Establishing the Validity of the College Adjustment Scales (CAS) as Outcome Measures in a University Counseling Center: A Test of Construct and Convergent Validity

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ESTABLISHING THE VALIDITY OF THE COLLEGE ADJUSTMENT SCALES
(CAS) AS OUTCOME MEASURES IN A UNIVERSITY
COUNSELING CENTER: A TEST OF CONSTRUCT
AND CONVERGENT VALIDITY

by

Denise K. Wiswell

A dissertation submitted in partial fulfillment
of the requirements for the degree
of
DOCTOR OF PHILOSOPHY
in
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Approved:

UTAH STATE UNIVERSITY
Logan, Utah

1995
ABSTRACT

Establishing the Validity of the College Adjustment Scales (CAS) as Outcome Measures in a University Counseling Center: A Test of Construct and Convergent Validity

by

Denise K. Wiswell, Doctor of Philosophy
Utah State University, 1995

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Department: Psychology

The College Adjustment Scales (CAS) are a multidimensional psychological measure designed specifically for use in college and university settings. The purpose of this study was to assess the ability of the College Adjustment Scales (CAS) to function as outcome measures in university counseling centers. Study 1 assessed the ability of the CAS to track change following brief therapy using a nonequivalent control group design. Study 2 assessed the convergent validity of the CAS by correlating two of the nine CAS scales with two established measures. The results of a three-factor MANOVA revealed that the CAS were able to track change very well for undergraduate students. Results for graduate students showed that three of the CAS scales tracked change quite well, two scales did not track change, and
four scales did not track change for graduate males. Convergent validity results were mixed for the two scales assessed. The Self-Esteem scale was determined to be a fairly good measure of global self-esteem. The CAS Anxiety scale did not correlate well with an instrument that is a good measure of anxiety characterized by physiological symptoms. Recommendations for future research are discussed.
I would like to express my deep appreciation and respect for Dr. Lani Van Dusen for her unfailing support and invaluable guidance throughout this dissertation. Her technical assistance, expert mentoring, and continuing patience and encouragement were invaluable. I also appreciated her ability to keep me on task and mindful of all the requirements for finishing this degree. Thanks also for the support and encouragement of committee members, Dr. Kenneth Merrell, Dr. Michael Bertoch, Dr. Gary Straquadine, and Dr. Mary Doty.

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CHAPTER I
INTRODUCTION

Statement of the Problem

The number of students served each academic year by university counseling centers has been rapidly rising (Bishop, 1990; Dworkin & Lyddon, 1991; May, 1991). In addition to the increasing demand for services, increasing numbers of students are seeking help for serious psychological problems (Bishop, 1990; Stone & Archer, 1990; Robbins, May, & Corazzini, 1985). Several authors' surveys of counseling center directors (see Stone & Archer, 1990) indicate that there is, in particular, an increase in problems such as eating disorders, substance abuse, sexual abuse and violence, and dysfunctional family experiences. These factors speak to a need for the availability of effective treatment services in universities and colleges. University counseling centers traditionally have provided free mental health services to students as well as meeting the universities' needs for outreach and consultation services. However, many college and university counseling centers have suffered losses in financial support, necessitating implementing small fees to students, limiting the number of sessions, and other cost-containment measures.

The recent increase in need for services, the change in severity of problems at counseling centers, and the threat of dwindling financial resources underlie the importance of the need to improve evaluation procedures and accountability for services. Bishop and Trembley (1987) noted that many college and university counseling centers have resisted improving systems of accountability, despite
recommendations to do so appearing in the professional literature as far back as the mid-70s. They recommended that counseling centers collect data and develop strategies to document that their existence does make a difference for the institution. Given the need to become more evaluative and therefore more accountable, counseling centers must now concern themselves with how this process can be implemented. Practically, this means appropriate evaluative measures must be identified and a process for their implementation developed. With the increase in severity of pathology, these measures must include the ability to identify more severe problems.

Lambert, Ogles, and Masters (1992) looked at the state of assessment of counseling center outcome and found much diversity and disorder. Problems noted included: use of instruments with poor psychometric properties, use of investigator-developed or investigator-modified scales, frequent use of one-item scales, and failure to report the psychometric properties of scales used. In addition to the problems noted above, many studies used multiple measures. This allowed assessment of several problem areas or assessment of client strengths at one time. While this strategy provides a useful and enriching source of data, it may also put a strain on busy counseling centers where time constraints are already tight. Use of multiple measures means more time is spent by the student taking the tests, more professional time and effort for scoring and interpreting results are required, and more time is needed for data entry.
Because there are advantages to looking at problems in a multidimensional manner, it may be helpful to use instruments that measure more than a single problem area or construct. Two of the most frequently used multidimensional measures are the Minnesota Multiphasic Personality Inventory and the Symptom Checklist-90-R (Piotrowski & Keller, 1989). However, both of these measures are time intensive and require professional interpretation. Thus, while effective multidimensional instruments are available, they may not be the most appropriate for the counseling center setting.

An instrument that may address some of the problems unique to college students is the College Adjustment Scales (CAS), developed in 1991 by Anton and Reed. The CAS are a multidimensional instrument designed specifically for use in college and university counseling center settings. The scales provide nine scale scores covering serious psychological problems such as depression and anxiety, as well as several problem areas that are more specific to college students, that is, academic and career problems. The CAS were normed on a college student population and the manual reports promising psychometric data. However, it is not known whether the CAS can be used to assess outcome. The CAS were designed as a screening instrument. However, if it can be shown that the scales can measure change, or outcome, the scales could potentially benefit counseling centers wanting to improve evaluative procedures.

In summary, counseling centers need to begin taking more serious strides toward improving the evaluation and accountability of their programs. To
accomplish this they need a good multidimensional instrument that can be easily administered, scored, and interpreted, and which addresses the increasing frequency and severity of problems of today’s college student clients. The primary question this research study addressed was whether or not the CAS could adequately assess treatment effectiveness in a college counseling center as demonstrated by the ability of the scales to measure change following therapy.
CHAPTER II

LITERATURE REVIEW

Prevalence and Severity of Student Problems

The demand for counseling and crisis management services is increasing in higher education (Bishop, 1990; Dworkin & Lyddon, 1991; Robbins et al., 1985). The number of clients served in university counseling centers has been rising each academic year. For example, on a university campus of 23,000 one counseling center reported an increase from 2,200 students served in the 1987-1988 school year to 2,700 students in the 1988-1989 academic year (Dworkin & Lyddon, 1991, p. 402).

Stone and Archer (1990) noted that the rise in incidence of problems is attributed in part to increased reporting of personal problems by students growing up in a society that is more psychologically minded and aware of the benefits of seeking help. Therefore, it is likely that this trend will continue despite declining college enrollments.

In addition to an increase in the number of students seeking services at university counseling centers, there is a concommittant increase in the frequency of psychological problems of a more severe nature (Aniskiewicz, 1979; Bishop, 1990; Johnson, Ellison, & Heikkinen, 1989; Levy, 1990; Stone & Archer, 1990). In a national sample of counseling center staff members, Robbins et al. (1985) noted that student problems appear to be changing from an educational and informational focus
to more serious emotional/behavioral problem areas. Staff also perceived the proportion of clients with chronic enduring needs as having increased. These serious problems take many forms. The most common are eating disorders, substance abuse, sexual abuse and violence (rape, date rape), dysfunctional family experiences, and AIDS (Stone & Archer, 1990, p. 544). The nature and severity of problems such as these contribute to feelings of depression, anxiety, and low self-esteem, and may temporarily impair the ability of a student to adequately function in the academic setting. As a result some students may require longer-term therapy and support.

Stone and Archer (1990) recognized that while referrals will be required for most long-term clients, many centers will not have easy access to referral services, thus increasing the likelihood that counseling centers will have to become involved in the treatment of these students. They also note that senior staff and trainees would also benefit from seeing some long-term clients in therapy.

Need for Improved Evaluation and Accountability

Given the rise in the number of students seeking services and the increase in the scope and severity of their problems, many authors have called for improved accountability and better evaluative measures for university and college counseling centers (Bishop & Trembley, 1987; Lewis & Magoon, 1987; Lichtenberg, 1986). Stone and Archer (1990) acknowledged and emphasized the need of college counseling centers to actively demonstrate the importance and value of their services.
Reasons to improve accountability and evaluation are based on several factors, which include fiscal and budgetary considerations, ethical obligations, and the practice of appropriate and professional clinical behavior.

**Administrative and Fiscal Considerations in Evaluation and Accountability**

Bishop and Trembley (1987) pointed out that the goal of accountability is to provide a basis for decision making based on the perceived value of an activity. According to the authors, the advantages of having some descriptive and evaluative data available for administrative decision makers faced with tight budgets are self-evident. Without data, distribution of resources could be more arbitrary and less informed. Accountability data offer a basis for recognition of the counseling center staff as important contributors to student life and the educational enterprise, as well as a method to improve decision making about program development, service provision, budgets, and personnel assignments (p. 494). As budgets become tighter, it is possible that university administrators will require better demonstration of the need for services, as well as effectiveness of those services. Some schools may eliminate university-run counseling centers and enlist private-managed health care agencies to provide psychological services due to rising health care costs. Foos, Ottens, and Hill (1991) have noted also that universities may conceivably seek HMOs on the basis of their capability of documenting significant successful results. Counseling centers need to be aware of this growing trend in health care services, and begin to change their attitudes about evaluation and accountability and work to
implement improved evaluative measures. Failure to do so may jeopardize their existence as part of the university system. Lambert et al. (1992) agreed that fiscal accountability is becoming a driving force behind the decisions of funding sources. They also noted that monetary reimbursement will remain a viable option only for those who can demonstrate that their programs and practices are effective (p. 527).

Clinical and Ethical Considerations in Evaluation

Despite many articles advocating improvement in evaluation methods and in accountability practices, many counseling centers have been slow to implement appropriate procedures and there remains a lack of such studies in the literature. Lewis and Magoon (1987) looked at follow-up methods of 80 counseling centers whose primary form of evaluation focused on client satisfaction following counseling. They reported that the primary purpose of these surveys was evaluation of the counselors' work, 34% of the data were for accountability purposes, and 18% evaluated client status. They noted that the majority of returns indicated satisfaction with services, a phenomenon typical of this type of survey. In summary, Lewis and Magoon stated that while client satisfaction is a viable measure of accountability, there is a need for improvement. They suggested a more rigorous methodology and the use of standarized instruments for assessing satisfaction.

While measuring client satisfaction can be helpful, it may not be enough. In addition to the administrative reasons outlined above, there are important clinical and ethical reasons to provide good evaluation of general treatment effectiveness as well
as client satisfaction, which may or may not correlate with problem alleviation.

Ethical standard 1.23 of the Ethical Principles of Psychologists (American Psychological Association, 1990) states that psychologists need to appropriately document their work in order to facilitate the later provision of services by themselves or by other professionals, to ensure accountability, and to meet other requirements of the law or of institutions.

Given the more severe nature of the problems being presented by student clients, clinical assessments, treatment decisions, and treatment effectiveness are areas that need to be carefully addressed. It is crucial for the mental health professional or counselor to be able to assess the client and respond to such questions as: is this person suicidal; what type of treatment might be indicated relative to problem severity; what resources does the person have; and are the symptoms and the problem reduced or eliminated following treatment (Wetzler, 1989, p. 5)?

In an article that examines why counseling research is viewed by some as irrelevant, Lichtenberg advocated that the situation might be improved if counselors consider embracing the scientist-practitioner model for training and practice. He envisioned that counselors trained as scientist-practioners would be empirical in their practice and accountable for their interventions through awareness of counseling and behavior change procedures showing evidence of effectiveness or promise and of the factors mediating or mitigating therapeutic change. (Lichtenberg, 1986, p. 366)

Lambert et al. (1992) pointed out that change is essential in the counseling process and that these changes must be measured and quantified. They noted that
scientific rigor and ethical obligations require empirical evidence regarding the effectiveness of the specific techniques utilized. They added that client changes must be measured and quantified in a manner that will allow clear statements regarding the type and magnitude of change experienced (Lambert et al., 1992).

