

Running head: SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER GROUP THERAPY
OUTCOMES: SOCIAL SKILLS TRAINING FOR ADULTS WITH MENTAL ILLNESS

APPROVED BY SUPERVISORY COMMITTEE

Chung-Yi Chiu, Ph.D.

Gerald Casenave, Ph.D.

Lindsey Rose, M.S.

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

DEDICATION

For Charlotte

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER GROUP THERAPY
OUTCOMES: SOCIAL SKILLS TRAINING FOR ADULTS WITH MENTAL ILLNESS

by

AMANDA M. RUSSO, B.S., B.A.

THESIS

Presented to the Faculty of the School of Health Professions

The University of Texas Southwestern Medical Center

Dallas, Texas

In Partial Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

DECEMBER 2012

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

Copyright © 2012

by

AMANDA M. RUSSO

All Rights Reserved

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

Abstract

BACKGROUND: Group therapy is an effective method of treating people with various mental illnesses. Social skills training is often used in a group therapy setting to improve the social functioning of people with mental illness, many of whom have social skills deficits. Currently, there is very little literature on how social skills training reduces symptomology, most of which is limited to children or adolescents and people with autism spectrum disorders. The current study looks to determine what, if any, effect social skills training has on alleviating depression and anxiety symptoms in a mixed mental illness sample.

SUBJECTS: 23 subjects were recruited from the University Rehabilitative Services to take part in the study. There were 11 males and 12 females divided into two treatment groups named Connections (CG) and Personal and Social Adjustment Treatment (PSATG).

METHOD: A one-way paired samples t-test was used to determine improvement between pre and post BDI-II and BAI scores.

RESULTS: BDI-II scores were significantly lowered, indicating improvement in depression symptoms. BAI scores were not statistically significant.

DISCUSSION: Social skills training does alleviate depression symptoms in an adult mixed mental illness sample. Future studies need to focus on improving anxiety symptoms as well.

Keywords: group therapy, social skills training, depression, anxiety, mental illness,

BDI-II, BAI.

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

Table of Contents

Chapter 1: Introduction	1
Chapter 2: Review of the Literature	3
Group Therapy for People with Mental Illness.....	3
Different Theory-Based Group Interventions for People with Mental Illness.....	9
The Effects of Mental Illness on Social Skills	15
Social Skills Deficits Common in People with Mental Illness	17
Problems with Perceived Social Stimuli	18
Observable Behaviors.....	20
Social Skills Training Goals for People with Mental Illness	23
Reducing Depression and Anxiety Symptoms for People with Mental Illness Using Social Skills Training	25
Summary	28
Research Questions and Aims	29
Chapter 3: Method.....	31
Participants	31
Group Therapy Procedure	31
Instruments	32
Demographics Questionnaire	33
Beck Depression Inventory-II (BDI-II).....	34
Beck Anxiety Inventory.....	35
Data Analysis	35
Descriptive Data Analysis	36
Primary Data Analysis.....	36
Secondary Data Analysis.....	37
Research Hypothesis.....	37
Chapter4: Results.....	40

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

Descriptive Data Analysis	40
Primary Data Analysis	41
Treatment Effectiveness of Depressive Symptoms	41
Treatment Effectiveness of Anxiety Symptoms	43
Secondary Data Analysis	45
Correlations between age, level of education, length of treatment, reported social support and reported stress	46
Chapter 5: Discussion	48
Clinical Implications	52
Future Research.....	52
Limitations	53
Conclusions	54
References.....	56
Table 1.....	66
Table 2.....	69
Table 3.....	70

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

CHAPTER ONE

Introduction

Group therapy has been found to be as effective as individual therapy (Burlingame, Fuhrman, & Mosier, 2003), if not more so for certain populations. Social skill competence is highly valued in both personal and professional relationships (Wallstedt-Paulsson & Eklund, 2008), but unfortunately is often lacking in people with mental illness (Velligan & Gonzalez, 2007; Segrin, 2000; Kopelowicz, Liberman, & Zarate, 2006). It has not been clear if poor social skills cause depression and anxiety, or if depression and anxiety and other mental illness symptoms impair patients' social skills function. Social skills deficits result in turmoil in relationships and lack of social support, which in turn coincides with poor self-image and depression. Deficient, impaired social skills also impact their daily functioning, well-being, and quality of life. Unfortunately, people with mental illness diagnoses often experience comorbid depression and anxiety on top of their primary diagnosis due to this lack of social reciprocity (Hillier, 2006). Social skill training aims to target social skill deficits, such as social perception problems, as well as increase socially appropriate behavior (Segrin, 2000). Regrettably, there are only a few studies that look at the relationship between social skills training in a group format and psychiatric symptom reduction (Hillier, Fish, Siegel, & Beversdorf, 2011; Young, Mufson & Gallop, 2010), and they are limited only to certain specific samples, primarily those of children and people with autism. Therefore the proposed study will aim to determine if such findings were generalizable to an adult, mixed psychiatric sample. This project will provide not only another way to measure the effectiveness of group therapy in general, but it will provide

empirical evidence of group therapy effectiveness of social skill training, that is, decreased depression and anxiety symptomology. Such outcomes have been lacking in the field of mental health.

The aims of the proposed study are to determine if:

1. Participants in the Connections group would have improved depression symptoms after receiving group therapy.
2. Participants in the Connections group would have improved anxiety symptoms after receiving group therapy.
3. Participants in the Personal and Social Adjustment Training group would have improved depression symptoms after receiving group therapy.
4. Participants in the Personal and Social Adjustment Training group would have improved anxiety symptoms after receiving group therapy.
5. Participants in the both groups would have improved depression symptoms after receiving group therapy.
6. Participants in the both groups would have improved anxiety symptoms after receiving group therapy.

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

CHAPTER TWO

Review of the Literature

Group Therapy for People with Mental Illness

Group therapy is a psychotherapeutic treatment where people of various presenting problems congregate together to work towards a common goal, typically symptomatic relief and personal growth (Yalom & Leszcz, 2005). Group therapy was previously only used in conjunction with other psychotherapeutic treatments (Pattison, 1965; Rickard, 1962; Stotsky & Zolik, 1965 as cited in Burlingame, Fuhrman, & Mosier, 2003), but since its early beginnings, group therapy has come to stand on its own as an effective treatment for mental illness (McRoberts, Burlingame, & Hoag, 1998). Yalom and Leszcz (2005) believed that group therapy is a setting in which therapists can offer maximum benefit to their clients, such as skills training and psychiatric symptom improvement, based on their eleven "primary factors" (p. 1) unique to group therapy which include: instillation of hope (i.e. seeing growth of other group members gives hope to new members), universality (i.e. being in a group helps the person feel that they are not alone in their situation), imparting information (i.e. group members support each other by sharing information about themselves), altruism (i.e. the client gains confidence when their shared information helps another member), the corrective recapitulation of the primary family group (i.e. the group is somewhat like a family, and in that gives the members a chance to explore their childhoods how it pertains to their present situations), development of socializing techniques (i.e. a safe place to practice newly learned skills), imitative behavior (i.e. a chance to model behaviors observed in the group), interpersonal learning (i.e. learning about oneself from

feedback obtained from group members), group cohesiveness (i.e. because there is a common goal, the group is united and the members feel a sense of acceptance and belonging), catharsis (i.e. releasing pain through sharing feelings with others), and existential factors (i.e. members realize they are responsible for their own lives and actions through support and guidance from the group). For example, the UTSW groups implemented these factors in a variety of ways: installation of hope and altruism were achieved through bringing in new members as older members were ready to exit the group; universality and group cohesiveness occurred because all the participants were working toward social skill improvement; development of socialization techniques, imitative behavior, and interpersonal learning were all directly addressed through the daily lesson plans prepared by the group facilitators, and were all inherent in the daily social interactions that played out between group members during the group time; and recapitulation of the primary family group, catharsis and existential factors were all achieved through a daily sharing exercises. Additionally, group therapy was chosen as the primary therapeutic modality of this study for other reasons; group therapy is a cost-effective treatment (McCrone, Weeramanthri, & Knapp et al., 2005; Burlingame, MacKenzie, & Strauss, 2004), as well as a way for people who might otherwise be isolated as a result of their illness to connect with others. As stated by Dr. Mary Ann Barr (as cited in Kahn, 1986, p. 29), "Group therapy is a place where these isolated, withdrawn folk can be brought back into contact with other people - both in a sense of reality testing, and in the sense of intimacy through communication." In other words, group therapy can be an especially helpful tool for people with mental illness not only for the treatment of the mental illness symptoms, but also due to the unique social platform that group therapy offers.

UTSW used group therapy rather than an individual format because of its inherent nature to allow social interactions and give its members a safe place to develop and practice social skills; additionally, group therapy is empirically validated to be as effective as individual therapy for treating mental illness (McRoberts, Burlingame, & Hoag, 1998). McRoberts et al., (1998) conducted a meta-analysis where they sought to analyze the effectiveness between individual therapy outcomes and group therapy outcomes using an effect size of Cohen's *d* (Cohen, 1977). Cohen's *d* effect size is interpreted as 0.2 is a small effect, 0.5 is a medium effect, and 0.8 is a large effect. Studies that were included had to use both group and individual formats within the same study with groups defined "broadly to include counseling, guidance, or training groups, and involve group interactions and the potential for reciprocal influence of three members or more" (Dagley, Gazda, Eppinger, & Stewart, 1994, p. 345 as cited in McRoberts et al., 104). Likewise, the UTSW groups also had both counseling and training components with more than three members for group interactions and reciprocal influence; ergo, this particular meta-analysis is especially relevant to the present study. Groups included in the study also had to meet regularly with an identified therapist for a specific purpose, have participants exhibiting a clinical problem representative of those typically treated by mental health professionals, and only included out patients, all factors of which are similar to the composition of the UTSW groups. Twenty-three studies were selected to be included in the meta-analysis. The authors comprehensively examined what moderators would influence the group therapy effects; thus, the present study will also examine these mediators. When comparing between individual therapy and those wait-listed for individual treatment, individuals in therapy fared better on average than 78% ($d = 0.76$,

$t_{(5)} = 3.63, p = .02$) of the wait-list counterparts. Group therapy individuals fared better on average than 82% ($d = .90, t_{(5)} = 2.73, p = .04$) than the wait-list counterparts, indicating that both therapies are more effective than no treatment. The overall mean effect size comparing individual to group therapy was 0.01 ($t_{(22)} = 0.15, p = .88$), indicating that group therapy and individual therapy overall were not statistically different from zero, and that there was no advantage of either therapy when post treatment means were compared for those in any kind of therapy versus those wait-listed. When comparing studies that examined individual treatment versus group treatment, the researchers found when clients were classified by their diagnoses, individual therapy had significantly better outcomes ($d = .13, t = 2.43, p = .04$ with a positive ES favoring individual therapy) than group therapy; however, when the studies were sorted according to therapeutic problem-solving focus (e.g., physical pain, parenting problems, vocational problems), group therapy had better outcomes ($d = -.12, t = -1.85, p = .36$ with a negative ES favoring group therapy), suggesting that the goals of the group were more influential in affecting group treatment outcome than treating specific diagnoses in a group setting. Also while comparing individual to group treatments, it was determined that theoretical orientation (behavioral, cognitive behavioral, or psychodynamic) did not affect the treatment outcome between individual and group therapy. The UTSW groups, in alignment with this finding, pulled from various theoretical orientations and used lesson plans specifically tailored to the needs of the group at that time. Seeing as this study supported the idea that no one theoretical orientation was superior to another, the researchers felt that the best and most applicable methods of various theoretical orientations should be used while conducting the group. This meta-analysis also found a trend that group therapy was more advantageous than individual therapy when there are

10 or fewer sessions ($d = -0.14$, $t = -2.16$, $p = .10$ with a negative ES favoring group therapy), suggesting that if the client can only attend a certain number of sessions, then group therapy would be more beneficial than individual therapy. It should be noted that this meta-analysis also did not include effect sizes for specific *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) diagnoses (i.e. bi-polar disorder, schizophrenia, eating disorders, etc.), but rather grouped them into "diagnostic classes" (McRoberts et al., 1998, p. 107). In the present study, the groups are comprised of a variety of mental illnesses, similar to the "diagnostic classes" examined in this meta-analysis; however, it is important to understand if and how specific diagnoses effect group therapy outcome.

