying a mental disorder. Jencks (1985) states that although many persons presenting with mental disorder or distress
were treated for such, most did not receive a mental diagnosis. It would seem therefore that the recognition rate for such disorders is at least double the rate of diagnosis of mental disorders. Kessler, Burns, Shapiro, Tischler, George, Hough, Bodison, and Miller, (1987), found the prevalence of medical patients with psychiatric disorders to be between 18 and 26 percent. Affective disorders were seen as more prevalent among females, and substance abuse disorders more prevalent among males. Recognition and diagnosis of mental disorders by primary health care providers was studied by Borus, Howes, Devins, Roseberg, and Livingston (1988). Of those patients seen in general practice, recognition of mental disorder occurred in about one-third of the patients who had a diagnosable mental disorder. Along with the above research there is the research on recognition of specific mental illness in the general medical population by M.D.s. This includes but is not exclusive to the diagnosis of depression (Cavanaugh, Clark, & Gibbons; 1983, Rodin & Voshart; 1986) and the diagnosis of anxiety and depression in a health care clinic (Vonkorff, Shapiro, Burke, Teitlebaum, Skinner, German, Turner, Klein, & Burns; 1985).

Along with the increasing failure of psychiatrists to perform physical examinations in the outpatient or private practice setting, (Anderson, 1980; McIntyre & Romano
1977), there has been a concomitant drop in psychiatric involvement altogether in community mental health settings Berlin, Kales, Humphrey & Kales 1981; Faulkner & Eaton 1979; Winslow, 1979). Berlinet et al. (1981) state that during the period between 1970 and 1977 the proportion of psychiatrists in all community mental health centers across the country fell from 36% to 5.8%. Psychiatrists therefore are spread thinner among the population being served. The purpose of this trend is presumably to cut costs to these community based mental health facilities, yet doing so can promote the belief that those therapists left have skills equivalent to those of the psychiatrist (Fink & Weinstein, 1979). Such cost cutting may be necessary but the cost to the patient in losing what medical coverage they were afforded by the psychiatrist may be great.

As can be seen by the above literature, the role of the psychiatrist in the mental health system as it stands today seems to be diminishing. This is due to necessary cost cutting and also the trend for practical medical skills to be eroded by disuse. Since medical coverage in community mental health centers and perhaps inpatient and private practice as well, seems to be decreasing, it may fall on the nonmedically trained therapist to be aware of those medical disorders that can masquerade as psychological disorders.
Conditions that can masquerade as "functional" psychological disorders

Jefferson and Marshall (1981), discuss three topics: 1) the neuropsychiatric features of several disorders, 2) the neuropsychiatric effects of medications, and 3) the effects of psychotropic medications and medical disorders. Taylor (1982) wrote a similar book entitled "Mind or Body; Distinguishing Psychological from Organic Disorders", which is a guide for the nonmedical clinician in practice. Both of these books detail several common medical masquerades that can be seen at the inpatient or outpatient clinic or in the emergency room setting as functional psychological disorders. Each book also discusses representative psychiatric symptoms such as anxiety, mania, depression, and psychosis. The question should always be what medical illness could account for such symptoms, and can it be ruled out before a psychiatric diagnosis is fixed on the individual?

For example, a complaint of anxiety or excess nervousness should be further defined with regard to both psychiatric and somatic symptoms (Jefferson & Marshall 1981). A thorough medical and psychiatric history should be taken as well as a drug history. Greden (1974) states that caffeineism can produce symptoms indistinguishable from anxiety disorder. Coffee intake, (over 250 mg or 2 to 3 cups) as well as many over the counter drugs, (e.g.
analgesics) and other xanthines such as cocoa or cola drinks, can produce caffeineism.

A few of the medical disorders that can masquerade as anxiety disorder on presentation are hyperthyroidism, hypothyroidism, hyperventilation, and mitral valve prolapse. Hyperthyroid patients have hyperdynamic peripheral circulation which tends to cause the individual to have warm, moist palms as opposed to the cold clammy palms of a patient with primary anxiety. They also tend to have extremely fine and silky hair, bulging eyes, heat sensitivity, and a fine tremor. Individuals can also exhibit velvety textured skin and frequent defecation as physical symptoms of this disorder.

Hyperventilation can occur as a manifestation of primary anxiety disorder but may also occur secondarily to a variety of organic disorders that produce respiratory acidosis, an increase in the acidity of the breath.

The last example of an anxiety disorder masquerade is mitral valve prolapse, which has often been mistaken for an anxiety disorder and has been associated specifically with panic attacks. Mitral valve prolapse is a disorder of the mitral valve of the heart and is reported to effect about 6% of otherwise healthy individuals (Jefferson & Marshal, 1981). Principal features of the disorder that suggest an organic origin are intermittent sharp chest pain, usually short in duration, not associated with
physical exertion or emotion, along with anxiety and palpitations.

Another category of disorders is the affective disorders, mania, and depression. Manic behavior can be caused by amphetamine overuse or abuse, which is easily misdiagnosed. Parkinson's disease, a movement disorder, affecting the basal ganglia of the brain, is commonly treated by the medication L-dopa. This drug, although an effective treatment for this disease, has the common side effect of causing manic behavior, including euphoria, hyperactive behavior, and exaggerated self-confidence.

Another affective disorder, much more common than mania is depression. Depression's major symptom is a disturbance in mood that significantly affects the life of the individual. Approximately 50% of North Americans experience a depression at one time or another in their lifetime (Galliand & Simpson 1976). The term is applied rather loosely at times to individuals experiencing anything from the "blues" to suicidal or psychotic depression. Yet clinical identification of the DSM III type of criteria for depression, does not resolve the question of etiology. The overall context of the depression, including other symptoms, must be considered.

For example, certain physical illnesses or problems are preceded by depressive symptoms prior to the emergence of any organic symptoms. Illnesses that have been
associated with depressive symptoms include endocrinopathies (e.g. disorders of the thyroid and parathyroid) and malignancies (e.g. cancer of the pancreas or other abdominal cancer, Jefferson & Marshall 1981).

Patients in the early stages of hyperparathyroidism (hypercalcemia), experience minor personality changes, depressed mood, and may become apathetic. The affective changes and personality disturbances can develop slowly over months or years. Although somatic complaints linked to depression would not be cause for suspicion of an underlying physical disorder, other symptoms such as thirst occurring in conjunction with the insidiously developing personality change and the depression are helpful clues to hyperparathyroidism (Peterson 1968).

Hypothyroidism is the result of insufficient production of thyroid hormone. Early clinical features include cold intolerance, constipation, and fatigue. Later symptoms include slowing of intellectual functioning, and motor activity. Appetite lessens although there may be a concomitant weight gain, also there may be hair loss, dry coarse hair, muscle aches and the voice may become hoarse and deeper. Late signs include a flat affect, large tongue, pale rough and doughy skin along with preorbital puffiness (Jefferson & Marshall 1981). It can be seen, that many of the symptoms of hypothyroidism could be mistaken for classic depressive
symptoms such as the slowing of intellectual capacity, appetite loss, fatigue, slowing of motor activity, and flat affect. Taken alone these features could be mistaken for primary depression. In fact depressive affect is mentioned in nearly all descriptions of hypothyroid patients when assessed by standard psychological tests (Jain 1972).

Pancreatic carcinoma represents about 4% of all malignancies in the general population and about 12% in all diabetics. It is roughly twice as common in males with the highest incidence in the 60 to 70 year age range (Gullick 1959). Neuropsychiatric features of the disease are depression with crying spells, insomnia and anxiety. Forty-six percent of those patients with pancreatic cancer will first present with psychiatric symptoms. In general this depression is mild or moderate noted often as a "loss of ambition", which early in the course of the disease lacks other vegetative signs (Jefferson & Marshall 1981). Common clinical features of this type of carcinoma are severe weight loss (20 - 40 pounds in a two month period), usually accompanied by weakness, jaundice, and common to most cases pain in the abdominal or lower back area. Since psychiatric symptoms precede somatic ones in this disease by a considerable amount of time, clinicians seeing such patients need to be aware of the signs of possible carcinoma. Patients who are 50 - 70 years of age,
(usually) male, who lack a psychiatric history or external causal factors, present with an uncharacteristic depressive complex, describing that "something is wrong", severe weight loss, and have abdominal or lower back pain are suspect for pancreatic carcinoma.

Drug or drug withdrawal induced depressions are likely to occur in persons who are either genetically predisposed, have had a prior depressive illness or, are elderly (Whitlock & Evens 1978). Although there are over 200 drugs that have been linked to depressive symptoms, certain classes of drugs, such as barbiturates, antipsychotics, antihypertensives, and some oral contraceptives are strongly linked to depression in certain patients.

Barbiturates, are sedative hypnotics and have depressant effects on the central nervous system. Antipsychotic agents such as thorazine or haloperidol, can also cause symptoms that suggest depression such as drowsiness, constipation, weight gain, and decreased sexual ability.

Antihypertensive drugs such as methyldopa, clonidine, pargyline (an MAOI), and especially reserpine can cause mild to severe and possibly psychotic depression in some patients receiving the drug. Methyldopa may cause side effects of lassitude, drowsiness, weakness, nightmares, impaired cognitive functioning and sexual dysfunction.
Reserpine induced depression is a well defined phenomenon (Goodwin, Ebert, & Bunney 1972) and has been described as a syndrome analogous to endogenous depression.

Finally, depression or dysphoric mood effects are often described by women taking some types of oral contraceptives. The physiologic cause remains unclear. Several authors have found that women with a past history of depression in relatives or themselves are more likely to become depressed with the use of oral contraceptives (Lewis & Hoghugh 1969). The incidence of depressive reactions while on an oral contraceptive ranges between 6 to 10% (Glick 1967, Moos 1968a). There is also evidence (Lewis & Hoghugh, 1969), that there is a trend toward more severe and lengthening periods of depression the longer the woman is on the medication.

Another set of symptoms is broadly discussed in the literature under the term psychosis. Though the psychosis of schizophrenia is the form most commonly known, it is not the only form, as psychotic episodes frequently arise from organic disorders. Taylor (1982) suggests the following when confronted with a patient manifesting psychotic symptoms: "in the absence of a well established history of functional psychosis, any case of psychotic behavior should be strongly suspected of organicity".

In a 1967 article, Wahl, Golden, Liston, Rimer, Rose,
Soghor, and Solomon discuss toxic and functional psychosis. In the article there is a table on the differential diagnosis between functional and organic psychosis, which is reproduced in appendix A. In the discussion of differential diagnosis several features of the patient are reviewed: age, premorbid stress, other general symptoms, affect, awareness, insomnia and restlessness, fears, ideas of reference and delusions, and other signs. Although organic psychosis can occur at any age, older people are more susceptible. Also, onset of organic psychosis is often (but not always) acute whereas the functional disorder is often slow and insidious in nature. Premorbid stress in an organic psychosis implies organic stress but there may be psychological stress as well.

The general symptoms discussed that are common to both organic and functional psychosis are weakness, fatigue, and hypochondriasis. Other signs such as grimacing, and mannerisms, may occur in either case and do not discriminate between the two disorders. The affect of the patient may be labile and exaggerated in either case. Affect that is blunted or inappropriate is more often seen in the organic case, though also seen in the functional patient.

The level of awareness also discriminates fairly well between the two disorders. The organic patient
usually has a fluctuating level of awareness between lucidity and confusion. The functional psychotic, on the other hand, ordinarily portrays a fairly constant level of awareness. The organic patient's problems are usually more pronounced at night than during the daytime. This is not necessarily true for the individual with functional psychosis.

Insomnia and restlessness can be early signs of delirium, and may occur in either organic or functional psychosis, but the nature of the disorientation can serve to discriminate between the two conditions. The organic psychotic individual often mistakes unfamiliar objects for familiar ones in an effort to orient him/herself to the environment (e.g. a nurse is mistaken as a spouse). On the other hand, functional psychotics are disoriented in a different way. Their mistakes tend to be very bizarre and outlandish (e.g. they may think they are on the moon instead of in the hospital). Another source of possible diagnostic discrimination is in the nature of the fears being described by the individual. Whereas organic patients may see themselves among a number of people who are in danger or threatened, functional psychotics usually see only themselves as threatened.

