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I am submitting herewith dissertation written by Charlene P. Bruley entitled "Perceived Severity, Expected Improvement and Goal of Change as Factors of Appointment Keeping Behaviors in Outpatient Mental Health Treatment." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Social Work.

William R. Nugent, Major Professor

We have read this dissertation
and recommend its acceptance:

David A. Patterson

Chalmer T. Cruthirds

Schuyler W. Huck

Accepted for the Council:

Anne Mayhew
Vice Provost and Dean of
Graduate Studies

Original Signatures are on file with official student records

**PERCEIVED SEVERITY, EXPECTED IMPROVEMENT
AND GOAL OF CHANGE AS FACTORS OF APPOINTMENT
KEEPING BEHAVIORS IN OUTPATIENT
MENTAL HEALTH TREATMENT**

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ABSTRACT

A field study was conducted to investigate the relationship between the number of problems identified by clients, their expectancy of improvement, a client's identified therapy goal, and the number of missed appointments. Information about the number of problems, expectancy of improvement and therapy goal were obtained prior to the client first meeting with his/her therapist. The case records of 90 clients (N=416) who attended a non-metropolitan county outpatient mental health agency were reviewed. Data was collected on the number of problems identified by clients, whether a client expected to reduce reported distress, and whether a client identified a therapy goal. The results suggested that the number of problems identified by a client, whether they identified a therapy goal or expected to reduce their level of stress, were not related to whether a client would miss appointments. Thus, research on the reasons why clients miss appointments warrants further study.

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CHAPTER 1

INTRODUCTION

We live in a society where setting and keeping appointments has become an integral part of our lives. Scheduling appointments with doctors, lawyers, dentists, physical therapists, optometrists, counselors, beauticians, friends, family, and many others too numerous to mention, has become routine. Not surprising then, is the notion that missed appointments impact the efficacy of our lives as well as the lives of others. This has been especially true in the area of health care, where the consequences of a missed appointment have had grave implications by seriously impacting the physical and emotional well-being of patients.

Health care providers and social scientists have long recognized the significance of this problem because of the potential harm which exists when the follow-up of a diagnosed illness has been delayed (Smoller, McLean, Otto & Pollack, 1998; Mirotznik, Ginzler, Zagon & Baptiste, 1998). Additionally, failed appointments have resulted in the misuse of professional resources, and resulted in financial losses for many health care providers (Majeroni, Cowan, Osborne & Graham, 1996; Campbell, Staley & Matas, 1991). This topic has become crucial as increasing numbers of studies indicate that mental illness and physical diseases can be impacted by increased attention to compliance which includes keeping appointments (U.S. Department of Health & Human Services, 1999; Ockene, Shumaker & Schron, 1990).

Failed appointments have long been recognized in both the mental health and medical health care literature as significant problems (Grunebaum, Luber,

Callahan, Leon, Olsson & Portera, 1996; Sparr, Moffitt & Ward, 1993; Macharia, Leon, Rowe, Stephenson & Haynes, 1992; Carr, 1985; Hertz & Stamps, 1977). The study of patient appointment breaking is a subset of a large body of work on patient compliance which has received considerable attention in the literature (Bean & Talaga, 1992). In their 1980 review, Deyo & Inui identified 87 studies on this topic and interest in this problem has continued unabated as the incidence of missed appointments has remained relatively unchanged (Smoller, et al., 1998; Dotter, 1998; Bean & Talaga, 1992).

Appointment-keeping rates vary considerably for both mental health and medical care. Failed appointment rates for mental health services ranged from 12 to 60 percent, with rates for missed initial appointments higher than those for on-going sessions (Dotter, 1998; Sparr et al., 1993; Rice & Lutzker, 1984; Hochstadt & Trybula, 1980). Generally the rates for failed medical appointments ranged from 20 to 50 percent (Smoller, et al., 1998; Grunebaum, et al., 1996; Deyo & Inui, 1980; Sackett, 1976) and for some providers, rates have been reported to be as high as 60 to 75 percent (Smoller, et al., 1998, Sparr, et al., 1993; Rice & Lutzker, 1984).

Mental Health

While medical care has been acknowledged as essential for healthy living, the importance of mental health care, until recently, had been banished to the rear of the nation's consciousness (U.S. Department of Health & Human Services, 1999). The Surgeon General's annual report addressed this long ignored subject,

in his 1999 executive summary (U.S. Department of Health & Human Service, 1999). The impact of mental illness and mental disorders has become widespread. An estimated 41.4 million Americans have had or will have a mental disorder at some time in their life (Bourdon, Rae, Locke, Narrow & Regier, 1992), affecting about one in five Americans (U.S. Department of Health & Human Services, 1999). Fifteen percent of the adult population and twenty-one percent of children ages 9 to 17 receive mental health services each year (U.S. Department of Health & Human Services, 1999). In 1990, the societal cost of this disabling disease was estimated to be an astounding 74.9 billion dollars (U.S. Department of Health & Human Service, 1996a). By 1996, direct costs for mental health services alone totaled \$69 billion (U.S. Department of Health & Human Services, 1999).

Today, in this nation, mental illness is the second leading cause of disability and premature mortality, which collectively accounts for more than 15 percent of the overall burden of disease from all causes, and is exceeded only by cardiovascular conditions (U.S. Department of Health & Human Services, 1999). In his annual report, the Surgeon General, stressed that the treatment of mental disorders is crucial to the nation's overall health. He stated:

From early childhood until death, mental health is the springboard of thinking and communication skills, learning, emotional growth, resilience, and self-esteem (U.S. Department of Health & Human Services, 1999, p. IX).

The impact of untreated mental disorders in adults is far reaching, often resulting in

lost productivity, significant distress in relationships, and can have a considerable and continuing effect on children in their care (U.S. Department of Health and Human Services, 1999).

Despite the devastation caused by mental illness, only one in six adults and one in three children get the mental health treatment they need (U.S. Department of Health & Human Services, 1996b). In his 1999 report, the Surgeon General noted: *“More than other areas of health and medicine, the mental health field has been plagued by disparities in the availability of and access to its services”* (U.S. Department of Health & Human Services, 1999, p. vi). Currently, in some parts of this country, essential components of mental health services such as community based services, continuity of providers and treatments, family support services and culturally sensitive services are in short supply (U.S. Department of Health & Social Services, 1999).

The reasons for this shortage are varied. The epidemic of high rates of missed appointments has been a contributing factor (Dotter, 1998; Sparr et al., 1993; Allan, 1988). Every hour lost due to a failed appointment significantly impacts both the client and a care provider's ability to offer needed services. It means one less person received an hour of needed treatment. Additionally, clients who miss appointments or are unable to get the mental health treatment they need are at greater risk of being hospitalized for their psychiatric illness (Grunebaum et al., 1996; Deyo & Inui, 1980). Furthermore, missed appointments interrupt the clients' treatment, may have adverse psychological consequences, and may prolong the duration of treatment (Swenson & Pekarik, 1988; Gariti, Greenstein,

Olsen & Harris, 1987). Untreated mental illness has also resulted in over utilization of general medical resources, *“placing an added burden on primary care”* (Grunebaum, et al., 1996, p. 849).

In times of increasing fiscal austerity and decreased availability of services, the mental health professional must optimize productive use of valuable time and provide cost-effective services (U.S. Department of Health & Human Services, 1999; Allan, 1988). Thus, it has become increasingly important to fill available treatment times, provide maximum service, efficiently utilize staff, reduce waiting lists, and generate fees (Sparr et al., 1993; Campbell, et al., 1991; Carpenter, Morrow, Del Gaudio, & Ritzler, 1981) without disrupting continuity and quality of care.

Research efforts to predict and reduce this problem date back to the 1950s (Miller, 1987). There has been, and continues to be, an overwhelming consensus that despite study efforts, missed appointments remain problematic without a clear solution (Dotter, 1998; Smoller, et al., 1998; Sparr et al., 1993; Macharia et al., 1992; Allan, 1988). Various studies have attempted to link socioeconomic status (Allan, 1988; Gould, Paulson & Daniel-Epps, 1970; Weighill, Hodge & Peck, 1983; Burgoyne, Acosta & Yamamoto, 1983; Carpenter et al., 1981; Baekeland & Lundwall, 1975; Errera, Davenport & Decker, 1965), length of time on a waiting list, sex, age, marital status, and clinic variables (Nicholson, 1994) with failure to keep appointments. Disappointingly, the findings have been mixed, for every study which reports a predictor or statistically significant result, a similar study has been found with either no significance or contradictory findings (Dotter, 1998; Sparr et

al., 1993, Miller, 1987).

Strategies to reduce failed appointments have also been tried and tested. Efforts to reduce “*no-shows*” through education suggested that educating clients about health issues had no effect on the failed appointment rate (Barron, 1980). Published data showed that reminders both telephone and written, can reduce failed appointments (Barron, 1980). Yet, conflicting results continue to plague the literature and little is known about the long-term effectiveness of these techniques with repeated administrations. Macharia et al. (1992) suggested that the positive results may have been of short duration because of the existence of decay in effect, which means that in the long run familiar patterns of high rates of failed appointments will prevail. Additionally, little is known about whether reminders and other interventions have been cost-effective. It has been hypothesized that interventions to reduce missed appointments may be more expensive than the cost of a missed appointment (Bean & Talaga, 1992).

Failed appointments have been, and continue to be, an immense problem not only for mental health, but for most, if not all, health care providers. The magnitude to which failed appointments impact the health care of patients and the health care system can be better understood if we look beyond its impact on mental health to its effects on medical health care. Mental health treatment and medical care are interconnected because physicians serve as a central referral for mental health treatment. When patients are non-compliant with referral for mental health services, they have tended to utilize medical care services more frequently (Olfson, 1991).

Medical Care

Non-attendance rates for clients who attend medical appointments varied by type of diagnosis. Some studies have reported failed appointment rates for patients with diabetes at 10 percent, peptic ulcers at 30 percent, high blood pressure at 44 percent, pap smears at 48 percent, immunizations at 40 percent, and breast cancer screening at an alarming 66 percent (Griffin, 1998; Sackett & Snow, 1979; Rice & Lutzker, 1984).

The repercussion of this occurrence has been far reaching, affecting patients, physicians, other care providers and society. Clients who fail to keep scheduled health care appointments have disrupted the delivery system in many ways (Barron, 1980). The most apparent result has been that the care of the person was interrupted. Missed appointments have been viewed as serious handicaps to both the efficacy of care providers and attacks on the continuity of care which is accepted to be essential for maintaining health (Go & Becker, 1979). When clients failed to show for scheduled appointments, they jeopardize their health and well-being (Mirotznik, et al., 1998).

Keeping scheduled appointments has been accepted as a central component of compliance with therapeutic regimens among medical care providers (Rice & Lutzker, 1984). Many diseases can be positively impacted when patients are compliant with treatment of which regularly scheduled appointments are an essential ingredient (Ockene, et al., 1990). Becker (1990) noted:

The ultimate success of efficacious preventive and curative regimes is usually dependent upon an individual's willingness

to undertake and/or maintain the required health behaviors (p. 5).

Patient care has suffered when appointments have been missed because opportunities have been lost for preventive care and early intervention during the disease process (Majeroni, et al., 1996). When such behaviors become recurrent, serious preventable morbidity has resulted (Smoller, et al., 1998; Barron, 1980).

Increased awareness about the importance of early detection and prevention has increased the number of visits, especially to primary care physicians (Norman, 1995). The idea of promoting prevention through health checks has become increasingly important as health care costs continue to rise (Majeroni, et al., 1996). Increases in health care visits have been accompanied by increases in missed appointments, especially in a managed care system (Majeroni, et al., 1996). Care providers have absorbed the cost of missed appointments with resulting financial loss, lost professional resources, decreased efficiency of office scheduling, and longer waiting periods for clients (Majeroni et al., 1996; Sparr et al., 1993; Campbell et al., 1991; Barron, 1980). When appointments are missed, the unanticipated idle time of care providers is virtually unrecoverable (Bean & Talaga, 1992). Lost income and increasing pressure for price control makes missed appointments even more serious (Smoller, et al., 1998; Bean & Talaga, 1992).

The burden for health care and insurance for the disadvantaged has been increasingly borne by the government and thus by society (Donelan, Blendon, Hill, Hoffman, Rowland, Frankel & Altman, 1997), as employers who offer health insurance coverage continue to disappear (Fronstin, 1997; Lee, Soffel & Luft,

1994). The ranks of the uninsured have expanded at an alarming rate from 12.9 percent in 1987 (United States Department of Health and Human Service, 1996a) to 17.7 percent in 1996 (Fronstin, 1997). The cost of uncompensated care has been borne by all payers in the health care delivery system. Yet, 45 percent of the uninsured report that they have been unable to get the care they need for major health conditions, like cancer and diabetes, which has resulted in increased morbidity and death (Donelan, et al., 1997).

Declining health care coverage has created a crisis among county public health providers who treat a high percentage of non-insured patients where demand for services has exceeded the availability of these essential services in both mental health and medical care (Brotman, Bumgarner & Prime, 1998). The difficulty arose because these beneficial services have been provided without cost or at very low cost to the patient. Without a price mechanism to ration services, demand has exceeded supply (services available) (Brotman, et al., 1998). This problem has been, and continues to be, common in the public health sector where the price of service (no fee) has not adequately reflected the benefits of services. This negatively impacts the public's perception of the value of these services (Brotman, et al., 1998).

County health care agencies have reported alarmingly high rates of missed appointments for clients who seek their care, ranging from 40 to 50 percent. These high rates have exacerbated an already out of control situation by decreasing the availability of requested services because of declines in financial revenue to agencies (Brotman, et al., 1998). Clearly, missed appointments jeopardize the

health and well-being of clients, contribute to shortages of need services, and are costly for health care providers.

Statement of the Problem

The study of missed appointments remains compelling for several reasons. First, missed appointments continue to be problematic in the delivery of mental health and medical services. Despite many years of study, high failed appointment rates from 12 to 60 percent prevail (Smoller, et. al., 1998; Grunebaum, et al., 1996; Nicholson, 1994; and Campbell, et al., 1991). The impact of missed appointments is felt by the very same clients who may unknowingly jeopardize their well-being when their diagnosed illnesses go untreated or treatment is prolonged. High rates of missed appointments continue to contribute to the decreased availability of needed health services, the unnecessary depletion of professional resources, and resulting financial losses (U.S. Department of Health & Human Services, 1999).

Second, while research has focused on both demographic and non-demographic predictors, and interventions to reduce the number of missed appointments, the literature has been filled with contradictory findings, and the utility of such interventions has not been assessed. Furthermore, the literature has been, and continues to be, dominated by outdated studies and a paucity of significant results. Thus, the reasons why clients fail to keep appointments are not well understood, with many competing theories and conflicting findings (Macharia et al., 1992, Bean & Talaga, 1992; Allan, 1988).

The ability to reliably and accurately identify clients who are likely to miss appointments could be immensely helpful to future studies of causality, developing

interventions to reduce failed appointments, and in assessing whether current treatment models are effective with clients who attend community based outpatient treatment centers. Ultimately, increased appointment keeping rates would improve continuity and quality of care, as well as client well-being. At the same time, increase the availability of services, and shorten waiting periods and treatment durations. It is hoped that insights gained from this study of missed mental health appointments will lay the ground work for reducing missed appointments not only for mental health clients and providers, but also for medical care patients and their providers.

Objectives

The objectives of this study were to:

- I. Systematically develop a model for predicting whether mental health clients will “no show” for appointments.
- II. Test the model using multiple regression analysis to determine which variables or combinations of variables are significant predictors of missing appointments.

CHAPTER 2

LITERATURE REVIEW

From the early 1950s until about 1975, the descriptive term for non-compliance with mental health treatment was "*client or patient drop-out*". Since then, non-compliance or non-adherence has been expanded to include specific behaviors on the part of the client such as: failure to enter a treatment program, premature termination of therapy, missed appointments, and incomplete implementation of instructions, including prescriptions (Blackwell, 1976). This review focuses on a component which directly affects the emotional health of patients, the availability of services, and the cost of providing those services: missed appointments.