Besides comparing individual and group therapy effectiveness and efficacy, Burlingame, Fuhrman, and Mosier (2003) further examined to what extent group therapy can make patients improved and under what intervention conditions. The researchers sought to determine the relationship between improvement rates in group psychotherapy and the group format, which they defined as group structure, theoretical model and leader characteristics. The researchers only included studies that's primarily treatment modality was group therapy. Additionally, studies were only selected to be a part of the analysis if they matched the following criteria: (1) treatment groups met regularly with an identified therapist and had a specific therapeutic purpose, (2) clients exhibited an identifiable problem, (3) the study was in English, (4) the study was experimental or quasi-experimental in nature, and (4) outcome statistics by which an effect size could be calculated were reported. After an exhaustive literature search based on the above criteria, 111 studies were included in the analysis. To compare outcomes, the researchers looked at three different comparisons: (1) outcome for individuals in group therapy versus wait-listed

control groups, (2) outcome studies with alternate group treatments (i.e. groups where the therapist is the guiding force for the therapy versus groups where the clients are the guiding force of momentum in the sessions), and (3) outcome for studies which used a pre- to posttest analysis. In the analysis, 73% of group psychotherapies were found to specifically target individuals with mental health problems. In the group therapy versus wait-list controls analysis, a medium effect size of Cohen's d of 0.63 ($p < .05$) was found, indicating that group treatment reliably improved outcomes compared to the wait-list controls. In the alternate treatment outcomes analysis, no statistically significant differences were found. In the pre- to posttest analysis, a medium effect size of Cohen's d was 0.71 ($p < .05$), which indicated that significant improvement occurred between the pre- and posttest scores. The researchers also chose to analyze the effect of theoretical orientation (i.e. behavioral, psychodynamic, eclectic, etc.) and found a modest impact, $F(5, 68) = 2.86, p < 0.05$, with behavioral treatments outperforming eclectic models. This also is important given that of the 111 studied used, 51% used cognitive-behavioral therapy as their theoretical orientation, 19% were behavioral, 15% were psychodynamic and 15% were eclectic. The researchers also chose to analyze the group composition (i.e. what participant characteristics were seen in each group) in each of the three outcome analyses and found that in each of the conditions, homogeneity of problem focus (i.e. skills training), mixed gender, and outpatient groups outperformed heterogeneity of problem focus (i.e. several different goals all in one group), single gender and inpatient groups. As far as the effects on specific diagnoses were concerned, those with depression and eating disorders indicated more improvement than those with other disorders; however, no diagnoses indicated worsening of symptoms after treatment. The effect sizes found comparing pre- to post-treatment scores for specific diagnoses in this

study were as follows: depression $d = 1.10, p < .05$; eating disorder $d = 1.38, p < .05$; personality disorder $d = 0.91, p < .05$; substance abuse $d = 0.90, p < .05$; thought disorder $d = 0.64, p < .05$; anxiety disorder $d = 0.84, p < .01$. This data suggests that there may be certain diagnostic populations for whom group therapy is especially effective; however, the data from this study suggests that psychotherapy is a valid and effective treatment for all diagnoses. The information gained from this meta-analysis supports the UTSW groups in that the UTSW groups are homogenous in problem focus (i.e. social skills training), mixed gender, and outpatient. Also, this study noted a modest effect in behavioral orientations; while the UTSW groups pull its curriculum from a variety of theoretical orientations, much of the curriculum is behaviorally based. Additionally, the UTSW groups are comprised of a variety of DSM diagnoses, all of which, according to this study, benefited from group therapy. It is for these reasons that the present study is using group therapy as the modality for which to deliver treatment to our participants.

Different Theory-Based Group Interventions for People with Mental Illnesses

As previously mentioned, several different treatment modalities are used in group therapy, and this warrants some further explanation about each treatment modality's empirical validity and why specifically elements of these therapies were included in the treatment of the UTSW groups. As noted in the above studies (Burlingame et al., 2003; McRoberts et al., 1999). Cognitive Behavioral Therapy (CBT) is a popular theoretical orientation for group therapy. It is characterized by an active therapist, highly structured sessions, focus on defining goals and symptom reduction, and learning cognitive and behavioral skills which modify dysfunctional beliefs and behavioral patterns (Sudak, Beck, & Gracely, 2002). CBT in a group format was

used to treat people with comorbid substance abuse and depression in an inpatient setting in the

Watkins et al., (2011) study. The primary goal of their research was to determine how effective

CBT group therapy was for people with depressive symptoms in substance abuse treatment

compared to a control group. In this study, the control group's treatment consisted of what the

researchers referred to as the "usual care" (Watkins, 2011, p. 579) which included non-CBT

group therapy, individual substance abuse counseling, and vocational skills training.

Participants in the CBT treatment received 16 two-hour sessions, divided into four modules: (1)

thoughts, (2) activities, (3) people, and (4) substance abuse. The intervention was adapted from

several CBT manuals and resources (Lewinshon, Munoz, Youngren, & Zeiss, 1986; Munoz,

Ippen, Rao, Le, & Dwyer, 2000 as cited in Watkins et al., 2011) so it was more applicable for

those in an inpatient setting with substance abuse. Outcome was measured using the Beck

Depression Inventory-II (BDI-II; Beck, Rush, Shaw, & Emery, 1979). Beck (1988) defined

cutoff scores as follows: none or minimal depression symptomology is less than 10 points, mild

to moderate depression symptomology is 10 to 18 points, moderate to severe depression

symptomology is 19-29 points, and severe depression symptomology is 30-63 points. At

baseline, BDI-II scores for the CBT treatment group were in the clinically severe range ($M =$

33.5). At three months post-baseline, the treatment group had a mean BDI-II in the mild to

moderate range ($M = 15.6$) whereas the control group had a mean BDI-II in the moderate to

severe range ($M = 21.9$). The symptoms further decreased at the six month follow up with the

treatment group receiving a BDI-II mean of 12.5 which is a score approaching the low end of the

mild to moderate range, and the control group receiving a BDI-II mean of 18.1 which is a score

at the top of the mild to moderate range. This indicates that as a result of the CBT group therapy,

the depressive symptoms as measured by the BDI decreased more for the CBT treatment group compared to the control group. In a research review for CBT and eating disorders (Tasca & Bone, 2007), the consensus was that while CBT was found to be an effective treatment for eating disorders in both group and individual settings, no statistically significant differences in behavioral or psychological outcomes from eating disorders could be found between the two formats; however, in one study (Chen, Touyz, & Beaumont et al., 2003 as cited in Tasca & Bone, 2007, p. 401) those receiving CBT in the group setting produced greater social adjustment and reduction in anxiety compared to those in individual CBT treatment. Based on this, the researchers concluded that CBT in a group setting was the more effective route of treatment for those suffering from eating disorders. In the UTSW groups, CBT is a large component of the curriculum; also, symptom reduction, as measured by the BDI-II, is the primary modality to determine success in the UTSW group outcomes. It is apparent from this Watkins (2011) study, that both CBT and BDI-II are relevant forms in which to deliver group therapy and measure its success.

Client-Centered Therapy (sometimes also known as Person-Centered Therapy) has also been used in group settings. Client-Centered Therapy (CCT), founded by Carl Rogers (1959), emphasizes that the client will intrinsically move through the therapeutic process at their own pace and therapeutic change will come about through six social-environmental conditions: (1) contact between the client and the therapist, (2) the client's state of incongruence leading to vulnerability and anxiety, (3) the therapist being congruent within the relationship, (4) the therapist experiencing unconditional positive regard towards the client, (5) the therapist experiencing empathic understanding of the client's thoughts and feelings, and (6) the client

perceiving at least minimal amount of unconditional positive regard and empathic understanding from the therapist. Payne, Liebling-Kalifani, and Joseph (2007) sought to understand how CCT in a group format would benefit people with Posttraumatic Stress Disorder (PTSD). Outcome was measured with several batteries: the Changes in Outlook Questionnaire (CiOQ; Joseph et al., 2005) which measured psychological growth following the trauma; the Clinical Outcomes in Routine Evaluation - Outcome Measure (CORE-OM; Evans et al., 2000) to assess current problems/symptoms, life functioning and risk to self or others; the Impact of Event Scale (IES; Horowitz et al., 1979) which measured the specific response to the trauma; and the Barrett-Lennard Relationship Inventory - Other Toward Self (BLRI-OS; Barrett-Lennard, 1978) which assessed the client's perceptions of the group itself. Given the small sample size ($N = 6$), the researchers simply examined the pre- and post-treatment scores, except on the BLRI-OS which was only taken post-treatment. The participants who rated higher scores on the BLRI-OS demonstrated reduced posttraumatic symptoms on the CiOQ and higher levels of functioning on the CORE-OM. The results were mixed on the IES. The researchers pointed out that the results were most likely not more favorable due to the lack of perceived empathy, regard, congruence, and unconditionality, the hallmarks of CCT. Upon further reflection, the researchers felt that their therapy administrators did not have adequate training in CCT and due to their clinical background had difficulty executing CCT correctly; however, based on the very small amount of evidence indicating that those whose needs were met with CCT therapy, the researchers concluded that CCT could be a valid group therapy treatment for PTSD and should be further studied. CCT is also another component used in the present study, with facilitators using this specifically at the beginning of each group session to determine how the participants are feeling

during that specific session. It should be noted that the UTSW facilitators received thorough training on CCT during their graduate education and from the lead facilitators.

Another theoretical orientation used in a group setting is Dialectical Behavior Therapy (DBT). In a study by Soler et al. (2009), the researchers sought to determine how DBT group training compared to psychodynamic-oriented group therapy for patients with Borderline Personality Disorder (BPD). According to Linehan (1993), DBT group therapy consists of approximately two hours per week of skills coaching and aims to increase behavioral capabilities. DBT is conceptualized as a set of abilities (skills) to manage emotional instability, which include concepts such as interpersonal effectiveness, emotional regulation, mindfulness, and distress tolerance (Soler et al., 2009). In the Soler et al. study (2009), 63 patients were recruited from outpatient programs and emergency services. They were randomly assigned to either the DBT group or the psychodynamic-oriented group, which was referred to as the Standard Treatment (ST) group. The ST group received the same number of sessions as the DBT group, but their group had a psychodynamic theoretical orientation. Using a Hierarchical Linear Modeling (HLM) analysis, the researchers found differences between the DBT group and the ST group, with the DBT showing a greater decrease in depression, anxiety and general psychiatric symptoms compared to the ST group. Multiple outcome measurements were used; a significant difference was found between the two groups on affective symptoms, $F(37.93) = 4.59, p = .001$; a significant difference between the two groups on anxiety symptoms, $F(39.97) = 2.45, p = .034$; additionally, a significant difference between the two groups for psychotic symptoms, $F(32.95) = 2.90, p = .018$. Statistically significant differences were found in psychoticism measures, $F(21.92) = 3.95, p = .034$; statistically significant differences were found

in irritability measures, $F(17.72) = 4.37, p = .028$; and impulsivity measures showed no significant differences between the two groups. Both treatment conditions showed significant reductions in the BPD symptom scores; however, there were no statistically significant differences between the two groups. Patients in the DBT group had almost a 30% greater probability of staying in treatment than their ST counterparts. The data indicates that overall, those in the DBT group had better outcomes than those in the ST group, suggesting that people with BPD benefit more from the behaviorally based DBT approach. Due to the strong behavioral component in the UTSW groups, this study further highlights and supports the importance of behavioral interventions, as well as the importance of symptom reduction in a group therapy setting. Additionally, when treatment was tailored to the symptom reduction, in this case behavioral change, participants had less attrition. These findings also support the structure and format of the present study.

The above studies (Watkins et al., 2011; Tasca & Bone, 2007; Payne et al., 2007; Soler et al., 2009) illustrate that certain theoretical orientations may be particularly advantageous for certain clinical populations; however, it is not always possible to have a clinically homogenous group (i.e. all participants have the same diagnosis). As noted in the Burlingame et al., (2003) study, groups formed by homogeneity of problem (i.e. skills training) proved to be successful for the clients. While the group may have contained several different diagnoses, if the group's focus was homogenous, the clients still benefited. The group therapy in the present study, while comprised of a variety of different illnesses, has the homogenous focus of social skills training. In the present study, the therapy groups have an eclectic theoretical orientation, pulling from the strengths of CBT and CCT orientations; however, the primary goal of social skills attainment

was continuously targeted via these therapeutic orientations. Social skills training, especially when conducted in a group setting, can be extremely beneficial to the client, not only for remedying social skill deficits that often occur comorbidly with mental illness (Hiller et al., 2007; Velligan & Gonzalez, 2007; Kopelowicz, Liberman, & Zarate, 2006), but also for providing a nonstigmatizing, cohesive and reinforcing environment in which to learn social skills (Kopelowicz et al., 2006). The UTSW groups aim to provide this safe environment for people with mental illness to strengthen their social skills while simultaneously improving their accompanying psychiatric symptoms. In order to highlight the importance of the present study, it is necessary to discuss the effects that poor social skills may have on a person with mental illness.