In either condition, the patient may present with ideas of reference and delusions and neither symptom tends to discriminate between the two disorders.
Hallucinations, however, do tend to be discriminative, but the evidence for this is now under dispute. According to Wahl, et al. (1967) hallucinations in the organic condition are more likely to be visual, tactile, or olfactory, though there may be auditory hallucinations too. The functional psychotic primarily reports auditory hallucinations. When more closely studied, this last guideline proves not to be as useful in the discrimination of the proper diagnosis. Goodwin, Alderson and Rosenthal (1971), in their research, reported visual hallucinations in 72% of those individuals with affective disorders and chronic schizophrenia, and 89% with organic brain syndrome. Auditory hallucinations can also occur in nonschizophrenic alcoholics, and can be induced in "normal" individuals by intake of sufficient amounts of amphetamines (Jefferson & Marshall 1981). When hallucinations occur in association with disturbance of attention, disordered memory and orientation, reduced wakefulness or insomnia, and increased or decreased psychomotor activity it is suggestive of delerium. This is especially true when there is evidence of a specific organic factor related to the disturbance (Wahl, et al., 1967).

Other signs that occur more frequently in organic psychosis are impairment of orientation to time, place, and person. Intellectual impairment is also more frequent
in the organic disorder. The amount of insight available to the individual is often a good distinguishing point; the organic psychotically disordered individual often realizes that something is wrong with the way his/her mind is functioning. Memory is almost always affected in the organic individual (recent more than remote). Lastly, Wahl, et al., (1967) state that illusions are more likely in the organic patient than the functional psychotic.

In summary then, psychosis should always be considered organic in origin until proven otherwise. It is important that the mental health worker be familiar with symptoms that make the individual suspect for such a disorder. Although this is not an exhaustive discussion of the many medical conditions that can manifest as psychological disorders, the above discussion was designed to make the reader cognizant of a few such disorders and the likely misdiagnosis. Among the many other disorders that can be discussed are dementia in the elderly, treatable alternative diagnoses (Fox, Topel, & Hucman 1970), and reversible dementia (Cummings, Benson, & LoVerme 1980). There are also articles on the psychiatric components of seizure disorders. Among these articles are descriptions of the effects of barbiturates on epileptic children (Ferrari, Barabas, & Mathews 1983), and the psychiatric symptoms of seizure disorders (Lawall 1976; Murray 1985). Case studies abound as well as articles
regarding covert drug use in psychiatric patients and consequent detection by the clinician (Hall, Popkin, Stickney & Gardner 1978; Sramek, Werner, Baumgartner, Tallos, Ahrens, Heiser, & Blahd 1985). There are a plethora of articles on medication effects on cognitive and emotional functioning. Also of interest is a recent article by Weddington (1980) reporting on four patients who were seriously medically ill but considered their complaints psychogenic in origin.

Guidelines for Assessment

Several articles have been written to guide the medically trained clinician in the critical assessment of the individual. Even though these guidelines are geared to medical personnel, they are of use to the nonmedically trained interviewer.

Hollender and Wells (1975) recommend listening carefully to the nature of the individual's complaints and using them as a guide for selecting who should undergo a complete medical exam and who need not. Complaints are divided into three areas: 1) the body, or somatic complaints, 2) the mind, or emotional complaints, and 3) social interactions. If the symptoms involve the body, such as headache, impotence, or palpitations, a medical examination is required to differentiate possible somatic from psychological causes of the disorder. An examination is also recommended for psychiatric complaints such as
depression, anxiety, hallucinations, or delusions. In the case of complaints of long standing difficulties with teachers, employers, parents, etc., where the difficulty is social in nature, these authors indicate that there is no indication for a medical examination. Huapaya (1975), wrote that the clinician need keep in mind the influence of emotional factors in the elaboration of physical symptoms. He lists situations in which both psychogenic and somatogenic factors should be investigated. Among these are the somatic complaints accompanying depression, hypochondriacal preoccupations, somatic delusions, or hallucinations. Psychologic symptoms suggestive of a toxic or organic condition, psychologic signs of epilepsy, and psychologic symptoms of drug intoxication or abuse are also symptoms that indicate medical investigation. In both articles, constant awareness of the interplay between body and mind in the evolution of symptoms is the most important recommendation given to the practitioner, along with the sensitivity not to conclude that "it is all in the patient's mind".

Shulman (1977), suggests that the greatest source of error is due to the law of parsimony which subsumes all of the patient's complaints under one diagnosis. The author offers a guide for practice. A thorough history is important and should be concerned with the present illness as well as the past biography and should include
significant personal events, past physical illness and past psychiatric illness. This summary can alert the clinician to complaints that are not part of the established pattern. Hidden information is a crucial tool for accurate diagnosis.

The second topic in the guide is the assessment of complaints versus disabilities, in other words, how does the symptom interfere with the everyday life of the individual. The answer to the question why the person chose to come in now may reveal interpersonal crises, problems in living or a bid for secondary gain. Descriptions of the onset of change and course may reveal that the individual has been ill for years, previous evaluations perhaps proving inadequate. A review of the reliability of all information given to the clinician is called for when the diagnosis remains in doubt.

Robbins and Stern (1976), in a chapter on the assessment of psychiatric emergencies, recommend an interview with the patient and relatives, if available, and a mental status exam which includes assessment of: appearance, attitudes, and behavior, disorders of thought, disorders of perception, mood and affect, sensorium, intellect, insight and judgment.

Taylor (1982), authored a set of guidelines aimed specifically at the non-medical clinician to build a special awareness of medical masquerades. A table taken
from the text and reproduced in appendix A gives the critical assessment Taylor (1982) recommends. As can be seen, there are several points to the assessment of an incoming patient that are potentially available to the clinician even without medical training. Again, the history of the individual is important. Age is also a factor, as is drug use of all types and past illness either mental or physical. Presumptive evidence which are strongly correlated with organic disorder would be a report of a head injury, change in headache pattern, visual problems, speech or gait problems, brain syndrome core deficits, and changes in consciousness. Taylor (1982) discusses each of these signs in detail. Although none alone indicates definite organicity, their presence should sensitize the clinician to the possibility of an organic disorder. The patient who reports no history of similar symptoms or reports new symptoms should be further examined even when a past psychiatric history is present. The emergence of new symptoms should suggest something more is going on with the individual. No readily identifiable cause should also make the clinician uneasy about diagnosis of a functional disorder. Organic mental disorders often appear out of nowhere. The older the person is, the more susceptible they are to organic disorders. Several factors contribute to this increased risk such as deterioration of organ function, increased
sensitivity to drugs, and the incidence of accidental falls may also increase. Individuals with chronic diseases may be treated with medications that cause adverse side effects resembling psychiatric symptoms (e.g. reserpine given for hypertension can produce depressive symptoms). Even without such treatment, a history of chronic disease should alert the clinician that further investigation and alternative explanations may be in order. Psychoactive chemicals (including illicit, prescribed, over the counter, and common household "drugs" such as caffeine) can create emotional effects from the pleasurable to the bizarre. A thorough assessment of drug intake and knowledge of possible interactions can help fix the correct diagnosis and treatment for the individual.

Presumptive evidence for organic brain dysfunction has been reviewed before. According to Taylor (1982), these signs should be accepted as indicative of organicity until proven otherwise. Assessment of such signs, again, is part of the initial interview. The interviewer should look for signs of recent head trauma (broken teeth, dried blood around the ear, facial lacerations) as well as routinely inquiring about head injury. A recent change in a person’s characteristic pattern of headaches should be thoroughly evaluated in that such changes can be a symptom of serious brain diseases, particularly infectious brain tumors, and subdural hematoma. Any visual problem of
recent onset should suggest the possibility of an organic disorder. Speech deficits, that is, problems in the mechanical production of speech sounds and problems with correct word usage can indicate an organic disorder. Body movements should be observed when the patient is entering and leaving the office. Abnormal movement or ataxia is suggestive of organic disorder.

Although Taylor does not suggest that the nonmedical clinician be held responsible for attaining vital signs, such as heart rate, blood pressure, respiration, and temperature, he does suggest that the non-medical clinician be able to make use of this information when it is available. In some cases abnormal vital signs may be the only clue to an organic disorder presenting with psychological symptoms. Appendix A contains the average vital sign values. To be familiar with such signs is well within the realm of the nonmedical clinician.

Consciousness indicates a person's state of general awareness of those things occurring in the immediate present. There are three changes that suggest the presence of organic dysfunction. They are excessive somnolence, lapses in consciousness, and loss of consciousness.

Finally Taylor recommends three simple pencil and paper tests for those cases where the organic masquerade is unclear or evidence from the interview is equivocal for
either functional or organic disorder. The three tests are: 1) write a sentence, 2) draw a clock, and 3) copy a three dimensional figure. The first test requires complex brain - eye - muscle interaction. It is particularly sensitive to global brain dysfunction. The second test requires that the individual handle spacial relationships, simple number sequences, the mechanical recording of numbers and the representation of time. The test may prove highly problematic for persons with organic brain disease. The third test examines spacial appreciation. This simple constructional test rests on the integrity of various associative areas in the brain, and is a global test for brain disfunction. When any of these tests are positive the clinician should consider this to be presumptive evidence of an organic problem. When negative however, they cannot be construed as definitive evidence against organicity (Taylor 1982).

Purpose of the Present Research

Accurate assessment is the responsibility of the clinician who contacts the patient. That clinician will probably be a nonmedically trained psychotherapist. This research has two purposes: 1) to ascertain whether clinicians in outpatient settings are aware that medical disorders can masquerade as psychological disorders, and 2) whether these clinicians can distinguish among sometimes confusing psychological presentations and
possible medical masquerades.

Three groups of clinicians were compared in this study: non-psychiatrically trained medical doctors, psychiatrists, and nonmedically trained psychotherapists. Generally it was hypothesized that the three groups would perform differentially on three types of clinical vignettes dependent on the type of training and experience received. These clinical vignettes are described more fully in the methods section. It was assumed that non-psychiatrically trained medical doctors would be better able to distinguish medical masquerades than either mental health psychotherapist or psychiatrist groups. It was also assumed that the psychiatrist group would perform significantly better than the mental health psychotherapist group on the medical masquerade vignettes. The two groups of mental health clinicians were expected to do significantly better on the psychological disorder vignettes than the medical doctors. The psychiatrist and mental health psychotherapist groups were expected to perform about the same on the psychiatric vignettes. Of the three subject groups, only the psychiatrists were expected to do well on the somatoform disorder vignettes since these are disorders that appear with multiple and confusing symptoms both medical and psychological in nature. Descriptive and demographic data were also collected on each group and reported in the results. It
was hypothesised that some demographic variables, such as specific training, area of practice, or years of experience might be useful in explaining why each group performed as they did on the clinical vignettes.

This research is thought to have some impact on the type of training clinical personnel receive, either in graduate school or in the work setting to better provide for and protect the client. Such training would assure quality in diagnosis and treatment of patients in a wide variety of settings.
SUBJECTS

There were three groups of subjects divided according to professional degree. These groups were psychiatrists (PSYS), nonmedically oriented mental health professionals (MHPS), non-mental health M.D.s (MEDS). These subjects were drawn from the Tucson, AZ and Seattle, WA areas. There were 30 subjects in each group making a total of 90 subjects. Questionnaires were mailed or given to each subject. A total of 266 questionnaires were distributed. Mailed questionnaires went to professionals listed in the yellow pages of the Tucson area phonebook. Other questionnaires were given to subjects at a southern Arizona mental health center, and at a Seattle area hospital. There were no significant differences in demographic information from the subjects collected from these three sources. Return rates will be discussed later in this section.

Demographic data collected on each subject included age, sex, number of years in school, number of years in practice, and degree. Demographic data for the three subject groups can be seen in table 1.

The psychiatrist group were an average of 51 years old, had an average of 7 years in school post bachelors, and had an average of 19 years in practice. The mental health
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Table 1 Continued

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psychotherapists were on average a little younger, averaging 40 years old, with an average of 5 years in graduate school, and about 10 years in practice. This group also consisted of 22 Ph.D. level psychotherapists and 8 masters level psychotherapists. Two-thirds of the psychotherapist respondents reported a background in biological or neurologically based science. The medical doctors were on average 47 years old, their post bachelors degree was obtained in an average of 6.3 years, and their amount of time in practice was on average 14 years. Total females in the sample was low, 17 out of 90, the majority of them in the mental health psychotherapist group. Most of the psychiatrists surveyed were in private practice (23), while a majority of the mental health psychotherapists were in practice at a public mental health center, HMO, or hospital base practice (20).