Measures Currently Used in Counseling Center Studies

In a national survey of psychological testing trends in outpatient mental health centers and clinics, the assessment instruments most used by clinicians included the MMPI, the Wechsler Scales, and projective techniques. The Beck Depression Inventory, a self-report measure used in over 500 studies to date, was ranked 12th in frequency of use in this survey (Piotrowski & Keller, 1989). One might expect counseling centers to use instruments much like those in use in outpatient mental health centers. However, based on a summary of outcome studies from the counseling literature, it appears that use of the most popular instruments listed above is rare (see Table A.1, Appendix A).

As Table A.1 indicates, in outcome studies, only two counseling center studies have used the MMPI, with projectives and the Wechsler Scales absent altogether. From the data it can be observed that typically studies use multiple measures, with 14 studies using three or more measures, and 8 of the studies using four or more measures.
The most frequently used standardized measure was one or both of the scales from the State-Trait Anxiety Inventory, which was used in four of the studies. The Beck Depression Inventory and the Brief Hopkins Psychiatric Rating Scale were each used in three of the studies. Four different measures of self-esteem were found in the 27 studies, with the Rosenberg Self-Esteem Inventory used twice, and the Tennessee Self-Concept, Coopersmith Self-Esteem Inventory, and Social Self-Esteem each used in one study.

Some authors (Strassberg, Anchor, Cunningham, & Elkins, 1977; Tracey, 1988; Weitz et al., 1975) developed measures specifically for use in their study. As might be expected, psychometric properties of the scales were either not listed or were validated through the data from the study itself. In a review of the psychometric properties of scales reported in the Journal of Counseling Psychology for 1967, 1977, and 1987, Meier and Davis (1990) found that approximately one third of the scales used in counseling outcome studies were either investigator developed or investigator modified. They stated that it is important that researchers using self-developed scales report the psychometric properties of the scales. However, they noted that only 30% of those using one-item scales cited a reliability estimate, 11% gave sample reliability estimates, and 2% reported a validity estimate.
Weaknesses in Current Counseling

Many of the measures listed in Table A.1 (found in Appendix A) have not been used effectively as measures of outcome. Three particular problem areas are (a) an overdependence on process variables, (b) outcome research that is not focused on problem resolution, and (c) methodological problems.

Overdependence on Process Variables

Much of the research in counseling is termed process research. Process research refers to what happens in therapy sessions, specifically in terms of therapist behaviors, client behaviors, and the interaction between therapist and client. Outcome research refers to changes that happen as a result of the processes of therapy. Outcome is typically measured as changes that occur between pretherapy assessment and posttherapy assessment (Hill & Corbett, 1993). Many of the studies in the current literature (see Table A.1) seem to blend process and outcome research. As can be seen in Table A.1, studies that looked at process variables or at characteristics of the therapist, client, or both were the most prevalent, with 54% of the total. Examples of the variables examined in this category included: personality integration, attributions, gender, dominance, matched interactions, and expectancy. Studies that compared one or more treatments or that examined some aspect of a treatment procedure comprised 39% of the total.
While many of these studies are of good quality and offer important and useful information, too often outcome of the problem is treated as a secondary or incidental concern. Process research can provide much information that is enriching, interesting, and helpful. However, it may be somewhat counterproductive to the goal of accountability if the demonstration of effectiveness of service provided is not a clear and prominent part of the study.

Outcome Research Not Based on Problem Resolution

Another problem in counseling research as noted in Table A.1 is use of outcome criteria that may or may not reflect problem resolution. These studies use a variable presumably related to outcome rather than actual outcome and generally do not use any standardized measures. For example, Longo, Lent, and Brown (1992) used outcome expectancy rather than actual outcome. Westerman, Frankel, Tanaka, and Kahn (1987) used only a subjective pre- and post-rating by an assessor. Other studies have looked at length of time the client stayed in therapy, and satisfaction with therapy, as measures of outcome. While these variables may be closely related to problem resolution, they do not address this issue directly.

Methodological Problems

The findings of counseling center outcome studies are summarized in the last column of Table A.1. (Appendix A). As might be expected, the data overwhelmingly show favorable outcomes regardless of the variable under study. However, many of these studies are of poor quality and the validity of results could
be considered questionable. Some studies are of poor quality because they used nonstandardized measures for assessing outcome or simply used therapist or client retrospective reports of improvement rather than specific data. In some of the studies, as noted in Table A.1, outcomes were derived from factors other than resolution of psychological problems. Examples of these factors included client satisfaction, number of sessions, and whether or not the client terminated prematurely or completed a longer course of treatment.

Using Established Measures to Overcome Research Weaknesses

Some authors have examined the problem of outcome measures used in counseling centers and have recommended the use of standardized instruments. One such instrument is the Symptom Check List-90-Revised (SCL-90-R). Johnson et al. (1989) used the SCL-90-R with counseling center clients for the purpose of assessing the nature and severity of their psychological symptoms. They asserted that its use yields much more specific information regarding the impact of personal problems on client well-being than results provided by previous research. However, they also noted that the nature of the problem, that is, career planning, academic performance, and family relationships, is often not addressed. In addition, the SCL-90-R does not include any items related to alcohol or drug use, a problem frequently noted in student populations.
The assessment of depression in counseling settings was reviewed by Ponterotto, Pace, and Kavan (1989) and included both clinician rating scales and client self-report instruments. The Hamilton Rating Scale for Depression was the most frequently used clinician rating scale, and the Beck Depression Inventory was by far the most frequently cited client self-report depression instrument. Both instruments have good psychometric properties, though the Hamilton Rating Scale is limited to use by trained clinicians. The Beck Depression Inventory (BDI), revised in 1978, is a 21-item measure whose primary purpose is to assess the severity of depression. The BDI also is available in a 13-item version which correlates .91 with the 1961 original version of the BDI. The BDI can be completed by the average client in about 10 minutes and scoring can be done in as little as 5 minutes. The BDI has been validated for use in a university population (Bumberry, Oliver, & McClure, 1978). In comparing the student population to Beck's original validation data, the Pearson coefficient was .79 (p. 152).

Advantages of the BDI are significant, and its widespread use make it easy to compare results across studies. However, the BDI measures just one problem area (severity of depression) and therefore would need to be used in conjunction with one or more measures if the goal is to assess a wider range of problems.

So while established outcome measures are available, they do not always address relevant symptoms of the student population and may cover only limited problem areas. In addition, these measures may be difficult to administer or
interpret. Frequently they are normed on noncollege samples, which limits their effectiveness as counseling center instruments.

The College Adjustment Scales, a New Measure for College Counseling Center Clients

One way to evaluate outcome while avoiding pitfalls of previous studies is through the use of new measures. In 1991, the College Adjustment Scales (CAS) were designed to meet the specialized assessment needs of counseling centers (Anton & Reed, 1991). The authors developed the measure because of two problems with the instruments that were currently being used in these settings. They noted that most instruments being used were normed on a general adult population, requiring results to be extrapolated to the college-student clients. Secondly, they noted that many counseling centers devised their own intake checklists, which frequently lacked defensible psychometric properties. The College Adjustment Scales (CAS) were standardized on a nonclinical sample of 1,146 college and university students from across the United States, making it very appropriate for use with student populations.

The CAS are a 108-item measure yielding nine scale scores. The nine scales measure the following problem areas: anxiety, depression, suicidal ideation, substance abuse, self-esteem problems, interpersonal problems, family problems, academic problems, and career problems.
Validity of the CAS

The validity of the CAS is based on four studies by the test developers that focus on convergent and discriminant validity and compare group differences between the standardization sample and a sample of students receiving counseling (Anton & Reed, 1991). All of these studies support the validity of the CAS. The CAS were correlated with several measures, including the State-Trait Anxiety Inventory (STAI), the Beck Depression Inventory, the Beck Hopelessness Scale (BHS), and the NEO Personality Inventory. The authors expected that CAS scores would correlate highly with other measures of related constructs. All CAS scales, with the exception of Substance Abuse and Career Problems, had large positive correlations with the STAI (.42-.74), BDI (.41-.84), and BHS scales (.31-.69) (Anton & Reed, 1991).

Administration and Scoring of the CAS

The CAS can be administered in individual or group testing situations. The CAS materials include an item booklet and the CAS answer sheet. Administration and scoring do not require a background in psychology, though interpretation of the profile does require graduate training in psychology or related fields. The test takes approximately 15-20 minutes to complete and can generally be scored in less than 5 minutes.

The CAS as an Outcome Measure

The CAS avoid some of the pitfalls discussed previously, as they are easily administered and scored, cover nine symptom areas relevant to student clients, report
good psychometric properties, and show promise in measuring change and problem resolution in student clients participating in treatment. However, the CAS are marketed only as a screening method. A 1993 pilot study conducted at a university counseling center indicates it may also have utility as an outcome measure (Wiswell, Nabers, & Hudson, 1993).

Establishing the Validity of the CAS

In order to further establish the validity of the CAS, it will be necessary to show that the CAS can do several things. First, the scales of the CAS must be able to identify problems presented by undergraduate and graduate student clients while showing that their level of severity is higher than nonclient students taking the CAS. Secondly, the CAS must be able to track change that occurs as a result of treatment. In addition, the CAS should demonstrate adequate convergent validity with related measures.

The CAS test developers have marketed the CAS as a screening measure only. As such, it is not known whether or not the scales can track change. Also, convergent validity studies were limited to just one measure specifically related to anxiety and to self-esteem. In addition, the CAS standardization sample included only a small number of graduate students (N = 27). This study will help establish the validity of the CAS by determining if they can show change following treatment, by
demonstrating adequate convergent validity with other measures, and by including more graduate students as subjects.

Gregory (1992) noted that it has long been acknowledged that validity is the most fundamental and important characteristic of a test. He contends that "test validation is looked at as a developmental process that begins with test construction and continues from there" (p. 117). In defining validity, Cohen, Swerdlik, and Smith (1992) noted that "validity as applied to a test refers to a judgment concerning how well a test does in fact measure what it purports to measure" (p. 159). More specifically, it is a judgment based on evidence about the appropriateness of inferences drawn from test scores (p. 159).

Validity is generally conceptualized as being accumulated through the following three categories: content validity, criterion-related validity, and construct validity. Within these categories, Cohen et al. (1992) noted that the validity of a test may be evaluated by: (1) scrutinizing its content, (2) relating scores obtained on the test to other test scores or other measures, and (3) executing a comprehensive analysis of not only how scores on the test relate to other test scores and measures, but also how they can be understood within some theoretical framework for understanding the construct the test was designed to measure. (p. 159)

Face validity is another type of validity that refers to a judgment concerning how relevant items on a measure appear to be. Thus, if a test definitely appears to measure what it purports to measure, it could be said to be high in face validity (Cohen et al., 1992, p. 160). Content validity refers to a judgment concerning how adequately a test samples behavior representative of the universe of behavior the test was designed to sample (p. 161). Criterion-related validity is a judgment regarding
how adequately a test score can be used to infer an individual’s most probable standing on some measure of interest—the measure of interest being the criterion (p. 164). Two types of validity are subsumed under this type of validity. Concurrent validity indicates the extent to which test scores accurately estimate an individual’s present position on the relevant criterion, while in predictive validity, test scores are used to estimate outcome measures obtained at a later date (Gregory, 1992, p. 122-123). Construct validity "refers to a judgment about the appropriateness of inferences drawn from test scores regarding individual standings on a certain kind of variable called a construct" (Cohen et al., p. 175). Another type of validity that is relevant to this study is convergent validity, a type of validity which is demonstrated when a test correlates highly with other variables or tests with which it shares an overlap of constructs (Gregory, 1992, p. 131).