The Effects of Mental Illness on Social Skills

Quality of life (QOL), which has been defined as the "subjective experience of well-being, health status, life satisfaction, social relationships, economic status and external life situations (Mendlowicz & Stein, 2000; Rapaport, Clary, Fayyad, & Endicott 2005 as cited in Wong, 2012, p. 50)", Studies have found that depression and anxiety degrades quality of life (Moore, Hofer, McGee, & Ring, 2005). QOL has also found to be related with social skills deficits. In a study by Wong et al., (2012) the researchers sought to determine if QOL was related with social skills for people suffering from social phobia (SP). Participants were divided into two subgroups: (1) generalized social phobia (GSP), which included people who had widespread social interactions fears, and (2) nongeneralized social phobia (NGSP), which included people who only had fears in specific situations (i.e. public speaking). These two groups were also compared to a normal control (NC). Social skill level was assessed using three

tasks: (1) Simulated Social Interaction Test (SSIT), (2) Unstructured Conversation Task (UCT), and (3) Impromptu Speech Task (IST). All three social skills assessments were videotaped and rated by independent raters unaware of diagnostic status. QOL was measured using the self-report Quality of Life Questionnaire (Evans & Cope, 1989) which tests QOL across 15 different domains: material well-being, physical well-being, personal growth, marital relations, parent-child relations, extended family relations, extramarital relations, altruistic behavior, political behavior, job characteristics, occupational relations, job satisfiers, creative-aesthetic behavior, sports activity, and vacation behavior. An overall QOL score was also computed. Participants also completed the Social Phobia and Anxiety Inventory (SPAI; Turner, Beidel, Borden, Stanley, & Jacob, 1991), which assessed social phobia symptoms across a range of potentially anxiety provoking situations. Pearson's correlations indicated that all clinical variables across all the participants were related to a person's QOL total score (all $p < .01$) and that higher QOL scores were positively correlated with the higher ratings of social skills by independent raters ($r = .48$) indicating that, universally, people with higher QOL also had better observed social skills. QOL scores were negatively related to a diagnoses of SP ($r = -.46$); additionally, those with an SP diagnoses had lower QOL and additionally, those with SP also had poorer social skill effectiveness ($r = -.51$) as rated by the independent raters. Also, behavioral observations (the SSIT, UCT and IST) of social skill competence and anxiety were also interrelated ($r = -.81$) indicating that higher anxiety was highly correlated with poorer social skills as viewed by outsiders. These findings indicate that social skill function greatly impacts a person's QOL of life scores.

In the present study, the objective is to reduce psychiatric symptoms, specifically depression and anxiety symptoms. As the Wong (2011) study pointed out, QOL is the subjective view of one's general satisfaction with their present level of functioning, and QOL is directly correlated with social skills, one could conclude that anxiety and depression, symptoms also associated with poor QOL (Lang & McNeil, 2006), could also be directly correlated with social skills. Unfortunately, poor social skills are often observed in conjunction with several mental illness diagnoses (Segrin, 2000; Becker et al., 1998; Wong, et al., 2012; Hiller et al., 2007; Kopelowicz, et al., 2006; Velligan & Gonzalez, 2007) which further compounds the problem presented when one is lacking social skills. Given this information, the goal of this study is to determine if social skills treatment alleviates some of these accompanying negative emotions (i.e., depression and anxiety).

Social Skill Deficits Common in People with Mental Illness

Before one can understand what social skills training does, it is helpful to understand what social skills are as well as the common deficits that people with mental illness face and how mental illness impacts social functioning. Social skills can be defined as a set of competencies that (1) facilitate initiating and maintaining positive social relationships, (2) contribute to peer acceptance and friendship, (3) result in satisfactory school/work adjustment and (4) allow individuals to cope with and adapt to the demands of the social environment (Gresham, Van, & Cook, 2006). Before discussing what social skills are, it is helpful to understand their importance. Social skill competence is highly correlated lower levels of loneliness and

aggression (Palmen et al., 2011), higher Quality of Life (QOL) (Wong, Sarver, & Biedel, 2012),

higher levels of vocational success (Becker, Drake, Bond, Xie, & Dain el al., 1998), and

how people with mental illness think and feel about themselves (Kopelowicz, et al., 2006).

Based on this evidence, one can infer that social skills are integral to daily functioning and life satisfaction. Unfortunately, people with mental illness have impaired social skills, which is why social skills training is featured so prominently in the UTSW groups.

Social skills competencies are typically defined by two conceptual models (McFall, 1982, as cited in Segrin, 2000) one of which suggests that social skills are a stable, enduring personality trait, which involves skills of correctly identifying social stimuli (Riggio, 1986, 1992; Riggio & Zimmermann, 1991, as cited in Segrin, 2000). The second conceptual model states that social skills are situation-specific behaviors which vary depending on the social context (Arkowitz, Lichtenstein, McGovern, and Hines, 1975 as cited by Segrin, 2000). Unfortunately, people with mental illness often have difficulties in one or both of these areas.

Problems with Perceived Social Stimuli

The first conceptual model of social competence is the trait model which treats social skills as an innate part of one's personality and is thus a stable attribute (Segrin, 2000). Riggio (1986 as cited in Segrin, 2000, p. 382), whose social skills inventories rely on this conceptualization, states that good social skills "entail encoding, decoding, and control abilities in emotionality and sociability (Riggio 1986, 1992; Riggio & Zimmermann, 1992 as cited in Segrin, 2000, p. 382)". For example, the ability to derive social meaning from visual stimuli is thought to develop naturally from infancy (Hu, Chan & McAlonan, 2010). In other words, neurotypical people can guess someone is upset if the person is frowning, happy if they are smiling, etc.; however, for

people with certain mental illnesses, this skill is not innate, and they lack the ability to ascribe emotions or mental states to observable behaviors. In a study by Baron-Cohen, Wheelwright, and Jolliffe (1997), the researchers determined that for neurotypical people, emotions of others were able to be inferred from very little information, specifically from looking only at someone's eyes; however, when the same information was given to people with high functioning autism or Asperger's Syndrome, they performed significantly worse than those in the neurotypical group, $F(1, 30) = 5.27, p = .029$. These findings suggest that for people with Asperger's Syndrome, decoding facial features and interpreting them into meaningful social data is particularly difficult. While the groups at UTSW are not limited strictly to people on the autism spectrum (although many members had this diagnosis), it is believed that this deficiency in the perception of social information is present in other mental illnesses as well. People who suffer from schizophrenia also show social skill deficits before given a formal diagnosis, sometimes in childhood, which makes researchers believe these deficits are hardwired into the individual and neurological in nature (Kopelowicz, Liberman, & Zarate, 2006). Bellack's review of the social skills literature (2004) also supported this theory, stating that those with schizophrenia show "subtle attention deficits in childhood that may interfere with the development of social relationships and the acquisition of basic social skills (Cornblatt & Kelip, 1994 as cited in Bellack, 2004, p. 377)". Bellack also points out that as far as social perception is concerned, people with schizophrenia suffer from "cognitive impairment, especially including deficits in social cognition and executive processes, interferes with both social perception and social problem solving (Penn, Corrigan, Bentall, Racenstein, & Newmann, 1997 as cited in Bellack, 2004, p. 377)". Another population suffering social skills deficits due to altered cognitive

functioning is people with Traumatic Brain Injury (TBI) (Dahlberg, Cusick, Hawley, & Newman et al., 2007). In a study by McDonald and Flanagan (2004), the researchers examined the social perception disruptions for people with TBI. The study included 34 adults recruited by three different brain clinics in the area near the university and were compared to a neurotypical control group. Overall, 30% of the TBI patients experienced abnormal levels of difficulty judging social situations compared with the control group. This information concerning difficulty in judging social situations continues to support the idea that people with mental illness and people with mental health issues, such as TBI, need social skills training. The groups at UTSW are comprised of a variety of people with mental illness. Some have mental illness as a result of an incident in their lives, such as TBI, while others were born with their mental issues, such as autism. Difficulty with reading social information is not isolated to any one particular diagnosis, but seems to be a commonality among all these illnesses with neurological roots. While the UTSW group facilitators make it a point to teach the participants skills in interpreting social behavior, as mentioned previously, knowing the social context of a situation is not enough to demonstrate good social skills. One must also know how to act in social situations.

Observable Behaviors

The second model of social competence focuses on examining specific behaviors in social contexts which can be observed and quantified by outside observers (e.g. eye gaze, speech patterns, body language) (Segrin, 2000). People with depression (Segrin, 2000), schizophrenia (Schiffman, Walker, Ekstrom, Schulsinger, & Sorensen et al., 2004; Velligan & Gonzalez, 2007; Kopelowicz, Liberman, & Zarate, 2006), personality disorders (Stanley, Bundy, & Beberman, 2001), and autism (Hillier, Fish, Siegel, & Beversdorf, 2011) exhibit socially inappropriate

behaviors. In Segrin's literature review of social skill deficits in depression (2000), he outlined several observable behaviors often seen in people with depression. These included paralinguistic behaviors, speech content, facial expressions, eye gaze, and posture and gestures. Segrin defined paralinguistic behaviors as the "noncontent portion of human speech, such as rate, volume, pitch and pause duration" (p. 384). People with depression exhibit slower speech (Pope, Blass, Siegman, & Rahe, 1970; Siegman, 1987; Weintraub & Aronson, 1967; Youngren & Lewinsohn, 1980), less speech (Breznitz & Sherman, 1987; Edison & Adams, 1992; Ellgring, Wagner, & Clarke, 1980; Fossi, Faravelli, & Paoli, 1984; Hinchliffe, Lancashire, & Roberts, 1971; Williams, Barlow, & Agras, 1972 as cited in Segrin, 2000, p. 384), longer pauses between speaking (Ellgring & Scherer, 1996 as cited in Segrin, 2000, p.384) and take longer to respond to another speaker (Breznitz & Sherman, 1987; Mandal, Srivastava, & Singh, 1990; Talavera, Saiz-Ruiz, & Garcia-Toro, 1994 as cited in Segrin, 2000, p.384). Segrin (2000) conceptualized speech content as the topics and themes typical in a person's conversations, which, as stated by Segrin (2000), is continually filled with negative verbal comments in people with depression. Facial expressions are the movements in the face associated with the person's feelings, and while people with depression do not necessarily show more signs of sadness, they do show less animation of the face (Gaebel & Wolwer, 1992 as cited in Segrin, 2000, p. 387) and less happy expressions (Oliveau & Willmuth, 1979; Schwartz et al., 1978 as cited in Segrin, 2000, p. 387). Gaze involves the amount of eye contact a person gives, with people with depression having markedly less eye contact than control groups (Dow & Craighead, 1987; Ellgring et al., 1980; Fossi et al., 1984; Hinchliffe, Lancashire, & Roberts, 1970, 1971; Jones & Pansa, 1979; Kazdin, Sherick, Esveldt-Dawson, & Rancurello, 1985; Natale, 1977; Segrin, 1992; Waxer, 1974;

Youngren & Lewinsohn, 1980 as cited in Segrin, 2000, p. 387). Finally, posture and gestures are used to gauge emotional investment in a social setting, and people with depression use less gestures, more personal body contact, and more nonverbal cues indicating sadness, anxiety and disinterest (Segrin, 2000). Observable behaviors such as these are addressed in present study's social skills groups, but as noted, these groups are not comprised solely of people with depression, but a variety of people with different mental illnesses; however, socially deficit behaviors are not limited to people with depression.

In a study by Schiffman et al., (2004), the researchers looked at videotapes of children who went on to develop schizophrenia to determine if there were any common observable behaviors compared to children who did not develop schizophrenia. The researchers found that children who went on to develop schizophrenia generally engaged in fewer positive social behaviors, such as smiling, laughing and engaging in conversation, than those who did not go on to develop mental illness ($t = 4.48$, $df = 87.8$, $p < 0.001$). This study highlights the apparent biological and neurological roots of social skills and the social skill deficits associated with people with mental illness. While Schiffman et al., (2004) only addresses schizophrenia and Segrin (2000) only addresses depression, many people with different mental illnesses suffer from behavioral social deficits (Schiffman, Walker, Ekstrom, Schulsinger, & Sorensen et al., 2004; Velligan & Gonzalez, 2007; Kopelowicz, Liberman, & Zarate, 2006; Stanley, Bundy, & Beberman, 2001; Hillier, Fish, Siegel, & Beversdorf, 2011) Additionally, the Schiffman et al., (2004) study supports the notion that social skills are behaviorally observed, ergo, it is appropriate to address these deficits from a behavioral standpoint. The UTSW groups address

these issues by directly teaching behavioral techniques to improve social skills in people with mental illness.

The research conclusively states that social skill success is a two-step process: being able to perceive the social cues in the environment and acting upon them appropriately. Therefore, it is the goal of social skills training to resolve these deficits and challenges by teaching specific techniques to lead to successful social interactions (Velligan & Gonzalez, 2007). The groups at UTSW aspire to teach the participants both the skills necessary to interpret social information, as well as act upon it accordingly. While the aforementioned studies use a variety of ways to determine the level of social skill success, the present study wishes to not only provide social skill training, but also to lessen the psychiatric symptoms of depression and anxiety.