APPARATUS

A questionnaire packet to be given to each subject. This was made up of two parts, a questionnaire consisting of nine clinical vignettes which are reproduced in Appendix B, and a demographic survey page, also reproduced in Appendix B. Although the clinical vignettes were the same for all subjects, the page asking for demographic information was slightly different for each professional category. There was a version for the psychiatrist group, a version for the mental health
psychotherapist group, and a version for the medical doctor group. Each version is basically the same, however there are one or more questions that were deemed reasonable to ask only one or two of the subject groups. For example only mental health psychotherapists were asked if they had a background in a biological science, and only the two groups with an M.D. degree were asked how often they perform a physical exam on a patient.

The vignettes were written by the investigator with the use of the Diagnostic and Statistical Manual III criteria for mental disorders and other sources (Lahey & Ciminero 1980, Taylor, 1982). These vignettes do not represent actual clinical cases. There are three vignettes for which a probable medical disorder is the likely diagnosis, three vignettes for which a somatoform disorder is the most likely diagnosis, and three vignettes for which a probable psychiatric disorder is the most likely diagnosis. With each vignette there were 9 diagnostic choices available. These choices included 1) Probable manic-depressive disorder, 2) Probable psychotic disorder, 3) Probable schizophrenic disorder, 4) Probable depressive disorder, 5) Probable organic brain disorder, 6) Probable anxiety disorder, 7) Probable medical disorder 8) Probable substance abuse disorder, and 9) Probable somatoform disorder. After the data were collected alternative number 2) Probable psychotic disorder, and
alternative number 3) Probable schizophrenic disorder were collapsed into one alternative choice and scored as the same answer. This was done because the two were so close in symptomatology as to be essentially the same choice, at least for the purposes of this study. This left eight alternative answers for each vignette.

A list of diagnostic criteria for each vignette in the questionnaire can be seen in figure 1. Validity of the somatoform and other psychiatric vignette items can be seen by a comparison between the clinical presentation symptomatology and the DSM III (American Psychiatric Association, 1980) criteria for somatoform and psychiatric disorders represented in the case vignettes. As can be seen in figure 1, the diagnostic criteria are listed for each questionnaire item in order, along with the correct somatoform, other psychiatric, or medical diagnosis. Validity of the "medical masquerade" vignettes is more difficult to establish than for the other vignettes. Medical vignette items number 1, 5, and 8 are also listed in figure 1 along with the physical symptoms that would make these case presentations suspect as possible medical masquerades. These three medical vignettes were generated using two sources (Jefferson & Marshall, 1983; and Taylor 1982). Both sources deal with medical masquerades and the authors concur on the medical diagnosis underlying the
Figure 1

DIAGNOSTIC CRITERIA FOR THE CASE VIGNETTES

1. Mitrovalve Prolapse
   - not connected with stress
   - no undue anxiety
   - family history of disorder
   - females more likely
   - shakiness
   - palpitations
   - chest pain
   - feeling of impending doom

2. Somatization disorder
   - multiple M.D.s
   - several years of symptoms
   - multiple symptoms
   - belief in illness

3. Depression
   - loss of interest
   - poor hygiene
   - loss of weight
   - psychomotor retardation
   - dysphoric mood
   - some psychotic features

4. Psychogenic pain disorder
   - severe & prolonged pain predominant
   - pain inconsistent with medical findings
   - psychosocial stressors or factors
   - pain associated to an unpleasant setting or circumstance
   - not due to another mental disorder

5. Depressive reaction to oral contraceptives
   - past history of depression
   - insomnia
   - psychomotor retardation
   - suicidal ideation
   - fatigue
   - atypical length of depression
   - loss of interest

6. Psychotic
   - delusions
   - agitation
   - flat affect
   - deterioration of function
   - work & hygiene poor
   - isolation
Figure 1 continued

7. Alcoholism
   continuous course
   pattern of pathological use
   blackouts
   impairment of work / social
   detox symptoms

8. Hypothyroid
   cold sensitive
   hair loss
   course hair
   muscle aches
   deep voice
   flat affect
   orbital puffiness
   fatigue
   wieght change
   delusions
   past history
   somatic complaints

9. Hypochondriasis
   multiple M.D.s
   exagerated interpretation of physical symptoms
   unrealistic fear of having a disease
   preoccupation with physical signs or sensations
   not due to other mental disorder
typical psychiatric symptom portrayal of these disorders.

Questionnaire items were ordered in the following manner, the most interesting and topic related, case vignettes, were first, and were given in the same order for each subject. Demographic and survey questions came next on a separate page, and lastly a page for optional comments from the subject in regards to the study.

PROCEDURE

The questionnaire was either given directly to the subject or mailed to the subject. For those that were mailed, Dillman's (1978) procedure for mail surveys was followed. This included multiple mailings, personalized communication, specific times for followup mailings, use of university letterhead for the cover letter, and provision of a return self addressed stamped envelope for the completed questionnaire. According to Dillman (1978) such procedures used in research by him have recieved a return rate of as much as 80 - 90% in a general population sample. Given the special population used in this research the return rate was expected to be and was much lower, between 33 - 39%. The variables that seem to influence return rate are multiple mailings, personalized communication, and specific times for followup mailings.

The cover letter explained the purpose of the study, why each respondent was important, who should complete the questionnaire, and guaranteed confidentiality in
conjunction with an identification system used to facilitate followup participation. Exactly one week after the first questionnaire packet was given to subjects a followup reminder was sent to all recipients of the questionnaire. Three weeks after the original mailing a second letter was sent to everyone who had not returned the questionnaire. This letter urged participation and information on how to request a second copy of the questionnaire if needed.

Psychiatrist participant return rate was 33%, mental health psychotherapist return rate was 39%, and medical doctor return rate was 31%. There was not a significant difference between the return rates of the three subject groups ($X = 1, 2df$ nonsignificant $p < .05$). Those subjects that were given the questionnaire in person were not significantly better at returning the packet than those subjects that were mailed the questionnaire.

**ANALYSIS**

An overall correct score was given to each subject defined by the number of vignettes correctly diagnosed. This overall score was based on three vignette set scores, 1) number correct for somatoform disorder vignettes, ranging from 0 - 3, 2) number correct for psychiatric disorder vignettes, ranging from 0 - 3, and 3) number correct for medical disorder vignettes, ranging from 0 - 3. Averages of the three scores were compared between and
within the three subject groups using two-way and one-way analysis of variance (ANOVA). The Tukey's (a) test, an a priori post hoc statistic allowing comparisons of pairwise mean scores when ANOVA comparisons are significant was used on the score data both within and between subject groups. The Tukey's (a) test is a conservative statistic providing a lower probability of alpha error than other tests designed for post hoc comparisons. Comparisons of demographic data were performed using the t test statistic among the three subject groups on the variables: 1) percent of patients given a physical exam, and 2) percent of patients referred to a psychiatrist. Within group comparisons using the Chi square statistic were performed on the variables of 1) sex, 2) degree (Ph.D., M.A.), 3) science background, 4) whether psychiatrists received a medical rotation during residency or training, and 5) theoretical orientation for psychiatrists and psychotherapists. A between group chi square analysis was performed on return rate. One-way between group ANOVA's were performed on demographic variables, 1) age, 2) years in school, 3) years in practice, and 3) estimate of percentage of patients seen in practice who have a medical disorder masquerading as a psychiatric disorder. Finally a series of standard multiple regression statistics were performed on the data using group demographic variables as predictor variables
in the equation and the three set vignette scores as the dependent variables in each equation. This analysis was performed to determine if demographic data alone might account for the differences in the score data obtained from the three subject groups.
CHAPTER 3

RESULTS

There were no significant differences in return rates for the three groups ($X = 1, 2$ df). Demographic comparisons between the three groups show that for this sample at least psychiatrists were significantly older than the mental health psychotherapist group and M.D.'s were also significantly older on average than the mental health psychotherapists ($F(2,87) = 12.1, p < .005$). Psychiatrists also had significantly longer post bachelors training than the mental health psychotherapists ($F(2,87) = 12.4$), and significantly more years in practice than this group as well ($F(2,87) = 7.5$). Lastly the psychiatrist group average estimate of medical disorders that can masquerade with psychological symptoms was significantly higher than the mental health psychotherapist group ($F(2,87) = 5.7$). Group statistics for age, years in school, years in practice, type of practice in and sex of subject can be seen in table 2 along with respective $F$ statistics and Tukey's (a) test pairwise comparisons of means between groups.

Table 2 shows the number of males and females in each subject group. There were significantly more males than females overall in the subject sample ($X = 9.7, 2$ df).

Medical doctors reportedly perform a physical exam an
### Table 2: Comparisons of Demographic Data Between Three Groups

PSYS = Psychiatrist group  
MHPS = Mental Health Psychotherapist group  
MEDS = Medical Doctor group

<table>
<thead>
<tr>
<th></th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGE</td>
<td>51.3</td>
<td>40.2</td>
<td>47.5</td>
</tr>
<tr>
<td>SD</td>
<td>10.8</td>
<td>4.1</td>
<td>10.0</td>
</tr>
<tr>
<td>**F(2,87) = 12.1 **</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YEARS IN SCHOOL</td>
<td>7.4</td>
<td>5.0</td>
<td>6.3</td>
</tr>
<tr>
<td>SD</td>
<td>1.8</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>**F(2,87) = 12.48 **</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YEARS IN PRACTICE</td>
<td>19.3</td>
<td>9.9</td>
<td>14.2</td>
</tr>
<tr>
<td>SD</td>
<td>10.4</td>
<td>5.6</td>
<td>11.0</td>
</tr>
<tr>
<td>**F(2,87) = 7.5 **</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .005

**N**

<table>
<thead>
<tr>
<th></th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>28</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td><strong>X² = 9.7, 2 d.f.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .008

**TYPE OF PRACTICE**

<table>
<thead>
<tr>
<th></th>
<th>PSYS</th>
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<th>MEDS</th>
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<tbody>
<tr>
<td>Private</td>
<td>23</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>HMO</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Hospital</td>
<td>5</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>MHC</td>
<td>2</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td><strong>X² = 44.3, 3 d.f.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2 continued

Tukey's (a) Test Comparisons On Significantly
Different Demographic Data

<table>
<thead>
<tr>
<th>AGE:</th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
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<tbody>
<tr>
<td>PSYS</td>
<td>-</td>
<td>11.07*</td>
<td>3.73</td>
</tr>
<tr>
<td>MHPS</td>
<td>-</td>
<td>-</td>
<td>7.33*</td>
</tr>
<tr>
<td>MEDS</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Critical Value = 5.65 * p < .05

<table>
<thead>
<tr>
<th>YEARS IN SCHOOL</th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYS</td>
<td>-</td>
<td>2.4*</td>
<td>1.13</td>
</tr>
<tr>
<td>MHPS</td>
<td>-</td>
<td>-</td>
<td>1.27*</td>
</tr>
<tr>
<td>MEDS</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Critical Value = 1.19 * p < .05

<table>
<thead>
<tr>
<th>YEARS IN PRACTICE</th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYS</td>
<td>-</td>
<td>9.33*</td>
<td>5.13</td>
</tr>
<tr>
<td>MHPS</td>
<td>-</td>
<td>-</td>
<td>4.2</td>
</tr>
<tr>
<td>MEDS</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Critical Value = 5.94 * p < .05
average of 88.5% of the time while psychiatrists perform a physical exam an average of 15% of the time. It is also of note that half of those psychiatrists surveyed do not perform physical exams at all, while none of the M.D.s surveyed failed to perform exams at least part of the time ($t(58) = -10.77$). As also can be seen in table 3, mental health psychotherapists refer an average of 31.3% of those patients seen to a psychiatrist for consultation, while other M.D.s refer and average of 3.3% of those patients seen to a psychiatrist ($t(58) = 4.36$).

Within group comparisons are shown in table 4. There were significantly more Ph.D.s in the mental health psychotherapist group than M.A. or M.S.W. level therapists ($X = 6.54, 1$ df). There was not a significant difference in the number of mental health psychotherapists who had received a biological or other science background versus those who did not have such a background. There were a significantly larger number of psychiatrists who had received an exclusively medical rotation during residency than those who had not ($X = 8.2, 1$ df).