Missed Appointments

There has been considerable discussion in the literature about missed appointments, especially in the medical literature. The extensive body of research on this topic authenticates its importance in health care treatment (Bean & Talaga, 1992). In mental health, the problem has not been consistently studied (Nicholson, 1994). However, there generally has been a consensus that improving the number of appointments kept helps health care professionals attain important goals of reducing the incidence of illness, and providing quality and efficient care. Efficiency and efficacy of these services have become a necessity. Mental health centers, county health providers, pediatric clinics, and neighborhood medical and dental clinics have been especially impacted by this problem because of limited

funding (Bean & Talaga, 1992).

Much of the research on broken appointments, dominated by conflicting results, continues to be a problem for physicians and other care providers (Kellerman, 1997; Hershberger, Robertson & Markert, 1999; Weingarten, Meyer & Schneid, 1997; Majeroni, et al., 1996). Becker & Maiman (1975) found that studies predicting health behaviors through patient demographics and social characteristics, for the most part, were not predictive of compliance and often were contradictory.

Research on medical treatment compliance and, in particular, missed appointments has focused on the personal determinants of health behaviors which include two principal components: personal characteristics (demographics) and cognition (beliefs a person has about complying with healthy behaviors) (Gochman, 1988). Personal characteristics studied have included age, gender, marital status, social class, income, and occupation. Disappointingly, conflicting results have dominated the literature (Kellerman, 1997; Hershberger, et al., 1999; Weingarten, et al., 1997; Bean & Talaga, 1992; Hertz & Stamps, 1977; Gates & Colburn, 1976; Jonas, 1973; Schroeder, 1973). Becker & Maiman (1975) observed that predicting health behaviors by the study of patient demographics and social characteristics, for the most part, were not predictive of compliance and often were contradictory. An example of this disparity can be seen in Barron's 1980 review of 22 studies, attendees and no-shows were not differentiated by age, a 1992 review of the literature by Bean & Talaga concluded that age was significantly associated with appointments kept. Their review found 18 studies

which identified age as an independent variable and of those studies 12 reported positive results. The values of Cramer's V ranged from .03 to .24 with a median of .17. They noted a consistently observed pattern in most of the studies, identifying younger adults missing the most appointments.

While medical research focused on demographics and cognition, mental health research subdivided missed appointments into two categories: initial and ongoing missed appointments. Initial missed appointments have a much higher non-attendance rate when compared with ongoing missed appointments and may account for part of the wide range of rates.

Initial Mental Health Missed Appointments

Clients who schedule initial mental health appointments, but subsequently fail to keep them have presented a more difficult problem for providers considering the higher no-show rates (Dotter, 1998; Smoller et al., 1998; Sparr et al., 1993; Carpenter et al., 1981). Frequently described in the literature as the intake interview, no-show rates for first appointments ranged from 20-60 percent (Nicholson, 1994; Sparr et al., 1993; Gould, et al., 1970; Overall & Aronson, 1963). No-show rates for on-going failed appointments ranged from 10-50 percent (Dotter, 1998; Nicholson, 1994; Sparr et al., 1993).

Nicholson (1994) reported that failure to keep initial appointments, has not been consistently studied. One explanation for the dearth in the literature was the inherent difficulty in re-contacting clients referred from other sources (Wilder, Plutchnik, Hope & Conte, 1977). Clients who miss initial appointments frequently have been referred from physicians, emergency rooms and other agencies, limiting

the availability for re-contact because of the assortment of referral sources (Nicholson, 1994).

Of the studies that examined the problem, there have been a number of inconsistencies which have contributed to the large range of rates. One problem has been a disagreement in the way “failed initial appointment” has been described. This discrepancy has been common throughout the research literature (Trepka, 1986). Some studies defined a failed initial appointment as a client who was referred, but failed to call for a follow-up appointment. Other studies described it as a client who made an appointment and later failed to keep that appointment. Trepka (1986) defined failed appointments as non-attendees (referred patients who never attended) and non-engaged (those who agreed to treatment but discontinued before treatment was underway). This variety of definitions for initial appointments made it difficult to consistently study this problem and may account for some of the inconsistencies in study outcomes. The most common definition for an initial missed appointment has been a scheduled initial appointment that was not kept.

On-Going Missed Appointments

On-going missed appointments in outpatient medical and mental health clinics remain a problem, with rates between 20 and 60 percent (Smoller, et al., 1998; Dotter, 1998). As with initial appointments, rates have varied widely. The medical literature has invested much time in studying missed appointments, yet few significant results have been found (Bean & Talaga, 1992). The mental health literature has studied this problem with less frequency (Dotter, 1998).

In the mental health literature, patient characteristics have been divided into two categories: demographic and non-demographic variables (Nicholson, 1994). Most demographic variables such as race, marital status, sex, education, age, and socio-economic status had mixed results (Dotter, 1998; Sparr et al., 1993; Minoletti, Perez & Blouin, 1984; Weighill, et al., 1983; Carpenter, et al., 1981; Jellinek, 1978; Raynes & Warren, 1971).

Demographic Predictors

Various demographic variables have been examined to see how well they predict appointment-keeping behaviors. They have included age, gender, race, distance to clinic, and intervals between appointments (Campbell, et al., 1991; Weighill, et al., 1983; and Barron, 1980). Age, referral source, distance to clinic and intervals between appointments were not related to missing scheduled mental health appointments (Campbell, et al., 1991; Weighill, et al., 1983; Barron, 1980). Berrigan and Garfield (1981) and Weighill et al. (1983) found that low-income clients were more likely to miss appointments. A patient's gender failed to predict whether patients would miss appointments (no-show) (Gates & Colburn, 1976; Hurlalto, Greenlick & Colombo, 1973; Jonas, 1973).

Race as a predictor also had mixed results (Barron, 1980). Several studies found that minority patients were more likely to miss appointments than other patients (Hertz & Stamps, 1977; Jonas, 1973; Alpert, 1964), while Schroeder (1973) failed to confirm these findings. Hertz & Stamps (1977) argued against the view that minority clients are more likely to break appointments. They suggested that language barriers or some other proxy variable rather than ethnicity was

related to the number missed appointments. The research on socio-economic status, income, and method of payment was again outdated and found inconsistent results (Huralto, et al., 1973 Alpert, 1964).

Yet , certain client characteristics, while not statistically significant were commonly noted in some of the studies: women were more likely to keep appointments when compared with men Huralto et al., (1973); younger clients, aged 18-24, less educated, and from lower socio-economic status were more likely to miss appointments (Smoller et al., 1998; Grunebaum, et al., 1996; Campbell, et al., 1991); and the elderly were more likely to keep their appointments (Gates, 1976; Huralto et al., 1973, Jonas, 1973).

Part of the varying results can be attributed to the use of wildly differing populations, treatment settings, and measurement techniques (Bean & Talaga, 1992; Wilder et al., 1977). Bean & Talaga (1992) identified several methodological problems which likely contributed to the conflicting results. First, definitions of the dependent variable were not consistent because some studies included cancellations as broken appointments. Second, operational definitions of the independent variables also varied. Third, studies were heterogeneous in other areas such as type of facility, demographic characteristics, and different approaches to research design and data analysis. The variation in these extraneous variables is likely to have influenced the many conflicting outcomes found in the literature (Bean & Talaga, 1992).

While demographic variables can provide us with knowledge about the clients who misses appointments “*they are not in themselves adequate for an*

understanding of compliance behavior" (Wilder et al., 1977, p. 933). Demographic variables must be understood through a patient's attitudes or beliefs such as a perceived need for help, traits of compliance and acceptance of their illness (Wilder et al., 1977). Little is known about these beliefs, attitudes and motivations that convince patients to miss appointments.

Non-Demographic Predictors

Clinicians have long been interested in the factors of practice which affect the probability that clients will keep appointments, yet few studies have investigated this area of study (Nicholson, 1994). These variables included such constructs as referral source, history of previous mental health treatment, and diagnosis.

Weighill, Hodge & Peck (1983) found that referral source, distance to clinic, interval between appointments, history of previous treatment, and type of clinic were not related to missing scheduled mental health appointments. Hatcher, Hoen-Saric and Weiskopf (1982) found the clients suffering from severe depression and anxieties were more likely to keep appointments.

Referral Source

Studies examining the relationship between sources of referral and the number of missed appointments were few and tended to be outdated. The most consistent factor in these studies was their discordant results. Raynes & Warren (1971) found no significant difference between those who attended appointments and those who did not. Sources of referral included other clinics within the agency, the emergency room, outside agencies, doctors, and self-referred. However, they

noted that while not significant, self-referred clients had lower noncompliance rates. They concluded that self-referred clients were more motivated to attend than clients from other referral sources.

Carpenter et al. (1981) found that clients referred from emergency rooms, friends, or relatives were more likely to miss initial appointments than self-referred clients. Yet, physician-referred clients were least likely to miss an initial appointment. Matas, Staley & Griffin (1992) had similar results; clients referred from physicians were least likely to miss appointments. However, their study was limited because self-referred clients were excluded. They also noted that emergency room clients differed significantly from physician referred clients in gender (mostly male), marital status (not married), were unemployed or on welfare, and had been diagnosed with a personality disorder or substance abuse. These factors may have better accounted for their findings.

High rates of noncompliance for emergency room referral clients may also be explained by a client's expectation of receiving crisis intervention (single session) services. They may be seeking symptom reduction and emotional stabilization rather than on-going treatment. It seems credible to conclude that these clients believed that no additional treatment was warranted. Wilder et al. (1977) argued that rather than motivation, patients referred from emergency rooms viewed on-going outpatient treatment as not "*in line with their needs*" (p. 933). Such patients, they concluded, would be better served by services provided on an "*as needed*" basis (Wilder et al., 1977). Ultimately, they were satisfied with the treatment they received and should not be classified as a non-compliant.

Previous Mental Health Treatment

Previous treatment as a predictor of breaking appointments has been absent from recent studies. Clients with a history of mental health treatment remain a topic for further study because, once again, results were contradictory. Raynes & Warren (1971) reported that previous treatment did not influence the attendance rate. Likewise, Matas et al. (1992) found no significant difference with regard to previous mental health contact. Carpenter et al. (1981) had opposing outcomes; they found that a history of previous mental health treatment was related to keeping a scheduled appointment. They concluded that clients with a positive previous experience and who were knowledgeable about the treatment experience showed less hesitation in re-engaging in treatment. In a similar manner, patients with a history of missing appointments were more likely to continue the behavior (Matas et al. (1992). One might conclude that the best predictor of behavior is past behavior. Barron (1980) also found that automatically re-scheduling appointments for non-compliant patients was ineffective in obtaining compliance.

Diagnosis

A scant number of studies have examined the relationship between diagnosis and noncompliance. Psychiatric diagnosis may predict whether clients will keep scheduled appointments. The research suggested that affective disorders had fewer reports of noncompliance when compared with other disorders, such as personality disorders and substance abuse (Jellinek, 1978; Wilder, et al., 1977; Minoletti, et al., 1984; Matas et al., 1992; and Nicholson,

1994). Jellinek (1978) found that clients who were diagnosed with depression (33% vs. 11%) were less likely to miss appointments. Diagnoses included 6 categories: affective disorder, psychosis, neurosis, personality disorders, crisis situations, and unknown. Matas et al. (1992) also reported that psychiatric diagnosis was a significant discriminating variable. Personality disorders were highest in the noncompliant group, while affective disorders were less likely to miss initial appointments. Clients who were vague about the reasons for seeking treatment tended to miss appointments more frequently (Gould, et al., 1970; Carpenter, et al., 1981; & Noonan, 1973). Carpenter et al., 1981 noted that patients who tended to be unclear about the reasons for seeking treatment were more likely to miss appointments. These patients, they suggested, needed to be seen right away in order to clear up their confusion. Clients who are unclear about the reasons for seeking treatment may be attending because of external pressures from family, friends or other referral sources. They may believe that attending a first appointment will reduce this external pressure and they perceive themselves to not be in need of additional treatment.

Reducing Missed Appointments

Finding ways to reduce missed appointments has been the focus of numerous studies. Primarily, the literature, utilizing random assignment, examined two methods to improve attendance: telephone reminders and mailed reminders. Studies examined both initial appointments and on-going appointments. The literature fared no better in its efforts to reveal solutions to the high rates of missed appointments than efforts to predict who will or will not attend appointments.

Burgoyne, Acosta, & Yamamoto (1983) found no improvement in no-show rates for initial appointments using telephone prompts. Likewise, Kidd & Euphrat (1971) found no improvement in on-going attendance rates using telephone prompts. In contrast, Turner & Vernon (1976) found significant improvement in initial attendance rates. No-show rates dropped from 32 percent to 11 percent using previous day telephone reminders. Boswell, Brauzer, Postlethwaite, LaRuffa (1983) found similar results, but noted that letter reminders were not related to improving attendance. Swenson & Pekarik (1988) found that sending out letter reminders improved initial no-show rates. In their study, non-attendees dropped from 43 percent to 17 percent.

A limiting factor in most of these studies was an important omission that may have biased the results. Many of the clients in these dated studies did not have telephones, which in Burgoyne et al. (1983) accounted for close to 50 percent of the participants. Other studies failed to include statistics on the number of clients without telephones which suggested that the results may have been tainted and may have been better accounted for by other factors such as: low socio-economic status.

An interesting finding by Boswell et al. (1983) noted that while telephone prompts improved attendance, for every 1000 scheduled appointments, telephone prompting required 342 minutes of clerical time to save 360 minutes of physician time. Salary differentials indicated a financial savings. However, manpower savings were not significant; suggesting that telephone prompts may not be an efficient solution to the problem and suggest a need for future research.

Shephard & Mosley (1976) used an experimental design study to compare the cost of postal cards and telephone prompts with a control group. They found that telephone prompts and post cards significantly reduced missed appointments as compared to the control groups. Telephone prompts were slightly more effective than mailed reminders. However, they noted that telephone prompts were more than twice the cost of mailing post card reminders. Additionally, telephone prompts required staff to work evening hours. Hagerman (1978) found that reminders were ineffective in improving attendance rates for patients with a history of missed appointments. While these studies indicate a possible means to reduce missed appointments, the impact of these interventions over time remains a mystery. The question remains whether the impact of the intervention would remain consistent over time. This reduction in missed appointments may regress to pre-intervention behaviors and thus suggests the importance of additional research on this topic.

Reasons for Missed Appointments

The reasons why clients miss appointments has been a very neglected yet continues to be an important topic. Few studies were found which asked this question. Sparr et al. (1993) reported the two main reasons given for missing an appointment were “forgot” while others gave no reason. Barron’s (1980) review also examined several reasons why patients missed medical appointments: weather conditions, length of time between appointments, and the physician-patient relationship. Only the physician-patient relationship was associated with appointment keeping. He observed that *“providing personal care decreased the*

likelihood of failing to keep an appointment” (p. 567). Interviews with patients suggested that personal interest, attention, and tender care were important to appointment keeping. He concluded that the most important factor in attendance patterns was the provider’s interest and concern about the patient’s health.

Alternative Views

While historically, non-compliance with treatment and in particular, dropping out of treatment has been viewed as problem behaviors, research has suggested that alternative explanations may also account for these abrupt exits from therapy (Miller, Duncan & Hubble, 1997). While the literature has not specifically included missed appointments in discussions of these alternative hypotheses, they warrant consideration as possible explanations for these alternating attendance patterns.