Social Skills Training Goals for People with Mental Illness

In a social skills training group, goals vary depending on the composition in the group. For example, in a literature review by Kopelowicz et al., (2006), the researchers identified specific major areas to address in social skills training for people with schizophrenia: personal problems or needs, persistent positive symptoms, negative symptoms, side effects of antipsychotic medications, erosion of skills from understimulating environments, social anxiety and avoidance, stressful emotional climate in family, group home, or work, cognitive deficits, acceptance and stabilization of illness, becoming a partner in their treatment, achieving insight into their illness, handling stigma, social isolation, employment and independent living. Each of these areas were addressed using specific cognitive and behavioral techniques including but not limited to: coping skills, verbal and nonverbal communication, modeling and role playing, de-escalation skills, assertiveness versus passivity or aggressiveness, social problem solving skills,

judicious self-disclosure, job-finding skills, advocacy from peers and self-help organizations, conversation skills, and negotiation skills. All of these concepts are covered carefully in the UTSW groups, as it was the goals of the groups to enable members to reach their personal goals for themselves that were being blocked by self-defeating behaviors. In another literature review by Velligan and Gonzalez (2007), the researchers stated that "social skills training teaches specific skills that lead to effective behavior in social interactions" including "nonverbal behavior, such as appropriate eye contact and voice volume, conversational skills such as introducing oneself to a new person and taking perspective of another person, and problem solving skills such as expressing dissatisfaction and generating solutions to interpersonal problems (p. 540)." In essence, social skills training specifically focuses on behavioral changes combined with cognitive alterations to produce decreases in symptomology and increases in positive interactions with others. Likewise, in the present study, the UTSW groups look to reduce depression and anxiety symptoms as a result of social skills training. Depressive symptoms and anxiety symptoms are commonly found in people with mental illness and social skill deficits (Segrin, 2000; Hillier et al., 2001; Young et al., 2010, Biedel et al., 2006). Unfortunately, psychiatric symptom reduction has only recently become a topic of research in the social skills training literature (Hillier et al., 2011). Due to the paucity of information concerning symptom reduction as an outcome measure in this population, the researchers chose to look at depressive and anxiety symptoms and how those are affected by social skills training. The few studies that have linked social skills training and symptom reduction focus on very specific groups: typically, children or adolescents, or people with autism.

Reducing Depression and Anxiety Symptoms in People with Mental Illness Using Social**Skills Training**

It is unclear if depressive symptoms and anxiety symptoms lead, in part, to a lack of social skills, or if it is social skill deficits themselves that give rise to anxiety and depression (Segrin, 2000). While it is apparent the two are related, researchers have yet to discover which causes which. Regardless, depression and anxiety are symptoms that often accompany and further impair an individual with social skill deficits (Segrin, 2000; Hillier et al., 2001; Biedel et al., 2006; Young et al., 2010). In a study by Young et al., (2010), the researchers sought to determine the best course of treatment for a group of adolescents who were at risk of developing major depression. The researchers grouped the participants into two subcategories: those who would receive social skills training (the Interpersonal Psychotherapy-Adolescent Skills Training or IPT-AST; Young & Mufson, 2003) and those who would receive only school counseling (SC). All participants were between the ages of 13 and 17. Those who consented to the study took the depression measurements and global functioning measurements. A hierarchical linear modeling (HLM) test was used to determine the differences between the interventions on rates of change in depression and functioning scores. From baseline to post-treatment, IPT-AST participants showed significantly greater rates of change than the SC counterparts on the depression measurements ($t = -2.56, p = 0.01$; $t = -3.09, p = 0.01$), and global functioning measurements ($t = 3.24, p = 0.01$). There were no significant differences between the groups at the 12 month (effect sizes ranged from .33-.50) or the 18 month follow-up (effect sizes ranged from .17-.40). At post-intervention follow-up, none of the participants met criteria for a depressive disorder; however, at the six month follow-up, four SC participants met the criteria

for a diagnosis. This was not true of the IPT-AST participants, which was significant (Fisher's Exact Test, $p < 0.05$). From the initial post-treatment measurements, IPT-AST significantly outperformed the SC group in decreasing depressive symptoms and greater improvements and overall functioning; however, by the 18 month follow up, the two groups did not differ significantly in their outcomes. The researchers noted, however, that this study was targeted to be preventative in nature, and thus the results were somewhat predictable as other preventative studies also found long-term effects to be negligible (Gillham, Shatte, & Freres, 2000). While this study was conducted on adolescents and on those who were simply "at risk" of being labeled with a mental illness, it is still noteworthy that the researchers found a greater reduction in depressive symptoms in the social skills treatment group compared to those who were given the typical school counseling. This further supports the present study in that while the researchers did not aim to specifically target depression reduction, by providing social skill training, depressive symptoms were alleviated.

In studies where the objective is to treat clients with existing depressive symptoms and anxiety, the results may be more profound. Hillier et al., (2011) sought to examine the concept that social skills training not only addresses social skill deficits, but has a broader scope of impact which directly reduces depression and anxiety. In their study, Hillier et al., (2010) analyzed the effects of social skills training in depressive and anxiety symptoms for people with autism. A total of 49 participants were included in the study, all of whom had to meet the DSM-IV criteria for an autism spectrum disorder as deemed by a qualified clinician, have an IQ of at least 75, and be at least 18 years of age. Titled Aspirations, the social skills training program consisted of eight one-hour weekly meetings with curriculum focused on improving social skills

and vocational skills. Specifically, the curriculum covered the topics of basic introductions, social communication, relationships, independent living, independence and college, employment, one social outing (getting pizza) and a conclusion and wrap up. These topics are very similar to information covered in the UTSW groups. Similar to the present study, to determine outcome, the researchers chose to use the Beck Depression Inventory-II (BDI-II) and the State-Trait Anxiety Inventory (STAI) to measure depressive symptoms and anxiety, respectively. These batteries were given to the participants two to three weeks before the start of treatment and at the end of their participation in the Aspirations program. The data was analyzed using a Wilcoxon signed ranked test and the hypotheses were two-tailed. Scores on both the STAI and the BDI-II were statistically significant with participants reporting lower anxiety and depression post-treatment. The effect sizes were small ($d = 0.21$, $p < 0.01$ for the STAI and $d = 0.24$, $p < 0.01$ for the BDI-II); however, 70% of the participants reported a reduction in anxiety and 77% reported a reduction in depression. While the effect sizes were small, this study is currently the only study found by the researchers to directly address the question of whether or not social skills training can alleviate depression and anxiety. The present study aspires to determine if these findings are also applicable to adults with mental illnesses other than autism.

While there are other studies which indicate that depressive symptoms, anxiety, and social skills deficits are closely intertwined (Segrin, 2000; White & Roberson-Nay, 2009; Horan et al., 2011; Palmen et al., 2011; Wong et al., 2012; Riley et al., 2008; Kopelowicz et al., 2006; Stanely et al., 2001), there is a dearth of information concerning social skills training and its effects on depression and anxiety symptoms. Additionally, what little literature there is has been focused on children and/or adolescents or people with autism. There has been very little

information concerning social skills training effects on depression and anxiety in other mental illnesses in an adult sample.

Summary

The present study is investigating outcomes for group therapy interventions using social skills training. UTSW utilized the group format because it contains inherent beneficial factors that are not found in individual counseling, including socialization, imitative behavior, and social learning (Yalom & Leszcz, 2005) as well as a place for people to connect through communication (Barr as cited in Kahn, 1986). Group therapy has been found to be as effective as individual therapy in treating people with mental illness (McRoberts et al., 1998), but more importantly, Burlingame et al., (2003) discovered that groups geared toward a similar focus (or as he called it a "homogeneity of problem"), and not necessarily groups comprised of similar mental illness diagnoses, benefitted most from group therapy format. The UTSW groups are structured in this way in that they a homogenous focus of social skills training.

Social skills are a set of competencies that require a person to be able to both interpret what is going on around them (Baron-Cohen et al., 1997; Dahlberg, Cusick, Hawley, & Newman et al., 2007; Bellack, 2004; Segrin, 2000) and be able to act on it appropriately (Segrin, 2000; Schiffman et al., 2004; Velligan & Gonzalez, 2007; Kopelowicz et al., 2006; Stanley et al., 2001; Hillier, et al., 2011) and these are both issues with which people with mental illness have. Social skills deficits are comorbid with several clinical populations (Hiller et al., 2007; Velligan & Gonzalez, 2007; Kopelowicz, Liberman, & Zarate, 2006), which are the same clinical populations (i.e. major depression, bi-polar disorder, schizophrenia, etc.) served by the UTSW groups. Social skills are particularly important because they are highly correlated with positive

attributes such as academic and vocational success and high QOL (Brigman, Webb, & Campbell, 2000; Ray & Elliot, 2006; Palmen, Vermande, Dekovic, & van Allen. 2011; Wong, Sarver, & Biedel, 2012; Becker, Drake, Bond, Xie, & Dain el al., 1998) and negatively correlated with vocational problems (Becker, Drake, Bond, Xie, & Dain el al., 1998), and poor self-image (Kopelowicz, et al., 2006), which is why the groups at UTSW spend the majority of its focus on developing these skills that so strongly impact QOL, and as noted, improvement in QOL means alleviation of symptoms of depression and anxiety as found by Wong et al., (2012).

Social skills success can be measured in a variety of ways (Tiuraniemi, et al., 2012; Schiffman et al., 2004; Horan et al., 2009; McDonald & Flanagan, 2004; Baron-Cohen et al., 1997; Hawkins et al., 2009; Cummings, et al., 2008; Riley, et al., 2008; Gresham et al., 2001), including symptom reduction (Segrin, 2000; Hillier et al., 2001; Young et al., 2010, Biedel et al., 2006). Segrin (2000) highlighted the various ways that social skill deficits and mental illness are intertwined, and Hillier et al., (2011) and Young et al., (2010) found social skills training can result in symptom reduction for depression and anxiety. For the purposes of this study, the researchers want to examine if social skills training affects symptom reduction, specifically depression and anxiety, as these are commonly found in people with mental illness (Segrin, 2000; Hillier et al., 2001; Young et al., 2010, Biedel et al., 2006). While there have been a few studies to date which examine the relationship between social skills training and alleviating depression and anxiety (Hillier et al., 2001; Young et al., 2010; Biedel et al., 2006), these studies are limited in that they deal specifically with children and/or adolescents or strictly with people with autism.

Research Questions and Aims

The researchers propose what effect social skills training will have on depression and anxiety symptomology scores. The proposed study hypothesized:

1. Participants in the Connections group would have improved depression symptoms after receiving group therapy.
2. Participants in the Connections group would have improved anxiety symptoms after receiving group therapy.
3. Participants in the Personal and Social Adjustment Training group would have improved depression symptoms after receiving group therapy.
4. Participants in the Personal and Social Adjustment Training group would have improved anxiety symptoms after receiving group therapy.
5. Participants in the both groups would have improved depression symptoms after receiving group therapy.
6. Participants in the both groups would have improved anxiety symptoms after receiving group therapy.

The purposes of this study are to examine the differences between the pre- and post-treatment scores on measurements of depression using the BDI-II and anxiety using the BAI after receiving group social skill training in a heterogeneous clinical sample. Given the findings from the Hillier et al., (2001), Young et al., (2010), Biedel et al., (2006) studies, the researchers believe these results will generalize to an adult with mental illness sample. The researchers hypothesize that depression and anxiety symptoms in people with mental illness will be improved by group social skills training based on the information that social skills and

depression and anxiety are intertwined. By conducting this study, the researchers will add to the growing literature on social skills training, especially in reference to an adult sample, which is currently grossly under-examined. While there is a growing field of study on social skills training and symptom reduction for children and for those with autism, there is very little literature on social skills training for adults, much less social skills training aimed at symptom reduction of other mental illnesses.

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS
CHAPTER THREE

Method

PARTICIPANTS

Participants were counseling clients being seen through the UT Southwestern Rehabilitation Counseling program. Twenty-five participants were recruited through the University Rehabilitation Services (URS). Most participants were referred to the URS from the Department of Assistive and Rehabilitative Services (DARS) as a referral for social skills training in order to help maintain competitive employment. DARS is a state agency that's mission is to put people with disabilities into gainful employment. Those who came to the URS through other means (i.e. private insurance) were also allowed into the groups if they met the inclusion criteria. Participants through DARS received the treatment at no cost while participants who were not DARS consumers either paid an insurance out-of-pocket cost (i.e. co-pay) or paid without insurance on a sliding scale. To be included in the groups, participants had to be at least 18 years old, have an identified need "to receive information on methods of understanding and dealing with work-place and social problems" (University Rehabilitation Services, 2012, p. 2), and have been formally diagnosed with mental illness (i.e. depression, bipolar disorder, various personality disorders, anxiety, etc.) via a psychological evaluation performed by a mental health professional.