There were 6 main hypotheses tested for in the remaining analysis of the data. Of these only one was wholly confirmed and two partially confirmed. The three clinician groups, psychiatrists, mental health psychotherapists, and medical doctors performed differently on the three types of clinical vignettes. A
### Table 3: Theoretical Orientation and Estimate Data Comparisons

<table>
<thead>
<tr>
<th>THEORETICAL ORIENTATION</th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychodynamic</td>
<td>10</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Eclectic</td>
<td>20</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>Cognitive/Behavioral</td>
<td>0</td>
<td>8</td>
<td>-</td>
</tr>
</tbody>
</table>

\[ X^2 = 10.0, \ 2 \text{ d.f.} \]

* \( p < .0067 \)

---

#### Mean Percentages

<table>
<thead>
<tr>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>% REFFERAL TO ANOTHER M.D.</td>
<td>21.0</td>
<td>12.9</td>
</tr>
<tr>
<td>SD</td>
<td>25.3</td>
<td>21.5</td>
</tr>
</tbody>
</table>

\[ F(2, 87) = 3.7 \]

| % REFFERAL TO PSYCHIATRIST | -   | 31.3 | 3.3  |
| SD                          | 34.9| 3.3  |

\[ t(58) = 4.36 ** \]

| % REFFERAL TO ANOTHER MHP   | -   | 8.2  | 11.6 |
| SD                          | 6.4 | 23.4 |

\[ t(58) = -.76 \]

| % PHYSICAL EXAM             | 15.0| -    | 88.5 |
| SD                          | 29.6| 22.8 |

\[ t(58) = -10.8*** \]

| % RETURN RATE               | 33  | 39   | 31   |
| X^2 = 1, 2 \text{ d.f.}    |     |

---

<table>
<thead>
<tr>
<th>OPINION OF % MEDICAL MASQUERADE</th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>8.3</td>
<td>5.6</td>
<td>8.3</td>
</tr>
</tbody>
</table>

\[ F(2, 87) = 5.7 * \]

* \( p < .005 \)

** \( p < .0001 \)

*** \( p < .0005 \)

---

SD = Standard deviation

- = no data collected for this variable in this group
Table 4  Within Group Comparisons on Demographic Data of Training and Area of Specialty

(MHPS only)

<table>
<thead>
<tr>
<th>SCIENCE BACKGROUND</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
<td>10</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 3.3, 1 \text{ d.f.} \]

<table>
<thead>
<tr>
<th>AREA SCIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
</tr>
<tr>
<td>Neuropsychology</td>
</tr>
<tr>
<td>Endocrinology</td>
</tr>
<tr>
<td>Psychopharmacology</td>
</tr>
<tr>
<td>Biopsychology</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 16.25, 4 \text{ d.f.} \]  

<table>
<thead>
<tr>
<th>TYPE OF DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D.</td>
</tr>
<tr>
<td>M.A. or M.S.W.</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 6.54, 1 \text{ d.f.} \]  

(PSYS only)

<table>
<thead>
<tr>
<th>MEDICAL ROTATION DURING TRAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 8.2, 1 \text{ d.f.} \]

* \( p < .01 \)

** \( p < .05 \)

(MEDS only)

<table>
<thead>
<tr>
<th>AREA OF SPECIALTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine</td>
</tr>
<tr>
<td>Ob/Gyn</td>
</tr>
<tr>
<td>Surgery</td>
</tr>
<tr>
<td>Family Practice</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 13.1, 3 \text{ d.f.} \]
two way ANOVA performed on the three set vignette scores by the three subject groups revealed a difference between group scores (F(2,87) = 4.0). Each group scored differently on the vignettes given (F(2,87) = 161.8). There was also a significant interaction effect (F(4,174) = 6.8), the medical doctors scored the same on the somatoform and medical disorder vignettes. The group average scores by set vignette can be seen in table 5 along with the ANOVA table. A graph representative of the mean score for each group by set vignette can be seen in figure 2.

The hypothesis that the nonpsychiatrically trained medical doctors would be better able to distinguish medical masquerades than either of the other groups was partially confirmed. A Tukey's (a) test on the mean medical vignette scores for the three groups, seen in table 6, revealed that there was no significant difference among the 3 groups although there was a near significant difference between medical doctors over psychiatrists (observed difference = -.4, critical value = +.46). A less conservative comparison (t test) confirmed the hypothesis that medical doctors outperform psychiatrists on the medical vignettes (t(58) = -2.52). The t test comparisons can be seen in table 7. What may be of more note is that the mental health psychotherapists did not score
Figure 2  Mean Score Correct for Professional Group by Vignette Set

* = Probable Medical Diagnosis Set Vignette Score
# = Probable Somatoform Diagnosis Set Vignette Score
$ = Probable Psychiatric Diagnosis Set Vignette Score
### Table 5: Two Way ANOVA on Group by Vignette Set

#### Score Means

<table>
<thead>
<tr>
<th>VIGNETTE SET</th>
<th>Somatoform</th>
<th>Medical</th>
<th>Psychiatric</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYS</td>
<td>2.033</td>
<td>.967</td>
<td>2.867</td>
</tr>
<tr>
<td>MHPS</td>
<td>2.333</td>
<td>1.133</td>
<td>2.833</td>
</tr>
<tr>
<td>MEDS</td>
<td>1.533</td>
<td>1.367</td>
<td>2.700</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>2.4963</td>
<td>2</td>
<td>1.248</td>
<td>4.0</td>
<td>.02 *</td>
</tr>
<tr>
<td>Error</td>
<td>26.9889</td>
<td>87</td>
<td>.310</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vignette</td>
<td>121.696</td>
<td>2</td>
<td>60.848</td>
<td>161.8</td>
<td>.001 *</td>
</tr>
<tr>
<td>Interaction</td>
<td>10.1926</td>
<td>4</td>
<td>2.548</td>
<td>6.8</td>
<td>.005 *</td>
</tr>
<tr>
<td>Error</td>
<td>65.444</td>
<td>174</td>
<td>.376</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant Difference
<table>
<thead>
<tr>
<th>Group Means</th>
<th>SOMATOFORM</th>
<th>MEDICAL</th>
<th>PSYCHIATRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYS</td>
<td>2.033</td>
<td>.967</td>
<td>2.867</td>
</tr>
<tr>
<td>MHPS</td>
<td>2.333</td>
<td>1.133</td>
<td>2.833</td>
</tr>
<tr>
<td>MEDS</td>
<td>1.533</td>
<td>1.367</td>
<td>2.700</td>
</tr>
</tbody>
</table>

**SOMATOFORM VIGNETTES**

<table>
<thead>
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<th></th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYS</td>
<td>-</td>
<td>-.3</td>
<td>.5*</td>
</tr>
<tr>
<td>MHPS</td>
<td>-</td>
<td>-</td>
<td>.8*</td>
</tr>
<tr>
<td>MEDS</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

Critical Value = .4668 * p < .05

**MEDICAL VIGNETTES**

<table>
<thead>
<tr>
<th></th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYS</td>
<td>-</td>
<td>-.166</td>
<td>-.4</td>
</tr>
<tr>
<td>MHPS</td>
<td>-</td>
<td>-</td>
<td>-.234</td>
</tr>
<tr>
<td>MEDS</td>
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</table>

**PSYCHIATRIC VIGNETTES**

<table>
<thead>
<tr>
<th></th>
<th>PSYS</th>
<th>MHPS</th>
<th>MEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYS</td>
<td>-</td>
<td>.034</td>
<td>.167</td>
</tr>
<tr>
<td>MHPS</td>
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<td>-</td>
<td>.133</td>
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<tr>
<td>MEDS</td>
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<td>-</td>
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</table>

* Significant difference between group means.
Table 7  
Pairwise t-test Comparisons

COMPARISONS BETWEEN PSYS & MHPS FOR VIGNETTES

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>t-value</th>
<th>D.F.</th>
<th>2 tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOMATOFORM</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYS</td>
<td>2.033</td>
<td>-2.11</td>
<td>58</td>
<td>.04 *</td>
</tr>
<tr>
<td>MHPS</td>
<td>2.333</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MEDICAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYS</td>
<td>.9667</td>
<td>-1.15</td>
<td>58</td>
<td>.257</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>PSYCHIARTIC</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYS</td>
<td>2.8667</td>
<td>.36</td>
<td>58</td>
<td>.723</td>
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<tr>
<td>MHPS</td>
<td>2.8333</td>
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</tbody>
</table>

* Significant difference between means

COMPARISONS BETWEEN PSYS & MEDS FOR VIGNETTES

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>t-value</th>
<th>D.F.</th>
<th>2 tail probability</th>
</tr>
</thead>
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<tr>
<td><strong>SOMATOFORM</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYS</td>
<td>2.033</td>
<td>2.67</td>
<td>58</td>
<td>.010 *</td>
</tr>
<tr>
<td>MEDS</td>
<td>1.533</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MEDICAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYS</td>
<td>.9667</td>
<td>-2.52</td>
<td>58</td>
<td>.015 *</td>
</tr>
<tr>
<td>MEDS</td>
<td>1.3667</td>
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<td></td>
<td></td>
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<tr>
<td><strong>PSYCHIARTIC</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYS</td>
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<td>.192</td>
</tr>
<tr>
<td>MEDS</td>
<td>2.700</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

* Significant difference between means.
Table 7 continued

COMPARISONS BETWEEN MHPS & MEDS FOR VIGNETTES

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>t value</th>
<th>D.F.</th>
<th>2 tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOMATOFORM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MHPS</td>
<td>2.333</td>
<td>4.04</td>
<td>58</td>
<td>.0005 *</td>
</tr>
<tr>
<td>MEDS</td>
<td>1.533</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MEDICAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MHPS</td>
<td>1.133</td>
<td>-1.34</td>
<td>58</td>
<td>.186</td>
</tr>
<tr>
<td>MEDS</td>
<td>1.3667</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PSYCHIATRIC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MHPS</td>
<td>2.8333</td>
<td>1.03</td>
<td>58</td>
<td>.306</td>
</tr>
<tr>
<td>MEDS</td>
<td>2.7000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant difference between means.
significantly lower than the medical doctors and actually scored somewhat higher than the psychiatrist group on the medical vignettes. This result is counter to the proposed hypothesis that psychiatrists would out perform psychotherapists on these vignettes.

Another hypothesis that was partially confirmed by the individual comparisons, was that psychiatrists and mental health psychotherapists would perform about the same in the diagnosis of psychiatric vignettes. The medical doctors also performed well on these vignettes, in fact there was no difference among these three groups on the psychiatric vignette score.

Of the three subject groups, only the psychiatrists were expected to perform well on the somatoform disorder vignettes. Although the Tukey's (a) test revealed this group outscored the medical doctor group on the somatoform disorder vignettes, the psychotherapist group did just as well as the psychiatrist group counter to the hypothesis. Further, the psychotherapist group outscored the medical doctor group on these vignettes as well.

Both psychiatrist and mental health psychotherapist groups performed best on psychiatric vignettes, significantly lower on somatoform disorder vignettes, and lowest on medical disorder vignettes. For individual ANOVA and pairwise Tukey's (a) test comparison summary tables see table 8.
Table 8  
One-way ANOVA PSYCHIATRIST Group by Vignette Mean Scores

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean</th>
<th>F</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vignettes</td>
<td>54.4222</td>
<td>2</td>
<td>27.211</td>
<td>144.6</td>
<td>.001*</td>
</tr>
<tr>
<td>Error</td>
<td>10.9111</td>
<td>58</td>
<td>.188</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant difference within group for vignette scores

Tukey’s (a) test pairwise comparison of means

Score means: Somatoform  Medical  Psychiatric
2.033  .967  2.867

SOMATOFORM  MEDICAL  PSYCHIATRIC

SOMATOFORM  -  1.066*  .864*  Critical Value = .3459
MEDICAL    -  -  1.9*  * p < .05
PSYCHIATRIC -  -  -

* Each mean significantly different from the others in this group.
Table 8 continued

One way ANOVA MENTAL HEALTH PSYCHOTHERAPIST Group by Set Vignette Score

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean</th>
<th>F</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vignettes</td>
<td>45.8</td>
<td>2</td>
<td>22.9</td>
<td>70.4</td>
<td>.001*</td>
</tr>
<tr>
<td>Error</td>
<td>18.867</td>
<td>58</td>
<td></td>
<td>.325</td>
<td></td>
</tr>
</tbody>
</table>

* Significant difference within group for vignette scores.