Anastasi (1988) noted that construct validation requires the gradual accumulation of information from a variety of sources. Any data throwing light on the nature of the trait under consideration and the conditions affecting its development and manifestations represent appropriate evidence for this validation (p. 153). This study attempted to add to the validity information about the CAS by examining the construct validity of that measure, and the convergent validity of the Anxiety and Self-Esteem scales of the CAS.
Summary and Conclusions

College counseling centers have continued to experience increasing numbers of student clients in recent years. In addition, many students are seeking help for more serious psychological problems than in the past. In order to accurately measure these problems, counseling centers need to use instruments that provide more than one or two scales covering limited problem areas.

Improved evaluation and accountability has been called for in counseling centers, though significant steps toward improvement in this area are lacking. Evidence of effectiveness of treatment and problem resolution with student clients is needed to meet ethical and clinical standards, and to elevate the level of current counseling research. Furthermore, with decreased monies available for educational programs, improved demonstration of effectiveness may be necessary to ensure continuation of university counseling programs and decrease the risk of privatization of services.

As demonstrated by the data in Table A.1, measures currently used in counseling centers frequently do not address the concerns noted above. Many authors design their own instruments, omitting important data on psychometric properties, as well as decreasing the opportunity for replication of findings. In addition, previous counseling center studies dealing with outcome have often neglected the issue of treatment effectiveness and problem resolution in favor of process variables or other issues.
Many good standardized instruments are available; however, they are not generally normed on college student samples, lessening the confidence with which their findings can be generalized. Instruments such as the Beck Depression Inventory, the Rosenberg Self-Esteem Scale, the Coopersmith Self-Esteem Inventory, and the State-Trait Anxiety Inventory have been frequently used with college populations. These instruments possess excellent psychometric properties, but are limited in their usefulness by the need to include other measures to assess additional problem areas. The use of a battery of tests might address this problem, but would add considerably to time constraints on centers experiencing increasing client loads.

The College Adjustment Scales would seem to be a suitable measure to address the above listed shortcomings for assessment with student clients. The CAS were normed on college students, are quick and easy to administer and score, and provide scale scores in nine pertinent treatment areas. In addition, the CAS appear to have value as an outcome measure in light of recent preliminary research. Additional information regarding the CAS will add to the construct validity of the test and improve the scales usefulness in the university counseling center setting.
As the literature review indicates there is a critical need for a valid, multidimensional assessment instrument that can evaluate the effectiveness of treatment in university counseling centers. Preliminary studies indicate that the CAS may be such an instrument.

The purpose of this study was to assess the usefulness of the CAS in this capacity. The main question this study attempted to answer was: "Are the College Adjustment Scales (CAS) an appropriate outcome measure for use in a college or university counseling setting?"

As the literature has indicated, for an instrument to be useful in measuring outcome, it needs to meet several criteria: (a) be easily administered (time efficient and without the need for professional training), (b) easily scored, (c) multidimensional (covering relevant symptom areas), (d) be sensitive to change, and (e) be able to measure problem resolution. The CAS were specifically designed to meet the first three criteria as noted in the literature review. However, it has not been established whether they are capable of measuring change and problem resolution. Therefore, this research will attempt to determine the ability of the CAS to measure change and track problem resolution. Two studies will be employed to examine the effectiveness of the CAS in these areas.
Design

Study 1 used a treatment/no-treatment group design. Mean pre- and posttest comparison scores for each scale of the CAS for each group were computed. These change scores were analyzed using a factorial design. The independent variables included group (whether subjects received treatment or not), academic status (undergraduate or graduate status), and gender. In addition, effect sizes were computed to determine the magnitude of differences.

Study 2 looked at the convergent validity of the CAS to determine if two of the CAS scales could measure problem resolution as well as comparable measures in the areas of anxiety and self-esteem. Previous examination of the CAS at the Utah State University Counseling Center (Wiswell et al., 1993) showed that two of the most frequently elevated scales for clients were the anxiety and self-esteem scales. The test authors, Anton and Reed (1991), have done some convergent validation studies of the CAS, comparing it to several established measures. However, they used the CAS for diagnostic purposes only, rather than as an outcome measure as they were used in this study.

Study 2 used a correlational design to extend the validity of the CAS. Comparisons of the CAS were conducted with the Beck Anxiety Inventory and the Rosenberg Self-Esteem Scale.
Subjects

Subjects for this study were students at Utah State University. Subjects assigned to the treatment group included students who were seeking psychological services at the USU Counseling Center. To be included in the study, these subjects needed to meet the criteria listed below. They had to:

1. Be voluntary clients of the USU Counseling Center.
2. Complete pre- and postmeasures of the CAS, Rosenberg Self-Esteem Scale, and the Beck Anxiety Inventory. Postmeasures were administered after the sixth session of therapy.
3. Not currently be involved in any other psychotherapy.
4. Be receiving individual therapy during the time the research was being conducted.

Subjects assigned to the no-treatment group were recruited from various academic levels of classes and various departments at USU. To be included in the study, these subjects had to volunteer to participate, not be current clients in therapy, and complete pre- and postmeasures of the CAS in the same time frame as that for the treatment group. Subjects in both the treatment and no-treatment groups also completed a demographic information form prior to testing.

For Study 1, data were collected throughout the academic year 1994-1995. To ensure an adequate sample to conduct a psychometric analysis, data from previous USU Counseling Center clients who had taken a pre- and post-CAS were added to the current data. Thus, the total number of subjects in the treatment group analysis
was 777, comprised of 648 undergraduates and 129 graduate students. For the final analysis, which included all subjects taking both the pre- and posttests, there were 230 undergraduates and 58 graduate students. The total number of subjects who participated in the no-treatment group was 647. Of the 647, 562 were undergraduates, and 85 were graduate students. For the final analysis, 545 undergraduates and 82 graduate students were included. Subjects for Study 2 were 55 subjects from the treatment group who completed the BAI and RSE in addition to the pre- and post-CAS.

Instruments

The measures used in this study were the College Adjustment Scales, the Rosenberg Self-Esteem Scale, and the Beck Anxiety Inventory.

The College Adjustment Scales (CAS) (Anton & Reed, 1991) are a 108-item self-report inventory (see appendix C). They were designed as a rapid screening measure for common psychological and developmental problems presented by college counseling center clients. Responses are made on an answer sheet using a 4-point scale with the subject choosing either F = False, Not At All True, S = Slightly True, M = Mainly True, and V = Very True. The responses are assigned numerical values that are summed and yield scores for nine separate scales. These scores are then graphed on the profile sheet (see Appendix D). The CAS include: anxiety, depression, suicidal ideation, substance abuse, self-esteem problems, interpersonal problems, family problems, academic problems, and career problems.
Anton and Reed (1991) reported high internal consistency of CAS, ranging from .80 to .92 with a mean of .86. Convergent validity was assessed comparing scales on the CAS with the State-Trait Anxiety Inventory, the Beck Depression Inventory, the Beck Hopelessness Scale, and the NEO Personality Inventory (NEOPI). Results showed that all College Adjustment Scales, except Substance Abuse and Career Problems, had positive correlations with the STAI, BDI, BHS and the NEOPI scales.

The Beck Anxiety Inventory (BAI) (Beck, Epstein, Brown, & Steer, 1988) is a measure of the severity of anxiety in older adolescents and adults. The BAI consists of 21 items and is rated on a scale from 0 to 3. The scale can be self-administered or read by a trained interviewer. In a diagnostically mixed sample of outpatients, Beck et al. (1988) reported high internal consistency of the BAI (Cronbach coefficient alpha = .92). Concurrent validity with four other measures of anxiety ranged from .47 to .51 (see appendix E). Borg and Gall (1989) have noted that a correlation of .33 is considered substantial.

The Rosenberg Self-Esteem Scale (Rosenberg, 1965, 1979) is a 10-item self-report inventory for measuring self-esteem that has been used extensively in the psychological literature (see Appendix F). Though developed as a Guttman scale, the test has frequently been scored using a Likert scoring system. Respondents are asked to strongly agree, agree, disagree, or strongly disagree with each of the 10 items of the scale. For the purpose of this study a Likert scoring system using values 0 to 3 will be used. Standard scores will be computed to facilitate comparison with the CAS.
Procedure

Prior to their intake at the USU Counseling Center, subjects completed the client rights form (Appendix B) and a demographic information sheet currently in use at the USU Counseling Center. The demographic information included gender of client, academic standing, age, marital status, previous psychological counseling, and the nature of the presenting problem. They also completed the dependent measures for the study: the College Adjustment Scales, the Rosenberg Self-Esteem Scale, and the Beck Anxiety Inventory. Posttreatment measures were completed by subjects when they returned for the sixth session of therapy at the USU Counseling Center. This time frame was consistent with the time frames used in previous data collection at the counseling center. Therapy is limited to 10 sessions at the USU Counseling Center, though sessions may be extended if problems are of a severe or persistent nature. Wiswell et al. (1993) found that the average number of sessions for all clients at the USU Counseling Center was 6.67. The decision to complete the posttest after the sixth session was based on this average.

For the no-treatment group, demographic information was collected prior to initial administration of the CAS. Students indicating on the demographic sheet that they were currently receiving psychotherapy services were excluded from the analysis. Pretest and posttest were administered 7 weeks apart to duplicate the counseling center client testing pattern.
Data Analysis

For Study 1, a multivariate analysis of variance (MANOVA) was conducted. Gain scores on each of the nine scales of the CAS served as the dependent variables. The independent variables for Study 1 were treatment/no treatment, academic status of subjects (whether graduate or undergraduate), and gender.

When there were significant interactions, post hoc comparisons to determine which academic level or gender had the greatest gains were made. Effect sizes for each of the nine scales of the CAS were computed comparing undergraduates and graduates in both the treatment and no-treatment groups. The effect size is noted by Borg and Gall (1989) as a helpful method for assessing the practical significance of relationships and group differences. For this study the effect size was computed by subtracting the mean change score of the no-treatment group on each of the dependent variables from the mean change score of the treatment group on each dependent variable and then dividing by the no-treatment group standard deviation. Scores for each group were compared using Cohen’s (1988) standards for effect sizes, and Borg and Gall’s (1989) standard of .33 for practical significance. Cohen’s standards include the following values: .20 = small effect size, .50 = medium effect size, and .80 = large effect size.

For Study 2, the product-moment correlation coefficient $r$ was computed to determine the magnitude of the relationship between change scores on the anxiety scale and self-esteem scales of the CAS, and scores on the Beck Anxiety Inventory and the Rosenberg Self-Esteem Scale. The Pearson $r$ is the commonly used statistic
in psychometric studies in psychology. However, the Spearman $\rho$ may give a more accurate picture given the ordinal nature of the scales of the dependent measures. Therefore, both correlational coefficients were computed and discussed.
CHAPTER IV

RESULTS

Analysis of Sample Characteristics

Demographic information for all subjects is presented in Table 1. Information is presented separately for undergraduates and graduates in the treatment and the no-treatment groups. All subjects were approximately the same age with a slight variation for the undergraduates in the treatment group. The average age for undergraduates was 22.32 and for graduate students the average age was 29.48. For undergraduates there were no statistically significant differences across groups in terms of age, gender, or ethnicity. For graduate students there were no statistically significant differences in age or in ethnicity. However, there was a higher percentage of graduate males than females in the no-treatment group. Thus, it was decided to include gender as a separate factor in all subsequent analyses.