GROUP THERAPY PROCEDURE

Participants were grouped into one of two social skills groups: Personal Social Adjustment Training Group (PSATG) and Connections Group (CG). Grouping was based on level of functioning, and often this coincided with age (i.e. CG was generally a younger-aged

group who had little or no work experience, and PSATG was generally an older-aged group who had work experience). These groups were comprised of approximately six to 12 people at a time. The groups included both genders and were not restricted to one diagnostic category. Both groups were open group format, meaning that it was an on-going group and members came and left as they were ready. Each member collaborated with the facilitators to set their own goals (5 goals) when they first started the group. Goals were generally behaviors, including things like, "make eye contact when others speak," "Reflect back what others say at least twice per day", "ask another member a question at least once per day," etc. Members graduated from the group once it was determined that they met approximately 80-100% of their social skills goals. The facilitators were two to three graduate students in the UT Southwestern Rehabilitation Counseling Master's program and were supervised by UT Southwestern staff members who had a M.S. or Ph.D. in counseling and were certified as a Certified Rehabilitation Counselor (CRC) or Licensed Professional Counselor (LPC). The group met four days a week for two and a half hours at a time with a 20 minute break during each meeting. The CG group met Mondays through Thursdays from 9 AM to 11:30 AM, and the PSATG group met Mondays through Thursdays from 1:30 PM to 4 PM. The facilitators used systemized lesson plans pulling from various theoretical orientations including, but not limited to Client-Centered Therapy, Cognitive-Behavioral Therapy, and Dialectical-Behavioral Therapy for both the PSATG and CG groups. While the sessions had a specific structure, sessions also were tailored to the needs of the participants at the given time. Sessions always started with a "feeling check" where each client was asked to use an emotion word to tell the group how they were feeling that day, which was the way to determine the client's current mental state and level of functioning. After this

procedure, the facilitators implemented Client Centered principals to discuss the participants "feeling check". After this discussion, a short break was taken, followed by a structured pre-planned lesson given by the facilitators. Lessons included valuable social skill assets such as recognizing social cues, setting boundaries, appropriate public behaviors, assertive communication, self-management skills, rational thinking to produce productive actions, and how social skills impact vocational and academic achievement.

Before starting the group therapy, each participant went through a brief orientation in which they were given a group member booklet that outlined the purpose of the group and lesson topics that would be covered. Additionally, it was at this point that the BDI-II and the BAI were administered. Once in the group, participants attended meetings for 12 weeks on average, with some participants needing as little as four weeks, and some needing as many as 24 weeks. For those who completed the social skills training, the point of discharge was determined between the facilitator and the participant, and if applicable, the participant's DARS counselor. At discharge, participants were asked to fill out a BDI-II, BAI, and the questionnaires authored by the facilitators. All data used in the present study was collected between 2005 and 2008.

INSTRUMENTS

Demographic Questionnaire

All participants were asked to fill out a basic demographic questionnaire. Questions included the participant's name, contact information, age, gender, level of education, and former and current employment (if applicable). Participants were also asked a few background (ex: "What, if any, previous psychological treatments have you had?", "What medications are you currently taking?", "Have you ever had a neuropsychological evaluation?", "Has anyone in your

family ever had a substance abuse problem?", "Are you currently under any form of litigation?"). Participants were also asked about what specific goals they wanted to work on, why they were coming to the group, what they hoped to gain from the group, what specifically they wanted to improve, their vocational goals and their perceived strengths in both social and vocational areas. Some of these questions were simply for information gathering purposes for the facilitators, and had no bearing on this study. Participants were also given a consent that outlined benefits and potential risks, expectations for calling in for missed appointments, limits of confidentiality, etc.

Beck Depression Inventory-II (BDI-II)

The BDI-II (Beck, Steer, & Brown, 1996) is a 21-item self-report inventory that assesses depressive symptom severity. The instrument contains items related to cognitive, affective and somatic symptoms (i.e. sadness, guilt, insomnia). Each item is rated on a four point Likert scale ranging from 0-3 with 0 meaning "not at all" to 3 meaning "severely" for how much a given symptom bothered them in the past month. Questions include items such as, "I cry over every little thing," and "I am sad all the time". Summary scores range from 0 to 63 with a higher score indicating more severe depressive symptoms. Specifically the following cutoff scores have been suggested: < 10 is none or minimal depression, 10-18 is mild to moderate depression, 19-29 is moderate to severe depression, and 30-63 is severe depression (Beck, 1988). The BDI has been subject to a large number of psychometric evaluations among a variety of populations, which have indicated that the instrument is highly internally consistent, temporally reliable, and converges with other measures of depressive symptomatology (see Beck et al. 1988b, as cited in Eack, Singer, & Greeno, 2008)" (p.467). The BDI-II has high concurrent validity with the

Hamilton Depression Rating Scale with a Pearson's r of 0.71 (Beck, Steer, & Brown, 1996).

The BDI-II also has high test-retest reliability with a Person's r of 0.93 (Beck et al., 1996). The BDI-II has found to have excellent internal consistency ($\alpha = .92$) (Eack, Singer, & Greeno, 2008; Beck et al., 1996).

Beck Anxiety Inventory (BAI)

The BAI (Beck, Epstein, Brown, & Steer, 1988) is a 21-item self-report inventory used to measure the symptoms of anxiety. Items related to cognitive and somatic anxiety symptoms (i.e. nervousness, difficulty breathing). Each item is rated on a four point Likert scale ranging from 0-3 with 0 meaning "not at all" to 3 meaning "severely" for how much a given symptom bothered them in the past month. Question included items such as, "Numbness or Tingling" and "Fear of Worst Happening". Summary scores range from 0 to 63 with a higher score indicating a more severe level of anxiety. Specifically, a suggested cutoff score of 12 indicates the presence of an anxiety disorder (Eack, Singer, & Greeno, 2008). "The BAI has been shown to have adequate reliability, to converge with other brief screening instruments for anxiety, and to significantly diverge from measures of depression in several studies (Beck et al. 1998a; Beck and Steer 1991; Creamer et al. 1995 ; Hewitt & Norton 1993; Wetherill & Arena 1997 as cited in Eack, Singer, & Greeno, 2008)." (p. 467). The BAI has high concurrent validity with the Hamilton Anxiety Rating Scale with a Pearson's r of 0.51 (Beck, Epstein, Brown & Steer, 1988) and a high test-retest reliability ($r = 0.75$) (Beck et al., 1988). The BAI has shown high internal consistency ($\alpha = .92$, Beck et al., 1988; Eack, Singer, & Greeno, 2008).

DATA ANALYSIS

Eighty-two participants originally fit the inclusion criteria and participated in the two groups. After excluding drop outs and missing values, only 23 participants had pre- and post-test inventories were completed for analysis. SPSS-19 was used for all data analysis.

Descriptive data analysis

All demographic data and testing scores were analyzed. Continuous/scale data was analyzed for mean and standard deviations. Normative/categorical data was analyzed for frequency, and by chi square. Demographic variables included group placement (i.e. CG or PSATG), age, gender, diagnosis, and length of treatment (i.e. how many weeks of group attended).

Primary data analysis

A one tailed paired *t*-test analysis was applied to determine if there was a significant improvement between pre-treatment and post-treatment scores on both the BDI-II and the BAI. The rejection level for all analyses will be set at $\alpha = .1$. A one tailed paired *t*-test was applied in the following:

1. BDI-II pre- and post-treatment scores for CG participants
2. BAI pre- and post-treatment scores for CG participants
3. BDI-II pre- and post-treatment scores for PSATG participants
4. BAI pre- and post-treatment scores for PSATG participants
5. BDI-II pre- and post-treatment scores for all participants
6. BAI pre- and post-treatment scores for all participants

The researchers expected that the post-treatment scores across all *t*-test conditions would be significantly lower than the pre-treatment scores indicating improvement in depression and

anxiety symptoms. The independent variable was receiving group therapy. The measure of the dependent variable was the scores on the BDI-II and BAI.

Secondary data analysis

The researchers explored if treatment effects are affected by diagnoses, gender, education, and age. In this case, the researchers used *t*-test to compare two categories of one dependent variable. Also, the researchers planned to use ANOVA to compare more than two categories of a dependent variable (i.e. post treatment scores and the scores from pretreatment to post treatment).

Research Hypotheses

Specifically, the present study hypothesized that:

1. Participants in the Connections group would have improved depression symptoms after receiving group therapy.
 - a. Null: After receiving social skills training in a group setting, pre-treatment BDI-II scores in the Connections group to post-treatment BDI-II scores.
 - b. Alternative: After receiving social skills training in a group setting, pre-treatment BDI-II scores in the Connections group will be higher than post-treatment BDI-II scores.
2. Participants in the Connections group would have improved anxiety symptoms after receiving group therapy.
 - a. Null: After receiving social skills training in a group setting, pre-treatment BAI scores in the Connections group will not differ significantly to post-treatment BAI scores.

- b. Alternative: After receiving social skills training in a group setting, pre-treatment BAI scores in the Connections group will be higher than post-treatment BAI scores.
3. Participants in the Personal and Social Adjustment Training group would have improved depression symptoms after receiving group therapy.
 - a. Null: After receiving social skills training in a group setting, pre-treatment BDI-II scores in the Personal and Social Adjustment Training group will not differ significantly to post-treatment BDI-II scores.
 - b. Alternative: After receiving social skills training in a group setting, pre-treatment BDI-II scores in the Personal and Social Adjustment Training group will be higher than post-treatment BDI-II scores.
4. Participants in the Personal and Social Adjustment Training group would have improved anxiety symptoms after receiving group therapy.
 - a. Null: After receiving social skills training in a group setting, pre-treatment BAI scores in the Personal and Social Adjustment Training group will not differ significantly to post-treatment BAI scores.
 - b. Alternative: After receiving social skills training in a group setting, pre-treatment BAI scores in the Personal and Social Adjustment Training group will be higher than post-treatment BAI scores.
5. Participants in the both groups would have improved depression symptoms after receiving group therapy.

- a. Null: After receiving social skills training in a group setting, pre-treatment BDI-II scores in the Connections group will not differ significantly to post-treatment BDI-II scores.
 - b. Alternative: After receiving social skills training in a group setting, pre-treatment BDI-II scores in the Connections group will be higher than post-treatment BDI-II scores.
6. Participants in the both groups would have improved anxiety symptoms after receiving group therapy.
- a. Null: After receiving social skills training in a group setting, pre-treatment BAI scores in both groups will not differ significantly to post-treatment BAI scores.
 - b. Alternative: After receiving social skills training in a group setting, pre-treatment BAI scores in both groups will be higher than post-treatment BAI scores.

CHAPTER FOUR

RESULTS

Descriptive data analysis

Twenty three participants (11 males, 12 females) were recruited in the present study. Eight participants were in CG (4 males and 4 females) and 15 participants were in PSATG (7 males and 8 females). For the both groups, the age range was 18-60 years old ($M=35.48$, $SD=11.89$). For CG, the age range was 18-48 ($M=30$, $SD=11.08$) and for PSATG, the age range was 21-60 ($M=39$, $SD=11.50$). For both groups, 13% ($n=3$) had thought disorder (i.e. schizophrenia); 78.3% ($n=18$) had mood disorder (i.e. major depression); 26.1% ($n=6$) had anxiety disorder (i.e. generalize anxiety disorder); 21.7% ($n=5$) had substance abuse; 39.1% ($n=9$) had personality disorder (e.g., borderline personality disorder). All participants were assessed for the Global Assessment of Functioning (GAF) at intake with scores ranging from 35 to 70. The GAF is a numeric scaled used by mental health professionals to rate a person's level of functioning. For clinical purposes, the researchers divided the scores into four categories: scores of 61-70 were rated as having "mild symptoms"; scores of 51-60 were rated as having "moderate symptoms"; scores of 41-50 were rated as having "severe symptoms" and scores of 31-40 were rated as having "some impairment in functioning". Two participants scored as having some impairment (8.7%), 13.04% scored as having serious symptoms ($n=3$), 52.17% had moderate symptoms ($n=12$) and 26.09% had some mild symptoms ($n=6$). For full detailed descriptive data results of each group please see Table 1.

Primary data analysis**Treatment effectiveness of depression symptoms**

For CG ($n=8$, mean age=29.75, $SD=11.08$), BDI-II pre-and post-scores were found to be significantly improved ($t=2.79$, $df=7$, $p=.027$). The researchers took the BDI-II results and further segmented the data into symptom severity categories based on Beck's (1988) suggested cut scores. Prior to treatment in CG, 25% ($n=2$) reported none to minimal symptoms, 12.5% ($n=1$) reported mild to moderate symptoms, 50% ($n=4$) reported moderate to severe symptoms, and 12.5% ($n=1$) reported severe symptoms. Overall, 62.5% ($n=5$) reported an improvement in their depressive symptoms. In terms of change between the symptom severity categories, 37.5% ($n=3$) reported no change in their symptom severity category, 25% ($n=2$) improved by one symptom severity category (i.e. moved from "severe" to "moderate to severe"), 25% ($n=2$) improved two symptom severity categories (i.e. moved from "severe" to "mild to moderate"), and 12.5% ($n=1$) improved by three symptom severity categories (i.e. moved from "severe" to "none to minimal"). No subjects fell into a more severe category after treatment. After treatment in the Connections group, 75% ($n=6$) reported none to minimal symptoms, 12.5% ($n=1$) reported mild to moderate symptoms, 12.5% ($n=1$) reported moderate to severe symptoms, and no subjects were categorized in the severe depressive symptoms category.