Tukey's (a) test pairwise comparison of means

Score Means: Somatoform Medical Psychiatric

<table>
<thead>
<tr>
<th>SOMATOFORM</th>
<th>MEDICAL</th>
<th>PSYCHIATRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.333</td>
<td>1.133</td>
<td>2.833</td>
</tr>
</tbody>
</table>

SOMATOFORM - 1.97* .503* Critical Value = .455
MEDICAL - - 1.7* * p < .05
PSYCHIATRIC - - -

* Each mean significantly different from the others in this group.
Table 8 continued One-way ANOVA MEDICAL DOCTOR Group by Vignette Mean Scores

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vignettes</td>
<td>31.667</td>
<td>2</td>
<td>15.833</td>
<td>25.7</td>
<td>.001*</td>
</tr>
<tr>
<td>Error</td>
<td>35.667</td>
<td>58</td>
<td>.615</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant difference within group for vignette scores

Tukey's (a) test pairwise comparison of means

Score means: Somatoform Medical Psychiatric
1.533 1.367 2.700

<table>
<thead>
<tr>
<th>SOMATOFORM</th>
<th>MEDICAL</th>
<th>PSYCHIATRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOMATOFORM</td>
<td>-</td>
<td>.166</td>
</tr>
<tr>
<td>MEDICAL</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* Psychiatric score significantly different than either medical or somatoform disorder.
As can be seen in the table, the psychiatrist group average score by three set vignettes one way ANOVA revealed a difference ($F(2,29) = 144.6$). Mental health psychotherapist group average score by three set vignettes one way ANOVA revealed a difference ($F(2,29) = 70.4$). Finally, as with the other two subject groups, the medical doctor group performed best on the psychiatric vignettes, but scored about the same on the somatoform and medical vignettes ($F(2,29) = 25.7$).

The last set of analyses performed on the data were three sets of standard multiple regressions. Demographic data collected on the sample groups were used as the possible predictor variables to predict set vignette scores for the three groups. Significant individual standard correlations between the demographic variables for each group can be seen in table 9. As can be seen from this table, variables such as age and years in practice are highly correlated for each group, older subjects with more years in practice.

Significant correlations for psychiatrists were years in school and score on somatoform disorder vignettes (.37), the more years in school, the more likely the subject would be to score correctly on the somatoform disorder vignettes. Age and type of practice was also correlated, (-.44), older subjects more likely being in private practice. Significant correlations for mental
Table 9  
Simple Correlations Between Variables in Subject Groups

<table>
<thead>
<tr>
<th>Psychiatrist</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age - Years in Practice</td>
<td>.86 *</td>
<td></td>
</tr>
<tr>
<td>Age - Type of Practice</td>
<td>-.44 *</td>
<td></td>
</tr>
<tr>
<td>Years in School</td>
<td>37 *</td>
<td></td>
</tr>
<tr>
<td>Probable Somatoform Disorder Score</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mental Health Psychotherapist</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age - Years in Practice</td>
<td>.62 *</td>
<td></td>
</tr>
<tr>
<td>Age - Probable Medical Disorder Score</td>
<td>.38 *</td>
<td></td>
</tr>
<tr>
<td>Age - Probable Psychiatric Disorder Score</td>
<td>-.51 *</td>
<td></td>
</tr>
<tr>
<td>Sex - Probable Psychiatric Diagnosis Score</td>
<td>.40 *</td>
<td></td>
</tr>
<tr>
<td>Area of Degree Level Degree</td>
<td>.96 *</td>
<td></td>
</tr>
<tr>
<td>Area of Probable Medical Degree Diagnosis Score</td>
<td>.36 *</td>
<td></td>
</tr>
<tr>
<td>Sex - Years in Practice</td>
<td>.40 *</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical Doctor</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age - Years in School</td>
<td>.44 *</td>
<td></td>
</tr>
<tr>
<td>Age - Years in Practice</td>
<td>.93 *</td>
<td></td>
</tr>
<tr>
<td>Age - Type of Practice</td>
<td>-.39 *</td>
<td></td>
</tr>
<tr>
<td>Sex - Years in School</td>
<td>.56 *</td>
<td></td>
</tr>
<tr>
<td>Years in Type of Practice</td>
<td>-.39 *</td>
<td></td>
</tr>
<tr>
<td>Area of Probable Psychiatric Specialty Diagnosis Score</td>
<td>-.46 *</td>
<td></td>
</tr>
</tbody>
</table>

* Significant Correlation (28 d.f., p < .05)
health psychotherapists were degree level and area of degree (.96), Ph.D.s in the sample more likely being in clinical psychology, and M.A. level therapists more likely in social work. Other significant correlations were between score on medical diagnosis vignettes and age (.38), older clinicians likely to score better on medical vignettes. The score on psychiatric disorder and age were correlated, (-.51), older clinicians scoring lower on psychiatric vignettes. Sex and years in practice, (.40), males generally having more years in practice than females. Sex and psychiatric diagnosis score was also correlated, (.40), males likely to score better on psychiatric vignettes. Lastly score on medical disorder and degree area (.36), the higher the degree the better the score.

Significant correlations for the M.D. group were for years in school and age (.44), the older the clinician, the more the reported years in school. Also years in school and years in practice (.44), were correlated, the longer in school the more likely the longer in practice. Age and type of practice were correlated, (-.39), the older, the greater the likelihood of being in private practice. Sex and years in school, (.56) the males reporting more years in school. Years in practice and type of practice were also correlated, (-.39), those with more years in practice more likely in private practice.
Lastly, score on the psychiatric vignettes and degree area (-.46) those M.D.s in specialized practice scoring lower than those in more generalized practice.

Standard multiple regression analyses performed on demographic data for the psychiatrist subject group revealed no significant relationships between the demographic predictor variables and the three vignette set scores for this group.

The standard multiple regression analyses performed using demographic data as predictor variables for the mental health psychotherapist group revealed two significant multiple regressions. For the probable medical diagnosis score the variable of level of degree, either Ph.D. or M.A., M.S.W., was the only significant contributor to the equation for this score. This variable accounted for only 9% of the variance in the medical diagnosis score for this group. This result would seem to indicate that the higher the graduate degree for this group the greater the likelihood of obtaining a better score on the probable medical diagnosis vignettes. The second significant multiple regression analysis for the mental health psychotherapist group was for score 3, the probable psychiatric diagnosis set vignette score. The age of the mental health psychotherapist accounted for approximately 16 percent of the variance for the probable psychiatric diagnosis score, and was the most significant contributor to the regression equation. Again it was the younger clinician who scored better in these vignettes.
Although it is unclear why younger subjects in this group scored better it may be that the familiarity with the diagnostic criteria and experience is what is important in the ability to score better on these vignettes. Table 10 shows the significant multiple regression analysis results for the mental health psychotherapist group, along with the calculated confidence limits for the significant predictor variables.

The last set of standard multiple regression analyses were performed using demographic data from the medical doctor group as the possible predictor variables and the three set vignette scores. There was one significant multiple regression for this group. The demographic variables of age and years in practice, again significantly correlated with each other, were significant contributors to the multiple regression equation for score 2, probable medical diagnosis score. Calculation of the confidence limits for these variables however, negated the feasibility of their use as variables in a regression equation as predictor variables for the score on probable medical diagnosis vignettes. According to Tabachnick and Fidell (1983), the useful significance of independent variables in the multiple regression equation can be determined by calculation of confidence limits. If these confidence limits include zero, one cannot reject the null hypothesis that the population regression coefficient is
### Table 10: Standard Multiple Regression
Demographic Variables on Score 2 (Medical Diagnosis)

#### Mental Health Psychotherapist Group

<table>
<thead>
<tr>
<th>Variables</th>
<th>Simple Correlations</th>
<th>B</th>
<th>( p )</th>
<th>( sr^2 ) (unique)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td>Score 2</td>
<td>.36</td>
<td>.699</td>
<td>.09</td>
</tr>
<tr>
<td>Years in School</td>
<td></td>
<td>.15</td>
<td>.605</td>
<td>.16</td>
</tr>
</tbody>
</table>

Intercept = -4.78

\[ R^2 = .60 \]

Adjusted \( R = .42 \)

Multiple \( R = .77 \)

* \( p < .01 \)

Confidence Limits Degree = .08 < Degree < 2.94

Confidence Limits School = -1.07 < School < 1.41

** Confidence Limits include 0

Variable not useful in the equation.

### Standard Multiple Regression
Demographic Variables on Score 3 (Psychiatric Diagnosis)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Simple Correlations</th>
<th>B</th>
<th>( p )</th>
<th>( sr^2 ) (unique)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Score 3</td>
<td>.40</td>
<td>.179</td>
<td>.1426</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-.51</td>
<td>-.498</td>
<td>.1564</td>
</tr>
</tbody>
</table>

Intercept = 4.367

\[ R^2 = .55 \]

Adjusted \( R = .35 \)

Multiple \( R = .74 \)

* \( p < .05 \)

Confidence Limits Sex = .084 < Sex < .814

Confidence Limits Age = -.885 < Age < -.111
zero. The standard multiple regression table for these results with the confidence limits can be seen in table 11.

Although it would make intuitive sense that at least some demographic variables, such as years in practice, degree area, and estimate of medical masquerades might account for the majority of the variance in the scores on the three sets of vignettes it is not born out through the standard multiple regression analyses performed on the data at hand.
Table 11  
Standard Multiple Regression  
Demographic Variables on Score 2 (Medical Diagnosis)

Medical Doctor Group

<table>
<thead>
<tr>
<th>Variables</th>
<th>Simple Correlations</th>
<th>B</th>
<th>B</th>
<th>sr² (unique)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Score 2</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>.22</td>
<td>.131</td>
<td>.307</td>
</tr>
<tr>
<td>Practice</td>
<td></td>
<td>-.01</td>
<td>-.1146</td>
<td>.293</td>
</tr>
</tbody>
</table>

Intercept = - 3.534

R² = .51  
Adjusted R = .35  
Multiple R = .71 *

* p < .05

Confidence Limits Age = -.498 < Age < .76 **
Confidence Limits Practice = -.715 < Practice < .485 **

** Confidence Limits include 0  
not useful variable in the equation.
This study of the awareness of health care professionals of medical disorders that masquerade with psychological symptoms revealed some noteworthy results. As stated earlier, the key to accurate assessment in the diagnostic process probably falls to the clinician who has the most contacts with the patient in the (mental) health care setting. As that clinician will likely be a nonmedically trained mental health professional it is an important training as well as quality assurance issue to ascertain whether such clinicians can distinguish between somatoform disorders, psychiatric disorders, and those disorders that are "medical masquerades".

There were two limitations to this study. One limitation is the low questionnaire return rate. Only one-third of the questionnaires were returned. This was the case inspite of the more aggressive tactics used as prescribed in the literature to try to achieve a greater return rate. Judging from the return rate itself along with the critical comments that accompanied some of the questionnaires, cost in practitioner time and effort would be a likely explanation for the low return rate. These clinicians simply may not have been inclined to give their free time to complete (yet another) questionnaire. The second limitation for the study is the case vignettes...
Although these case descriptions were hoped to be valid measures of the clinicians ability to distinguish between psychiatric, somatoform and medical disorders, they are only investigator generated descriptions and not actual cases. These cases cannot take the place of real patients attending an outpatient clinic, but are instead two dimensional portrayals of such patients. Although the argument for the face validity of the vignettes has already been made in a previous section of this paper, the patient descriptions are still a limitation to how the results can be generalized.