Preanalysis for Time-of-Year Effects

Data for the preanalysis were computed for treatment group subjects only. This group took the pretest CAS at various times during the year, while the no-treatment group took the pretest CAS in the spring of 1994. To analyze the data, the school year was divided into quarters: fall, winter, spring, and summer. A random sample of 5 subjects from each month was selected for a total of 15 subjects for each
Table 1

Study 1 Subjects’ Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Undergraduates</th>
<th>Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>No-Treatment</td>
</tr>
<tr>
<td>Age Range</td>
<td>18-50</td>
<td>17-46</td>
</tr>
<tr>
<td>Mean Age</td>
<td>23.87</td>
<td>20.77</td>
</tr>
<tr>
<td></td>
<td>(5.74)</td>
<td>(3.90)</td>
</tr>
<tr>
<td>Total N</td>
<td>648</td>
<td>545</td>
</tr>
<tr>
<td>% Female</td>
<td>66</td>
<td>64</td>
</tr>
<tr>
<td>% Male</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>% Caucasian</td>
<td>90</td>
<td>92</td>
</tr>
</tbody>
</table>

Each seasonal group was comprised of 12 undergraduate students and 3 graduate students. Means and standard deviations on the pretest for each subject by quarter are presented in Table 2. A one-way ANOVA was conducted on these scores. Results of this revealed no statistically significant differences, at the .05 level, for any of the CAS.
Table 2
Means and Standard Deviations for the CAS by Quarter

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>27.357</td>
<td>27.800</td>
<td>30.067</td>
<td>26.533</td>
</tr>
<tr>
<td></td>
<td>(4.733)</td>
<td>(6.742)</td>
<td>(6.703)</td>
<td>(7.100)</td>
</tr>
<tr>
<td>Depression</td>
<td>23.071</td>
<td>24.800</td>
<td>23.400</td>
<td>25.133</td>
</tr>
<tr>
<td></td>
<td>(5.980)</td>
<td>(7.233)</td>
<td>(6.642)</td>
<td>(7.100)</td>
</tr>
<tr>
<td>Suicidal Ideation</td>
<td>13.500</td>
<td>16.466</td>
<td>15.00</td>
<td>16.133</td>
</tr>
<tr>
<td></td>
<td>(2.175)</td>
<td>(6.334)</td>
<td>(4.106)</td>
<td>(8.593)</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>14.071</td>
<td>15.66</td>
<td>13.066</td>
<td>13.733</td>
</tr>
<tr>
<td></td>
<td>(5.076)</td>
<td>(6.411)</td>
<td>(2.185)</td>
<td>(2.738)</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>28.714</td>
<td>31.400</td>
<td>29.467</td>
<td>28.133</td>
</tr>
<tr>
<td>Interpersonal Problems</td>
<td>22.286</td>
<td>23.533</td>
<td>24.600</td>
<td>22.067</td>
</tr>
<tr>
<td></td>
<td>(5.525)</td>
<td>(5.693)</td>
<td>(7.199)</td>
<td>(4.906)</td>
</tr>
<tr>
<td></td>
<td>(6.046)</td>
<td>(6.343)</td>
<td>(5.994)</td>
<td>(6.079)</td>
</tr>
<tr>
<td>Academic Problems</td>
<td>22.357</td>
<td>28.067</td>
<td>28.533</td>
<td>23.133</td>
</tr>
<tr>
<td></td>
<td>(5.017)</td>
<td>(8.631)</td>
<td>(8.667)</td>
<td>(7.661)</td>
</tr>
<tr>
<td>Career Problems</td>
<td>16.857</td>
<td>19.667</td>
<td>22.067</td>
<td>17.467</td>
</tr>
<tr>
<td></td>
<td>(4.944)</td>
<td>(7.697)</td>
<td>(11.087)</td>
<td>(5.768)</td>
</tr>
</tbody>
</table>

Note: Standard deviations for each set of means are centered below in parentheses.
Statistical Differences Between Groups

To determine if the CAS could show outcome for students undergoing counseling, mean change scores for all subjects receiving counseling were compared with those subjects who had no counseling. These scores and standard deviations for each scale are provided in Table 3. It should be noted that a score of 20.0 indicates no change in pre- to posttest scores; numbers greater than 20 indicate change scores in a positive direction, and numbers less than 20 indicate change scores in a negative direction. As can be seen from the table, there were differences between groups.

An analysis of the change scores using a three-factor MANOVA was carried out to examine the differences between groups and the interaction effects of academic status and gender. A factorial design was used in order to examine the effects of the factors simultaneously by forming groups based on all possible combinations of the levels of the independent variables. MANOVA results are summarized for each scale of the CAS in Appendix F, Tables F.1 through F.9.

Analysis of Scales with Significant Three-Way Interactions

Significant three-way interactions were found for four of the nine CAS scales. The results of the MANOVA for these four scales are summarized in Tables F.1, F.2, F.3, and F.4. The scales included: Self-Esteem $F(1, 907) = 3.81, p < .050$;
Table 3

Mean Change Scores and Standard Deviations on the CAS for Each Group

<table>
<thead>
<tr>
<th></th>
<th>Undergraduates</th>
<th></th>
<th>Graduates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>No-Treatment</td>
<td>Treatment</td>
<td>No-Treatment</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>ANX</td>
<td>25.11</td>
<td>24.48</td>
<td>24.34</td>
<td>24.05</td>
</tr>
<tr>
<td>SI</td>
<td>22.27</td>
<td>22.85</td>
<td>20.71</td>
<td>20.05</td>
</tr>
<tr>
<td>SA</td>
<td>21.08</td>
<td>20.86</td>
<td>20.36</td>
<td>20.55</td>
</tr>
<tr>
<td>SE</td>
<td>23.28</td>
<td>23.53</td>
<td>23.44</td>
<td>20.85</td>
</tr>
<tr>
<td>IP</td>
<td>22.52</td>
<td>22.34</td>
<td>20.95</td>
<td>20.70</td>
</tr>
<tr>
<td>FP</td>
<td>21.20</td>
<td>21.87</td>
<td>21.76</td>
<td>19.35</td>
</tr>
</tbody>
</table>

Note: Standard deviations for each set of means are centered below in parentheses.
Family Problems $F(1, 907) = 7.77, \ p < .005$; Academic Problems $F(1, 907) = 5.9, \ p < .015$; and Career Problems $F(1, 907) = 4.07, \ p < .044$. The presence of interactions indicates that conclusions based on main effects alone will not fully describe the data for these scales. Therefore, analyses of the simple interaction effects were conducted to determine at what level of the third variable significant twoway interactions existed. It was found that the two-way interaction for academic status by group was significant for males only. This was true for all four scales: SelfEsteem $F(1, 907) = 4.04, \ p < .045$; Family Problems $F(1, 907) = 4.93, \ p < .027$; Academic Problems $F(1, 907) = 5.94, \ p < .015$; and Career Problems $F(1, 907) = 8.56, \ p < .004$.

Figures 1, 2, 3, and 4 illustrate the interaction for each of those scales. As can be seen from these figures, the pattern for females is consistent. For undergraduate males, and for all females, each of these scales showed a relatively large change from pre- to posttest in the treatment group and a small amount of change from pre- to posttest in the no-treatment group. However, the results for graduate males were quite different. There were no differences between the treatment and no-treatment groups of graduate male subjects on the Self-Esteem and Career Problems scales. On the Family Problems and Academic Problems scale, the no-treatment group had slightly more change than the treatment group, though this was not statistically significant.
Figure 1. Change scores for each group by gender and academic status for the Self-Esteem scale.

Figure 2. Change scores for each group by gender and academic status for the Family Problems scale.
Figure 3. Change scores for each group by gender and academic status for the Academic Problems scale.

Figure 4. Change scores of each group by gender and academic status for the Career Problems scale.
Analysis of Scales with Nonsignificant Three-way Interactions

When the highest-order interaction is not significant, it is appropriate to then examine the next lower sources of variance, in this case two-way interactions. Scales for which there were significant two-way interactions were Suicidal Ideation and Interpersonal Problems. Results of the MANOVA for these two scales are summarized in Tables F.5 and F.6. The only two-way interaction that was significant for these scales was academic status by group. The presence of this interaction indicates that conclusions based on main effects alone will not fully describe the data for these scales. An analysis of simple effects for these interactions was conducted. The results of the simple effects analysis were similar for both scales.

For the Suicidal Ideations scale it was found that there was a statistically significant difference between undergraduate and graduate student performance in the treatment group, $F(1, 907) = 6.10$, $p < .014$. However, there were no statistically significant differences between undergraduates and graduates in the no-treatment group. Figure 5 illustrates this interaction. As can be seen in Figure 5, undergraduates in the treatment group show the greatest amount of change from pre- to posttest, with undergraduates in the no-treatment group showing little change. Graduate students in both groups show only a small amount of change from pre- to posttest.

There was also a significant difference between undergraduate and graduate student performance in the treatment group for the Interpersonal Problems scale
Figure 5. Change scores for each group by academic status for the Suicidal Ideation scale.

$F(1, 907) = 3.79, p < .050$. Figure 6 illustrates the interaction for this scale. As can be seen in Figure 6, once again undergraduates showed a higher rate of change than graduate subjects in the treatment condition. In the no-treatment condition the graduates had a higher rate of change than the undergraduate students. Therefore, when interpreting the meaning of change scores for these two scales, both academic status and group factors must be considered.

Analysis of Scales with No Significant Interactions

No significant interactions were observed for the remaining three scales: Anxiety, Depression, and Substance Abuse. Therefore, main effects for each scale were interpreted. For all three scales, only the main effect for group was significant:
Figure 6. Change scores for each group by academic status for the Interpersonal Problems scale.

Anxiety $F(1, 907) = 60.89, p < .000$; Depression $F(1, 907) = 91.68, p < .000$; and Substance Abuse $F(1, 907) = 4.50, p < .034$. The amount of change was significantly greater for those receiving treatment than for those not receiving any treatment regardless of gender or academic status.

Magnitude of Group Differences

The results thus far have shown statistically significant differences for group on all scales for undergraduates. For female graduates there were statistically significant differences on all scales with the exception of Suicidal Ideation and Interpersonal Problems. For male graduate students there were statistically significant differences on three scales. To determine if these results also
demonstrated practical significance, effect size analyses were conducted. The effect size analyses compared the change scores from each group for both undergraduates and graduate subjects.

By using the researcher’s standard of .33 (Borg & Gall, 1989) to first look at undergraduates’ performance, it appears that the CAS do a very good job of distinguishing between those who received treatment and those who did not. Other than the Family Problems scale, all scales exceed the .33 value. The Family Problems scale, while not meeting the standard, does show some ability to detect change.

For undergraduates the average effect size for the nine scales was .78. Graduate students had an average effect size of .64 for the nine scales.

Results are shown in Table 4. As can be seen in Table 4, for undergraduates, medium to large effect sizes were obtained for all scales except the Substance Abuse scale, the Family Problems scale, and the Career Problems scale. For graduate students, large effect sizes were obtained for the Anxiety, Depression, and Career Problems scales. Medium effect sizes were obtained on the Self-Esteem and Academic Problems scales. Small effect sizes were obtained for the Substance Abuse and Family Problems scales. There were no meaningful differences between groups on the Suicidal Ideation and the Interpersonal Problems scales. This result reflects calculations using data of both males and females. When broken down by gender, meaningful differences were obtained for graduate females on the Suicidal Ideation scale (ES = .71), but not for graduate males (ES = -.34). For the
Table 4

Effect Sizes for Group Differences

<table>
<thead>
<tr>
<th></th>
<th>Undergraduate Students</th>
<th>Graduate Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>.972</td>
<td>1.120</td>
</tr>
<tr>
<td>Depression</td>
<td>1.200</td>
<td>1.500</td>
</tr>
<tr>
<td>Suicidal Ideation</td>
<td>.948</td>
<td>.096</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>.402</td>
<td>.240</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>.765</td>
<td>.643</td>
</tr>
<tr>
<td>Interpersonal Problems</td>
<td>.670</td>
<td>.107</td>
</tr>
<tr>
<td>Family Problems</td>
<td>.244</td>
<td>.298</td>
</tr>
<tr>
<td>Academic Problems</td>
<td>.497</td>
<td>.754</td>
</tr>
<tr>
<td>Career Problems</td>
<td>.397</td>
<td>1.000</td>
</tr>
<tr>
<td>Mean ES</td>
<td>.677</td>
<td>.640</td>
</tr>
</tbody>
</table>

Interpersonal Problems scale, meaningful differences were also found for graduate females (ES = .36), but not for graduate males (ES = -.12).