For PSATG ($n=15$, mean age=38.53, $SD=11.50$), BDI-II pre-and post-scores were found to be significantly improved ($t=2.28$, $df=14$, $p=.039$). Prior to treatment in the PSATG group, 46.67% ($n=7$) reported none to minimal depressive symptoms, no subjects reported mild to moderate depressive symptoms, 26.67% ($n=4$) reported moderate to severe depressive symptoms, and 26.67% ($n=4$) reported severe depressive symptoms. Overall in the PSATG,

40% (n=6) reported an improvement in their depressive symptoms. In terms of change between the symptom severity categories, 53.33% (n=8) reported no change in their symptom severity category, 6.67% (n=1) improved by one symptom severity category, 26.67% (n=4) improved by two symptom severity categories, 6.67% (n=1) improved by three symptom severity categories, and 6.67% (n=1) worsened by three symptom severity categories. After treatment in the PSATG group, 66.67% (n=10) reported none to minimal symptoms, 6.67% (n=1) reported mild to moderate symptoms, 13.33% (n=2) reported moderate to severe symptoms, and 13.33% (n=2) subjects were categorized in the severe depressive symptoms category.

For all participants, BDI-II pre-and post-scores were found to be significantly improved ($t=3.45$ $df=22$, $p=.002$). Prior to treatment, overall for all subjects in the current study, 39.1% (n=9) reported no to minimal depressive symptoms, 4.3% (n=1) reported mild to moderate depressive symptoms, 34.8% (n=8) reported moderate to severe depressive symptoms, and 21.7% (n=5) reported severe depressive symptoms. After comparing the changes between the pre- and post-treatment scores, the researchers found that 47.8% (n=11) remained in their same symptom severity categories and 47.8 (n=11) improved their symptom severity. Of those who did not improve their symptom category, 34.78% (n=8) were in the mild to moderate symptom category, 8.7% (n=2) were in the moderate to severe category, and 4.35% (n=1) were in the severe symptoms category. Of those who improved their severity 13% (n=3) improved by one symptom severity category, 26.1% (n=6) improved by two symptom severity categories, 8.7% (n=2) improved by three symptom severity categories, and 4.3% (n=1) fell into a more severe symptom severity category. Post-treatment, 69.6% (n=16) reported minimal or no depressive

symptoms, 8.7% (n=2) reported mild to moderate depressive symptoms, 13% (n=3) reported moderate to severe depressive symptoms, and 8.7% (n=2) reported severe depressive symptoms.

Treatment effectiveness of anxiety symptoms

For CG, no significant improvement was found in BAI pre-and post-scores ($t=0.28$, $df=7$, $p=.787$). The researchers also segmented the BAI results into symptom severity categories based on the cut score suggested by Eack et al. (2008) of scores less than 12 were considered to be not clinically significant and scores 12 and more were considered to be clinically significant and could be considered to have an anxiety disorder. Prior to treatment, 62.5% (n=5) reported non-clinically significant anxiety symptoms and 37.5% (n=3) reported clinically significant anxiety symptoms. Overall, only one participant improved their anxiety symptoms from clinically anxious to not clinically anxious. After comparing the changes between the pre- and post-treatment scores, 75% (n=6) reported no change in their clinical category, 12.5% (n=1) improved their score from clinically significant to not clinically significant and 12.5% (n=1) fell from not clinically significant anxiety symptoms to clinically significant anxiety symptoms. After treatment, 62.5% (n=5) reported non-clinically significant anxiety symptoms and 37.5% (n=3) reported clinically significant anxiety symptoms.

For PSATG, no significant improvement was found in BAI pre-and post-scores ($t=1.77$, $df=14$, $p=.137$). Prior to treatment, 53.33% (n=8) reported non-clinically significant anxiety symptoms and 46.67 (n=7) reported clinically significant anxiety symptoms. Overall, 20% (n=3) improved their anxiety symptoms from clinically significant to not clinically significant. After comparing the changes between the pre- and post-treatment scores, 66.67% (n=10) reported no change in their clinical category, 20% (n=3) improved their score from clinically significant to

not clinically significant and 13.33% (n=2) fell from not clinically significant anxiety symptoms to clinically significant anxiety symptoms. After treatment, 60% (n=9) reported non-clinically significant anxiety symptoms and 40% (n=6) reported clinically significant anxiety symptoms.

There was no significant improvement in BAI pre-and post-scores for the total sample ($t=1.44$, $df=22$, $p=.164$). For all subjects prior to treatment, 43.5% (n=10) reported anxiety symptoms in the clinically anxious range while 56.5% (n=13) reported symptoms in the non-clinically significant range. After comparing the changes between the pre- and post-treatment scores, 69.57% (n=16) reported no change in their clinical category, 17.39% (n=4) reported improvement from clinically significant anxiety to non-clinically significant anxiety, and 13.04% (n=3) reported a worsening of symptoms from non-clinically significant to clinically significant. After treatment, 39.1% (n=9) were in the clinically anxious range and 60.9% (n=14) were in the not clinically anxious range. It should be noted that even though almost the same number of people still reported clinically significant anxiety symptoms pre- and post-treatment, these were not all the same people. Specifically, 10 subjects reported clinically significant levels of anxiety prior to treatment, and after receiving treatment, four of those 10 (40%) reduced their anxiety to non-clinical levels. Of the nine people who reported clinically significant anxiety symptoms post-treatment, six of them were considered to have clinically significant anxiety symptoms prior to treatment, but three did not report clinically significant anxiety symptoms. Interestingly, the three who experienced increased anxiety were all in their 20's and had personality disorders, two of whom were in PSATG and one of whom was in CG. For a full description of evaluation outcomes by range, mean, standard deviation, numbers and percentages, see Table 2.

Secondary data analysis

According to the literature (Burlingame et al., 2003; Young et al., 2010; McRoberts et al., 1998) diagnoses, gender, and age had potential interactions with group therapy; however, we found no statistically significant interactions. Various studies have found gender differences in the efficacy of group therapy with some studies citing women as benefiting most from group therapy (Wade & Goldman, 2006; Litvin-Raffin, Guimaraes Fachel, Arezo Ferrao, Pasquoto de Souza & Volpato Codioli, 2009; Gelhart, Hand-Ronga, & King, 2002) and some stating that men do better in group therapy (Morris, Bloom & Kang, 2007); however, in the present study, gender was not a statistically significant factor in improvement for the BDI-II ($t=-1.02$, $df=21$, $p=.322$) or the BAI ($t=-.23$, $df=21$, $p=.820$). When separated by group, gender still did not make a statistically significant impact on improvement for the BDI-II for Connections ($t=.07$, $df=6$, $p=.945$) or PSATG ($t=-1.38$, $df=13$, $p=.191$) or for the BAI for Connections ($t=-.04$, $df=6$, $p=.972$) or PSATG ($t=-.23$, $df=13$, $p=.824$). Certain diagnostic populations, such as people with depression or eating disorder, have been shown to respond more favorably to group therapy than other diagnostic categories (Burlingame et al., 2003). Additionally, Morris et al., (2007) found similar diagnostic differences in group therapy efficacy and also in the age of the subject with younger people having better outcomes than their older counterparts while Sarte, Mertens, Areal and Weisner (2003) found that older subjects did better in group therapy than the younger subjects. Gelhart et al., (2002) also found education level to have an effect on group treatment outcome; however in the present study, the researchers found no statistically significant interactions for diagnoses, education level or age. Further, the researchers hypothesized that

there may have relationships between age at orientation, level of education, length of treatment and reported social support and reported stress and the BDI-II improvement and the BAI improvement. It has been noted that because of the limited sample size, the researchers used a 90% confidence interval as significance testing ($\alpha < .1$) for all subjects.

Correlations between age, level of education, length of treatment, reported social support and reported stress

Given the lack of interactions through independent t-test, the researchers chose to analyze correlations between various factors such as age at orientation, level of education, length of treatment and reported social support and reported stress. It should be noted that given our small sample size, a p value of .10 would also have been appropriate. The researchers found a significant positive correlation between the BDI-II improvement and the BAI improvement ($r=.52, p=.011$). There was also a significant negative correlation between age at orientation and length of treatment ($r=-.48, p=.021$) indicating that the younger the participant, the longer they remained in the group. There was also a significant negative correlation of length of treatment and reported social support ($r=-.44, p=.035$) indicating that clients who reported more social support required less treatment.

Using a p value of .10 as a significant level, there was a positive correlation between BAI improvement and reported social support ($r=.35, p=.103$) which indicates that the more social support the subject reported, the better the likelihood that their anxiety symptoms decreased after treatment. Number of stressors reported and length of treatment was also positively correlated, trending toward statistical significance ($r=.30, p=.166$) suggesting that the more stressors reported coincided with longer treatment time. The correlation between BDI-II improvement

and age also approached statistical significance and was negatively correlated ($r=.32, p=.142$)

suggesting that the younger the client, the more likely they were to report an improvement in depression symptoms. Length of treatment and BAI improvement also approached statistical significance and was negatively correlated ($r=-.29, p=.174$) indicating that those who reported improvement in anxiety symptoms stayed in a treatment for a shorter period of time. For a detailed analysis of the above correlations, see Table 3.

SOCIAL SKILLS TRAINING AND MENTAL ILLNESS

CHAPTER FIVE

DISCUSSION

The primary purpose of this study was to determine if social skills training could reduce depression and anxiety symptoms in a mixed mental illness sample. The UTSW groups were comprised of people with a variety of ages, diagnoses, level of functioning, level of education and included both genders. The groups had a multi-disciplinary approach to social skill attainment that included techniques from Client Centered therapy, CBT, DBT, and other clinically therapeutic approaches. The researchers hypothesized that anxiety and depressive symptoms would be significantly reduced after receiving the social skills training. Despite the fact that this study had relatively small sample size, all scale data were normally distributed having almost the same amount of men and women. A wide variety of mental disorders were present, giving the researchers a good representation of whether or not social skills training would affect depressive and anxiety symptoms in a mixed mental illness sample. As far as the level of functioning is concerned, the data was also well distributed, with a wide variety of functioning present.

This study demonstrated that social skills training can reduce depressive symptoms and in a mixed mental illness sample. For the CG, BDI-II scores significantly improved, indicating that the social skills training did improve depressive symptoms. When the BDI-II scores were divided into clinical severity cut points, in the CG, 62.5% of the subjects reported an improvement in their depressive symptoms, 37.5% reported no change in their depressive

symptoms, and none reported worsening of symptoms. For the PSATG, BDI-II scores also significantly improved, with 40% of the subjects reporting an improvement in their depressive symptoms, 53.33% reporting no change in their depressive symptoms, and 6.67% reporting a worsening of symptoms. Unfortunately, it is unclear as to why this one participant reported a worsening of symptoms. For both groups combined, BDI-II scores significantly improved with 47.8% of the subjects improving their depressive symptoms. This coincides with the findings from Watkins (2011) and Hillier et al., (2011) that BDI-II scores can be improved with CBT and social skills training. Also, Segrin (2000) noted that social skills and depression are correlated, but the direction of that relationship is unknown. Seeing as the goal of this group was to improve social skills, as the subjects improved their skills, their depression symptoms also were alleviated; therefore, even though depression symptoms were not directly targeted, they were indirectly affected (and improved) by social skill training.

Unfortunately, improved BAI scores were not as significantly changed as the improved BDI-II scores. When the BAI scores were divided into clinical severity cut points, for CG, only 12.5% improved their anxiety symptoms. For the PSATG, BAI scores were also not significantly improved, with only 20% indicating improvement in their anxiety symptoms. For both groups combined, BAI scores were not significantly improved, with only 17.39% reporting an improvement in their anxiety symptoms; however, of the subjects who originally reported clinically significant anxiety scores, 40% of them improved to not clinically significant anxiety levels. What was most surprising in regards to the BAI scores was that 13.04% reported worse anxiety symptoms after treatment. Given then results from the Hillier et al., (2011) study, the researchers were hoping to produce a similar result that BAI scores would improve; however, the

Hillier study had almost twice the amount of participants, used a different measurement for anxiety, and was exclusive to people with ASD, which may account for some of the differences between their findings and the present study's.

These findings could be interpreted in a number of ways. First, BDI-II scores were more severe than BAI scores from pre-treatment, meaning that there was less room for improvement in the BAI scores. Overall, the subjects did not report their anxiety to be as intense as their depressive symptoms, ergo, improvement was not as profound. Secondly, it should be noted that for those that did report high levels of anxiety prior to treatment, a large percentage (40%) did have improvement, indicating that for those who were anxious, this treatment appeared to be effective. The researchers looked into those who reported a worsening of anxiety symptoms and found that they did share some commonalities. Specifically, they were all in their 20s and had both mood disorders and personality disorders. It is unclear as to why one person reported a worsening of their depressive symptoms.