For more than forty years, the research has concentrated on client pathology and often labeled a client as “resistant to treatment or a treatment failure” when he or she has been non-compliant by either dropping out of treatment or missing appointments. Miller et al. (1997) have argued an alternative view: “Rarely, if ever, has the client been cast in the role of the chief agent of change.” Yet, some research has indicated that as much as 40 percent of improvement in therapy may be attributed to the client and his/her environment (Miller, et al., 1997). It has been estimated that approximately 15 percent of clients show measurable change prior to the first appointment (Miller, et al., 1997); Howard, Kopte, Krause & Orlinsky, 1986). Understanding the significance of this

measurable change is important in understanding missed appointments. If therapists fail to ask about such phenomenon, they may miss important insights that the problem is in process toward resolution and may not need extensive treatment (Berg, 1994). It seems contradictory then, to label all clients as failures when they abandon therapy or miss appointments (Miller et al., 1997, Pekarik, 1983; Garfield, 1978). There is a strong possibility that both dropping out of treatment and/or missing an appointment may be indicative of positive changes clients have made. Some clients may change so much that he/she may believe that there is no need for further treatment. Jerome Frank (1990) noted, “most patients who quit after a single interview do so because they have accomplished what they intended and, on average, such patients report as much improvement as those who stay the prescribed course” (p. xi).

While Pekarik, (1983) acknowledged that generally treatment dropouts had the poorest outcomes, he found that the common belief that all dropouts were treatment failures was neither clearly supported nor disputed by study results. He hypothesized that the inconsistencies found in the literature may be due to the way the term “dropout” was defined in the literature, which he argued failed to account for appropriate terminators. He found that patients who failed to return for treatment included not only those clients needing further treatment, but also clients who experienced symptom reduction and who believed that they were no longer in need of services, even though an agreed upon number of appointments had not been met. Since most studies classified dropouts in terms of duration, the dropout rate he argued, was overstated.

In a 1983 study, Pekarik found that 37 percent of the clients categorized as dropouts by their therapist (41 of 103 participants), terminated because they no longer needed services. Another 17 percent of those labeled as “dropouts”, discontinued treatment because they disliked the services. In his study, “dropouts” were identified by a therapist’s designation of a client as someone who was in need of treatment beyond their last session attended.

In this study, participants were given a (BSI) Brief Symptom Checklist (Derogatis, as cited in Pekarik, 1983) at pre-therapy and again at a 3 month follow-up after intake. The BSI is a 53 item self-report that assesses the presence and severity of a wide range of psychiatric symptoms. Interestingly, all of those participants identified as “dropouts” showed a decrease in BSI scores. However, the fact that all patients showed a decrease in BSI scores could indicate a regression toward the mean effect. This would most likely occur when clients were in crisis at the time they made their first appointment. Since most folks in crisis get better over time without formal help, the time between a crisis point and a mental health appointment will generally see the client improve. This possibility also argues for caution in labeling anyone who misses or cancels an appointment as “resistant” or viewing them within the context of a negative “drop out” label.

Pekarik concluded that clients classified as “treatment failures” cannot be considered to be a homogeneous group who can be categorized as actual treatment failures, but rather a heterogeneous group with potentially different expectations about treatment outcomes and its duration. It may be that a significant number of clients expect and benefit from symptom reduction rather

than symptom elimination. Similarly, it may be hypothesized that when clients feel better they opt to miss appointments.

In 1993, Wierzbicki & Pekarik conducted a meta-analysis of 125 studies of psychotherapy dropouts. Consistent with previous research, the mid-point for clients who dropped out was 46.86 percent and ranged between 30 and 60 percent (Pekarik & Stephenson, 1988; Garfield, 1978; Baekeland & Lundwall, 1975). Several conclusions in this analysis were of interest to this dissertation research. First, studies which utilized therapist's judgment in determining dropout vs. appropriate terminators were problematic because of the potential for low reliability, as the criteria for determining when a client should be categorized as a dropout varied among the studies. It was also conceivable that the client's perception of his/her current functioning was very different from the therapist's view. These differing perspectives point to possible barriers of understanding which may impede the client/therapist relationship. These barriers may result in contradictory categorization of whether dropping out of treatment or missing an appointment is appropriate or a problem when evaluated by the client or his/her therapist.

Pekarik (1988) noted that the dropout rate increased three fold when the therapist failed to accurately identify the client's conception of the problem. It seems plausible to conclude that a client may have discontinued treatment because therapy was no longer needed, contrary to the therapist's assessment of treatment failure or that the client was dissatisfied with the therapist's inability to communicate that he/she understood the problem. The analysis also noted that

studies which investigated a client's intentions, client's expectations about treatment and client/therapist relationship were strongly related to dropping out of therapy (Wierzbicki & Pekarik, 1993).

The therapeutic relationship is assumed to be the medium through which the process of therapy is experienced (Miller et al., 1997). Clients who are engaged and join in the work with the therapist benefit the most from the experience (Horvath & Luborsky, 1993). Factors associated with the therapeutic alliance are a client's ability to form interpersonal relationships, a clinician's ability to be warm, empathetic, to accept clients without judgment, to recognize their discomfort, to offer hope of a solution and whether or not a client's expectations of therapy are in alignment with the therapy process and the therapist's perception of the problem (Steenbarger, 1994; Feister & Rudestam, 1975; Eiduson, 1968). It seems logical to hypothesize that a client may exhibit erratic attendance patterns prior to dropping out of treatment which develop out of a poor client/therapist relationship which finds its origin in the therapist's inability to conceptualize the problem in a manner similar to that of the client. The client, then, is left vacillating between feelings of frustration at the perceived misunderstanding and a desire to improve and feel better. These feelings would then be observed through a pattern of missed appointments. Thus, a correlation may exist between a lack of a therapeutic connection, a client's attendance patterns and ensuing treatment dropout.

While Wierzbicki & Pekarik (1993) observed many noteworthy results in their meta-analysis, which suggested the importance of future research in this

area, they found that as many as 25 percent of the studies reviewed lacked sufficient data for the calculation of effect sizes and were excluded from the analysis. They remarked that “non-significant effects are more likely than significant effects to be reported with insufficient information to permit the calculation of effect size and therefore more likely to be excluded from the meta-analysis” (p. 194). Therefore, the mean effect sizes should be viewed as upper estimates of the true values of these effects (Wierzbicki & Pekarik, 1993).

In a recent study, Mueller & Pekarik (2000) reported that clients who attended fewer visits than predicted by the therapist were more likely to be classified as dropouts. They tended to be less satisfied with treatment and achieved greater improvement. Clients were assessed using the Brief Symptom Inventory (Derogatis & Spencer as cited in Mueller & Pekarik, 2000) at 4 and 8 months post intake intervals. These outcomes at first glance appear contradictory. However, previous research indicated that early terminators did so because of symptom reduction, and conceivably also present was at least some dissatisfaction with some aspect of treatment (Mueller & Pekarik, 2000). However, because the sample was drawn from consecutive clients who sought treatment, the sample may not be representative of the population. Thus, conclusions about the findings should be made with caution.

While historically, treatment dropouts have been viewed as treatment failures, dropping out of treatment can indicate a positive outcome for the client and is unquestionably an important research topic. Similarly, missed appointments have historically been viewed as problem behaviors, yet the possibility exists that

the lack of connection, lack of understanding between the client and therapist and symptom abatement may better explain why clients miss appointments and is important to further our understanding of this behavior pattern.

Cognition

The other primary research interest has been the study of cognition. Cognition includes beliefs, expectations, perceptions, values, motives and attitudes. Cognition provides individuals with ways of understanding and interpreting events, which result in decisions to engage or not engage in health behaviors (Gochman, 1988). The two major cognitive approaches to understanding health behavior are the Health Belief Model (HBM) and the Locus of Control Model. However, the Health Locus of Control Model has been found to be a relatively weak predictor of health behavior (Conner & Norman, 1996).

The HBM has received much attention in the public health literature. It is the oldest and most widely used model and it has been fairly successful at predicting health behaviors (Conner & Norman, 1996). The Health Belief Model finds its origins in cognitive theory (Sheeran & Abraham, 1996; Norman & Bennett, 1996).

Cognitive Theory

Cognitive theory began around 1911 when Alfred Adler and Sigmund Freud parted company because of fundamental differences between them (Werner, 1986). Adler disagreed with Freud's notion of unconscious motivations because he saw personality as unified and never in conflict with itself. Adler believed that

thinking determines behavior (Werner, 1986). Cognitive theory today holds that a critical determinant of emotions, motives, and behavior is an individual's thinking, which is a conscious or unconscious process (Fiske & Taylor, 1991). We have an experience or observe a situation, arrive at a conclusion about what happened, and act accordingly. Thus a person's behaviors derive from his/her opinions or perceptions. Cognitive theory contends that it is inaccurate perceptions that lead to inappropriate behaviors (Werner, 1986).

Social Cognition

Social cognition is the part of cognitive theory which is concerned with how individuals make sense out of social situations (Fiske & Taylor, 1991). Much of the work in social cognition is split between how people make sense of themselves and of others (Conner & Norman, 1996). The focus of this review is upon how people make sense of themselves (self-regulation processes).

Self-regulation processes are the individual cognitions or thoughts which intervene between observable stimuli and responses in real world situations (Fiske & Taylor, 1991). The assumption is that social behavior is best understood as a function of people's perception of reality, rather than a function of an objective description of the stimulus environment (Conner & Norman, 1996). Fiske & Taylor (1991) define self-regulation processes as *"those mental and behavioral processes by which people enact their self-conceptions, revise their behavior, or alter the environment so as to bring about outcomes in line with their self-perceptions and personal goals"* (p. 181). Self-regulation involves the setting of goals, cognitive preparations and the on-going monitoring and evaluation of goal-

seeking activities (Conner & Norman, 1996).

Social Cognition Models

Two broad types of Social cognition models (SCMs) have dominated the efforts to explain health-related behaviors (Conner, 1993). The first is attrition, which is concerned with a person's causal explanations of health-related events. Most research in this area has focused on how people respond to a range of serious illnesses (Conner & Norman, 1996).

The second type of SCM examined various aspects of an individual's thoughts (cognition) in order to predict future health-related behaviors and outcomes (Conner & Norman, 1996). The major social cognition approach to predicting health behavior is the Health Belief Model (Sheeran & Abraham, 1996; Gochman, 1988).

Health Belief Model

The recent growth in the study of health behavior has significant roots in the frameworks outlined in a 1966 article by Kasl and Cobb entitled “Health behavior, illness behavior, and sick role behavior” (Kirscht, 1988). Of the social cognition models, the health belief model (HBM) is possibly the oldest and most widely used (Conner & Norman, 1996; Sheeran & Abraham, 1996; Becker, 1974). In their review of the literature Leventhal, Zimmerman, & Gutmann (1984) noted that *“the health belief model is the cognitive model most frequently used in studies of health behavior and compliance”* (p. 384).

The HBM has been fairly successful as a conceptual formula for understanding why clients engage or fail to engage in health-related behaviors, of

which missed appointments and treatments are a part (Janz & Becker, 1984). It has been effective in predicting preventative health behaviors such as influenza inoculations and cervical cancer, and sick role behaviors such as prescription regimes, diabetic dietary regimes, renal disease regimes, and anti-hypertensive regimes (Sheeran & Abraham, 1996). The HBM has also predicted clinic utilization by children. A parent's beliefs about the threat of illness and the efficacy of medical care are consistently related to the use of services by children (Kirscht, Becker & Eveland, 1976).

At the core of this model is a set of health cognitions concerned with: personal susceptibility to a condition; the perceived severity of that condition; the efficacy of the behavior; and barriers to the behavior (Kirscht, 1988). Susceptibility represents the personal probability of the threat. Severity and barriers are respective composites of all the distress of the health threat. Other variables such as individual demographic variables, social pressure, and personality are thought to interact with perceived susceptibility and perceived severity (Conner & Norman, 1996).

Prior to 1974 "*perceived susceptibility*" was the most powerful dimension. Since 1974, "barrier" has yielded the highest significant results (Janz & Becker, 1984; Sheeran & Abraham, 1996).

The basic components of the HBM include: perceived susceptibility (individuals vary widely in their feelings of personal vulnerability to a condition), perceived severity (feelings concerning the seriousness of contracting an illness), perceived benefits (the potential negative aspects of a health action may impede

the undertaking of a recommended behavior), cues to action (internal and/or external cues), and other variables (diverse demographic, personal, structural and social factors, which are capable of influencing health behaviors) (Conner & Norman, 1996; Becker, 1990, Kirscht, 1988).

Two other modifying variables frequently included in this model are cues to action and health motivation. Cues to action include a variety and range of triggers which may be either internal (i.e. physical symptoms) or external (i.e. advice from others)(Conner & Norman, 1996). However, the way in which these variables combine to produce behavior has never been specified (Kirscht, 1988). The HBM was hypothesized to be six independent variables acting to produce behavior and thus has often tested as six independent predictors of behavior. Yet, some writers suggested that the belief elements together produce some degree of readiness to act in the face of threat. The beliefs must be above some threshold for the behavior to occur (Kirscht, 1988).

The Health Belief Model hypothesizes that health-related action depends upon the simultaneous occurrence of three classes of factors:

- *The existence of sufficient motivation (health concern) to make health issues salient or relevant.*
- *The belief that one is susceptible (vulnerable) to a serious health problem or to the sequelae of that illness or condition.*
- *The belief that following a particular health recommendation will be beneficial in reducing the perceived threat; and at a subjectively acceptable cost. Cost refers to the perceived*

barriers that must be overcome in order to follow the health recommendation; it includes, but is not restricted to, financial outlays (Rosenstock, Stretcher, & Becker, 1988), p. 177).

The main strength of the HBM rests in the fact that it was developed by researchers working directly with health behaviors (Conner & Norman, 1996). Of all the existing models, the HBM received the most extensive research attention (Becker, 1990). A large body of evidence has accumulated in support of the HBM's ability to account for the undertaking of health behaviors, seeking diagnoses, and following prescribed medical advice (Becker, 1990). A number of assumptions underlie the HBM. One assumption which Rosenstock (1974) noted was that a cue was necessary to trigger action. This factor, calling the beliefs into a prominent position, is a supposition that appears characteristic of many cognitive and behavior models (Kirscht, 1988). Another assumption is that causal direction is hypothesized to run from beliefs to behavior (without excluding the very real possibility of a reverse relationship) (Kirscht, 1988).

Despite the body of findings linking the HBM to health actions, the HBM suffers from several weaknesses. Janz & Becker (1984) noted that this model is a psycho-social model, and is limited to accounting for as much of the variance as can be explained by attitudes and beliefs. Variables such as intentions to perform a behavior, social pressure and self-efficacy (perceptions of control over the performance of the behavior), which have been found to be highly predictive of behavior have been excluded from the Health Belief Model (Conner & Norman,

1996). The model also failed to address the importance of the influence that others' approval may have on behavior (Sheeran & Abraham, 1996).

Because of the weaknesses inherent in the HBM, Rosenstock et al. (1988) suggested an expanded version which includes the concept of self-efficacy. Health Belief Model found its origins in Cognitive Theory, and self-efficacy found its origin in Social Learning Theory.

Social Learning Theory

Social learning theories have paralleled the development of cognitive theory and have often been identified as a type of cognitive theory (Murray & Jacobson, 1978). These theories were largely developed by psychologists who had clinical interests in real social situations. Leading the way were four dominant researchers: Albert Bandura, Julian Rotter, and the team of Neal Miller and John Dollard.

In 1941 Miller and Dollard advocated the concepts of higher mental processes as attention, symbolization, mediated transfer, and foresight as part of the learning process (Murray & Jacobson, 1978). Later, Rotter's social learning was clearly cognitive. Rotter's theory includes two basic concepts: reinforcement and expectancy. Reinforcement according to Rotter is an incentive (Werner, 1986).

Expectancy is the subjective probability of a given behavior leading to a particular outcome. Expectancies are specific to each situation, but people are thought to have general expectancies such as interpersonal trust and internal versus external control of outcome. Behavior, then, is a function of the expectation

that a particular behavior will achieve that outcome (Werner, 1986). The consequences of the behavior are believed to operate by influencing expectations regarding the situation (Rosenstock et al., 1988). Becker and Maiman (1975) contended that *“behavior is predicted from the value of an outcome to the individual and from the individual’s expectation that a given action will result in that outcome”* (p.11).