For undergraduates, eight of the nine scales show effect sizes larger than the researcher's .33 value for practical significance. Five of the nine scales exceed this value for graduate students.
Study 2

Study 2 looked at the construct validity of the CAS to determine if they could measure the degree of problem resolution, or change, in the areas of anxiety and self-esteem. Comparisons of the CAS Anxiety and Self-Esteem scales were made with the Beck Anxiety Inventory (BAI) and the Rosenberg Self-Esteem Scale (RSE), respectively.

The resulting Pearson $r$ revealed a statistically significant positive correlation between the change scores for the anxiety scale of the CAS and the BAI ($r = +.38$). Results using the Spearman correlation coefficient were identical to the Pearson $r$ ($r_s = .38$). This value was also statistically significant at the .05 level.

The magnitude of the relationship between change scores on the Self-Esteem scale of the CAS and the change scores on the Rosenberg Self-Esteem Scale (RSE) was also calculated. There was a statistically significant negative correlation between the CAS Self-Esteem scale and the RSE ($r = -.65$), and a statistically significant negative correlation using the Spearman correlation coefficient ($r_s = -.65$). On the CAS Self-Esteem scale, high scores indicate low self-esteem, whereas on the RSE a high score indicates high or good self-esteem. Therefore, obtaining a high negative correlation coefficient is indicative of a strong relationship between the CAS and the RSE.

In summary, there was a significant positive correlation between the Anxiety scale of the CAS and the BAI. There was a significant negative correlation between the Self-Esteem scale of the CAS and the RSE.
CHAPTER V

DISCUSSION

The primary purpose of this study was to examine the ability of the CAS to effectively measure change in the level of a student's problems after participating in brief therapy at a university counseling center. Specifically, change scores between students receiving brief therapy and students receiving no therapy were compared. Several important findings emerged.

Time of Treatment

The results of the preliminary analysis indicated that time of year does not influence the ability of the CAS to measure problems. This consistency in ability to measure problems over time helps assure that differences in change scores, or outcome, are due to treatment effects, and supports the use of the CAS for this purpose.

Tracking Change with the CAS

Following Treatment

Results of the MANOVA suggest that the CAS can track change. However, the magnitude and significance of these changes are influenced by gender and academic status for some scales.
One would expect that if treatment has an impact, there would be greater change in the treatment group, and this was born out. All scales were able to differentiate between treatment and no-treatment groups for undergraduates as indicated by the statistically significant differences. Thus, as a result of therapy, changes occurred for undergraduates and the CAS were able to demonstrate those changes. Furthermore, when using effect size analysis, it was found that the differences detected between groups were substantial for most scales.

The Family Problems scale, however, had a less than substantial effect size. One possible reason for this finding may be the nature of this scale. Many of the items are directed at problems students might be having with their parents. The majority of students in college live away from home and, as such, may not be experiencing a great deal of family conflict.

Overall, undergraduates had higher pretest scores than graduates on most scales. Higher pretest scores are indicative of a more serious level of problem. If problems were more severe, we would expect therapy to focus on these areas. Therefore, if therapy is successful, a higher rate of change was likely for undergraduates. It may also indicate that the problems addressed in the CAS are more representative of problems of undergraduate students than of graduate students.

What these findings mean for clinicians using the CAS with undergraduate students is that the CAS track change. The CAS will function as a strong outcome
measure, adding to the available measures suitable for improving evaluative practices in university counseling centers.

Tracking Change for Graduate Students

When using the CAS with graduate students, the Anxiety, Depression, and Substance Abuse scales were able to differentiate between groups as indicated by the statistically significant differences and substantial effect sizes. Graduate students presenting with problems in these areas appear to have benefited from participation in treatment, showing change in a positive direction. For graduate students, these three scales appear to be the strength of the CAS.

For the Self-Esteem, Family Problems, Academic Problems, and Career Problems scales, the CAS were able to differentiate between groups for graduate females, but not for males. In their 1991 professional manual for the CAS, test developers Anton and Reed reported that the CAS were unbiased with respect to gender (p. 3). Therefore, this finding was somewhat surprising and unexpected. There are two possible interpretations of this finding: (a) the CAS cannot track changes for male graduate students, and (b) male graduate students do not experience problems in these areas, thus reducing the opportunity for change.

It was noted that three scales of the CAS have demonstrated a strong ability to demonstrate change for graduate male students. Substantial change following therapy was seen on the AN, DP, and SA scales. Thus, the first interpretation seems implausible given the ability of the CAS to track change of graduate males in these areas.
There is support for the second interpretation, however. Some studies indicate that differences in the areas of family problems and self-esteem may be due to gender differences as noted in several studies. For instance, Zuckerman (1989) noted that male college students report less stress regarding family relationships than do females. In the area of self-esteem, several studies report that female college students score lower than their male counterparts on measures of self-esteem (Jensen, Jensen, & Wiederhold, 1993; O'Brien, 1991; Wise & Joy, 1982).

Another possible reason for failure to differentiate between graduate males in the treatment and no-treatment groups on these scales is the low pretest scores of these subjects. An examination of the raw data revealed that pretest scores of the 20 graduate males comprising the treatment group sample were very close to the mean of the CAS standardization sample. Percentages of subjects scoring less than one half standard deviation for these scales were 40% for the Self-Esteem scale, 65% for the Family Problems scale, 75% for the Academic Problems scale, and 80% for the Career Problems scale. This finding would seem to be quite meaningful, particularly for the Family Problems, Academic Problems, and Career Problems scales. The low scores probably indicate that these areas were not problematic for this group, and thus there was no room for change.

Further evidence that these areas may not be a problem for graduate male students is the nature of these scales and their relationship to graduate males. For example, males generally are raised with the idea of planning for a career and supporting a family. They also are not expected to become homemakers. Thus,
male graduate students, by nature of membership in a graduate program, are probably doing well academically and are in a position to meet future career expectations. This may result in a suppression of their scores on these scales that specifically address academic and career problems.

In terms of the nature of the items on the Family Problems scale, many are related to current problems with one’s parents. It is likely that graduate students are fairly independent of their parents, thus making these items less relevant for them.

For the Suicidal Ideation and Interpersonal Problems scales, the CAS were unable to differentiate between groups for both male and female graduate students. In examining the data for male graduate subjects on the Suicidal Ideation and Interpersonal Problems scales there is again a pattern of pretest scores near the mean. For the Suicidal Ideation scale, 85% of these subjects had scores that would indicate this was not a problematic area for them. For the Interpersonal Problems scale, 70% of the subjects were around the mean. For female graduate students, data were similar with 71% scoring less than one half a standard deviation on the Suicidal Ideation scale and 67% scoring around the mean on the Interpersonal Problems scale. Therefore, it is seems reasonable that graduates scoring this low to begin with did not experience distress in these areas severe enough to warrant direct therapeutic attention.

Overall, what these findings mean for the counselor is that, for graduate students, some scales may not be as relevant as for undergraduate students. This is true for six of the nine scales for male graduate students, and two of the scales for
female graduate students. It would be beneficial to sample a larger graduate population to note if suppressed scores recurrently appear for these scales before ruling out their relevance for this group.

This need is further highlighted by the fact that the test developers used a very small graduate sample \((N=27)\) in their norming data. As mentioned before, items in several of the scales do not appear particularly relevant for graduate students, especially for male graduate students.

When using the effect size analysis, it was found that the differences detected between groups were meaningful. For most scales there was a moderate to strong effect, indicating that the magnitude of change detected by the CAS was practically meaningful. However, these effect sizes were largely influenced by the scores from the female graduate students. When only the male graduate students were considered, the magnitude of change was almost nonexistent, and certainly not large enough to have any practical meaning.

Performance of graduate females was similar to that of undergraduates and as such the CAS do a good job of showing outcome with this group. It is likely that the data for females inflated the overall effect sizes for graduate students, however. As such, the ability of the CAS to show outcome for male graduate students may look better than it actually was. Therefore, when using the CAS with male graduate students, results need to be cautiously interpreted.

When interpreting the meaning of change scores for two of the scales, Suicidal Ideation and Interpersonal Problems, academic status must be considered.
For both scales, undergraduates in the treatment group showed a high magnitude of change compared to the graduates in the same group. There was no reason to predict that change scores would differ as a result of academic status and the reasons for these differences in the treatment group subjects are unclear. In addition to some of the reasons given previously, it is possible that suicidal ideation and interpersonal problems are areas that are more problematic for undergraduates; thus more change would be expected for that group. It could also be these problems are more likely to be the focus during therapy with undergraduates. Finally, the differences might simply be an artifact of this particular sample of subjects.

Construct Validity of the CAS

Study 2 examined the construct validity of the CAS by attempting to demonstrate convergent validity of the Anxiety scale and the Self-Esteem scale. Standards for interpreting validity coefficients are not well specified in the literature. Some authors have discussed convergent validity (often referred to as concurrent validity) as an important method of adding to validity evidence, but then do not give exact values from which to interpret this information once it is obtained (Anastasi, 1989; Gregory, 1992; Cohen et al., 1992).

Worthen, Borg, and White (1993) have given some specific values for the acceptable level of validity coefficients, but noted that these represent "very rough guidelines" (p. 190). The values given include: very acceptable .85 to 1.00; minimally acceptable .75 to .85; and unacceptable < .75. When reviewing
acceptable ranges for correlation coefficients, these authors noted that high correlations should be .80 and above, moderate correlations range from .40 to .80, and low correlations are less than .40. It would appear from information in professional journals and in professional manuals for psychological tests that the latter set of standards is most often the standard used for interpretation.

For example, in the professional manual for use with the Beck Anxiety Inventory, a range of correlations of the BAI with other rating scales is cited from several studies, and then discussed without reference to any standard. Magnitudes of the correlations ranged from .15 to .61. The manual then states that these correlation coefficients are not only significantly related to other measures but are "substantially related" as well (Beck & Steer, 1993, p. 13). The CAS test developers also noted that measures that correlated with the CAS at .40 or above were considered to be substantially related (Anton & Reed, 1991).

**Anxiety Scale Validity**

When the relationship of the CAS Anxiety scale to the BAI is interpreted using correlational coefficient standards, that relationship would be considered to be moderate or substantial. However, when results are interpreted using the most stringent of the two standards listed above, the Anxiety scale of the CAS and the BAI validity coefficients are in the unacceptable range (.38).

One possible reason for the low correlation of the CAS with the BAI may be a difference in how they measure the anxiety construct. On the BAI, nearly two thirds of the items focus on physiological symptoms of anxiety. The CAS Anxiety
scale, on the other hand, has just 16% of its items related to physiological signs of anxiety. Anxiety is a construct that has physical, emotional, cognitive, and behavioral correlates. For example, clients with obsessive-compulsive disorder experience many cognitive symptoms, that is, rumination, and may not show any physiological symptoms. Clients with generalized anxiety disorder worry a great deal and feel unable to control their anxiety, but may or may not have physiological symptoms. Clients who have panic attacks experience many physiological symptoms. The different nature of symptoms of the anxiety construct will affect how clients score on different measures. So, while both the CAS and the BAI measure anxiety, they appear to focus on different aspects of this broad construct.

Beck et al. (1988) noted that the BAI was constructed to provide a measure of the severity of anxiety in psychiatric populations. The CAS, on the other hand, were constructed for use with a college student population. The lower correlation obtained in this study could also reflect this difference in populations the instruments are targeted towards.

Beck et al. (1988) also noted that the BAI is better able to discriminate nonanxious diagnostic groups (major depression, dysthymic disorder, etc.) than is the State-Trait Anxiety Inventory (STAI). Given the low correlation coefficient obtained in the present study, a future study needs to be conducted to determine the extent to which the CAS Anxiety scale is able to discriminate between anxiety and depression.