As far as the secondary analysis is concerned, the researchers found no demographic characteristics that had a significant impact on BDI-II or BAI outcome. Based on this information, the researchers believe that using social skills training as a treatment for depressive symptoms could be applied to almost any clinical sample regardless of age, gender, level of education, or type of mental illness. It appears to be universally useful, which adds to the growing research on social skills training and its effects on depression and anxiety scores (Hillier et al., 2011; Young et al., 2001; Biedel et al., 2006). Additionally, this study specifically examines adults with a variety of mental illnesses, something which is currently lacking from the current literature.

The correlational analysis produced some interesting results. The BDI-II and BAI scores were highly positively correlated, suggesting that when a subject reported improvement, it was reported on both scales. This also suggests that despite the fact that the BAI did not produce statistically significant improvements, it was still beneficial. Surprisingly, younger clients were kept in treatment longer; however, as noted in the secondary analysis, this does not mean they reported more or less improvement than their older group members. This may mean that younger clients take longer to learn the social skills necessary to be deemed ready to leave the group. It may also mean there was an age bias on part of the group leaders and, if applicable, the DARS counselor. Discharge from the group was based upon agreements between the group facilitators, the subject and, if applicable, the DARS counselor. More investigation into discharge criteria would be needed to determine why this correlation occurred. Also, social support was highly correlated with length of treatment. As previously discussed, discharge from treatment was based on clients meeting a set of pre-determined goals that were agreed upon between the client, group facilitator and DARS counselor, suggesting that those who had more social support reached their goals more quickly than those who did not have as much social support. This coincides with a study by Sarte, Chi, Mertens and Weisenr (2011) that found that for people who had substance abuse, those with more support maintained sobriety and treatment outcomes better than those without support. This also helps support the positive correlation finding between BAI improvement scores and reported social support and the positive correlation between BAI improvement and length of treatment. The positive correlation between length of treatment of number of reported stressors is not surprising. In a study by Gunthert,

Cohen, Butler, and Beck (2005), the researchers found that the more stress a patient reported, the longer the patient took to improve their depressive symptoms. Seeing as symptom improvement was often a goal for discharge among the subjects, it is not surprising that the more obstacles (stressors) a client reported, the longer it took to improve, ergo the longer it took to be discharged.

Clinical implications

Given the current study's findings, the UTSW multi-disciplinary group therapy approach of social skill training has proven to be an effective approach for a wide age range of people with diverse mental illnesses in terms of improving depression symptoms and, to some degree, anxiety symptoms. Since the current participants are mainly referred from DARS and discharged from the group only after achieving their goals as determined by the DARS counselor and group facilitators, it shows that this multi-disciplinary group therapy approach of social skill training can be regarded as a helpful and useful service for vocational rehabilitation, especially for people with mental disabilities who are looking to return to the competitive workforce.

Future research

For future studies, a larger sample size needs to be studied. Considering we had a medium effect size, according to Cohen's analysis, a minimum total number of participants would be 64. Additionally, more measurements should be taken at post-treatment to determine how much change has happened in level of functioning, amount of support and amount of stressors. Perhaps most importantly, an objective measurement of social skills should be added at pre-and post-treatment to see if the social skill training is working for social skills acquisition. Then the amount of improvement of social skills could be correlated with the amount of

improvement in depressive and anxiety symptoms. Also, even though BDI-II and BAI scores were highly correlated, BAI improvement did not reach statistical significance. Future studies should aim for new ways to target and improve anxiety, especially given that this study actually had a few subjects report worse anxiety symptoms post-treatment. Additionally, as noted previously, there is very little research currently on social skills acquisition with an adult sample. Our findings suggest that age does play a part in the treatment process, due to the fact that the younger participants needed to be in treatment longer than older participants. This may be due to the fact that humans continue to develop psychologically past the age of 18 (Whitbourne, Sneed, & Sayer, 2009). This suggests that more investigation is needed to understand why this phenomenon occurred. Clinically speaking, it would be advantageous to determine what each participant could benefit most from after receiving their pre-test scores, then make individualized outcome measures in addition to the standard measurement packet for all patient plans for improvement based on pre-treatment data.

Limitations

This study has some limitations to report. Our most obvious limitation is the sample size, having only 23 completed participants. This study did have a medium effect size, and to have a $p < .05$, the minimum sample size recommended is 45. The researchers are very interested to see how a larger sample size would affect the outcomes. Also of note, of the nine participants who reported clinically significant levels of anxiety post-treatment, three (33.3%) reported an increase in anxiety from pre-treatment; however, due to our small size, it is difficult to draw any conclusions about why this may have happened. It would be interesting to see if this percentage would remain similar or decrease with a larger sample size. Our findings were also limited in

that we were unable to determine other indicators of improvement post-treatment (such as assessing the GAF only before treatment and asking about social support and stressors only prior to treatment). Perhaps at pre-treatment, the subjects did not know how to recognize all the social support they had, or perhaps they learned to cope with some of the stressors they previously reported, which may have dropped after treatment. The CG and PSATG were originally divided around differences in age. Although there was a small difference in the mean age between the two groups, the age range was not all that different, suggesting that these groups were not divided as well as originally intended. Also, these groups primary purpose was to increase social skills; however, there were no objective measurements to attest to social skill acquisition, other than stating whether or not treatment goals were achieved based on a decision between the group facilitators, the client and the DARS counselor. So even though this group helped with depressive symptoms, and to some degree anxiety symptoms, we have no indicators that the subjects did, in fact, improve their social skills. Also, it is difficult to determine how influential other factors (such as stressors and social support) interacted with symptoms improvement. From the current analysis, we only know that they were influential, but not why they were influential.

Conclusions

This study empirically supports that social skills training in a group setting is effective for reducing depression in an adult mixed mental illness sample regardless of other demographic factors such as type of diagnosis, gender, or age. Anxiety symptoms were not significantly improved; however anxiety symptoms were reduced for 40% of the people who originally had clinically significant anxiety prior to treatment. Clinically speaking, this offers another option

for therapists looking to help their clients reduce depressive symptoms, and in some cases, anxiety symptoms. Future further research is needed to know how group therapy social skills training can be effective to reduce anxiety symptoms more profoundly. Additionally, this study needs to be replicated in with a larger sample size to determine what, if any, effect that has on the significance of these findings. Age differences need to be examined more closely in future studies to determine why younger clients need more treatment. Also, given that the primary objective of the group was to improve social skills, more measurements should be used to fit this treatment goal. By conducting this study, the researchers have added to the growing literature on social skills training, especially in reference to an adult sample, which is currently grossly under-examined. While there is a growing field of study on social skills training and symptom reduction for children and for those with autism (Hillier et al., 2011; Young et al., 2001; Beidel et al., 2006), there is very little literature on social skills training for adults, much less social skills training aimed at symptom reduction of other mental illnesses. In line with the dearth of information on social skills training for adults, there was evidence to indicate that younger people needed more time in the group to attain their treatment goals compared to the older group members, suggesting the need for more examination between social skills training and age. Despite the fact that this study did not have a measurement for social skill acquisition, the results clearly state that group social skills training does provide a very valuable asset in that it can significantly reduce depressive symptoms for an adult mixed mental illness sample.

References

- Achenbach, T. M. (1991). *Manual for the Child Behavioral Checklists/4-18 and 1991 profile*. Burlington: University of Vermont.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Asher, S. R., Hymel, S., & Renshaw, P. D. (1984). Loneliness in children. *Child Development, 55*, 1456-1464.
- Asher, S. R., & Wheeler, V. A. (1985). Children's loneliness: A comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology, 53*, 500-505.
- Baron-Cohen, S., Wheelwright, S., & Jolliffe, T. (1997). Is there a "language of the eyes"? Evidence from normal adults, and adults with autism or Asperger syndrome. *Visual Cognition, 4*(3), 311-331.
- Barrett-Lennard, G. T. (1978). The Relationship Inventory: Later developments and adaptations. *JSAS Catalog of Selected Documents in Psychology, 8*, 68.
- Beck, A. T. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*, 77-100.
- Beck, A. T., Epstein, N., Brown, G., & Steer, G., A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*(6), 893-897.
- Beck, A. T., Rush, A. J., Shaw, B. K., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for

- measuring depression. *Archives of General Psychiatry*, 4, 561-571.
- Beidel, D. C., Turner, S. M., & Morris, T. L. (1995). A new inventory to assess childhood social anxiety and phobia: The Social Phobia and Anxiety Inventory for Children. *Psychological Assessment*, 7, 73-79.
- Beidel, D.C., Turner, S. M., & Young, B. J. (2006). Social effectiveness therapy for children: Five years later. *Behavior Therapy*, 37, 416-425.
- Bellack, A. S. (2004). Skills training of people with severe mental illness. *Psychiatric Rehabilitation Journal*, 27(4), 375-391.
- Burlingame, G. M., Fuhrman, A., & Mosier, J. (2003). The differential effectiveness of group psychotherapy: A meta-analytic perspective. *Group Dynamics: Theory, Research, and Practice*, 7(1), 3-12.
- Burlingame, G. M., MacKenzie, K. R., & Strauss, B. (2004). Small group treatment: Evidence for effectiveness and mechanisms of change. In M. J. Lambert (Ed.), *Bergin & Garfield's Handbook of psychotherapy and behavior change* (5th ed., pp. 647-696). New York: Wiley & Sons.
- Chen, E., Touyz, S.W., Beumont, P.J.V., Fairburn, C.G., Griffiths, R. et al. (2003). Comparison of group and individual cognitive- behavioral therapy for patients with bulimia nervosa. *International Journal of Eating Disorders*, 33, 241-254.
- Cummings, K. D., Kaminski, R. A., & Merrell, K. W. (2008). Advances in the assessment of social competence: Findings from a preliminary investigation of general outcome measure for social behavior. *Psychology in the Schools*, 45(10), 930-946.
- Dahlberg, C. A., Cusick, C. P., Hawley, L. A., Newman, J. K., Morey, C. E.,

- Harrison-Felix, C. L., & Whiteneck, G. G. (2007). Treatment efficacy of social communication skills training after traumatic brain injury: A randomized treatment and deferred treatment controlled trial. *Archives of Physical Medicine and Rehabilitation*, 88, 1561-1573.
- De Jong, P. F. (1995). Validity of the Amsterdam Child Behavior Checklist: A short rating scale for children. *Psychological Reports*, 77, 1139-1144.
- Dozois, D. A., Dobson, K. S., & Ahnberg, J. L. (1998). A Psychometric Evaluation of the Beck Depression Inventory-II. *Psychological Assessment*, 10(2), 83-89.
- Eack, S. M., Singer, J. B., & Greeno, C. G. (2008). Screening for anxiety and depression in community mental health: The Beck Anxiety and Depression Inventories. *Community Mental Health Journal*, 44, 465-474.
- Evans, C., Mellor-Clark, J., Margison, F., Barkham, M., Audin, K., Connell, J., & McGrath, G. (2000). CORE: Clinical Outcomes in Routine Evaluation. *Journal of Mental Health*, 9, 247-255.
- Evans, D. R. & Cope, W. E. (1989). Quality of Life Questionnaire manual. Toronto: Multi-Health Systems.
- Eysenck, H. J., & Eysenck, S. B. (1975). *Eysenck Personality Questionnaire (Junior and Adult) Manual*. San Diego: Educational and Industrial Testing Service.
- Gelhart, R.P., Hand-Ronga, N., & King, H.L. (2002). Group cognitive-behavioral treatment of depression and the interaction of demographic variables. *Journal of Cognitive Psychology*, 16(4), 469-486.
- Gresham, F. M., Van, M. B., & Cook, C. R. (2006). Social skills training for teaching replacement behaviors: Remediating acquisition deficits in at-risk

- students. *Behavioral Disorders*, 31(4), 363-377.
- Gunthert, K. C., Cohen, L. H., Butler, A. C., & Beck, J. S. (2005). Predictive role of daily coping and affective reactivity in cognitive therapy outcome: Application of a daily process design to psychotherapy research. *Behavior Therapy*, 36(1), 77-88.
- Hawkins, D., Sofronoff, K., & Sheffield, J. (2009). Psychometric properties of the social problem solving inventory-revised short-form: Is the short form a valid and reliable measure for young adults? *Cognitive Therapy and Research*, 33, 462-470.
- Hillier, A., Fish, T., Cloppert, P., & Beversdorf, D. Q. (2007). Outcomes of a social and vocational skills support group for adolescents and young adults on the autism spectrum. *Focus on Autism and Other Developmental Disabilities*, 22(2), 107-115.
- Hillier, A., Fish, T., Siegel, J. H., & Beversdorf, D. Q. (2011). Social and vocational skills training reduces self-reported anxiety and depression among young adults on the autism spectrum. *Journal of Developmental and Physical Disabilities*, 23, 267-276.
- Horan, W. P., Kern, R. S., Tripp, C., Helleman, G., Wynn, J. K., Bell, M., & Marder, S. R. (2011). Efficacy and specificity of Social cognitive skills training for outpatients with psychotic disorders. *Journal of Psychiatric Research*, 45, 1113-1122.
- Horowitz, M. J., Wilner, N., & Alvarez, M. A. (1979). Impact of Event Scale: A measure of subjective distress. *Psychosomatic Medicine*, 41, 209-218.
- Hu, Z., Chan, R. C., & McAlonan, G. M. (2010). Maturation of social attribution skills in typically developing children: An investigation using the social attribution task. *Behavioral and Brain Functions*, 6(10).
- Joosen, M., Sluiter, J., Joling, C., & Frings-Dresen, M. (2008). Evaluation of the

- effects of a training programme for patients with prolonged fatigue on physiological parameters and fatigue complaints. *International Journal of Occupational & Environmental Health*, 21, 237-46.
- Joseph, S., Linley, P. A., Andrews, L., Harris, G., & Howle, B. (2005). Assessing positive and negative changes in the aftermath of adversity: Psychometric evaluation of the Changes in Outlook Questionnaire. *Psychological Assessment*, 17, 70-80.
- Kahn, E. M. (1986). Discussion: Inpatient group psychotherapy: Which type of group is best? *Group*, 10(1), 27-33
- Kaufman, J., Birmaher, B., Brent, D., & Rao, U. (1997). Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL): initial reliability and validity data. *Journal of American Academic Child and Adolescent Psychiatry*, 36, 980-988.
- Kopelowicz, A., Liberman, R. P., & Zarate, R. Recent advances in social skills training for schizophrenia. *Schizophrenia Bulletin*, 32(S1), 12-23.
- Kovacs, M. (1992). *Children's Depression Inventory manual*. Toronto: Multi-Health Systems.
- Lewinsohn, P., Munoz, R., Youngren, M., & Zeiss, A. (1986). *Control Your Depression*. New York, NY: Prentice Hall Press
- March, J. S. (1997). *Multidimensional Anxiety Scale for Children*. Toronto: Multi-Health Systems.
- McCrone, P., Weeramanthri, T., Knapp, M., Rushton, A., Trowell, J., Miles, G., & Kolvin, I. (2005). Cost-effectiveness of individual versus group psychotherapy for sexually abused girls. *Child and Adolescent Mental Health*, 10(1), 26-31.