Self-Efficacy

Bandura's (1977) Social Learning Theory (SLT) found its origin in these two views of reinforcements and expectancies. Bandura rejected the conception that learning is automatically shaped by environmental forces. Behavioral consequences provide information and motivate the person, but outcome depends on intervening thought processes (Murray & Jacobson, 1978). SLT according to Bandura, attempts to explain and predict behavior using several key concepts: incentives, outcome expectations, and efficacy expectations (Becker, 1990).

Bandura (1977) argued that perceived self-efficacy influences all aspects of behavior. Self-efficacy also affects people's choices of behavior settings, the amount of effort they expend on a task, and the length of time they persist in the face of obstacles (Becker, 1990). Additionally, self-efficacy affects people's emotional reactions and thought patterns (Becker, 1990).

Bandura (1977) hypothesized that efficacy expectations are learned from four major sources: performance accomplishments, vicarious experiences (observations of events and/or people), verbal persuasion, and psychological state. He believed that high physiological arousal impairs performance. People are more

likely to fail when they are very tense and agitated. He also recognized the influence of environmental factors.

Expanded Health Belief Model

A major contribution of Social Learning Theory was the introduction of the concept of self-efficacy as a distinct concept from outcome expectation (Bandura, 1977; Rosenstock, et al., 1988). Outcome expectancy is a person's estimate that a given behavior will lead to certain outcomes. This concept is similar to the HBM's "*perceived benefits*" (Rosenstock et al., 1988). On the other hand self-efficacy is the conviction that one can successfully execute the behavior required to produce the outcome (Rosenstock et al., 1988). Bandura (1977) argued that perceived self-efficacy influences all aspects of behavior.

Rosenstock et al. (1988) contend that the Health Belief Model does not incorporate efficacy expectation into the model because the behavioral focus of the early model was on circumscribed preventative actions such as accepting immunizations. However, in working with chronic illnesses and modifying life-long health habits, the situation is very different. For behavior change to succeed (HBM), people must have the incentive to take action, feel threatened by their current behavior patterns, believe that the specified change will be beneficial by resulting in an valued outcome at an acceptable cost, and they must also feel themselves competent (self-efficacy) to implement that change (McIntosh, Kubena, Jiang, Usery, & Karnei, 1996; Rosenstock, et al., 1988).

Alternative Concept

While the failure of the HBM to measure self-efficacy was an important omission (Table 1), so was the omission by Bandura that people who feel capable of change possess adequate incentives to change, believe outcomes can be influenced by behavior, and do not face major barriers to taking such actions (Rosenstock et al., 1988). A number of findings indicated that people who fail to comply with medical advice or take health protective actions fail to exhibit much motivation about health (Janz & Becker, 1984). Strecher, DeVellis, Becker & Rosenstock (1986) espoused that incentives, outcome expectations, and self-efficacy are all important elements of health behavior. The similarities of Social Learning Theory and the Health Belief Model are illustrated in Table 1 below:

Conclusion

The problem of missed appointments remains an important topic and deserves further study for several reasons. First and most important, missed

Table 1. Model Comparison

Social Learning Theory	Health Belief Model
Expectancies about environmental cues	Perceived susceptibility to and severity of the illness
Expectations about outcomes	Perceived benefits minus perceived costs
(Not explicitly included)	Cues to action
Expectations about self-efficacy	(Not explicitly included)
Incentive	Health motive: value of reduction of perceive threat

(from Rosenstock, et al., 1988)

appointments continue to disrupt the continuity of care, the availability of service and may jeopardize a client's well-being. Second, the literature has been filled with competing theories and contradictory findings. Finally, interventions to reduce missed appointments have also experienced conflicting findings and the utility of such interventions has not been tested.

Rationale

There is a dearth of understanding of the factors which predict whether clients will no-show for mental health care appointments. The continuing exorbitant failed appointment rates, combined with their impact on clients and their providers have inspired the present study. The focus of this study will be a client's beliefs or perceptions of distress, expectations of improvement (goals), perceived severity of his/her problems, and perceived benefits of keeping appointments (expected reduction in discomfort).

The theoretical foundation used in this study to explain attendance or failed appointments will be cognitive theory. This theory asserts that a critical determinant of behavior is an individual's thinking, either conscious or unconscious (Fiske & Taylor, 1991). Thus a person's behavior is derived from his or her perceptions about a specific situation (Werner, 1986). The facet of cognitive theory which this study draws upon to explain an individual's health actions (attending appointments) is that the behavior is predicted from the value of the outcome to the individual, and from his/her expectation that a given action (attending appointments) will result in that outcome (Becker & Maiman, 1975). In

this case, the outcome is missed appointments.

The noted cognition model for predicting health behaviors that will be used in this study will be the Health Belief Model (Conner & Norman, 1996; Sheeran & Abraham, 1996; Gochman, 1988). The Health Belief Model (HBM) has been fairly successful as a conceptual formula for understanding why clients engage or fail to engage in health-related behaviors, of which missed appointments are a part (Janz & Becker, 1984). A large body of evidence has accumulated in support of the Health Belief Model's ability to account for undertaking and continuing preventive health behaviors (Becker, 1990; Kirscht, 1988). In mental health treatment, the HBM has experienced limited use, with only 2 studies found which predicted the likelihood that clients would continue with lithium therapy (Connelly, 1984; Connelly, Davenport & Nurnberger, 1982). Two aspects of the HBM model important to this study are perceived severity and perceived benefits. Perceived susceptibility to illness has been eliminated. Perceived susceptibility has been utilized in studies that investigate behaviors that prevent the occurrence of disease. Clients in this study are presumed have a mental illness or disorder because of the reported presence of distress.

This study will attempt to answer the following research questions:

- I. Is a client's perception about the severity of his/her problems related to whether an appointment is attended or missed?
- II. Is a client, who has identified a therapy goal prior to treatment more or less likely to keep appointments?
- III. Is a client's expectation of improvement at the beginning of

therapy, related to whether he/she keeps or misses an appointment?

These questions will be addressed by examining the records of clients who attended an initial intake for mental health services and then agreed to treatment. In particular, whether a client identified a written therapy goal prior to treatment, identified problems as serious and expected decrease in discomfort will be studied to determine whether these variables predict whether clients are likely to miss appointments.

Hypotheses

Based upon the evidence noted above, the present study examined 3 non-directional hypotheses. While the hypotheses tested suggested directional hypotheses, non-directional hypotheses were tested because a result in either direction was considered important. The hypotheses tested included:

- I. Perceived severity will be related to appointment keeping when controlling for all other predictor variables.
- II. Goal identification will be related to appointment keeping when controlling for all other predictor variables.
- III. A client expectation of improvement will be related to appointment-keeping when controlling for all other predictor variables.

The underlying assumption is that the personal expectation of goal attainment (outcome expectancy) (appendix A, item F) is a major determinant of

behavior (Maddux, Sherer & Rogers, 1982). It is assumed that by stating a therapy goal a client believes himself/herself able to achieve the identified goal.

CHAPTER 3

METHODOLOGY

Subjects

The site for this study was a non-metropolitan statistical area (NMSA) located in Roseburg, Douglas County, Oregon, with a population of approximately 19,000 residents and a county population of less than 95,000 (U.S. Census Bureau, 1990). The U.S. Census Bureau standards defined a NMSA as a statistical population with a central city of less than 50,000 and a population area of less than 100,000 (U.S. Census Bureau, 1990).

An estimated 15.6 percent of this population lives below the poverty line. In 1990, there were approximately 36,000 households in the county. Of those, 7.4 percent received public assistance and 32.7 percent received social security. The median household income was estimated to be \$23,693. The per capita income was estimated to be \$10,809. More than half the county's residents live outside the major city limits. A staggering 16.6 percent of the population does not have a high school diploma and another 5 percent have less than a 9th grade education (U.S. Census Bureau, 1990).

The community mental health program is located in the county's health department main office which is located in the county seat and central city. The main office serves the majority of the residents who seek mental health services in the county. Eligibility for services required a person to have a Diagnostic and Statistical Manual IV (American Psychological Association, 1994) diagnosis and

either Oregon Health Insurance, private insurance, or no insurance. The program did not accept any HMO insurance plans.

In order to qualify for treatment, clients without insurance must have a DSM-IV diagnosis and the seriousness of their symptoms must put them at risk for inpatient hospitalization. Fees for clients without insurance were based on a sliding fee scale which was based on household income. The minimum charge per session was \$5 and maximum was \$104. Clients whose insurance failed to cover the entire cost of treatment were responsible for the balance based on the same sliding fee scale.

The program service providers included: a psychiatrist, a family physician, 2 psychiatric nurse practitioners, a clinical psychologist, marriage & family therapists, social workers, and masters level psychologists. The medical unit (MU) provides as needed medication therapy for all clients referred by the other units. The community service unit (CSU) provides services to the chronically mentally ill. The youth and family unit (YFU) provides services to children under the age of 18 and their families at either the health department office or at local schools. The crisis and evaluation unit (CEU) provides emergency services to county residents experiencing psychiatric emergencies, assessments, and initial intakes for the adult treatment unit. The subjects of this study included clients who received therapy from the adult treatment unit (ATU). The adult treatment unit provides mental health treatment for all adult clients, 18 years of age or older, who qualify for treatment as defined earlier. This unit does not treat chronically mentally ill clients. Clients who are 17 may qualify for services if they will turn 18 within 3

months. Generally, there are approximately 400 active clients at any given time.

The subjects included in this study were male and female clients, age 18 years or older, who had a DSM-IV diagnosis, completed an initial intake appointment, had been assigned to the Adult Treatment Unit for outpatient mental health treatment and had not been diagnosed as chronically mentally ill. Clients with a chronic mental illness as defined in the Oregon statutes will be excluded because generally services to these clients included case management with services conducted off site. The Oregon statutes define chronically mentally ill as:

18 years of age or older, diagnosed by a psychiatrist, licensed clinical psychologist or a non-medical examiner certified by the Mental Health and Developmental Disabilities Service Division as suffering from chronic schizophrenia, a chronic paranoid disorder or chronic psychotic disorder other than those caused by substance abuse (Title 35, 1997, p. 33).

A random sample was drawn from a computer list of adult clients who sought treatment with the Adult Treatment Unit from July 1, 1999 through June 30, 2000. During this period, a total of 416 adult clients who met the above criteria sought mental health treatment from ATU. A simple random sample using a table of random numbers was drawn from these 416 clients.

Dependent Variables

The dependent variables were: (1) the number of missed appointments (MA); and (2) the combined number of missed appointments and canceled

appointments (MCA). An appointment is classified as missed when a client fails to notify the therapist that the appointment will not be kept. An appointment is classified as canceled when a client informs the therapist at any time prior to the scheduled appointment time that the appointment will not be kept. A missed or canceled appointment is recorded in each chart by the client's therapist as a progress note. Missed or canceled appointments are also reported on the therapist's daily activity log and then entered into the computer and stored in a client's attendance file.

Independent Variables

The independent variables were: (1) perceived severity (Severity) of a client's problem(s). Perceived severity was a count of the total number of problems listed on the medical background that a client has identified as serious (see Appendix A, item C). Problems listed on the medical background form included a checklist of common symptoms and the option to lists other symptoms. These symptoms are included as criteria in making a DSM-IV diagnosis. A DSM-IV diagnosis is subdivided into levels of severity. "Severity is judged to be mild, moderate and severe based of the number of symptoms and the degree of functional disability (American Psychiatric Association, 1994, p. 376). The problem list included common medical problems that qualify as Axis III medical conditions, mental health symptoms which qualify as criteria of Axis I diagnosis, and commonly occurring social stressors that qualify as criteria for Axis IV (American Psychiatric Association, 1994). (2) A client's expected goal of change

(Expectancy) was a dichotomous variable (0 = no, 1 = yes) and indicated whether or not a client identified a goal or outcome of treatment. Lazarus & Folkman (1984) argued that individuals appraise stressor to determine whether they are changeable and whether resources are available to enhance coping. A client who identifies a goal prior to treatment has expectancy of an outcome from treatment (Elliott & Marmarosh, 1995). (3) A client's perceived benefit of keeping appointments (expected improvement) was measured by subtracting a client's expected reduction in discomfort (ERD) from current discomfort (CD) (Appendix A, items G & H):

CD - ERD = Improvement.

Both expected improvement and expected reduction in discomfort was measured using self-anchored scales. An individual rating scale and, in particular, a self-anchored scale (Bloom, Fischer & Orme, 1999) was used to operationalize the level of current discomfort and expected reduction in discomfort. This type of measure has been repeatedly recommended in major reviews because of its flexibility and ability to evaluate the intensity of a client's internal thoughts and feelings (Bloom, et al., 1999). Self-rating scales have high face validity (Bloom et al., 1999; Nugent, 1992). Bloom et al. (1999) reported that *"they can provide data with validity comparable to excellent standardized measures with excellent psychometric characteristics, although this may not be the case uniformly"* (p. 187).

Self-rating scales assume that the client is the best judge of his own situation and state of well-being (Bloom et al., 1999) rather than some other expert or "Big Brother" making the evaluation (Levi & Anderson, as cited in Bloom et al.,

1999). Any self-observation will contain some element of reactivity (Campbell & Lee, 1988). Alter & Evens (1990) *noted, "One cannot observe oneself and not be aware of the observation"*

(p. 150). However, when the purpose of self-observation is a baseline of the goal of change, then reactivity becomes what one is seeking (Alter & Evens, 1990).

A total of 12 variables were included in this study. These included gender, age, prior treatment, referral source, ethnicity, diagnosis, the number of reported problems, goal of change, and expected improvement. Information about the number of scheduled, attended, missed, and canceled along with the combined number of canceled and missed appointments was also gathered (as shown in Table 2).

It is important to note that a number of important independent variables were omitted from this research. In particular, the measure of improvement clients' experiences prior to and between appointments, and measures of the therapeutic relationship or alliance clients have with their therapist (Mueller &

Table 2. Appointment Summary

	Scheduled	Attended	Missed	Canceled	Canceled & Missed
Total Number of Appointments	899	555	192	152	344
% of Scheduled	100%	61.7%	21.4%	16.9%	38.3%
Mean	9.97	6.17	2.13	1.69	3.80
Std. Deviation	8.073	5.816	2.073	1.834	3.069

Pekarik, 2000; Miller, et al., 1997; Horvath & Luborsky, 1993; Wierzbicki & Pekarik, 1993; Frank, 1990; Pekarik, 1988; Pekarik, 1983). Unfortunately, measures of these variables were unavailable for this study. The implications of these excluded variables from this study will be addressed in the discussion section of this dissertation.

Research Design

An ex post facto design (Kerlinger, 1979) was used in this study. Data on at least 90 subjects (N=416) was collected from clients who began outpatient treatment during an entire year from July 1, 1999 through June 30, 2000. The sample size was determined by a power analysis to be discussed below. The study involved the review of written charts and computer records.

A multiple regression/semi-partial correlation approach was employed to test a hypothesized relationship between one categorical and two interval independent variables and (1) the number of missed, and (2) the combined number of missed and canceled appointments (Pedhazur & Pedhazur-Schmelkin, 1991; Cohen & Cohen, 1983).

Power Analysis

A power analysis (Borenstein & Cohen, 1988, Cohen, 1988) was conducted to determine the sample size necessary to test the hypothesized relationship between one independent, controlling for two covariates, and an interval dependent variable using a multiple regression approach. The power analysis conducted, focused on detecting an increase in R^2 (i.e., a squared semi-partial

correlation [sr^2]) of .05, a small effect size. This magnitude squared semi-partial is equivalent to a semi-partial correlation of $\sqrt{.05} = .22$ between the dependent variable and the independent variable of focus (Cohen & Cohen, 1983). The sample size was selected in an attempt to detect at least a small effect size, with $\alpha = .05$, two-tailed, and power = .80. Given these parameters, the power analysis showed that at least 90 clients were needed in order to detect a $sr^2 = .05$, with two covariates and an overall $R^2 = .15$, and with power = .80.

For the present study, a small effect size indicated the variance accounted for by the target independent variable, controlling for two covariates, was 5% (Borenstein & Cohen, 1988). For the present study, this effect size was considered to be of practical and theoretical importance (Orme & Combs-Orme, 1986).