In summary, given the low correlation obtained between the BAI and the Anxiety scale of the CAS, it is recommended that other studies be conducted to look
closer at the validity of this important area. Also, for clients experiencing anxiety problems that have a strong physiological aspect, such as panic attacks, counselors may want to use an additional anxiety measure or use the clinical interview to get more specific information on these symptoms.

Self-Esteem Scale Validity

There was a statistically significant negative correlation between the CAS Self-Esteem scale and the RSE (−.65). Elevated scores on this scale of the CAS indicate low self-esteem, while on the RSE, elevated scores indicate high self-esteem. Therefore, obtaining a high negative-correlation coefficient is indicative of a strong relationship between these measures.

The validity coefficients for the Self-Esteem scale and the RSE approach the minimally acceptable range using the most rigid standard. When considering the more lenient of these interpretive standards, however, the relationship is quite strong. The RSE is considered to be a measure of global self-esteem. The findings of this study indicate that the SE scale of the CAS also provides a good measure of the global self-esteem construct.

In summary, the Anxiety scale of the CAS would benefit from further research looking at convergent validity with other measures of anxiety. The Self-Esteem scale of the CAS appears to have good convergent validity with the RSE and provides an acceptable measure of global self-esteem.
CHAPTER VI
CONCLUSIONS AND RECOMMENDATIONS

The findings of this study support the use of the CAS as an outcome measure in university counseling centers, particularly for undergraduates. First, the CAS demonstrated the ability to distinguish between individuals exhibiting problems in the areas represented by the nine scales and individuals not seeking treatment. Secondly, the CAS was able to identify change in individuals who have had treatment. In addition, the CAS was able to identify a sufficient magnitude of change so as to be meaningful to counselors attempting to evaluate treatment progress or lack of progress of student clients.

The Self-Esteem scale of the CAS shows good convergent validity and the ability to adequately measure this important construct. The Anxiety scale, however, did not perform as well when correlated with a measure that focuses on the physiological symptoms of anxiety. For clients experiencing anxiety problems that have a strong physiological aspect, such as panic attacks, counselors may want to augment the CAS with an additional anxiety measure or target the clinical interview to get more specific information on these symptoms.

Use of the CAS with undergraduates for evaluating outcome is recommended without reservation. With graduate students, three of the nine scales were excellent for evaluating outcome, with other scales only useful in some cases. These three scales, Anxiety, Depression, and Substance Abuse, would seem to be the most consistent in their ability to measure the amount of change of subjects while
remaining resistant to the effects of academic and gender variables. In a clinical setting it is desirable to have a measure that yields consistent results for the population being tested. These three scales appear to be the strength of the CAS, showing a reliable ability to predict change following treatment regardless of gender or academic status.

The CAS was able to identify problem areas of graduate students but it should be remembered that these problems appeared less severe than those of undergraduates. Better norms for graduate students are recommended. Comparing graduates' scores to norms based largely on undergraduate scores may not give an accurate picture of the severity of the problems, nor accurately measure outcome for this subgroup. In addition, some of the scales, Family Problems, Academic Problems, and Career Problems, may not be relevant for this group. More research is recommended with this population.

Limitations of the Study

The research design employed controlled for threats to internal validity such as history, maturation, testing, and instrumentation. However, due to the nature of this study, selection of subjects was not completely controlled for with this design. This and other potential threats to validity will be discussed in this section.

Findings from research study samples can be validly generalized to an accessible target population only if the members of the sample were randomly selected from that population (Borg & Gall, 1989). It is possible that the external
validity of this study was compromised due to different selection methods for the subjects comprising the two groups under study. Subjects in the treatment group were students who came to the counseling center seeking services for personal problems they were currently experiencing in their daily lives. Therefore, it was not ethically acceptable to randomly assign them to treatment or no-treatment groups, nor appropriate to delay treatment. Subjects in the no-treatment group were volunteers from a variety of academic departments and classes. It would also have been inappropriate to assign them to the treatment group when treatment may not have been needed. However, within these constraints there was no reason to believe that the self-selection process was not random. This was further supported by an analysis of subject characteristics, which rendered no significant differences on several factors between groups. Thus, to the extent possible, a close approximation of randomization occurred. While not ideal, some researchers have suggested that under these circumstances, inferential statistics can be used and the data interpreted with some caution (K. White, personal communication, March 16, 1995).

This study was intended to examine a measure specifically for use with college students, and thus results should not be generalized to other populations. In addition, this study was conducted at Utah State University, a school with a high concentration of students who are members of the Church of Jesus Christ of Latter-day Saints. Mormonism represents a relatively conservative cultural and religious ideology and largely reflects a membership that is white, conservative, and middle-
class. As such, results may not necessarily be generalizable to other university or college student bodies where the population is more heterogenous.

Another potential threat to the internal validity of this study is experimental mortality. Many clients who took the pretest did not complete enough treatment sessions to take the posttest. There are a couple of possible reasons for this and each would likely have a different effect on the data. Some clients may have met their treatment goals in fewer than six sessions and thus not completed the posttest. In these cases the outcome or change score may have been substantial and likely positive. On the other hand, some clients may have dropped out of therapy prematurely, in which case the data would possibly show little or no change, or change in a negative direction. However, there was no indication that more subjects dropped out for one reason or the other. As there was an equal chance for all subjects to stay in therapy, or drop out of therapy, it is unlikely that experimental mortality significantly affected the treatment group means.

One of the factors that could be a limitation of this study was the use of all nine scale scores for each subject. It would be expected that a student seeking treatment at a counseling center would show elevated scores on some scales as compared to the nonclinical population. However, it is doubtful that all nine scales will be elevated. There is a high likelihood that therapy will focus primarily on those problem areas that are elevated. By considering the scales that were not the focus in therapy in the data set, the amount of change in those peripheral scales may reflect change only indirectly affected by treatment. If "indirect benefit" of treatment
does not occur, then problems in the peripheral areas are experimentally equivalent to problems of the no-treatment group. Therefore, we would not expect a change to occur.

Recommendations for Future Research

Some general recommendations are suggested for future investigations on the ability of the College Adjustment Scales to show outcome and on the validity of this measure.

This study examined all nine scales of the CAS for each subject. As noted earlier, this may have the effect of "watering down" the data for specific scales that were not the focus of treatment. In the future, limiting the treatment group data to those scales that reflect areas targeted in therapy might provide more specific information about the ability of individual CAS scales to demonstrate "treatment" outcome.

Another interesting, but unexplored variable that could be investigated in future studies is the effects of different types of treatment on outcome as measured by the CAS. The present study, despite its limitations, indicates that the CAS can be useful and valid in showing outcome, particularly on the Anxiety, Depression, and Substance Abuse scales. Knowing the CAS can show outcome lends well to having the researcher begin to compare the specific effects of various types of treatment, such as cognitive-behavioral, dynamic, gestalt techniques, and so on. Along those
same lines, other variables that might be of interest include gender of the therapist implementing treatment and how this interacts with gender of the client.

As noted before, caution should be used when the CAS are administered to graduate students. Further studies need to be directed toward establishing national norms for this group. In addition, specific items and scales of the CAS should be examined to determine their applicability and appropriateness for this subgroup.

Additional research on the CAS should strengthen their validity and add to the usefulness of the CAS in university counseling center settings.

Summary

In summary, university counseling centers need to improve accountability and evaluation procedures in order to meet the standards of good clinical practice and to help justify services in an era when budgets are tighter and money is less available. Demonstrating that services are necessary and are helping students is one way to improve accountability. This study has shown that the CAS are a measure that could be used in university counseling centers to aid in evaluating services. The CAS are easy to administer, score, and interpret. In addition, the CAS are able to identify and accurately measure a range of student concerns, and can measure change after therapy, especially in undergraduates.
REFERENCES


American Psychologist, 45, 390-395.


Wiswell, D., Nabers, K., & Hudson, D. (1993, October). Using the college adjustment scales in a college counseling center. Presentation at the Utah Counseling Centers Convention, Park City, UT.


APPENDIXES
APPENDIX A:

TABLE A.1

TABLE OF OUTCOME MEASURES
## Table A.1

### Table of Outcome Measures

<table>
<thead>
<tr>
<th>Study and Year</th>
<th>N</th>
<th>Measures Used</th>
<th>Variable(s) Examined</th>
<th>Research Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abramowitz &amp; Jackson (1974)</td>
<td>28</td>
<td>Rotter Locus of Control Scale (9 items)</td>
<td>Group therapy methods</td>
<td>No superiority of insight groups found. Most positive exper. in combined group.</td>
</tr>
<tr>
<td></td>
<td>4 Grps.</td>
<td>Trait Anxiety Inventory</td>
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<td></td>
<td></td>
<td>Alienation Scale (modified)</td>
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<td></td>
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<td>Rosenberg Self-Esteem (10 items)</td>
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<td></td>
<td></td>
<td>Social Self-Esteem</td>
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<tr>
<td>Anchor (1977)</td>
<td>24</td>
<td>(Pre-therapy Assessment)</td>
<td>Personality integ. in counselor/client dyads</td>
<td>When personality integration is high more success is seen in therapy.</td>
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<tr>
<td></td>
<td></td>
<td>Tennessee Self-Concept</td>
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<td></td>
<td></td>
<td>Incomplete Sentences Blk. (Outcome Measure)</td>
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<td>Counselor and supervisor ratings</td>
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<tr>
<td>Andrea (1983)</td>
<td>25</td>
<td>Richardson revision of the Gordon Test of Visual Imagery</td>
<td>Control of visual imagery and outcome</td>
<td>Control of visual imagery did not impact therapy outcome.</td>
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<tr>
<td></td>
<td></td>
<td>Control</td>
<td></td>
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<td></td>
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<td>Personal Orientation Inventory</td>
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<tr>
<td>Study and Year</td>
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<td>Measures Used</td>
<td>Variable(s) Examined</td>
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<tr>
<td>Buglione, DeVito, &amp; Mulloy (1990)</td>
<td>36</td>
<td>Test Anxiety Inventory</td>
<td>Comparison of traditional and computer therapy</td>
<td>Both reduced anxiety, no difference between types of therapy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GPA</td>
<td></td>
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<tr>
<td>Burlingame, Fuhriman, Paul, &amp; Ogles (1989)</td>
<td>57</td>
<td>Hopkins Symptom Checklist</td>
<td>Therapist level of experience and training</td>
<td>Clients of experienced therapists showed more improvement.</td>
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<tr>
<td></td>
<td></td>
<td>Brief Hopkins Psychiatric Rating Scale</td>
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<td>Target Complaint Inventory</td>
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<td></td>
<td></td>
<td>Therapist Attitude and Exp. Questionnaire</td>
<td></td>
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</tr>
<tr>
<td>Burton &amp; Nichols (1978)</td>
<td>20</td>
<td>State-Trait Anxiety Inventory</td>
<td>Effect of goal setting</td>
<td>No difference in improvement between setting and not setting goals conditions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nichol’s Pers. Sat. Inventory</td>
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<tr>
<td></td>
<td></td>
<td>Behavioral Target Complaints</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endlich (1989)</td>
<td>50</td>
<td>Beck Depression Inventory</td>
<td>Relationship of depression to attributions</td>
<td>Depression was correlated with seeing problems as a function of stable controllable causes.</td>
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<tr>
<td></td>
<td></td>
<td>Causal Dimension Scales</td>
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<td></td>
<td></td>
<td>Levenson Scales</td>
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<td>Study and Year</td>
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<td>Variable(s) Examined</td>
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<tr>
<td>Fernandez, Brechtel, &amp;</td>
<td>30</td>
<td>IPAT Anxiety Scale</td>
<td>Computer-aided vs cog. counseling for anxiety. Homework compliance. Perceived outcome and view of experience</td>
<td>Treatment equally effective in reducing anxiety. Computer group perceived as less effective.</td>
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<tr>
<td>Mercer (1986)</td>
<td>Groups</td>
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<tr>
<td></td>
<td>Groups</td>
<td>Symptom Checklist</td>
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<tr>
<td>Gomes-Schwartz (1978)</td>
<td>35</td>
<td>Vanderbuilt Psychotherapy Process Scales</td>
<td>Prediction of outcome from process variables</td>
<td>Patient involvement most predictive of therapy outcome</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MMPI index of maladjustment</td>
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<tr>
<td></td>
<td></td>
<td>Therapist/other clinician rating</td>
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<td></td>
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<tr>
<td>Hillerbrand (1988)</td>
<td>163</td>
<td>Client reported SES</td>
<td>SES of client and outcome</td>
<td>SES was related to outcome.</td>
</tr>
<tr>
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<tr>
<td>Hogg &amp; Deffenbacher</td>
<td>37</td>
<td>BDI</td>
<td>Group treatments for depression and self-esteem</td>
<td>Cognitive and Interpersonal group treatment for depression both effective, no difference between treatments.</td>
</tr>
<tr>
<td>Group (1988)</td>
<td></td>
<td>MMPI Depression Scale</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Automatic Thoughts Questionnaire</td>
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<td></td>
<td></td>
<td>Therapist Assessment of Behavior</td>
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<td></td>
<td></td>
<td>Evaluation of Therapy by Client</td>
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<table>
<thead>
<tr>
<th>Study and Year</th>
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<th>Measures Used</th>
<th>Variable(s) Examined</th>
<th>Research Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jensen, Baker, &amp; Koepp (1980)</td>
<td>400</td>
<td>Grade point average survey self-report data</td>
<td>Trans. Analysis, effect on GPA and feelings about self</td>
<td>86% helped by TA sessions and GPA increased</td>
</tr>
<tr>
<td>Karzmark, Greenfield, &amp; Cross (1983)</td>
<td>110</td>
<td>25 SCL-90 items GAS rating</td>
<td>Expectations for therapy with level of adjustment pre- and post therapy</td>
<td>Expectancy unrelated to improvement. Adjustment and expectancy did not have a strong relationship.</td>
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<tr>
<td>Kivlighan, McGovern, &amp; Corazzini (1984)</td>
<td>6 Groups</td>
<td>Impact Message Inventory Observer Rating Form Group Member Eval. Form</td>
<td>Anger and intimacy</td>
<td>Matched interactions led to more comfort with intimacy, more appropriate expression of anger</td>
</tr>
<tr>
<td>Lenihan &amp; Kirk (1990)</td>
<td>81</td>
<td>Compulsive Eating Scale Perfectionism Scale Bem Sex Role Inventory Pact Program Change Scale</td>
<td>Eating behaviors, perfectionism, and compulsive eating attitudes</td>
<td>Use of paraprofessionals effective in reducing neg. eating, perfectionism, and compulsive attitudes.</td>
</tr>
</tbody>
</table>