One supported hypothesis was that for somatoform disorder presentations, psychiatrists were better able to diagnose these disorders than were the non-psychiatrically trained medical doctors sampled. This result makes intuitive sense in that of these two groups the psychiatrist group probably holds the greater experience with these confusing multiple physical symptom yet psychiatrically based disorders and also this group would have greater familiarity with the diagnostic criteria used to determine diagnosis of these disorders. Counter to the proposed hypothesis however, mental health psychotherapists were just as accurate in their ability to diagnose such disorders as psychiatrists. This might be because of familiarity with diagnostic criteria, or that such multiple somatic complaints are a red flag to mental
health clinicians. Also notable is that the mental health psychotherapist group was accurate above the medical doctor group for these particular disorders. The medical doctors low score on these vignettes could be due to the nature of the clinical portrayal. Multiple somatic complaints of a vague nature along with this group's special training, naturally may point these clinicians into the direction of an organic disorder rather than somatoform disorder at first report. Whatever the reason, although it was not surprising that the psychiatrist group performed better that the medical doctors on these vignettes I was surprised to find the mental health psychotherapist group performed as well as the psychiatrist group and significantly above the medical doctors.

The psychiatrist group scored about the same as the mental health psychotherapists on the psychiatric vignettes. Again intuitively, these clinical descriptions would appear to be more familiar to these groups. What was not expected, however, was that the medical doctor group also performed well on these clinical portrayals, scoring no differently than either of the other two groups. Contrary to what previous research would suggest about this group's ability to diagnose psychiatric disorder, for these clinical vignettes at least, this group performed as well as those with more extensive
training in the area of psychiatry, or psychology.

Results dealing with medical vignettes are less clear cut than the results discussed thus far. Although the psychiatrist group was expected to be able to discern medical masquerades better than the mental health psychotherapist group this was not borne out in the results. These two groups were not significantly different from each other on these vignettes but there was a slight trend for the mental health psychotherapists to score better than the psychiatrist group on the medical vignettes. Also mental health psychotherapists did not score significantly lower than the medical doctor group although the trend was in this direction. This result is surprising in that, at least in this study, non-medically trained mental health psychotherapists are not only aware that medical masquerades exist but they are just as capable of discerning these masquerades as psychiatrists and other medical doctors given the presentations. Further, given the significant correlation between degree and score on the medical vignettes, it would seem that psychologists are the more accurate diagnosticians within the mental health psychotherapist group.

The hypothesis that medical doctors would perform significantly better than psychiatrists on the medical vignettes was in all probability borne out in the results. When the less conservative t statistic was used the above
The medical doctors were better able to discern the medical masquerades than their psychiatrically oriented counterparts in the psychiatrist group. However, using the more conservative Tukey's (a) test statistic, although being very close to significance (−.4 obtained, .46 critical value) these groups would seem to be nonsignificantly different. A conservative interpretation of these results is that there is a strong trend in the hypothesized direction; medical doctors are better able to discern medical masquerades than psychiatrists. More research would be valuable in this area especially since data also reveals that the majority of psychiatrists do not routinely perform a physical exam on patients, many may not receive a strictly medical rotation during training, and past research has revealed that patients may rely on psychiatrists for more medical attention than is routinely given in a busy practice.

Average scores for the 3 sets of clinical vignettes suggests that of the three subject groups, mental health psychotherapists were quite good diagnosticians for somatoform, psychiatric, and even the medical disorder vignettes. Although not significantly better than the psychiatrist group, these psychotherapists were also not significantly worse than the medical doctor group on the medical vignettes, suggesting that for these presentations there is awareness of medical disorders that masquerade
with psychiatric symptoms and to a certain extent the ability to discern these disorders as well.

The attempt to explain why these three subject groups answered as they did using demographic data and a series of standard multiple regressions was in general unsuccessful although some standard correlations were of interest and can be discussed further. For both M.D. groups; psychiatrists and medical doctors the more years spent in practice the more likely these subjects will be in private practice. On average as the medical doctor group becomes more specialized in practice the less likely they are to accurately discern psychiatric disorder in patient presentations. The mental health psychotherapists with more training (Ph.D.) seem more likely to discern medical masquerades than are individuals with less training. Also of curious note is that males in this group seem more likely to have longer time in practice. This could be due to the stress still put on females in various careers to take time out to have and raise families, therefore having less time and experience in practice overall.

Research in the area of "medical masquerades" lies naturally in the fields of psychiatry and medicine practice. However, such knowledge is important to the nonmedically trained psychotherapist clinician as well in order to raise the quality of treatment for the mental
health patient. The present research revealed that psychiatrists may not be as in touch with medical practice as could be hoped when a nonmedically trained therapist refers to him/her. This could be due to a lost feeling of confidence with medical/physical matters, or simply due to the lack of time to concentrate on any one patient. Medically oriented doctors are more likely to discern medical complications and underlying physical disorders but mental health therapists do not typically refer to these practitioners, relying instead on the doctor at hand, the psychiatrist.

Training of mental health psychotherapists in medical disorders that could account for psychological symptomology could be undertaken at many levels. Graduate school is the obvious starting point for such training. Classes in general abnormal, diagnostic issues, assessment, and interview technique should all incorporate a unit in medical masquerades. More specialized training and education in medical or health psychology could have more detailed units in differential diagnosis and clinical judgement of medical masquerades. Experience with such disorders in a health setting is also important.

Changes in policy towards training and post graduate experience in the area of medical masquerade, depends on national and regional professional organization attitudes on how important the issue is in the service to the
patient. At the level of the individual clinician it may depend on the awareness, prior experience with patients who have had underlying medical problems, and of course on the availability of workshops on the topic.

Policy toward and training issues for psychiatrists is more complicated. These clinicians, at least in mental health centers, are given limited time with the patient, and even in private practice these M.D.'s may not feel the need for whatever reasons to look at the possibility of medical complications for their patients. Policy towards the use of psychiatrist time in Mental Health Centers both in and outpatient, needs to be reviewed. Again service to the patient in treatment and the awareness and knowledge of medical masquerades is the important issue and just as important is the psychiatrist's ability to remain competent in medical skills.

To conclude, there is a general awareness in the health care professions that were sampled that medical disorders exist that can masquerade as psychiatric disorders. These disorders often present with a confusing mixture of psychological and somatic symptoms often not clearly diagnosable via the current psychiatric criteria. This study suggests that although further training in these types of disorders may be necessary to increase the quality of diagnosis and treatment of these individuals
which conservatively make up 10 percent of the population seen at in and outpatient facilities, clinicians seem to be able to discern such disorders to a certain extent.

Further research could be of three types, using the same three clinical health care professions. Videotaped presentations could be recorded and presented to subjects individually, diagnostic choices would be given after each presentation and the rational for diagnostic conclusions gathered as well as the general diagnosis. Further questionnaire research could be undertaken, as well. This type of research would have a lesser cost than the video presentations in both subject time and researcher expenses but participation and return rates are a methodological problem that might be avoided with the more expensive research. Payment of subjects is also an attractive possibility to assure greater participation in either mode of research. Whatever the mode further research takes in the area it seems important that it be undertaken and with special interest on how previous training and further training in the area of medical masquerades effects the ability of clinicians to discern such disorders.
APPENDIX A
Structural brain diseases associated with psychiatric symptoms:

**PSYCHOSIS**
- Huntington's disease
- Encephalitis
- Lupus erythematosus
- Tumor, granuloma, abcess
- Trauma
- Metachromatic leukodystrophy
- Wilson's disease
- Idiopathic cerebral ferrocalcinosis

**DEPRESSION**
- Subdural hematoma
- Tumor, granuloma, abcess
- Normal pressure hydrocephalus
- Lupus erythematosus
- Cerebral infarction
- Trauma
- Multiple sclerosis
- Arnold-Chiari malformation
- Huntington's disease
- Binswanger's disease

**MOVEMENT DISORDER**
- Huntington's disease
- Idiopathic cerebral ferrocalcinosis
- Wilson's disease
- Basal ganglia infarct
- Olivopontocerebellar atrophy
- Carbon monoxide, manganese poisoning
- Hallervorden-Spatz disease
- Tumor, granuloma
- Lupus erythematosus
- Multiple sclerosis

**DEMENTIA**
- Alzheimer's disease
- Pick's disease
- Multi-infarct dementia
- Normal pressure hydrocephalus
- Abcess
- Tumor
- Spongiform encephalopathy
- Lupus erythematosus
- Metachromatic leukodystrophy
- Kufs' disease
- Binswanger's disease
- Arnold-Chiari malformation
- Subdural hematoma
### Differential Diagnosis Between Functional and Organic Psychosis

<table>
<thead>
<tr>
<th></th>
<th>Organic</th>
<th>Functional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>any, older more susceptible</td>
<td>younger, puberty to 30's</td>
</tr>
<tr>
<td><strong>Premorbid personality</strong></td>
<td>any</td>
<td>schizoid, aloof</td>
</tr>
<tr>
<td><strong>Onset</strong></td>
<td>oftenacute</td>
<td>gradual, insidious</td>
</tr>
<tr>
<td><strong>Premorbid stress</strong></td>
<td>organic or psychiatric</td>
<td>psychiatric or organic</td>
</tr>
<tr>
<td><strong>Weakness</strong></td>
<td>rare</td>
<td>common</td>
</tr>
<tr>
<td>fatigue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hypochondriasis</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mannerisms</strong></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>grimmacing</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td><strong>Affect</strong></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>labile</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>blunted</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td><strong>Awareness level</strong></td>
<td>fluctuates</td>
<td>consistant</td>
</tr>
<tr>
<td><strong>Insomnia, restlessness,</strong></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td><strong>Disorientation</strong></td>
<td>unfamiliar for familiar</td>
<td>mistakes are bizarre</td>
</tr>
<tr>
<td><strong>Fears</strong></td>
<td>sees self and others in danger</td>
<td>alone in danger</td>
</tr>
<tr>
<td><strong>Ideas of reference</strong></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td><strong>Delusions</strong></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td><strong>Hallucinations</strong></td>
<td>visual, tactile olfactory</td>
<td>auditory</td>
</tr>
<tr>
<td><strong>Illusions</strong></td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td><strong>Perseveration</strong></td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td><strong>Orientation</strong></td>
<td>impaired</td>
<td>rarely impaired</td>
</tr>
<tr>
<td>Intellectual functions</td>
<td>usually impaired</td>
<td>rarely impaired</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Abstract, conceptual</td>
<td>impaired</td>
<td>usually impaired</td>
</tr>
<tr>
<td>Insight, awareness</td>
<td>usually present</td>
<td>absent</td>
</tr>
<tr>
<td>Memory</td>
<td>usually affected</td>
<td>usually intact</td>
</tr>
<tr>
<td></td>
<td>recent &gt; remote</td>
<td></td>
</tr>
<tr>
<td>Other evidence</td>
<td>present</td>
<td>usually absent</td>
</tr>
<tr>
<td>of organic, CNS disease or toxin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Manifestations of physical disease

symptoms  possible disease
Overall appearance  brain syndrome
dishevelment, gross errors in dress
Movement  Parkinson's, Huntington's, tardive dyskinesia
tremors, jerkiness, twitching, rigidity
disturbances in gait  intoxication, cerebellar disease, normal pressure hydrocephalus
Head  head trauma
cuts, abrasions, lumps, dried blood about the ear
Face  neurological conditions
asymmetries in movements
Eyes  hyperthyroidism, tumor of the orbit behind ear
bulging  myasthenia gravis, selective nerve dysfunction
drooping eyelids
deviations in pupil size  numerous drugs, stimulants, hallucinogens, anticholinergics
dilated
constricted  opiate drugs
non-alignment  dysfuction of one or more cranial nerve
Neck  thyroid enlargement, aneurism, cancer
protruding lumps
Skin  anemia, shock
color changes  liver disease, gallbladder, cancer of the pancreas, anemia
pallor
yellowing
<table>
<thead>
<tr>
<th>Condition</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>blue lips</td>
<td>inadequate oxygenation</td>
</tr>
<tr>
<td>butterfly rash (nose and face area)</td>
<td>autoimmune diseases</td>
</tr>
<tr>
<td>black and blue marks</td>
<td>trauma, blood disorders involving clotting deficiencies</td>
</tr>
<tr>
<td>lines of discoloration</td>
<td>IV drug use often found along the inner aspect of the arm</td>
</tr>
<tr>
<td>thickening</td>
<td>hypothyroidism</td>
</tr>
<tr>
<td>excessive perspiration</td>
<td>certain drugs, hypermetabolic conditions</td>
</tr>
<tr>
<td>Hair</td>
<td>hypothyroidism</td>
</tr>
<tr>
<td>extremely course, dry</td>
<td>hypothyroidism</td>
</tr>
<tr>
<td>extremely fine, silky</td>
<td>hyperthyroidism</td>
</tr>
</tbody>
</table>
Critical factors in assessment

When associated with psychiatric symptoms 
clues to organic mental disorder

1. no history of similar symptoms 
2. no readily identifiable cause 
3. age 55 or older 
4. coexistence of chronic disease 
5. excessive use of drugs 

presumptive evidence for organic mental disorder

6. brain syndrome (one or more core deficits) 
   - inattention 
   - disorientation 
   - recent memory impairment 
   - diminished reasoning 
   - sensory indiscrimination 

7. head injury 
8. change in headache pattern 
9. visual disturbances 
10. speech deficits 
11. abnormal body movements 
12. sustained deviations in vital signs 
13. changes in consciousness 
14. special tests (one or more positive) 
   - write a sentence 
   - draw a clock 
   - copy a three dimensional figure

Vital Sign Values

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<table>
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</thead>
<tbody>
<tr>
<td>heart rate</td>
<td>50-100/minute</td>
</tr>
<tr>
<td>blood pressure</td>
<td>90/50-----------160/95 systolic/</td>
</tr>
<tr>
<td>(oral)</td>
<td>96 F ------ 100 F</td>
</tr>
<tr>
<td>respiratory rate</td>
<td>6-20/minute</td>
</tr>
<tr>
<td>temperature</td>
<td>96 F ------ 100 F</td>
</tr>
</tbody>
</table>
APPENDIX B
DIAGNOSIS AND THE

HEALTH CARE PRACTITIONER

A SURVEY OF HEALTH CARE PRACTITIONERS

WITH VARYING YEARS OF EXPERIENCE

This survey was developed to assess the possible improvement in diagnostic ability a clinician may acquire as he/she gains experience in the field.