Alpha was set at .05, according to convention, to reduce the likelihood of a Type I error (Murphy & Myers, 1998; Pedhazur & Pedhazur-Schmelkin, 1991; Orme & Combs-Orme, 1986). Power was set at .80 to increase the ability to correctly reject the null hypothesis when it is false, thus reducing the risk that the findings are the result of a Type 2 error (Pedhazur & Pedhazur-Schmelkin, 1991; Orme & Combs-Orme, 1986).

Data Collection

The University of Tennessee, Institutional Review Board granted permission to gather data from the records of clients on September 14, 2001 (Appendix B) and was renewed on September 12, 2002. Data was collected from the charts of at

least 90 clients included in the sample and from their computer records which indicated whether appointments were missed or canceled. The data were recorded onto a data sheet (see Appendix C) by an employee of the agency and not this researcher. Archival records have strong external validity because the subject is unaware of the research or its aims (Judd, Smith & Kidder, 1991). Ten percent of the records were re-examined by the employee to assure accuracy. In order to protect confidentiality and anonymity, the data from each chart were identified only by their assigned random number. Information including gender, age, ethnicity, prior treatment, diagnosis, and referral source were also gathered from each chart and used to describe the sample. The effects of these variables were controlled for by utilizing a hierarchical regression model. Each chart contains general client information, financial, insurance information and fee agreement, consumer information (name and address), consent to services, and signed client rights and responsibilities. This data was not collected because it would violate anonymity.

Appointments with therapists and medication appointments with the staff psychiatrist, physician, or nurse practitioners that were missed or canceled were recorded on the data sheet from original progress notes located in the chart and compared with computer records for each participant. Clients' chart record and computer attendance files were compared for accuracy. Data reported exclusively by either chart or computer records were included in this study.

Data Analysis

A hierarchical multiple regression analysis was utilized to test one categorical and two interval independent variables with one interval dependent variable (Pedhazur & Pedhazur-Schmelkin, 1991). Demographic variables were entered into the regression equation first to control for any effect these variables may have on the dependent variable. The 3 independent variables were entered into the equation second. A test of assumptions was conducted to assure that the model was correctly specified: (1) normality was tested by an examination of the distributions of the residuals of the dependent variables, MA and MCA; (2) independence among the observations was assumed, given the design; (3) homogeneity of variance was tested by examining the scatter plot of the standardized residuals against the predicted values of the dependent variable; and (4) a linear relationship was tested by an examination of the independent variable (group squared) plotted against the predicted values of the dependent variable. Each independent variable was tested for multicollinearity using the tolerance statistic. Cook's D was conducted to determine whether any outliers influenced the results (Norusis, 1995).

Two analyses were conducted: (1) one in which the number of missed appointments (MA) was the dependent variable, and (2) one in which missed and canceled appointments (MCA) were the dependent variable. Few studies have included canceled appointments, yet they have long been acknowledged as a problem for both the client and providers (Dotter, 1998). Non-directional hypotheses were tested because a result in either direction would be important.

The independent variable “goal” was divided into two categories: no goal (0) or goal (1). The independent variable “serious” was the sum of all problems labeled as serious by clients on the medical background form (Appendix B). The interval variable “expected improvement” was determined by subtracting expected level of reduction in discomfort (ERD) at termination of treatment from self-rated level of client discomfort (CD) , $CD - ERD = \text{Improvement}$. Both self-rated scales consist of 10 degrees. A rating of 1 represented no discomfort and 10 represented the highest discomfort. Subjects who did not rate either a level of distress and/or expected improvement were assigned a 0 representing no expected improvement.

The self-rating scales were classified as interval scales. While some have argued that self-rating scales are truly ordinal scales, treating an ordinal scale as if it were internal has very little effect on the identification of empirical relationships in the social sciences (Nunnally, 1978). Nunnally (1978) stated that it is permissible to treat most measurement methods in the behavioral sciences as leading to interval scales. He noted that *“as long as the rank order is not disturbed, changes in the shapes of the correlations make only very small changes in the correlation.....for example a correlation of .50 might go down to .45 or up to .55”* (p.29).

To examine the effect of goal of change (goal), identification of problems as serious (serious), and expect decrease in discomfort (discomfort) on missed appointment (MA) and missed combined with canceled appointments (MCA), the independent variable was entered into the equation simultaneously. Each

independent variable was tested for multicollinearity using the tolerance statistic.

CHAPTER 4

RESULTS

Demographic and Non-Demographic Variables

Demographic and non-demographic data were gathered from the records of the 90 clients included in the sample. These variables were used to describe the sample and as control variables. The sample mean age was 35.21 (SD = 11.754). Females included in the sample account for 72.2% (n=65). Race was divided into “white” (n=84; 93.3%) and “other.” The “other” category accounted for 6.7% of the sample and included Hispanic (n=3) and Native American (n=3) clients. In this study, Hispanic and Native American clients were combined into one category, that of “other.”

Almost one-half of the clients had previously received treatment from the agency, 47.8% (n=43). Referral source was coded into two categories: “self-referral” and “other referral.” The “other referral” category accounted for 47.8% of all of the referrals (n=43) and included agency referrals (n=17), court referrals (n = 2), family/friend referrals (n=7), and medical referrals (n=17).

Primary mental health diagnosis was defined as the first diagnosis listed on Axis I or Axis II. It is a common practice to identify several diagnoses on Axis I and another on Axis II. The diagnoses were recorded according to perceived declining influence of symptoms on the client. The primary diagnoses included: attention deficit hyperactivity disorder (ADHD) (n=2), adjustment disorder (n=12), anxiety disorder (n=3), bipolar disorder (n=7), cannabis abuse (n=1), depression, not

otherwise specified (n=11), dysthymia (N=14), major depression (n=27), panic disorder (n=5), and post-traumatic stress disorder (PTSD) (n=8). Mental health diagnoses were coded into two classifications: “mood disorders” and “other disorders.” Bipolar disorder, major depression, dysthymia, and depression not otherwise specified are all listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) under the general classification of mood disorders, and so, in this study, were coded into the mood disorder category (American Psychiatric Association, 1994). Mood disorders represented 65.6% of the sample (n=59). The remaining diagnoses - ADHD, adjustment disorder, cannabis abuse, anxiety disorder, panic disorder and PTSD - were coded into the “other disorder” category (see Table 3).

Independent Variables of Focus

The mean of the variable “number of problems” was 21.99 (SD = 10.39, range 0-47; see Table 2). The mean of the independent variable “expected improvement” was 4.60 (SD = 3.02, range 1-10). A total of 69 (76.7%) of the clients identified a specific therapy goal prior to their first appointment. No conclusions were made about the reasons why clients did not identify a therapy goal of change prior to their first appointment.

Dependent Variables

The dependent variables of focus in this study were the number of missed appointments and the combined number of canceled and missed appointments

Table 3. Re-classified Descriptive Statistics for Mental Health Diagnoses

Disorders	Frequency	%	Classification Total	%	Cumulative %
Mood Disorders:			59	65.6	65.6
Bipolar Disorder	7	7.8			
Depression	11	12.2			
Dysthymia	14	15.6			
Major Depression	27	30.0			
Other:			31	34.4	100.0
ADHD	1	1.1			
Adjustment Disorder	12 4	13.3 4.4			
Anxiety Disorder	8	8.9			
PTSD	5	5.6			
Panic Disorder	1	1.1			
Cannabis Abuse					
Total:	90	100.0	90	100.0	

Table 4. Descriptive Statistics Interval Variables

Interval Variables	Mean	Std. Deviation	N
Age	35.12	11.91	90
Problems (# reported)	22.09	10.45	90
Goal of Change	.77	.43	90
Expected Improvement	4.73	2.99	90
Missed Appointments	2.13	2.07	90
C&M Appointments	3.80	3.07	90

(i.e., the sum of missed and canceled appointments). The mean number of missed appointments was 2.13 (SD = 2.07, range 0 -10; see Table 4). The mean number of canceled and missed (C&M) appointments was 3.70 (SD = 2.97, range 0-14).

Regression Analyses

Analysis 1

Two regression analyses were conducted. First, the relationship between the independent variables “problems,” “goal of change,” and “expected improvement” and the dependent variable missed appointments was examined. The demographic variables age, gender, race, referral source, and diagnosis were included in the regression equation in order to control for the effects of these variables. Referral source was dummy coded into two categories (1=self-referral, 0=all others). Self-referral accounted for 52.2% of referrals. It was determined that combining the remaining categories into “other” would not significantly impact the results. Diagnosis was dummy coded into two categories (1=mood disorders, 0=all other diagnostic categories). Ethnicity was dummy coded into two categories

(1=white, 0=all others).

It was predicted that a relationship would exist between the number of problems identified by clients and the number of missed appointments; the expectation of improvement and the number of missed appointments; and the goal of change and the number of missed appointments after controlling for covariates. Non-directional statistical tests were conducted since a result in either direction was considered important. Table 5 below shows the simple correlations between all the variables in the first analysis.

As can be seen in Table 6, the number of problems was significantly related to the number of missed appointments, $[t(80) = 2.27, p < .05]$. After controlling for all covariates, as the number of problems reported by a client increased, the expected number of missed appointments increased. The two other independent variables of focus, expected improvement $[t(80) = .015, p > .05]$, and therapy goal $[t(80) = -.586, p > .05]$, were not significantly related to the number of missed appointments.

Two of the covariates were significantly related to the number of missed appointments. Age was found to be significantly related to the number of missed appointments $[t(80) = -2.412, p < .05]$ (see Table 6). As age increased, the number of missed appointments decreased. Prior treatment was also significantly related to the number of missed appointments $[t(80) = 3.193, p < .01]$.

OLS Assumptions

Normality of the distribution of residuals was tested by a visual examination of a histogram of residuals (see Figure 1). Normality was also tested by an

examination of a normal P-P plot of the residuals (see Figure 2).

Both plots suggested possible departures from normality, with the observed distribution appearing more skewed and leptokurtic than a normal distribution (Lehman, 1991).

Table 5. Correlations – Dependent Variable Missed Appointments

		Missed	Gender	Age	Prior	Referral	Ethnicity	Diagnosis	Problems	Goal	Improvement
Pearson	MISSED APPOINTMENTS	1.000	-.032	-.172	.290**	-.088	.039	.002	.253*	-.028	.042
	GENDER	-.032	1.000	-.153	.138	-.061	-.166	-.084	.060	.127	.028
	AGE	-.172	-.153	1.000	.198	.123	.018	-.008	.004	-.094	.101
	PRIOR TREATMENT	.290**	.138	.198	1.000	.066	.095	-.007	.128	-.014	.069
	REFERRAL	-.088	-.061	.123	.066	1.000	.095	.040	.098	.039	.009
	ETHNICITY	.309	-.166	.018	.095	.095	1.000	.087	.062	.169	.006
	DIAGNOSIS	.002	-.084	-.008	-.007	.040	.087	1.000	.031	-.123	.006
	PROBLEMS	.253*	.060	.004	.128	.098	.062	.031	1.000	.151	.296**
	THERAPY GOAL	-.028	.127	-.094	-.014	.039	.169	-.123	.151	1.000	.357**
	IMPROVEMENT	.042	.028	.101	.069	.009	.006	.006	.296**	.357	1.000
Sig. (2-tailed)	MISSED APPOINTMENTS	.	.764	.104	.006	.411	.716	.989	.016	.793	.694
	GENDER	.764	.	.150	.195	.570	.118	.431	.573	.233	.795
	AGE	.104	.150	.	.062	.249	.868	.938	.970	.377	.341
	PRIOR TREATMENT	.006	.195	.062	.	.535	.373	.946	.229	.896	.517
	REFERRAL	.411	.570	.249	.535	.	.373	.712	.357	.718	.930
	ETHNICITY	.716	.118	.868	.373	.373	.	.412	.560	.112	.955
	DIAGNOSIS	.989	.431	.938	.946	.712	.412	.	.772	.246	.957
	PROBLEMS	.016	.573	.970	.229	.357	.560	.772	.	.154	.005
	THERAPY GOAL	.793	.233	.377	.896	.718	.112	.246	.154	.	.001
	IMPROVEMENT	.694	.795	.341	.517	.930	.955	.957	.005	.001	.
N	MISSED APPOINTMENTS	90	90	90	90	90	90	90	90	90	90
	GENDER	90	90	90	90	90	90	90	90	90	90
	AGE	90	90	90	90	90	90	90	90	90	90
	PRIOR TREATMENT	90	90	90	90	90	90	90	90	90	90
	REFERRAL	90	90	90	90	90	90	90	90	90	90
	ETHNICITY	90	90	90	90	90	90	90	90	90	90
	DIAGNOSIS	90	90	90	90	90	90	90	90	90	90
	PROBLEMS	90	90	90	90	90	90	90	90	90	90
	THERAPY GOAL	90	90	90	90	90	90	90	90	90	90
	IMPROVEMENT	90	90	90	90	90	90	90	90	90	90

**Significant at .05

*Significant at .01

Table 6. Coefficients Dependent Variable - Missed Appointments

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
	B	Std. Error	Beta			Tolerance	VIN
1							
(Constant)	3.562	1.189		2.996	.004		
GENDER	-.585	.485	-.127	-1.205	.231	.909	1.100
AGE	-4.402E-02	.018	-.253	-2.406	.018	.916	1.092
PRIOR	1.498	.433	.363	3.457	.001	.916	1.092
TREATMENT							
REFERRAL	-.363	.420	-.088	-.862	.391	.973	1.028
SOURCE							
ETHNICITY	-2,834E-02	.855	-.003	-.033	.974	.946	1.057
DIAGNOSIS	-2.111-02	.439	-.005	-.048	.962	.986	1.014
2							
(Constant)	2.900	1.240		2.339	.022		
GENDER	-.604	.483	-.131	-1.250	.215	.888	1.126
AGE	-4.399E-02	.018	-.253	-2.412	.018	.893	1.119
PRIOR	1.374	.430	.333	3.193	.002	.900	1.111
TREATMENT							
REFERRAL	-.440	.416	-.107	-1.057	.293	.962	1.040
SOURCE							
ETHNICITY	-1.681E-02	.863	-.002	-.019	.985	.900	1.112
DIAGNOSIS	-8.812E-02	.438	-.020	-.201	.841	.963	1.039
PROBLEMS	4.753E-02	.021	.240	2.275	.026	.884	1.131
THERAPY	-.319	.544	-.065	-.586	.560	.787	1.270
GOAL							
EXPECTED	1.162E-03	.077	.002	.015	.988	.785	1.273
IMPROVEMENT							