(table continues)
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<tr>
<th>Study and Year</th>
<th>N</th>
<th>Measures Used</th>
<th>Variable(s) Examined</th>
<th>Research Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longo et al. (1992)</td>
<td>139</td>
<td>Self-efficacy for Client Behaviors Scale &lt;br&gt; Expectations About Counseling Scale (Used two scales) &lt;br&gt; Client Problem Identification Questionnaire &lt;br&gt; Rosenberg Self-Esteem Scale or State-Trait Anx. Invent.</td>
<td>Self-efficacy to motivation/outcome expectancy. Did not actually look at client improvement per se</td>
<td>Found that self-efficacy did not relate to global self-esteem or to state anxiety at intake. Self-efficacy and motivation contributed to client returning for service.</td>
</tr>
<tr>
<td>O'Farrell, Hill, &amp; Patton (1986)</td>
<td>2</td>
<td>Hopkins Symptom Checklist&lt;br&gt; Tennessee Self-Concept Scale&lt;br&gt; Target Complaints</td>
<td>Comparison of two cases treated by the same therapist</td>
<td>Client 1 improved, client 2 improved in two areas, got worse in two others. Concluded counselors need to adapt interventions to the individual.</td>
</tr>
<tr>
<td>Peterson (1981)</td>
<td>128</td>
<td>Self-report outcome survey</td>
<td>Counseling systems for groups, and outcome</td>
<td>95% reported some improvement</td>
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<tr>
<td>Schauble &amp; Pierce (1974)</td>
<td>41</td>
<td>MMPI</td>
<td>Client-therapist process variables and outcome</td>
<td>Therapist empathy, positive regard, and internal/external client variable contribute to positive outcome.</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>Study and Year</td>
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<td>Measures Used</td>
<td>Variable(s) Examined</td>
<td>Research Results</td>
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<tr>
<td>---------------</td>
<td>-----</td>
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<tr>
<td>Shaw (1977)</td>
<td>32</td>
<td>BDI</td>
<td>Compared two methods of treatment for depression</td>
<td>Cognitive modification most effective treatment for depression over beh. mod., nondirective and no treatment</td>
</tr>
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<td></td>
<td></td>
<td>Hamilton</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>Visual Analogue Scale</td>
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<td>Strassberg et al. (1977)</td>
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<td>BDI</td>
<td>Number of sessions and outcome</td>
<td>As no. of sessions went up client showed improvement.</td>
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<td>Visual Analogue Scale</td>
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<tr>
<td>Terry (1989)</td>
<td>2</td>
<td>Therapist’s subjective rating only</td>
<td>Modified version of systems therapy</td>
<td>Noted improvements in both cases using the concept of meaningful system.</td>
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<td>Tracey (1989)</td>
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<td>Client Satisfaction Scale Therapist Satisfaction Scale</td>
<td>Therapist and client satisfaction</td>
<td>Successful dyads showed a pattern of satisfaction, unsuccessful dyads did not.</td>
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<td>Brief Hopkins Psychiatric Rating Scale</td>
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<td>Counseling Outcome Measure</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Follow-up Questionnaire on Individual Counseling</td>
<td></td>
<td></td>
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<td>Study and Year</td>
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<td>Measures Used</td>
<td>Variable(s) Examined</td>
<td>Research Results</td>
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<tr>
<td>Tracey (1985)</td>
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<td>Counseling Outcome Measure</td>
<td>Counselor dominance</td>
<td>Counselors dominant in successful dyads, equal dependency in unsuccessful dyads</td>
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<td></td>
<td>Dyads</td>
<td>Follow-up Questionnaire on Individual Counseling</td>
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<tr>
<td>Weitz et al. (1975)</td>
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<td>Client questionnaire</td>
<td>No. of sessions and outcome compared</td>
<td>Improvement better for those with 20 or more sessions.</td>
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<td>Westerman et al. (1987)</td>
<td>16</td>
<td>Subjective rating by an assessor pre- and post</td>
<td>Cooperation vs resistance</td>
<td>Support for paradoxical treatment for resistance, behavioral approach for</td>
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<td>Client/therapist coordinating style</td>
<td>cooperative clients.</td>
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CLIENT RIGHTS

Utah State University Counseling Center

As a client of the USU Counseling Center, you have the right to:

1. Receive the best professional services within your personal belief and value system, including the right to an individual treatment plan.

2. Ask any questions about the Counseling Center and its function or about the training, experience, therapeutic orientation, and personal values of your counselor.

3. Participate in the development of an individual treatment plan with your counselor or request alternative treatment.

4. Request a specific staff member or type of counselor (e.g., female vs. male). You also have the right to request a change to a different counselor.

5. Refuse services or terminate treatment at any time.

6. Review your own record file with the counselor within a reasonable time after making a written or verbal request. Parents and legal guardians also have the right to review, with the counselor, the record file of their minor child (below age 18).

7. Expect that information, written or verbal, will be kept confidential. No information will be communicated to other individuals or agencies unless authorized by the signature of the client, or parent of a minor, in a written letter or release-of-records form. It is important to note that a counselor is legally and ethically required to violate the client's right to confidentiality in the following instances:

   a. A clear emergency exists where there may be danger to the client or others.

   b. Child abuse or neglect is suspected or reported.

   c. The counselor is under court subpoena to surrender client records and/or give testimony. This includes court actions against the counselor as well as any court proceedings which may be brought against you.
8. Obtain access to proper channels for complaint or correction of suspected violation of your rights.

9. Be informed when confidential information has been requested and of options available to you in such a case.

10. Counseling Center policies relating to confidentiality are:
   a. If a client utilizes the Student Health Services in addition to the Counseling Center, the counselor may consult with the staff of the Health Services in order to develop a more comprehensive treatment program for the client.
   b. Counselors review individual cases with other professional staff within the Counseling Center.
   c. When a client is contacted at home (to reschedule an appointment, for example), communication is made by telephone or a letter. (If you prefer an alternate form of notification, please inform your counselor).

11. Be informed that the Utah State University Counseling Center provides mental health services to a broad range of clients from Utah State University, while at the same time graduate students in the Pro-Sci Psychology Training Program. Services are provided by advanced students who work at a level appropriate to their level of training and who are under supervision by psychologists.

   For purposes of training and supervision the counselors on our staff and in our training program may at times audiotape or videotape counseling interviews. Interviews will not be taped without the knowledge of the client. All such tapes are the property of the Counseling Center and no one but supervisory staff and counselors will have access to them. They will be erased after supervision is completed. These interviews may also be scheduled for live observation by the supervisors. Rules of strict confidentiality apply and will be respected.

12. To better serve students, the Counseling Center collects additional research data from time to time. Providing this information is strictly voluntary and does not affect your right to receive services. All information is kept in strict confidence and will be coded so that the identity of the individual remains anonymous. Interested individuals who provide the data may contact Counseling Center staff for a summary of results.
These policies are established with the welfare of the client in mind. If you have any questions or reservations concerning these policies, please talk to your counselor. Please keep your copy of these rights for future reference.

The Counseling Center reserves the right to verify your student status in order to ascertain current eligibility for services (minimum of seven (7) quarter hours required by you or your spouse).

I have read the above statement of client rights, have no questions about them, and give consent for taping and data collection as described.

Signature ____________________________

Date ______________

Witness ____________________________
APPENDIX C

CAS ITEM BOOKLET
Directions:

On the accompanying answer sheet, please fill in your name, today’s date, and your sex, age, race, and year in college. Please mark all your answers on the answer sheet. Do not write in this booklet.

This booklet contains 108 statements. Read each statement carefully and decide whether or not it is an accurate statement about you. For each item, circle the letter on the answer sheet that best represents your opinion.

Circle "F" if the statement is FALSE or NOT AT ALL TRUE. F S M V
Circle "S" if the statement is SLIGHTLY TRUE. F S M V
Circle "M" if the statement is MAINLY TRUE. F S M V
Circle "V" if the statement is VERY TRUE. F S M V

Please note that the items are numbered across the rows of the answer sheet. If you make a mistake or change your mind, make an "X" through the incorrect response and then circle the correct response. DO NOT ERASE! Please answer each item as openly and honestly as possible. Be sure to answer every item.