What follows are 9 short client presentations. Each of these paragraphs is followed by a list of possible general diagnoses.

Please choose the diagnosis that you feel is the most correct given the information in the presentation. Following the presentations, you will be asked to answer some simple questions about your career and training.

Thank you for your participation in this study of health practitioners.

Psychology Department, University of Arizona
Tucson, AZ. 85721
A young woman, 27, presented at the local mental health center complaining of periodic extreme anxiety. During these times she would experience palpitations, intermittent chest pain, shakiness, an overwhelming sense of impending doom along with a feeling that she would die from these symptoms. She reported that the symptoms were not related to stress or exercise. Between these attacks, she stated she feels no undue anxiety. Lastly, she reported that her sister suffers from these same attacks; and, that both have been seen by their family general practitioner. She referred her to this facility. Her mother, a somewhat overprotective woman, accompanied her to the interview and confirmed the woman's story and course of symptoms.

1. PROBABLE MANIC - DEPRESSIVE DISORDER
2. PROBABLE PSYCHOTIC DISORDER
3. PROBABLE SCHIZOPHRENIC DISORDER
4. PROBABLE DEPRESSIVE DISORDER
5. PROBABLE ORGANIC BRAIN DISORDER
6. PROBABLE ANXIETY DISORDER
7. PROBABLE MEDICAL DISORDER
8. PROBABLE SUBSTANCE ABUSE DISORDER
9. PROBABLE SOMATOFORM DISORDER
A 24 year old woman with a history of severe alcohol abuse was seen at an emergency room for what the police described as drunken behavior. Her speech was slurred and her gait was uncoordinated. She was also visibly malnourished, and somewhat disheveled. Upon questioning she reported that she had been in treatment at a private clinic and a member of AA, neither of which had helped her. She had recently lost another job because she was unable to keep to the prescribed hours. She was divorced 2 years ago; her husband having custody of the children. She did not know where they currently lived. After 24 hours in the hospital this woman developed a noticeable tremor, had no memory as to how she got to the hospital, and complained of feeling anxious, and wanted to check out immediately.

1. PROBABLE MANIC - DEPRESSIVE DISORDER
2. PROBABLE PSYCHOTIC DISORDER
3. PROBABLE SCHIZOPHRENIC DISORDER
4. PROBABLE DEPRESSIVE DISORDER
5. PROBABLE ORGANIC BRAIN DISORDER
6. PROBABLE ANXIETY DISORDER
7. PROBABLE MEDICAL DISORDER
8. PROBABLE SUBSTANCE ABUSE DISORDER
9. PROBABLE SOMATOFORM DISORDER
A 22 year old man was brought to a local mental health center by the police, complaining that the FBI was after him and were observing everything he said and did. The police were involved when he struck his boss, yelling that he wanted him "to call them off". He denied any drug use within the past four months but he had had a few drinks the night before with someone from his work place. At that time he talked about suspecting his boss "was in on it" for quite some time. During the interview he was agitated, continually looked around the room and had a somewhat flat affect. A report from his boss revealed a fall off in work performance over the last 6 months, observed aloofness from coworkers, and 2 recent reprimands over personal appearance. There were no overt signs of a head trauma and no evidence of drug involvement.

1. PROBABLE MANIC - DEPRESSIVE DISORDER
2. PROBABLE PSYCHOTIC DISORDER
3. PROBABLE SCHIZOPHRENIC DISORDER
4. PROBABLE DEPRESSIVE DISORDER
5. PROBABLE ORGANIC BRAIN DISORDER
6. PROBABLE ANXIETY DISORDER
7. PROBABLE MEDICAL DISORDER
8. PROBABLE SUBSTANCE ABUSE DISORDER
9. PROBABLE SOMATOFORM DISORDER
A 30 year old housewife was seen at a local mental health clinic for what she described as depression. For eight months she had felt down to the extent of, at times, considering suicide. She would awaken early in the morning, unable to fall back to sleep and then would feel listless for the rest of the day. She stated that whether she had the energy or not she never felt like doing anything anymore and that this was hurting her marriage and family life. It was revealed during the interview that her mother had tried to commit suicide about 10 years prior and since then had had periodic though less severe bouts of depression. The woman, in question, had had one previous significant bout with depression shortly after the birth of her second child which was an unplanned pregnancy. This prompted her to go on "the pill" which she had been taking for about 10 months. No other drugs were being taken and she had no recent loss or precipitating stress. After much discussion among the family it was decided that she be brought to see a counselor.

1. PROBABLE MANIC - DEPRESSIVE DISORDER
2. PROBABLE PSYCHOTIC DISORDER
3. PROBABLE SCHIZOPHRENIC DISORDER
4. PROBABLE DEPRESSIVE DISORDER
5. PROBABLE ORGANIC BRAIN DISORDER
6. PROBABLE ANXIETY DISORDER
7. PROBABLE MEDICAL DISORDER
8. PROBABLE SUBSTANCE ABUSE DISORDER
9. PROBABLE SOMATOFORM DISORDER
A 60 year old man came to a clinic complaining of chronic low back pain that has occurred on and off for several years (15 years). He reported that when it occurred, the pain became progressively worse as the work day went on until bedtime when he had trouble falling to sleep. He had been examined thoroughly by his physician once again and once again no physical basis could be found for his trouble. Although he was able to maintain his job as a salesman, the pain hampered his movement and the amount of time he could spend on the road. Questions about his family revealed that his wife had died approximately 4 years previous and that his daughter moved back from out of state to be near him, but that now her company was transferring her to another city. Observation of the patient revealed a somewhat flat affect, bordering on possible depression. He stated he had no real hobbies and few friends. Further questioning revealed nothing remarkable.

1. PROBABLE MANIC - DEPRESSIVE DISORDER
2. PROBABLE PSYCHOTIC DISORDER
3. PROBABLE SCHIZOPHRENIC DISORDER
4. PROBABLE DEPRESSIVE DISORDER
5. PROBABLE ORGANIC BRAIN DISORDER
6. PROBABLE ANXIETY DISORDER
7. PROBABLE MEDICAL DISORDER
8. PROBABLE SUBSTANCE ABUSE DISORDER
9. PROBABLE SOMATOFORM DISORDER
A 40 year old man, a lumber yard worker, was taken to the local hospital by his wife because he was exhibiting signs of depression. He had lost 10 pounds within the last 3 weeks without dieting and he firmly believed it was because his "stomach was rotting away". He also showed a marked decrease in personal hygiene, psychomotor retardation, an increased desire to sleep and a loss of interest in his usual hobby of wood working, which he did to bring extra money into the home. Other information gathered at the time of the interview revealed that he had recently been indecisive about a family vacation, avoidant of or uninterested in sex and guilty about neglecting his only son who was 10 years old at the time of the interview.

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<tr>
<td>1.</td>
<td>PROBABLE MANIC - DEPRESSIVE DISORDER</td>
</tr>
<tr>
<td>2.</td>
<td>PROBABLE PSYCHOTIC DISORDER</td>
</tr>
<tr>
<td>3.</td>
<td>PROBABLE SCHIZOPHRENIC DISORDER</td>
</tr>
<tr>
<td>4.</td>
<td>PROBABLE DEPRESSIVE DISORDER</td>
</tr>
<tr>
<td>5.</td>
<td>PROBABLE ORGANIC BRAIN DISORDER</td>
</tr>
<tr>
<td>6.</td>
<td>PROBABLE ANXIETY DISORDER</td>
</tr>
<tr>
<td>7.</td>
<td>PROBABLE MEDICAL DISORDER</td>
</tr>
<tr>
<td>8.</td>
<td>PROBABLE SUBSTANCE ABUSE DISORDER</td>
</tr>
<tr>
<td>9.</td>
<td>PROBABLE SOMATOFORM DISORDER</td>
</tr>
</tbody>
</table>
A forty year old man was brought by his 18 year old son to the local emergency room because of complaints of tightness in his chest. The man felt this symptom was the beginning of a heart attack. He also complained of tingling in both sides of his upper extremities and elevated temperature. On examination by the resident on call, who was familiar with the man from previous trips to the hospital outpatient unit, nothing could be found to account for the complaints. The man had consumed that evening several beers and spicy Mexican food according to the son. The man insisted however that this was not heart burn and also insisted he be seen by another physician. Another physician was called to the examination room. She was also familiar with the man from previous visits. A history revealed that the man made frequent visits to the emergency room and outpatient clinic for a variety of somatic complaints usually nonverifiable on examination. He was also being seen on the outside by at least two doctors that his son could think of. The son also reported that his father regularly missed work due to illness and kept a supply of various over the counter drugs at home. The resident found nothing to account for the symptoms. The man left the emergency room hastily without his son’s help.

1. PROBABLE MANIC - DEPRESSIVE DISORDER
2. PROBABLE PSYCHOTIC DISORDER
3. PROBABLE SCHIZOPHRENIC DISORDER
4. PROBABLE DEPRESSIVE DISORDER
5. PROBABLE ORGANIC BRAIN DISORDER
6. PROBABLE ANXIETY DISORDER
7. PROBABLE MEDICAL DISORDER
8. PROBABLE SUBSTANCE ABUSE DISORDER
9. PROBABLE SOMATOFORM DISORDER
A 35 year old man with a history of manic-depressive disorder presented with complaints of increased fatigability, over the last 4 months, muscle aches, and a strange sensitivity to cold weather not experienced previously. He also reported a recent weight gain of 15 pounds although he had not eaten more over the past few weeks, which his wife confirmed. She also stated that her husband's fear of going bald was coming true for his hair was falling out at an incredible rate. The man had been maintained on lithium for 3 years prior to this visit with minimal side effects and an excellent response in the control of his mood swings. His affect was somewhat flat, his voice was hoarse and deep, and his eyes looked puffy; as though he'd been crying although this he denied. Other information gathered were unremarkable.

1. PROBABLE MANIC - DEPRESSIVE DISORDER
2. PROBABLE PSYCHOTIC DISORDER
3. PROBABLE SCHIZOPHRENIC DISORDER
4. PROBABLE DEPRESSIVE DISORDER
5. PROBABLE ORGANIC BRAIN DISORDER
6. PROBABLE ANXIETY DISORDER
7. PROBABLE MEDICAL DISORDER
8. PROBABLE SUBSTANCE ABUSE DISORDER
9. PROBABLE SOMATOFORM DISORDER
A 50 year old woman was brought to the local mental health center by her husband, and her 24 year old son on the advice of a doctor at the local university medical center. She had been seen there 2 days previous for reported chest pain and distress. On examination in the emergency room nothing could be found that could be causing such symptoms. On questioning it was revealed by the son that the weekend prior to that episode he had announced his engagement to be married. He also added that his parents had seemed happy for him at the time but that his mother had later made several disparaging remarks about his fiancee and they had argued. The woman in question refused to speak to the interviewer stating that she knew that she was physically sick, that it was just a matter of time before the doctors would find out what was really wrong with her. Her husband stated that she had always been rather sickly for as long as he had known her with a variety of things including back pains, menstrual problems, food allergies, muscle aches, blurry vision from time to time, abdominal pains, headaches, anxiety, and constipation. She frequently switched doctors, and never seemed satisfied with what their recommendations were but that this was the first time it was recommended that she come to counseling.