a. Dependent Variable: Missed Appointments

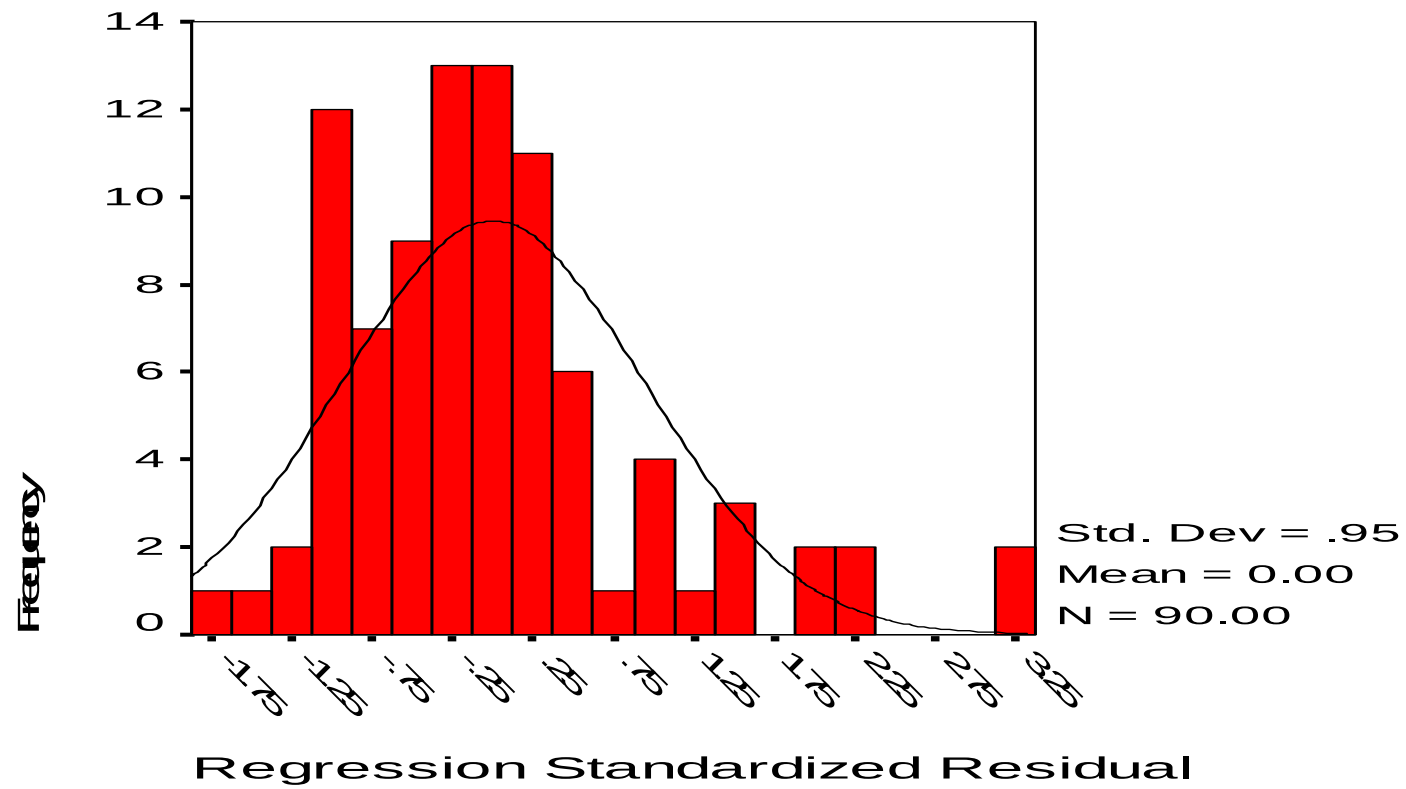


Figure 1. Histogram Dependent Variable: Missed Appointments

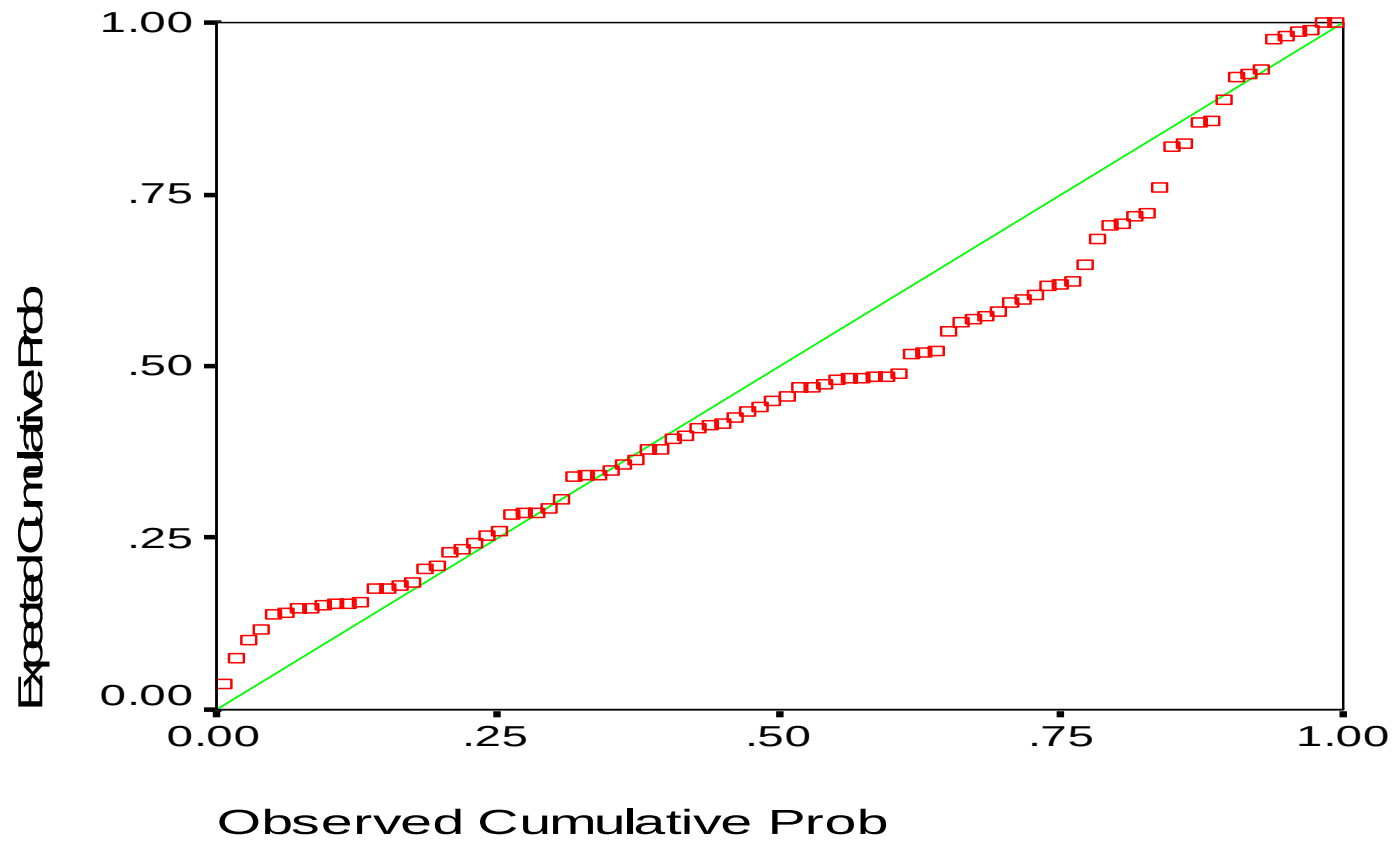


Figure 2. Normal P-Plot of Regression Standardized Residual
Dependent variable: Missed Appointments

Homogeneity of variance assumption was tested by visual inspection of a plot of standardized residuals versus standardized predicted values of the dependent variable (see Figure 3). This plot showed a pattern similar to the so-called “fan shape” that suggests an increase in residual variance as predicted values of the dependent variable increase (Neter, Wasserman, & Kutner, 1983) and, therefore, a possible violation of the homogeneity of variance assumption. Neter et al. (1983) noted that this combination of possible violations of the assumptions of OLS regression can arise from a dependent variable that follows a Poisson distribution, which is quite plausible for the variable “number of missed appointments” since it is a count variable (Greene, 1993).

Greene (1993) discusses a number of options for correcting OLS regression estimates when there are violations of the assumptions of normality and homogeneity of variance. He notes, however, that in instances of small to moderate sized samples these approaches may introduce further errors that offset any gain over reliance on OLS data analysis approaches (Greene, 1991, p. 408). Since the sample size in this dissertation was in the small to moderate size range, it was decided not to employ any of the alternate procedures discussed by Greene (1991). The sample size was not increased because resources were not available to gather additional data.

The above results need to be considered and interpreted within the context of these possible violations of OLS assumptions. In particular, the violation of the assumption of homogeneity of variance may have resulted in underestimates of the standard errors in the regression analysis (Neter, et al.,

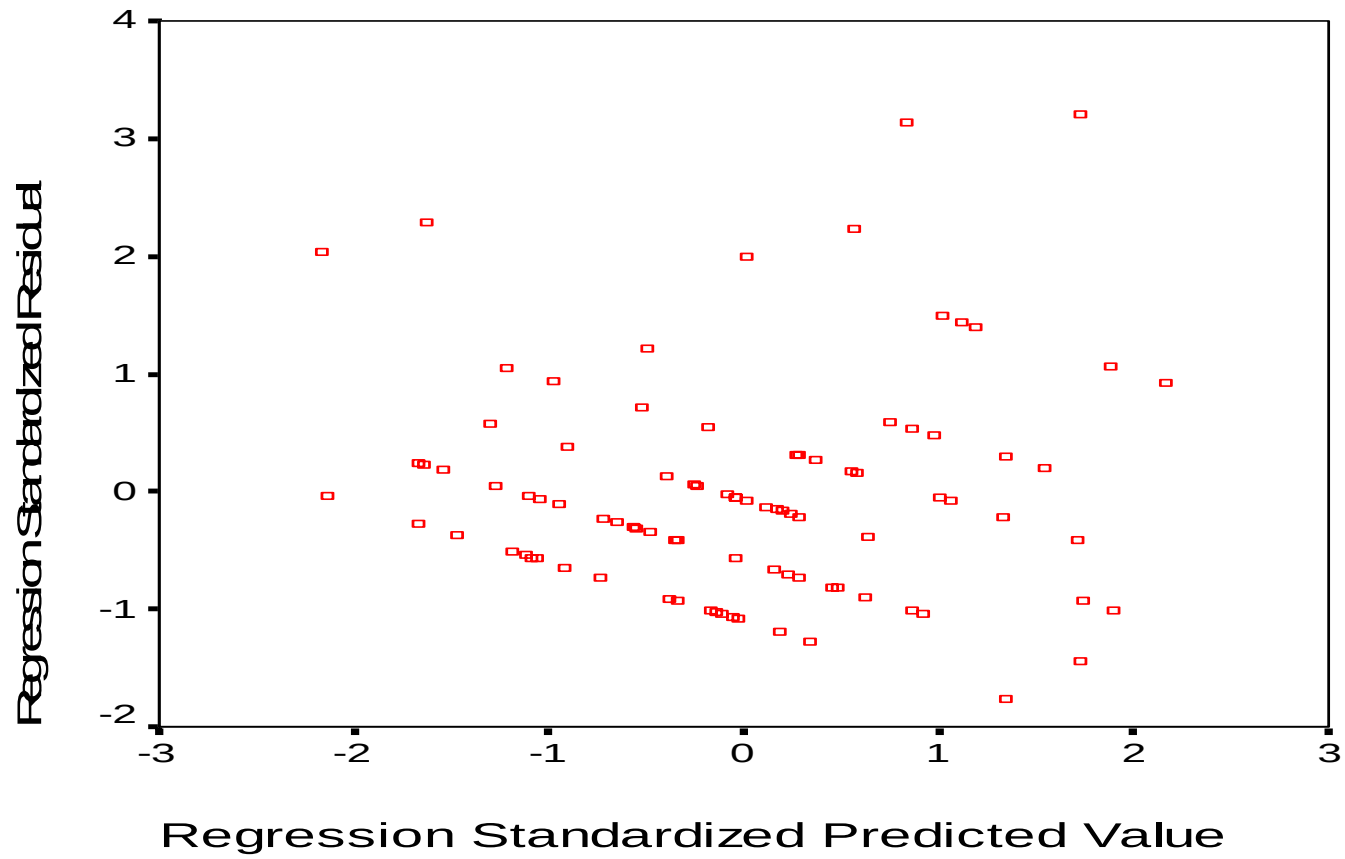


Figure 3. Scatter Plot Dependent Variable: Missed Appointments

1983), so the above results for “number of problems” may be erroneous and reflect a statistically significant outcome that is an artifact of an overestimated t-ratio.

Analysis 2

Next, the relationship between the independent variables “problems,” “goal of change,” and “expected improvement” and the dependent variable the combined number of canceled and missed appointments was investigated. The demographic variables age, gender, race, referral source and diagnosis were used, again, as covariates to control for the effects of these variables. Referral source, diagnosis and ethnicity were dummy coded. Dummy coding categorical variables increases the sensitivity of the tests of significance thereby minimizing potential distortion from small number of cases present in this study which may give misleading pictures (Pedhazur & Pedhazur-Schmelkin, 1991). Referral source was dummy coded into two categories (1=self-referral, 0=all others). Diagnosis was dummy coded into two categories (1=mood disorders, 0=all other categories). Ethnicity was dummy coded into two categories (1=white, 0=all other).

It was predicted that a relationship would exist between the number of problems and the combined number of canceled and missed appointments; the expectation of improvement and the combined number of canceled and missed appointments; and a therapy goal of change and the combined number of canceled and missed appointments. Non-directional statistical tests were conducted because a result in either direction was considered important. Table

Table 7. Correlations - Dependent Variable Canceled and Missed Appointments

		C&M	Gender	Age	Prior	Referral	Ethnicity	Diagnosis	Problems	Goal	Improvement
PEARSON	C&M APPTS	1.000	.098	-.088	.373**	-.086	.012	.060	.209*	.067	.159
	GENDER	.098	1.000	-.153	.138	-.061	-.166	-.084	.060	.127	.028
	AGE	-.088	-.153	1.000	.198	.123	.018	.008	.004	-.094	.101
	PRIOR	.373**	.138	.198	1.00	.006	.095	-.007	.128	-.014	.069
	TREATMENT										
	REFERRAL	-.086	-.061	.123	.066	1.000	.095	.040	.098	.039	.009
	ETHNICITY	.012	-.166	.018	.095	.095	1.00	.087	.062	.169	.006
	DIAGNOSIS	.060	-.084	-.008	-.007	.040	.087	1.000	.031	-.123	.006
	PROBLEMS	.178	.060	.004	.128	.098	.062	.031	1.000	.151	.296**
	THERAPY	.067	.127	-.094	-.014	.039	.169	-.123	.151	1.000	.357**
	GOAL										
	IMPROVEMENT	.159	.028	.101	.069	.009	.006	.006	.296**	.357**	1.000
Sig. (2 tailed)	C&M APPTS	.	.360	.408	.000	.421	.913	.576	.048	.530	.134
	GENDER	.360	.	.150	.195	.570	.118	.431	.573	.233	.795
	AGE	.408	.150	.	.062	.249	.868	.938	.970	.377	.341
	PRIOR	.000	.195	.062	.	.535	.373	.946	.229	.896	.517
	TREATMENT										
	REFERRAL	.421	.570	.249	.535	.	.373	.712	.357	.718	.930
	ETHNICITY	.913	.118	.868	.373	.373	.	.412	.560	.112	.955
	DIAGNOSIS	.576	.431	.938	.946	.712	.412	.	.772	.246	.957
	PROBLEMS	.048	.573	.970	.229	.357	.560	.772	.	.154	.005
	THERAPY	.530	.233	.377	.896	.718	.112	.246	.154	.	.001
	GOAL										
	IMPROVEMENT	.134	.795	.341	.517	.930	.955	.957	.005	.001	.
N	C&M APPTS	90	90	90	90	90	90	90	90	90	90
	GENDER	90	90	90	90	90	90	90	90	90	90
	AGE	90	90	90	90	90	90	90	90	90	90
	PRIOR	90	90	90	90	90	90	90	90	90	90
	TREATMENT										
	REFERRAL	90	90	90	90	90	90	90	90	90	90
	ETHNICITY	90	90	90	90	90	90	90	90	90	90
	DIAGNOSIS	90	90	90	90	90	90	90	90	90	90
	PROBLEMS	90	90	90	90	90	90	90	90	90	90
	THERAPY	90	90	90	90	90	90	90	90	90	90
	GOAL										
	IMPROVEMENT	90	90	90	90	90	90	90	90	90	90

** Significant at .01

* Significant at .05

7 illustrates the correlations between all these variables in the second analysis.

As can be seen in Table 8, the results suggested that, after controlling for covariates, there was no relationship between the number of problems [$t(80) = 1.299, p > .05$], expected improvement [$t(80) = .920, p > .05$], or goal of change [$t(80) = .158, p > .05$] and the combined number of canceled and missed appointments. One of the covariates was significantly related to the combined number of canceled and missed appointments. Prior treatment was significantly related to the number of missed appointments [$t(80) = 3.752, p < .01$]. When holding all other variables constant, the results suggested that clients who had prior treatment also had about two more canceled and missed appointments than clients who had no prior treatment.