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1. I have poor study skills.
2. I feel tense much of the time.
3. A lot of people irritate me.
4. I haven’t felt much like eating lately.
5. I need more information about career options.
6. I have nothing to live for.
7. I party too much.
8. I feel good about myself.
9. I avoid talking to my parents.
10. I have difficulty concentrating while studying.
11. When I get upset, I have trouble catching my breath.
12. The people around me care about very different things than I do.
13. The smallest tasks seem to tire me out.
14. I can’t seem to find a major that fits me.
15. No one would miss me if I were to die.
16. I spend too much money on drugs or alcohol.
17. I feel that my life is going about as well as most others my age.
18. My family doesn’t understand me.
19. I never find the time to study.
20. I seem to be worried constantly about something.
21. I have close and satisfying relationships.
22. Lately, I feel sad or blue most of the time.
23. I need to know myself better in order to choose a career.
24. I've thought about how I would take my life.
25. I've missed classes or work because I partied the night before.
26. I trust my judgement.
27. My home life is unpredictable.
28. I seldom feel prepared for my exams.
29. I have a lot of aches and pains.
30. I seem to disagree with others more than I agree with them.
31. I've lost interest in the things I've always enjoyed.
32. I'm worried because I can't find a career that interests me.
33. I think things would be better if I weren't alive.
34. I've done things while drinking that I'm ashamed of or embarrassed at.
35. I believe that I'm a successful person for my stage in life.
36. My family tries to run my life.
37. I organize my time poorly.
38. Lately, I've had trouble concentrating.
39. I always get hurt when I let others get close to me.
40. Most mornings I wake up calm and rested.
41. I'm dissatisfied with my lack of plans for the future.
42. My mind has been filled with thoughts of suicide.
43. I've gotten into trouble as a result of my drinking.
44. I'm afraid to ask for what I need.
45. It bothers me that my family is not closer.
46. I’m satisfied with my academic performance.
47. Lately, it doesn’t take much to get me upset.
48. People around me don’t understand what I’m really like.
49. Things have gone from bad to worse.
50. I’m worried about finding a major.
51. I’ve planned how to take my life.
52. I use drugs or alcohol as a way to cope with my problems.
53. I feel that I’m sexually attractive.
54. My parents won’t let me grow up.
55. As much as I try, I’m always behind in my schoolwork.
56. Often I get so nervous I feel my heart pounding.
57. My temper often gets me into arguments.
58. Lately, it’s a chore for me just to get through the day.
59. I don’t know how to go about selecting a career.
60. I can no longer cope with life.
61. My use of drugs or alcohol has hurt my grades.
62. I don’t have any particular strengths or talents.
63. I feel smothered by my parents.
64. I think about dropping some classes.
65. I worry about things that don’t bother most other people.
66. I need others more than they seem to need me.
67. Sad thoughts keep me awake at night.
68. Although I know it's time for me to decide, I'm not yet ready to choose a major or a career.
69. I think about dropping some classes.
70. Other people believe that I have a problem with drugs or alcohol.
71. I don't feel as capable as most other people.
72. My family life is pleasant and satisfying.
73. Other students seem to study more than I do.
74. I think I'm showing the signs of a lot of stress.
75. I don't get along with those in authority.
76. I don't get the same pleasure that I used to from my activities.
77. I feel I'm being forced into a career I don't want.
78. I know exactly how I would end my life.
79. People have taken advantage of me while I was drunk or high.
80. I'm too sensitive to criticism from others.
81. I can't seem to let go of my family.
82. I seem to forget what I know when I take a test.
83. Lately, my worries have made it hard for me to get to sleep.
84. I'm tired of the way people treat me.
85. I believe that no matter what I do things will not improve.
86. I'm anxious because I'm running out of time for choosing a career.
87. I'm tired of living.
88. I've felt guilty over my drinking or use of drugs.
89. I have a very positive opinion of myself.
90. I don’t like to be at home because we always argue.
91. I’m inconsistent in my class work.
92. I often feel afraid but don’t know why.
93. I’ve made mistakes in choosing my friends.
94. I can’t seem to get rid of my feelings of sadness.
95. My friends have a better idea about their future than I have about mine.
96. I’ve attempted suicide in the past.
97. I’ve had arguments with my friends about my drinking or use of drugs.
98. People say I lack self-confidence.
99. I think about problems at home even when I’m at work or school.
100. No matter how much I study, I can’t seem to make good grades.
101. I’m bothered by thoughts that I can’t seem to get rid of.
102. I don’t trust most of the people around me.
103. Recently I’ve lost some of my interest in sex.
104. I don’t know what to do with my life.
105. I think about death a lot.
106. I’ve been in some pretty dangerous situations because of my drinking or use of drugs.
107. Frequently I feel dissatisfied with the kind of person I am.
108. I am afraid of my parents.
APPENDIX D

CAS PROFILE SHEET
APPENDIX D

CAS PROFILE SHEET

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July 25, 1995

Denise Wiswell
FAX (801) 797-1448

Dear Ms. Wiswell:

In response to your recent request, permission is hereby granted to you to include a copy of the College Adjustment Scales Test Booklet and Profile Sheet in the appendix of your dissertation. This permission agreement also grants permission to UMI to distribute copies of your dissertation upon demand.

This Agreement is subject to the following restrictions:

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ONE COPY of this Permission Agreement should be signed and returned to me to indicate your agreement with the above restrictions. This proposed Agreement will expire if it is not
signed and returned to PAR within 30 days. Please keep one copy for your records.

Sincerely,

R. BOB SMITH III, Ph.D.
President

RBS/bv

ACCEPTED AND AGREED:

BY: Denise Wiswell

DATE: July 26, 1995
APPENDIX E

THE ROSENBERG SELF-ESTEEM SCALE
Appendix E

The Rosenberg Self-Esteem Scale

Below is a list of items related to self-esteem. Please read each one carefully and circle the response that most closely represents how you feel about that item. (SA = Strongly Agree, A = Agree, D = Disagree, and SD = Strongly Disagree).

1. On the whole, I am satisfied with myself.  
   SA  A  D  SD

2. At times I think I am no good at all.  
   SA  A  D  SD

3. I feel that I have a number of good qualities.  
   SA  A  D  SD

4. I am able to do things as well as most other people.  
   SA  A  D  SD

5. I feel I do not have much to be proud of.  
   SA  A  D  SD

6. I certainly feel useless at times.  
   SA  A  D  SD

7. I feel that I’m a person of worth, at least on an equal plane with others.  
   SA  A  D  SD

8. I wish I could have more respect for myself.  
   SA  A  D  SD

9. All in all, I am inclined to feel that I am a failure.  
   SA  A  D  SD

10. I take a positive attitude toward myself.  
    SA  A  D  SD
APPENDIX F

MANOVA TABLES
APPENDIX F

MANOVA TABLES

Table F. 1

MANOVA Results for CAS Self-Esteem Scale

<table>
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* indicates statistically significant at .05 level.
Table F.2

**MANOVA Results for CAS Family Problems Scale**

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* indicates statistically significant at .05 level.
Table F.3

MANOVA Results for CAS Academic Problems Scale

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* indicates statistically significant at .05 level.
Table F.4

MANOVA Results for CAS Career Problems Scale

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* indicates statistically significant at .05 level.
Table F.5

MANOVA Results for CAS Suicidal Ideation Scale

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* indicates statistically significant at .05 level.
Table F.6

**MANOVA Results for CAS Interpersonal Problems Scale**

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* indicates statistically significant at .05 level.
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* indicates statistically significant at .05 level.
Table F.8

MANOVA Results for CAS Depression Scale

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* indicates statistically significant at .05 level.
Table F.9

MANOVA Results for CAS Substance Abuse Scale

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* indicates statistically significant at .05 level.
VITA

DENISE K. WISWELL

Education

Ph.D. Combined Program: Clinical/Counseling/School Psychology Utah State University, Logan: 1996

M.S.W. Masters in Social Work University of Michigan, Ann Arbor: 1983

B.S. Psychology Central Michigan University, Mt. Pleasant: 1973

Supervised Clinical Experiences

Utah State University Counseling Center September 1993 - Present

Therapist. (Half-time). Provide outpatient services to students presenting with psychological problems to the university counseling center. Duties include on-going therapy, crisis intervention, group therapy, intake evaluations, and assessment. 1200 clinical hours will be accumulated by the end of my contract in June 1995. Supervisor: Mary Doty, Ph.D.

Logan Regional Hospital - Behavioral Health Unit June - August 1994

Practicum Student Therapist. Provided assessment, diagnosis and group treatment of adults presenting with severe emotional and/or behavioral problems that necessitated short-term hospitalization. Typical problems included affective disorders, dissociative disorders, eating disorders, and dementia. Worked as part of an interdisciplinary team, had responsibility for written psychological reports, co-facilitated group therapy. 100 Practicum hours. Supervisor: Dr. Bruce Johns.
Utah State University
Community Family Partnership
Logan, Utah

October 1991 - August 1993

Staff Assistant. (Half-time). Provided annual assessment of developmental level using the Battelle Developmental Inventory for children, ages 6 months to 8 years, of families in the project. Cognitive assessments using the WISC and WIPSI were also administered on occasion. Responsible for administration, scoring, and reports for the BDI. 1200 total hours accumulated. Supervisor: Phyllis Cole, Ph.D.

Utah State University Counseling Center
October 1992 - June 1993

Practicum Student Therapist. Provided outpatient therapy services to USU students presenting a variety of emotional and behavioral difficulties. Co-facilitator of group focusing on interpersonal skills, and a sexual abuse support group. Conducted intake interviews, and maintained appropriate agency records and reports.
300 Practicum hours. Supervisors: Dr. Mary Doty and Dr. Mark Nafziger.

Utah State University Psychology Community Clinic
January 1991 - July 1994

Practicum Student Therapist. Provide outpatient therapy services to adults, children, and couples presenting with a range of emotional and behavioral difficulties. Conduct intake interviews, maintain agency records, administer psychological test battery and submit written psychological evaluations. Initiated and co-facilitated a four week introduction-to-assertiveness training group. Co-facilitated a 16 week eating disorders support group.
700 Practicum hours (100 hours waived for previous experience).
Supervisors: Dr. Scott Blickenstaff, Dr. David Stein, Dr. Susan Crowley.

Toledo Veteran’s Administration
Outpatient Clinic
Toledo, Ohio

May 1983 - August 1983

Practicum Student Therapist. Worked with veterans on an outpatient basis, providing evaluation, and on-going therapy as a requirement for my professional practicum at the University of Michigan. 200 practicum hours.
Supervisor: Dan Downey, LCSW
Teaching Experience

Utah State University
Logan, Utah
Spring Quarter 1993
Summer Quarter 1994

Instructor. (Part-time). Responsible for all phases of a class titled: Behavior Modification. Duties included developing and giving lectures, developing and administering examinations, and assigning course grades for this undergraduate junior level class. Taught over the Comnet system serving off-campus sites in Utah and Colorado, and on-campus USU students.

Professional Experience

Listening Ear Crisis Center Inc.
Mt. Pleasant, Michigan
January, 1985 - September 1991

*Director of Residential Services. Oversee the operation of the agency's group homes for developmentally disabled and mentally ill individuals. Duties included: Supervision of group home program directors, hiring of all personnel, quality assurance, assisting all treatment staff in development and monitoring of all treatment-related programs. Also serve as an on-call therapist for agency's Runaway Youth Services and Children's Sexual Abuse Program, providing emergency counseling for youth and families, arranging temporary foster care placement if needed. Supervisor: Don Schuster, LCSW

Central Michigan Community Mental Health Services
Reed City, Michigan
December, 1983 - January, 1985

*Outpatient Therapist. Responsible for all phases of clinical practice in a rural mental health setting serving adults, children, and families. Duties included evaluation, on-going therapy, referral, hospitalization assessment, and on-call emergency services. Supervisor: Eldon Whitford, MSW

Listening Ear Crisis Center Inc.
Mt. Pleasant, Michigan
January, 1981 - August, 1982

*Program Director/Case Manager for a residential treatment facility for developmentally disabled children. Supervised direct care staff, developed
programs for daily living skills, reduction of maladaptive behaviors, and training in social skills. Supervised social work with families. Supervisor: Don Schuster, LCSW

Gratiot-Isabella Intermediate School District
Mt. Pleasant, Michigan

*Behavior Therapist for a school program that provided special education services to residents of a state institution. Responsible for development and monitoring of behavior management programs, and inservice training of instructional staff and support personnel. Supervisor: Adverna Nolan

Research

Wiswell, D., Nabers, K., & Hudson, D. (1993, October). Using the college adjustment scales in a college counseling center. Presentation at the Utah Counseling Centers Convention, Park City, UT.


Professional Licensure / Affiliations

Student Affiliate, American Psychological Association 1991-present.


Certified Social Worker, State of Michigan, December 1993 - March 1985