1. PROBABLE MANIC - DEPRESSIVE DISORDER
2. PROBABLE PSYCHOTIC DISORDER
3. PROBABLE SCHIZOPHRENIC DISORDER
4. PROBABLE DEPRESSIVE DISORDER
5. PROBABLE ORGANIC BRAIN DISORDER
6. PROBABLE ANXIETY DISORDER
7. PROBABLE MEDICAL DISORDER
8. PROBABLE SUBSTANCE ABUSE DISORDER
9. PROBABLE SOMATOFORM DISORDER
Thank you for your time. If you have any comments about this questionnaire please feel free to write them down below.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Date of birth: 
Sex: M F
Degrees: In what area(s):
Amount of time in school (post bachelors): mos. yrs.
Approximate amount of time in practice: mos. yrs.
What type of practice are you in?

A conservative estimate of people seen for outpatient treatment with a medical disorder manifesting as a psychiatric disorder in your opinion would be percent.

What percentage of patients do you refer to a psychiatrist?

What percentage of patients do you refer to other mental health professionals?

On what percentage of patients do you perform a physical exam?

What percentage of the time do you refer to another physician?
Date of birth________________
Sex ______ M ______ F
Degree(s)________________ In what area(s)________________
Amount of time in school (post bachelors)____ mos. _____ yrs.
Approximate amount of time in practice. _____ mos. _____ yrs.
What type of practice are you in? ____________________________

A conservative estimate of people seen for out patient treatment
with a medical disorder manifesting as a psychiatric disorder in
your opinion would be ______ percent.

What is your theoretical orientation?________________________
Did you receive a strictly medical rotation during your training?
Yes ______ No ______
On what percentage of patients do you perform a physical exam?
________________
What percentage of patients do you refer to another physician?
________________
Date of birth

Sex  M  F

Degree(s):   In what area(s):

Amount of time in school (post bachelors):  mos.  yrs.

Approximate amount of time in practice:  mos.  yrs.

What type of practice are you in:

A conservative estimate of people seen for outpatient treatment with a medical disorder manifesting as a psychiatric disorder in your opinion would be percent.

What is your theoretical orientation?

Do you, in your practice, have access to a physician or psychiatrist?  yes  no

What percentage of clients do you refer to a psychiatrist?

What percentage do you refer to another type of M.D.?

What percentage of clients do you refer to a psychologist or other mental health professional for some specialized work?

Do you have any background in medicine, neurobiology, neuropsychology, endocrinology, psychopharmacology, biopsychology, or any related field?  yes  no

If yes to the question above, in what area(s):
APPENDIX C
A pilot study for this research was completed in the Fall of 1985. The following is the method, results, and discussion of this pilot study. The purpose of this study was to ascertain whether clinicians working in an outpatient setting are aware of and able to distinguish between functional psychiatric disorders, and possible "medical masquerades".

Method

Subjects

Subjects for this study were chosen from the mental health psychotherapists employed at a mental health center in southern Arizona. These therapists are of particular interest in this study since, as part of their duty, they perform the intakes on new clients to the center as well as deliver therapy to their assigned clients. The clients may be given a diagnosis by the intake worker which may be changed later by the assigned therapist. There were 23 therapists who were given the questionnaire, and later the follow-up survey. Fourteen were returned, a return rate of about 50%. The subjects ranged in age between 34 and 48, with a mean age of 42.6 years. Mean graduate education in years was 3.45. Most subjects had an M.A. level degree, 2 had a Ph.D., and one had a B.A. degree. They had been practicing in the field for an average of 11.7 years, ranging from 7 to 19.5 years. Only two of the subjects had a background in a physical or
biological science. Thirtysix percent of the sample were male.

Apparatus

A questionnaire was generated from modifications of patient presentations found in Taylor (1982), and Lahey and Ciminero (1980). There were three vignettes in which a psychiatric diagnosis is the most accurate given the patient presentation, and three vignettes where a medical diagnosis was the most correct given the patient presentation. A copy of the pilot study questionnaire can be seen in figure 1.

Figure 1 here

A followup survey assessing the age, sex, amount of time in school, amount of time in practice; and other pertinent background and demographic data for the subjects was also given to the subjects. A copy of the survey can be seen in figure 2.

Figure 2 here

Procedure

Subjects were asked to complete the diagnosis questionnaire individually and return it, at which time each subject was given the followup survey designed to gather background and demographic information. All subjects had the option of declining participation in the study. The subjects were asked to give the last 4 digits of their social security number on both the questionnaire and the followup survey to help match the two set of data
for later coding purposes.

Results

The results revealed that for this set of clinicians the average estimate of "medical masquerades" that is patients with medical disorders underlying psychological presentations was nearly 18%. The results of the questionnaire revealed that these clinicians correctly diagnosed the psychological presentations an average of 64% of the time. These clinicians also correctly discerned medical masquerades an average of 37% of the time. The percent correct for each vignette was 1=14%, 2=93%, 3=71%, 4=28%, 5=71%, and 6=28%.

Discussion

Based on past research, there are a good percentage of psychiatric admissions to in and outpatient mental health settings where the psychiatric symptoms are a result of an underlying medical disorder.

Since mental health psychotherapists are in the position of interacting with clients on typically a weekly to bimonthly basis, it is important for them to be aware of physical illness that can cause psychiatric symptoms. As can be seen by the tentative results of this pilot study, an ability to discern possible physical illness does not come easily to the front line therapist. To go back to the original question, are mental health professionals aware of medical masquerades? Well sort of, they are aware that physical illness can manifest as
or with psychiatric symptoms, this is clear from the estimate of medical masquerade in the population given in the followup survey, but whether these clinicians can go the extra step to suspect physical illness in someone presenting with psychiatric symptoms is questionable. This could be due to the fact that these clinicians were not trained in physical or biological sciences which may or may not be helpful in discerning medical masquerades, or it could be that these clinicians simply rely on the consulting psychiatrist to sort out possible medical masquerades. This reliance on the doctor may be justified and indeed the patient may be protected from misdiagnosis or more likely this is an area where extra training for those therapists in most contact with the patient would prove valuable for the individuals involved.
1. A young woman, 27, presented at the local mental health center complaining of extreme anxiety. During these times she would experience palpitations, intermittent chest pain, an overwhelming sense of impending doom and a feeling that she would die from these symptoms. She reported that the symptoms were not related to stress or exercise. Between these attacks, she stated she feels no undue anxiety. Lastly, she reported that her sister suffers from these same attacks; and, that both have been seen by their family general practitioner. She referred her to this facility. Her mother, a somewhat overprotective woman, accompanied her to the interview and confirmed the woman's story and course of symptoms.

___ 1. Probable manic - depressive disorder
___ 2. Probable psychotic disorder
___ 3. Probable schizophrenic disorder
___ 4. Probable depressive disorder
___ 5. Probable organic brain disorder
___ 6. Probable anxiety disorder
___ 7. Probable medical disorder
___ 8. Other ___________________
2. A 22 year old man was brought to a local mental health center by the police, complaining that the FBI was after him and were observing everything he said and did. The police were involved when he struck his boss, yelling that he wanted him "to call them off". He denied any drug use within the past four months but he had had a few drinks the night before with someone from his workplace, where he talked about suspecting his boss "was in on it" for quite some time. During the interview he was agitated, continually looked around the room and had a somewhat flat affect.

___ 1. Probable manic - depressive disorder
___ 2. Probable psychotic disorder
___ 3. Probable schizophrenic disorder
___ 4. Probable depressive disorder
___ 5. Probable organic brain disorder
___ 6. Probable anxiety disorder
___ 7. Probable medical disorder
___ 8. Other
3. A 35 year old man with a history of manic - depressive disorder presented with complaints of increased fatigability, and a strange sensitivity to cold weather not experienced previously. He also reported a recent weight gain of 15 pounds although he had not eaten more over the past few weeks. Lastly he reported that his fear of going bald was coming true for his hair was falling out at an incredible rate. The man had been maintained on lithium for 3 years prior with minimal side effects and an excellent response in the control of his mood swings. Other information gathered were unremarkable.

1. Probable manic - depressive disorder
2. Probable psychotic disorder
3. Probable schizophrenic disorder
4. Probable depressive disorder
5. Probable organic brain disorder
6. Probable anxiety disorder
7. Probable medical disorder
8. Other
4. A 30 year old housewife was seen at a local mental health clinic for what she described as depression. For 6 to 8 months she had felt down to the extent of, at times, considering suicide. She would awaken early in the morning, unable to fall back to sleep and then would feel listless for the rest of the day. It was revealed during the interview that her mother had tried to commit suicide about 10 years prior. The woman had had one previous significant bout with depression shortly after the birth of her second child which was an unplanned pregnancy. This prompted her to go on "the pill" thereafter. No other drugs were being taken and she had no recent loss or precipitating stress.

___ 1. Probable manic - depressive disorder
___ 2. Probable psychotic disorder
___ 3. Probable schizophrenic disorder
___ 4. Probable depressive disorder
___ 5. Probable organic brain disorder
___ 6. Probable anxiety disorder
___ 7. Probable medical disorder
___ 8. Other ____________________
5. A 40 year old man, a lumber yard worker, was taken to the local hospital by his wife because he was exhibiting signs of depression. He had lost 10 pounds recently without dieting and believed it was because his "stomach was rotting away". He also showed a marked decrease in personal hygiene, psychomotor retardation and a loss of interest in his usual hobby of wood working. Other information gathered at the time of the interview revealed nothing remarkable.

1. Probable manic-depressive disorder
2. Probable psychotic disorder
3. Probable schizophrenic disorder
4. Probable depressive disorder
5. Probable organic brain disorder
6. Probable anxiety disorder
7. Probable medical disorder
8. Other ___________________
6. A 24 year old woman with a history of severe alcohol abuse was seen at an emergency room for drunken behavior. Her speech was slurred and her gait was uncoordinated. She was also visibly malnourished. Upon questioning she reported that she had been in treatment at a private clinic and a member of AA neither of which had helped her. After 24 hours this woman developed a noticeable tremor, had no memory as to how she got to the hospital and complained of feeling anxious.

_____ 1. Probable manic - depressive disorder
_____ 2. Probable psychotic disorder
_____ 3. Probable schizophrenic disorder
_____ 4. Probable depressive disorder
_____ 5. Probable organic brain disorder
_____ 6. Probable anxiety disorder
_____ 7. Probable medical disorder
_____ 8. Other ____________________
Thank-you for your time. If you have any comments about this questionnaire please feel free to write them down below.
Followup survey to Diagnosis Questionnaire

Last 4 numbers of social security number ______________________
Date of birth ____________________________
Sex    M    F
Degree(s) __________________ In what area(s) __________________
Amount of time in school (grad school) __ mos. __ yrs.
If grad student, year in school. ________________
Amount of time in practice. ___ mos. ___ yrs.
If grad student, # of externships (or other relevant work experience). __________________________

What type of practice are you in? ____________________________
What is your theoretical orientation? ____________________________
Do you, in your practice, have access to a physician or psychiatrist. yes no
Do you have any background in medicine (non-medical person), neurobiology, neuropsychology, endocrinology, psychopharmacology, biopsychology, or any related field? yes no
If yes to the question above, in what area(s) and amount of time.

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<th>Area</th>
<th>Time (mos. yrs.)</th>
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A conservative estimate of people seen for outpatient treatment with a medical disorder manifesting as a psychiatric disorder in your opinion would be ______ percent.
REFERENCES


McIntyre, S. & Romano, J. (1975). Is there a stethoscope in the house (and is it used?). Archives of General Psychiatry, 34, 1147 - 1151.