OLS Assumptions

As in the previous regression analysis, the normality assumption of OLS regression was tested by visual inspections of a histogram of OLS residuals (see Figure 4). Normality was also tested by an examination of a normal P-P plot of residuals (see Figure 5). Similar to the previous analysis, both these plots were suggestive of a distribution of residuals somewhat more skewed and leptokurtic than a normal distribution.

Homogeneity of variance of residuals was assessed by a visual inspection of a plot of standardized residuals versus standardized predicted values of the dependent variable (see Figure 6). This plot showed a pattern somewhat similar to the fan shape that is suggestive of heteroscedasticity. These results were very similar to those obtained in the assessment of the plausibility of the OLS

Table 8. Coefficients Dependent Variable - Canceled and Missed Appointments

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
	B	Std. Error	Beta			Tolerance	VIN
1							
(Constant)	4.078	1.740		2.343	.021		
GENDER	9.670E-02	.710	.014	.136	.892	.909	1.100
AGE	-3.988E-02	.027	-.155	-1.489	.140	.916	1.092
PRIOR	2.504	.634	.410	3.948	.000	.916	1.092
TREATMENT							
REFERRAL	-.575	.615	-.094	-.934	.353	.973	1.028
SOURCE							
ETHNICITY	-.235	1.251	-.019	-.188	.851	.946	1.057
DIAGNOSIS	.437	.643	.068	.680	.499	.986	1.014
2							
(Constant)	2.958	1.833		1.614	.110		
GENDER	-1.302E-03	.715	.000	-.002	.999	.888	1.126
AGE	-4141E-02	.027	-.161	-1.536	.128	.893	1.119
PRIOR	2.386	.636	.391	3.752	.000	.900	1.111
TREATMENT							
REFERRAL	.653	.615	-.107	-1.060	.292	.962	1.040
SOURCE							
ETHNICITY	-.371	1.275	-.030	-.291	.772	.900	1.112
DIAGNOSIS	.421	.647	.065	.650	.518	.963	1.039
PROBLEMS	4.013E-02	.031	.137	1.299	.198	.884	1.131
EXPECTED	.105	.114	.103	.920	.361	.785	1.273
IMPROVEMEN							
T	.127	.804	.018	.158	.875	.787	1.270
THERAPY							
GOAL							

a. Dependent Variable: Canceled and Missed Appointments

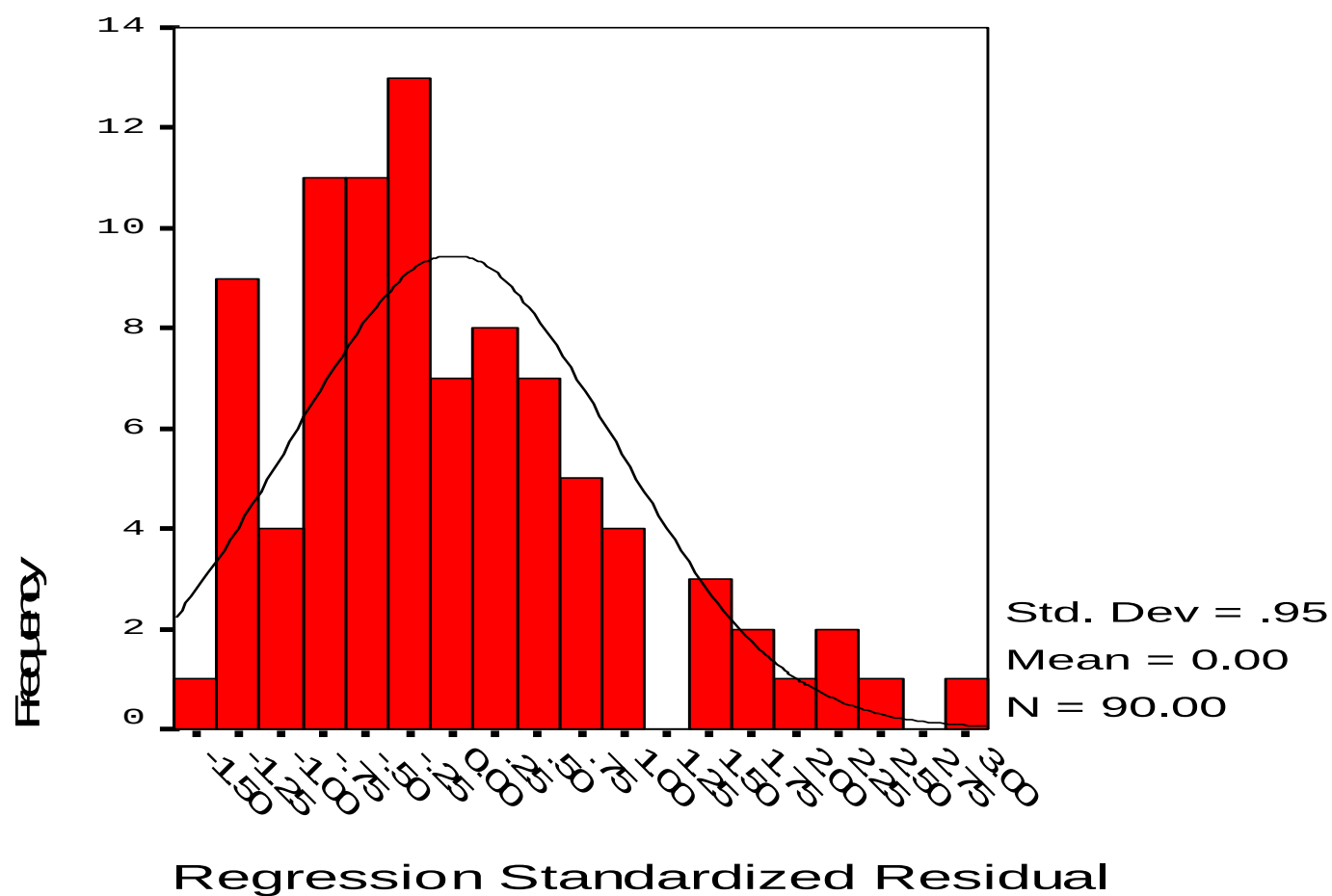


Figure 4. Histogram Dependent Variable: Canceled and Missed Appointments

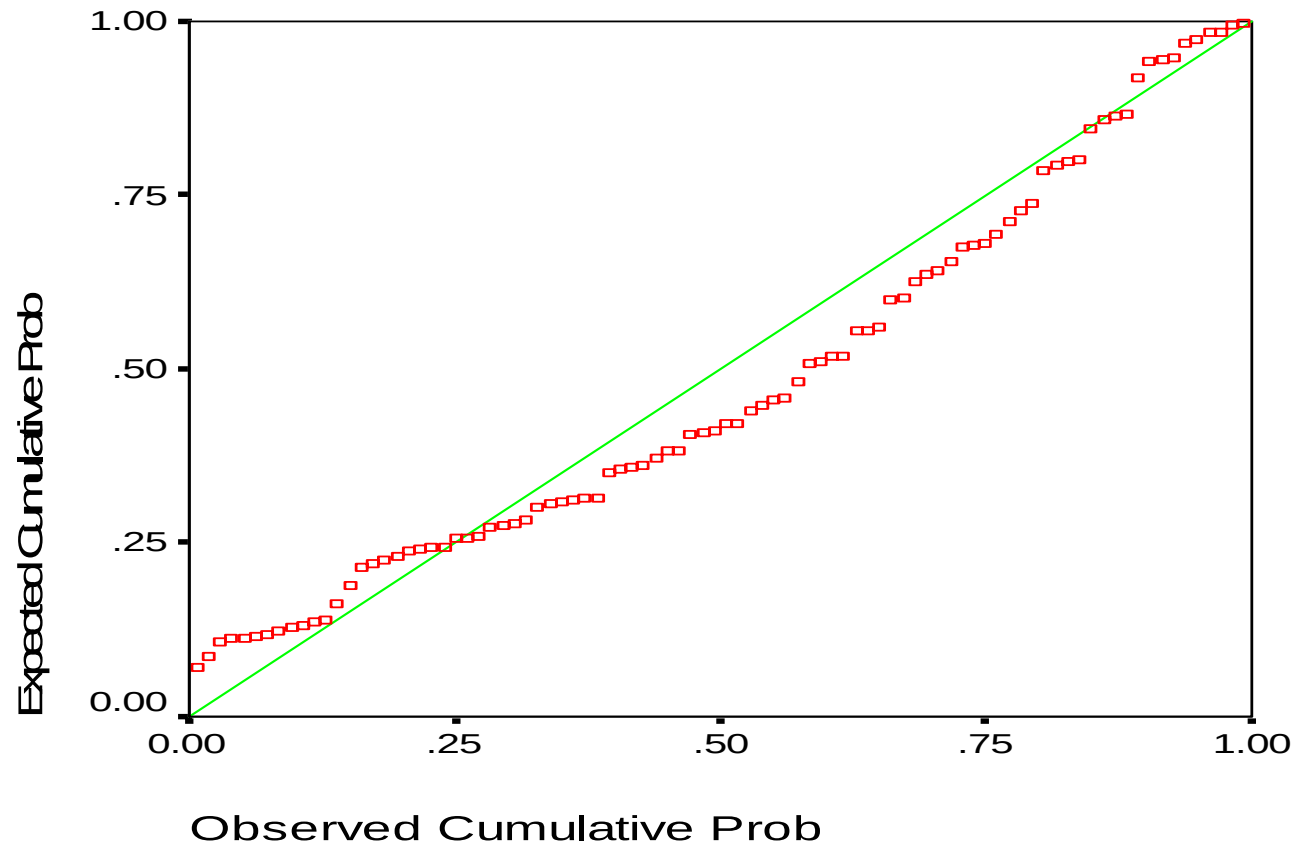


Figure 5. Normal P-P Plot of Regression Standardized Residual Dependent Variable: Canceled and Missed Appointments

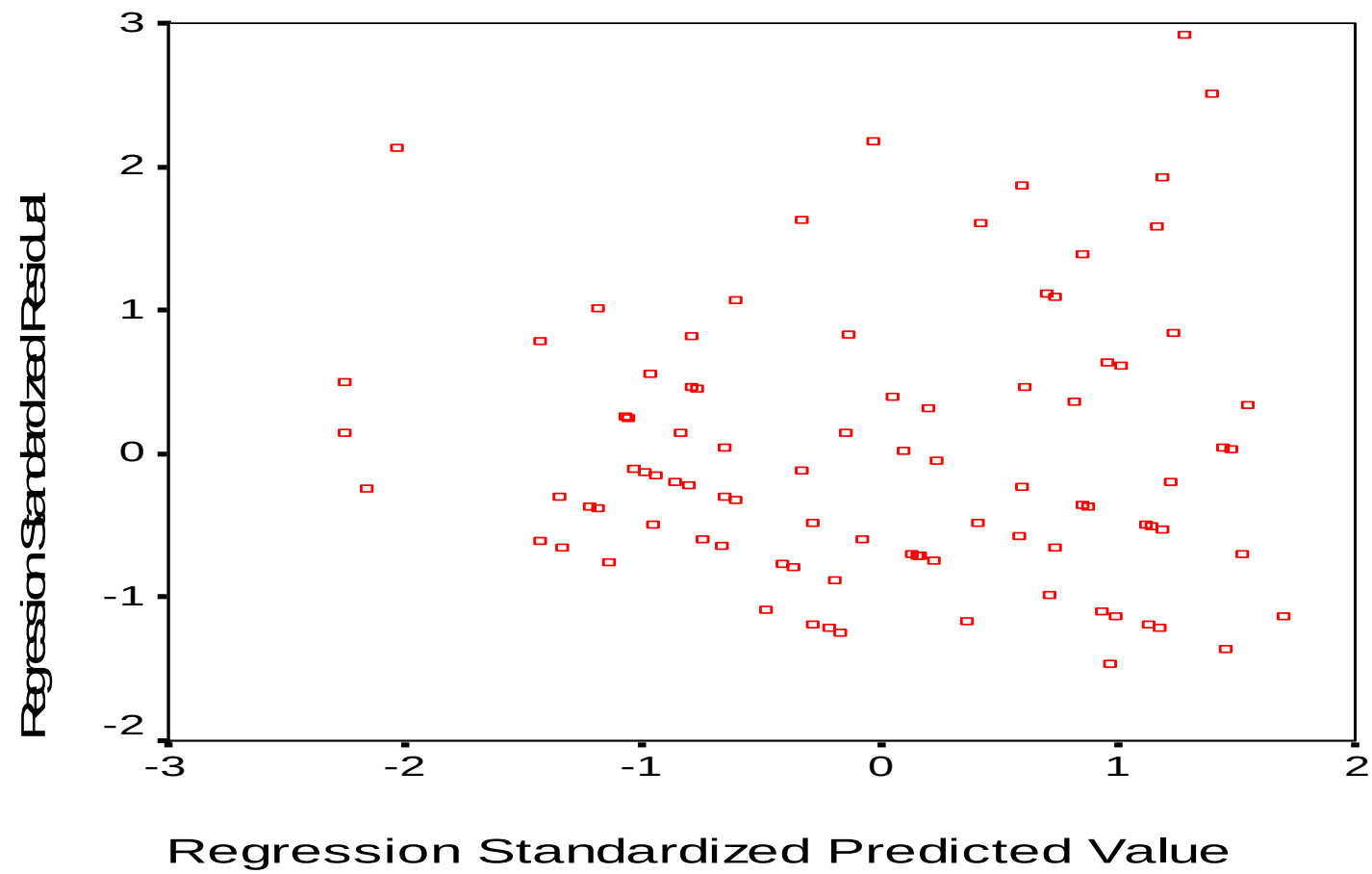


Figure 6. Scatter Plot Dependent Variable: Canceled and Missed Appointments

regression assumptions in the previous analysis and may indicate that the distribution of canceled and missed appointments may follow a Poisson distribution. Since the number of canceled and missed appointments is a count variable, it is plausible that the distribution that this variable follows is Poisson in nature (Greene, 1993). Given that violations of the homogeneity of variance assumption can lead to under estimates of standard errors (Neter et al., 1983), and that none of the independent variables were significantly related to the dependent variable in this analysis, it does not appear that these possible violations of the assumptions of OLS regression have negatively influenced this analysis since outcomes that were artifacts of these violations would most likely show up as spurious statistically significant results.

CHAPTER 5

DISCUSSION

Discussion

The results in this study are tentative and thus disappointing. The study found a significant relationship between problems and missed appointments, yet these results were overshadowed by the examination of the plot of the residuals which suggested the presence of heteroscedasticity. Notwithstanding, this topic remains germane. The high rates of missed appointments obtained in this study are consistent with prior studies and point to further study (Dotter, 1998, Smoller, et al., 1998). The rate of missed appointments in this study represented 21.4% of scheduled appointments. Canceled appointments combined with missed appointments accounted for 38.3% of scheduled appointments. These figures are consistent with previous research which found that on-going missed appointments ranged from 12-60% (Dotter, 1998; Smoller, et al., 1998).

The elevated number of missed and canceled appointments obtained in this study echo the literature's identification of the importance of this problem (Sparr, et al., 1993, Grunebaum et al., 1996; Hertz & Stamps, 1977). High rates of missed appointments continue to contribute to decreased availability of needed services, increased cost of services, the unnecessary depletion of professional resources, and resulting financial losses (U.S. Department of Health & Human Services, 1999). The ability to reliably and accurately identify clients who are likely to miss appointments would be immensely helpful to future studies

of causality, developing interventions to reduce failed appointments, and in assessing whether current treatment models are effective with clients who attend community based outpatient treatment centers. Ultimately, increased appointment keeping would improve continuity and quality of care, as well as client well-being, while also increasing the availability of services and shortening waiting periods and treatment durations.

The outcomes gleaned from this study need to be considered within the context of omitted variables, model misspecification, statistical power, and sample size. These limitations are discussed below.

Methodological Limitations

This study did not use an experimental design; consequently inferences of causality should not be made. The ex post facto design used does not control for confounding variables and all threats to internal validity (Pedhazur & Pedhazur-Schmelkin, 1991), so causal inferences should be avoided.

Model Misspecification

The disheartening results also suggested that the model may not have been developed enough to explain the complexity of this problem. Knowledge about behavior in the context of the social environment is important to understanding human behavior (Kirscht-Ashman & Hull, 1994). Social and environmental factors unique to clients who live in rural communities were omitted from this study. Potential factors include transportation, proximity factors, income, individual resources, weather, client-therapist relationship, and

interpersonal factors. Generally, clients who sought services from this agency were low income and were at risk for experiencing all of these potential impediments to keeping appointments. These factors should be included in future research.

A second form of possible misspecification is the lack of consideration of potential interactions that may exist between the variables included in this research. The possibility exists that some independent variables interacted with others, and not including these interactions would lead to erroneous conclusions about the relationship between the dependent variables in this study and the included independent variables. Interactions were not included because there was no theoretical or prior empirical evidence which suggested that these interactions should be tested. Future research should include the consideration of possible interactions.

A third form of misspecification is the possibility of a nonlinear relationship between the dependent variables and the independent variables in this research. As with possible interactions, there was no theoretical or empirical rationale, which suggested the nonlinear forms to be tested. Therefore, researchers should entertain the possibility of nonlinear relationships in future research.

A fourth form of misspecification concerns ordinary least squares regression (OLS) utilized in this study to analyze the data. The dependent variables, the number of missed appointments and the combined number of missed and canceled appointments, were both examples of count data. Other data analysis methods may have been more appropriate for these data, such as

Poisson and negative binominal models (Sturnman, 1999). While some research has suggested that OLS regression may not be as limited in the analysis of count data as some have suggested, future research should utilize methods of analysis specifically designed for count data.

A final potential model misspecification of this study is the possibility of the omission of important independent variables. This problem is discussed below.

Omitted Variables

Correlation research such as was used in this study is vulnerable to the problem of omitted variables. The omitted variable problem concerns the possibility that important variables related to the dependent variable are not included in a regression model, and, hence, the results give a misleading picture of the relationship between variables included in the model and the dependent variable.

One omitted variable that deserves special consideration is the impact that unmeasured problems in a client's life, the impact that social and environmental factors have on her or his ability to keep a set appointment. This potential explanatory variable is related to the threat to internal validity known as "history." A plausible explanation for missing an appointment may be the difficulty finding a babysitter, an unexpected auto break down, family pressure to discontinue treatment, illness of either the client or of a family member, or simply forgetting to attend the appointment. In fact, the variable "number of client problems" may have served as a proxy variable for this omitted variable, and it will be remembered that "number of client problems" was significantly related to the

number of missed appointments. Clients who seek services from a county mental health agency often are low socioeconomic status, and lack outside resources that could assist them to remedy problems that impede attending appointments. The problems these clients face impede their ability to participate in meaningful activities (Wilton, 2003).

Another omitted variable that warrants discussion is what might be called “maturation.” Clients are constantly changing and gaining new experience (Cook & Campbell, 1979). Because of this on-going transformation, a client may find a solution to the crisis that brought him/her to treatment, outside of therapy. While a client may report many problems, resolving one or two problems may be enough of a change for a client to report an improved sense of well-being. For this client, missing an appointment may indicate improvement in a client’s sense of well-being and attending a therapy appointment becomes a lower priority (Pekarik, 1983). Historically, therapists have classified a client who misses an appointment as resistant to treatment without consideration of the client’s contribution to positive outcomes (Pekarik, 1983).

A particularly important variable omitted from this study is a measure of the client’s relationship with his/her therapist. Carl Rogers believed that the client/therapist relationship was a core ingredient in the success of therapy in 1951 (Miller, Duncan & Hubble, 1997). Despite the debate that continues on the importance of the therapeutic relationship, some researchers argue that it is the client’s belief about the relationship that determines sufficiency (Miller, Duncan & Hubble, 1997). The client must feel respected and feel that the therapist is

genuine.

A central ingredient in this relationship is the therapist's attitude toward the client. The impact of a therapist's negative attitude toward the client has been validated (Lorion, 1982). Some researchers have suggested that psychotherapy ends rather than begins with the first appointment when the therapist has a negative attitude toward the economically disadvantaged client (Lorion, 1982). The results of survey studies revealed that the distribution of psychological disorders in the low income population is inversely related to socio-economic status (Dohrenwend & Dohrenwend, 1969). Lorion (1982) suggested that therapists' attitudes are not supportive of psychotherapy with disadvantaged clients. The therapist may have a negative attitude about the client's ability to make changes. He argued that therapists require special training in understanding the needs and communication patterns of these clients. The therapist must communicate an understanding of a client's problem, and assess the level of readiness for treatment and motivation for change (Beck, 1988; Miller, Duncan & Hubble, 1997). When these important factors are absent, the client may not connect with his/her therapist.

In such cases, the client and therapist may not develop a relationship which provides the essential support to the client. Some researchers believe this relationship to be essential for successful treatment (Miller, Duncan & Hubble, 1997). These clients may vacillate between the desire for change and feeling overwhelmed by the problems of life and the perceived difficult work of therapy. Therapy may be perceived as a negative experience. For the client who

alternates between these feelings, it seems logical that the client may attend some appointments and miss others.

Statistical Power

The sample size was determined by estimates of value of R-square. However, in this study, a post-hoc power study resulted in an estimated actual power of about .60. The difference between the initial power estimate and the post-hoc observed power is accounted for by the difference between the initial R-square estimate of .05 and the observed R-square of .01. The sample size necessary to detect a significant relationship between the dependent variable and one of the target independent variables, controlling for covariates, would be approximately 130 for power of .80, assuming an increase in R-squared of about .05 associated with the target independent variable. An even larger sample size would be required if the increase in R-square associated with the target independent variable was less than .05.

The consideration of statistical power is important in interpreting the results of this dissertation. Under conditions of inadequate power, the outcomes may yield an ambiguous and inconclusive conclusion because of the failure to reject the null hypothesis when it is false (Orme & Combs-Orme, 1986). The sample size was determined by estimates of value of R-square. The sample was not increased because the resources were not available. Future research in this area should include larger sample sizes than was used in this dissertation research.

Sample

A final limitation concerns the sample of mental health clients involved in this study. The sample was limited to a single agency, which makes it difficult to generalize to any other populations and to other mental health settings (Cook & Campbell, 1979). Replications of this research should be conducted with clients seeking services at both similar and dissimilar agencies, perhaps through the use of purposive samples that include agencies that serve a broad representation of clients with a variety of diagnoses.

Implications for Future Research

The results suggested that future research should include larger sample sizes to increase power, the use of alternative data analysis procedures more appropriate for count data, such as Poisson models and negative binomial models; and the inclusion of important variables omitted from this study, especially measures of the client/therapist relationship.

In particular, a client's perception about the therapist's ability to understand how the client feels about his/her life situation, the therapist's ability to communicate empathy, and an understanding of the client's life situation and problems (Beck, 1988). This information may assist researchers to develop predictors which would assist therapists to identify clients who are at risk for missing appointments because of failure to connect with a therapist and to better assess whether continuing treatment or an alternate therapist is needed. Additionally, it will be important for future research on the relationship between problems and missed

appointments to control for the effects of maturation and history.

The results also suggested that the model may need to be expanded to include the complexity of the lives of these clients. Utilizing a larger ecological perspective will include a spectrum of social and environmental factors that may hamper a client keeping an appointment. Potential factors may include transportation, proximity factors, income, individual resources, and interpersonal factors. A more robust model that includes social and environmental variables is important to understanding this behavior (Kirscht-Ashman & Hull, 1993).

Consistency of Results with Previous Research

The results of this study are consistent with previous research, which found that clients who had previous mental health treatment were more likely to miss appointments (Carpenter, et al., 1981). Likewise, the results of this study are consistent with previous research, which found that younger clients are more likely to miss appointments when compared to older clients (Bean & Talaga, 1992). The missed appointment rate of 21.4% falls with the range of 12-60% noted in the literature (Dotter, 1998; Smoller, et al., 1998).

Implications for Social Work Practice

The implications for practice listed below are those found in the literature because no significant results were obtained in this study. The results of this study suggested that the number of problems reported by clients attending therapy may impact the therapeutic process. Many potential alternative explanations exist that may clarify the relationship between the number of

problems and clients missing appointments. The continuing high rates of missed appointments suggest that changes in the therapy process are warranted.

Treatment planning should include attention to meeting the client's definition of the problem and goal of treatment (Wilder, et al., 1977). Clients may come to therapy with a belief about the therapy process and its duration. These clients may become discouraged when they do not find quick relief for problems and are already overwhelmed. An on-going assessment of client's belief about his/her satisfaction with treatment and his/her belief about the need for continuing treatment may assist in reducing missed appointments.

Clients who report feeling overwhelmed by life's circumstances and problems may need additional support in order to be successful in therapy. These clients may find that attending therapy becomes another complication in an already busy life. As a part of the therapeutic relationship, clinicians need to be sensitive to potential barriers to treatment that may be present for clients who report a considerable number of problems.

The large number of presenting problems may in and of itself present as a barrier to treatment. Since the arrival of brief therapy models, task-centered brief therapy has become a major treatment modality (Kanter, 1983). This form of treatment is designed to be brief. Generally, task-centered approach utilizes short-term systematic problem solving of client identified problems with therapy directed at one or two of the dominant problems (Reid, 1986). An essential component of this type of therapy is the client's ability to maintain a stable problem focus (Kanter, 1983). Clients who report large numbers of problems

may reflect a decompensation of cognitive skills under the stress of numerous problems (Kanter, 1983). It may be more difficult for the therapist to assist the client to concentrate on the identified goals of therapy.

An assessment of social and environmental factors which impede attending treatment is a vital part of social work practice. Attention to the needs of these clients may reduce the risk that the client will miss appointments and delay needed treatment. This assessment may assist in identifying clients who lack the resources needed to attend appointments.

The continuing exorbitant numbers of missed appointments should challenge us to continue to seek new methods to deal with this problem. Clients who seek treatment and miss appointments may be sending a message that the way therapy is conducted is not conducive to keeping appointments.

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APPENDICES

APPENDIX A

DOUGLAS COUNTY MENTAL HEALTH DIVISION MEDICAL BACKGROUND

NAME: _____ BIRTHDATE: _____ HEIGHT: _____ WEIGHT: _____ SEX: M F DATE: _____

(Circle)

A. GENERALLY, MY OVERALL FEELING OF WELL-BEING IS:

_____ EXCELLENT _____ ABOVE AVERAGE _____ AVERAGE _____ BELOW AVERAGE _____ POOR

B. CHECK EVERY ITEM YOU HAVE HAD OR WHICH APPLIES TO YOU NOW:

☐ Alcohol problems	☐ Drug withdrawal	☐ Liver problems	☐ Skin problems
☐ Alcohol withdrawal	☐ Epilepsy	☐ Loneliness	☐ Sleep disturbance
☐ Allergies	☐ Fainting spells	☐ Loss of spouse	☐ Suicide ideas
☐ Annoyed easily	☐ Family problems	☐ Low back pain	☐ Surgery - major
☐ Appetite change	☐ Fatigue	☐ Marriage problems	☐ Tense feelings
☐ Asthma	☐ Fearfulness	☐ Masturbation problems	☐ Thyroid problems
☐ Blood pressure	☐ Financial problems	☐ Menstrual problems	☐ Tuberculosis
☐ Blood infections	☐ Grief	☐ Muscle problems	☐ Tubal ligation
☐ Bone problems	☐ Grumpy	☐ Nerve problems	☐ Tumors
☐ Bowel problems	☐ Guilt feelings	☐ Nightmares	☐ Ulcers
☐ Cancer	☐ Headaches	☐ Panicky feelings	☐ Vasectomy
☐ Convulsions	☐ Heart problems	☐ Paralysis	☐ Venereal disease
☐ Decision making problems	☐ Hospitalized over 2 wks	☐ Pregnancy interrupted	☐ Weight change
☐ Depression	☐ Hypoglycemia	☐ Relaxing difficulty	☐ Worrying
☐ Diabetes	☐ Hysterectomy	☐ Sadness	☐ Other _____
☐ Discouraged	☐ Inferiority feelings	☐ Sexual problems	_____
☐ Dizziness	☐ Injury - serious	☐ Shakiness	_____
☐ Divorce/separation	☐ Job problems	☐ Short-tempered	_____
☐ Drug use	☐ Kidney problems	☐ Shyness	_____

C. CIRCLE THE ABOVE CHECKS FOR PROBLEMS YOU CONSIDER SERIOUS.

D. UNDERLINE CURRENT PROBLEMS.

E. ON A SCALE FROM 1 TO 10, WHERE 10 IS THE GREATEST DEGREE OF DISCOMFORT AND 1 IS NO DISCOMFORT, HOW UNCOMFORTABLE ARE YOU? _____

F. WHAT IS YOUR GOAL FOR IMPROVING? (WHAT CHANGES WOULD YOU LIKE TO MAKE?)

G. WHERE WOULD YOU HOPE YOUR COMFORT/DISCOMFORT LEVEL TO BE BY THE END OF TREATMENT ON THE SCALE FROM 1 TO 10 LISTED IN "E" ABOVE? _____

H. ARE YOU UNDER DOCTOR'S CARE AT THIS TIME? _____ NAME OF DOCTOR _____

I. CURRENT MEDICATIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

REASON:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

APPENDIX B

THE UNIVERSITY OF TENNESSEE



Institutional Review Board
Office of Research
404 Andy Holt Tower
Knoxville, Tennessee 37996-0140
865-974-3466
Fax: 865-974-2805

09/14/2001

IRB#: 6093 B

TITLE: Perceived Severity, Expected Improvement and Goal of Change as Factors of Appointment
Keeping Behaviors in Outpatient Mental...

Bruley, Charlene Patricia
Social Work
1415 Boyer Avenue
Walla Walla, WA 99362-2503

Nugent, William R.
Social Work
125 Henson Hall
Campus

Your project listed above was reviewed. It qualified for expedited review and has been approved.

This approval is for a period ending one year from the date of this letter. Please make timely submission of renewal or prompt notification of project termination (see item #3 below).

Responsibilities of the investigator during the conduct of this project include the following:

1. To obtain prior approval from the Committee before instituting any changes in the project.
2. To retain signed consent forms from subjects for at least three years following completion of the project.
3. To submit a Form D to report changes in the project or to report termination at 12-month or less intervals.

The Committee wishes you every success in your research endeavor. This office will send you a renewal notice (Form R) on the anniversary of your approval date.

Sincerely,

A handwritten signature in black ink that reads 'Brenda Lawson'.

Brenda Lawson
Compliances

APPENDIX C

DATA SHEET

DATE_____

RANDOM ASSIGNED NUMBER_____

GENDER_____

AGE_____

PRIOR SERVICES _____

REFERRAL SOURCE_____

ETHNICITY_____

DIAGNOSIS_____

PROBLEMS_____

DEGREE OF DISCOMFORT_____

EXPECTED IMPROVEMENT_____

STATED GOAL_____

ATTENDED SESSIONS_____

CANCELED APPOINTMENTS_____

MISSED APPOINTMENTS_____

VITA

Charlene Bruley was born in Montreal, Quebec, Canada on July 30, 1951. She attended schools both in Montreal and then California, where she graduated from Torrance High School in 1969. She graduated from the University of Montana in 1993 with a Bachelor of Arts in Social Work. Immediately upon graduation, she entered the Master's in Social Work program at Walla Walla College, College Place, Washington. She received her M.S. W. in June of 1994. Upon graduation, she began working with disadvantaged children and families as a child and family therapist in rural Oregon. In August of 1995, she entered the University of Tennessee to pursue the Doctorate of Philosophy in Social Work while continuing to work with disadvantaged clients and families. The doctorate was received in August 2003.

She is presently working with at-risk adolescents and their families as a Program Manager for Children's Home Society of Washington. The program is funded by a three year grant from the Federal Department of Education's Safe Schools Program.