- McDonald, S., & Flanagan, S. (2004). Social perception deficits after traumatic brain injury: Interaction between emotion recognition, mentalizing ability, and social communication. *Neuropsychology, 18*(3), 572-579.
- McRoberts, C., Burlingame, G. M., & Hoag, M. J. (1998). Comparative efficacy of individual and group psychotherapy: A meta-analytic perspective. *Group Dynamics: Theory, Research, and Practice, 2*(2), 101-117.
- Moore, M., Hofer, S., McGee, H., & Ring, L. (2005). Can the concepts of depression and quality of life be integrated using a time perspective? *Health and Quality of Life Outcomes, 3* (1)
- Morris, A., Bloom, J.R., Kang, S. (2007). Organizational and individual factors affecting consumer outcomes of care in mental health services. *Administration and Policy in Mental Health and Mental Health Services Research, 34*, 243-253.
- Munoz, R., Ippen, C., Rao, S., Le, H., & Dwyer, E. (2000). *Manual for Group Cognitive-Behavioral Therapy for Major Depression: A Realty Management Approach*. San Francisco, CA: San Francisco General Hospital, University of Cali.
- Palmen, H., Vermande, M. M., Dekovic, M., & van Aken, M. A. (2011). Competence, problem behavior, and the effects of having no friends, aggressive friends, or nonaggressive friends: A four-year longitudinal study. *Merrill-Palmer Quarterly, 57*(2), 186-213.
- Payne, A., Liebling-Kalifani, H., & Joseph, S. (2007). Client-centred group therapy for survivors of interpersonal trauma: A pilot investigation. *Counselling and Psychotherapy Research, 7*(2), 100-105.
- Poznanski, E. O., Mokros, H. B., *Children's Depression Rating Scale, Revised (CDRS-R)*. Los Angeles: Western Psychological Services; 1996.

Raffin A. L., Guimarães Fachel J. M., Ferrão Y .A., Pasquoto de Souza F., Cordioli A.V.,
(2009). Predictors of response to group cognitive-behavioral therapy in the treatment of
obsessive-compulsive disorder. *European Psychiatry*, 24, 297-306.

Ray, C. E., & Elliot, S. N. (2006). Social adjustment and academic achievement:
A predictive model for students with diverse academic and behavior
competencies. *School Psychology Review*, 35(3), 493-501.

Rogers, C. R. (1959). A theory of therapy, personality and interpersonal relationships, as
developed in the client-centred framework. In S. Koch (Ed.), *Psychology: A study of a
science*, Vol. 3: Formulations of the person and the social context (pp. 184_256). New
York: McGraw-Hill.

Radloff, L.S. (1997). The CES-D scale: A self-report depression scale for research in the general
population. *Applied Psychology Measures*, 1(3), 85-401.

Salzer, M. S., Baron, R. C., Brusilovskiy, E., Lawer, L. J., & Mandell, D. S. (2011). Access and
outcomes for persons with psychotic and affective disorders receiving vocational
rehabilitation services. *Psychiatric Services*, 62(7), 796-799.

Sarte, D.D., Chi, F.W., Mertens, J.R., Weisner, C.M. (2011). Effects of age and life transitions
on alcohol and drug treatment outcome over nine years. *Journal of Studies on Alcohol
and Drugs*, 73(3), 459-478.

Sarte, D.D., Mertens, J.R., Arean, P.A., & Weisner, C.M. (2003). Contrasting outcomes of older
versus middle-aged and younger adult chemical dependency patients in a managed care
program. *Journal of Studies on Alcohol*, 64(4), 520-530.

Schiffman, J., Walker, E., Ekstrom, M., Schulsinger, F., Sorensen, H., & Mednick, S. (2004).

- Childhood videotaped social and neuromotor precursors of schizophrenia: A prospective investigation. *American Journal of Psychiatry*, *161*, 2021-2027.
- Segrin, C. (2000). Social skills deficits associated with depression. *Clinical Psychology Review*, *20*(3), 379-403.
- Shaffer, D., Gould, M.S., Brasic, J., et al. (1983). A Children's Global Assessment Scale (CGAS). *Archives of General Psychiatry Arch Gen Psychiatry* *40*, 1228-1231.
- Silverman, W., & Albano, A. M. (1997). *The Anxiety Disorders Interview Schedule for Children (ADIS-C/P)*. San Antonio: Psychological Corporation.
- Soler, J., Pascual, J. C., Tiana, T., Cebria, A., Barrachina, J., Campins, M. J., & Gich, I. (2009). Dialectical behaviour therapy skills training compared to standard group therapy in borderline personality disorder: A 3-month randomised controlled clinical trial. *Behaviour Research and Therapy*, *47*, 353-358.
- Stanley, B., Bundy, E., & Beberman, R. (2001, September). Skills training as an adjunctive treatment for personality disorders. *Journal of Psychiatric Practice*, 324-335.
- Sudak, D. M., Beck, J. S., & Gracely, E. J. (2002). Readiness of psychiatry residency training programs to meet the ACGME requirements in Cognitive-Behavioral Therapy. *Academic Psychiatry*, *26*(2), 96-101.
- Tasca, G. A., & Bone, M. (2007). Individual versus group psychotherapy for eating disorders. *International Journal of Group Psychotherapy*, *57*(3), 399-403.
- Tiuraniemi, J., Laara, R., Kyro, T., & Lindeman, S. (2012). Medical students learning reflection and interpersonal skills. *Academic Psychiatry*, *36*(1), 74-75.
- Turner, S. M., Beidel, D. C., Dancu, C. V., & Stanley, M. A. (1989). An empirically derived

- inventory to measure social fears and anxiety: The *Consulting and Clinical Psychology*, *1*, 35-40.
- Turner, S. M., Beidel, D. C., Borden, J. W., Stanley, M. A. & Jacob, R. G. (1991). Social phobia: Axis I and axis II correlates. *Journal of Abnormal Psychology*, *100*, 102-106.
- University Rehabilitation Services (2012). *PSA Member Booklet*. Dallas, TX: Author.
- Velligan, D. I., & Gonzalez, J. M. (2007). Rehabilitation and recovery in schizophrenia. *Psychiatric Clinics of North America*, *30*, 535-548.
- Wade, N.G., & Goldman, D.B. (2006). Sex, group composition, and the efficacy of group interactions to promote forgiveness. *Group Dynamics: Theory, Research, and Practice*, *10*(4), 297-308.
- Wallstedt-Paulsson, E., & Eklund, M. (2008). Outcome of work rehabilitation for people with various disabilities and stability at a one-year follow-up. *Work*, *31*(4), 473-481.
- Watkins, K. E., Hunter, S. B., Hepner, K. A., Paddock, S. M., de la Cruz, E., Zhou, A. J., & Gilmore, J. (2011). An Effectiveness Trial of Group Cognitive Behavioral Therapy for Patients With Persistent Depressive Symptoms in Substance Abuse Treatment. *Archives of General Psychiatry*, *68*(6), 577-584.
- Whitbourne, S. K., Sneed, J. R., & Sayer, A. (2009). Psychosocial development from college through mid-life: A 34-year sequential study. *Developmental Psychology*, *45*(5), 1328-1340.
- Wong, N., Sarver, D. E., & Beidel, D. C. (2012). Quality of life impairments among adults with social phobia: The impact of subtype. *Journal of Anxiety Disorders*, *26*, 50-57.

- Young J. F., & Mufson, L. Manual for Interpersonal Psychotherapy-Adolescent Skills Training (IPT-AST). New York: Columbia University; 2003.
- Yalom, I. D., & Leszcz, M. (2005). *The theory and practice of group psychotherapy*. (5th ed.). New York: Basic Books (AZ).
- Young, J. F., Mufson, L., & Gallop, R. (2010). Preventing depression: A randomization trial of interpersonal psychotherapy-adolescent skills training. *Depression and Anxiety*, 27, 426-433.

Table 1

Participant characteristics

	Connections	PSATG	Total
	n(%)	n(%)	n(%)
Gender			
Male	4(50)	7(46.7)	11(47.8)
Female	4(50)	8(53.3)	12(52.2)
Diagnosis			
(1) Thought disorder	2(25)	1(6.67)	3(13.04)
(2) Mood disorder	5(62.5)	13(86.67)	18(78.26)
(3) Anxiety disorder	1(12.5)	5(33.33)	6(26.09)
(4) Substance abuse	3(37.5)	2(13.33)	5(21.74)
(5) Child/adolescent disorder	3(37.5)	6(40)	9(39.13)
(6) Personality disorder	4(50)	6(40)	10(43.48)
(7) Mental retardation	0	1(6.67)	1(4.35)
(8) Borderline intellectual functioning	3(37.5)	1(6.67)	4(17.39)
Currently on medication			
(1) Yes	5(62.5)	14(93.33)	19(82.61)
(2) No	2(25)	1(6.67)	3(13.04)
(3) Did not report	1(12.5)	0	1(4.35)

Ethnicity

(1) Caucasian	1(12.5)	7(46.67)	8(34.78)
(2) African American	0	2(13.33)	2(8.70)
(3) Did not report	7(87.5)	4(26.67)	11(47.82)

Marital status

(1) Single	6(75)	10(66.67)	16(69.57)
(2) Married	1(12.5)	1(6.67)	2(8.70)
(3) Separated	1(12.5)	0	1(4.35)
(4) Divorced	0	3(20)	3(13.04)
(5) Widowed	0	1(6.67)	1(4.35)

Those with history of or current substance abuse	3(37.5)	5(33.33)	8(34.78)
---	---------	----------	----------

Global Assessment of
Functioning (GAF)

1. Mild symptoms	2(25)	0	2(8.70)
2. Moderate symptoms	1(12.5)	2(13.33)	3(13.04)
3. Severe symptoms	5(62.5)	7(46.67)	12(52.17)
4. Some impairment in functioning	0	6(40)	6(26.09)

Descriptive data analysis means and standard deviations

	<u>Connections</u> M(SD)	<u>PSATG</u> M(SD)	<u>Total</u> M(SD)
Age	30(11.08)	39(11.49)	35(11.89)
Years of education	12(2.13)	14(3.02)	13(2.67)
Weeks in treatment	15(5.01)	12(1.85)	13(3.51)

Social support reported	1.38(1.19)	2.93(1.10)	2.39(1.34)
Stressors reported	4.88(1.96)	4.67(2.23)	4.74(2.10)

Note. ^aMild Symptoms=GAF61-70, Moderate Symptoms=GAF 51-60, Serious Symptoms=GAF 41-50, Some Impairment in Functioning=GAF 31-40

Table 2

Evaluations outcomes (range, mean, standard deviation, number and percentages) separated by clinical categories

	<u>Connections</u>		<u>PSATG</u>		<u>Total</u>	
	Pre n(%)	Post n(%)	Pre n(%)	Post n(%)	Pre n(%)	Post n(%)
BAI (Range=0-63)	Range=2-23 M=13 SD=9.77	Range=0-45 M=12 SD=14.21	Range=3-33 M=16 SD=10.22	Range=0-35 M=12 SD=10.77	Range=2-33 M=15 SD=9.96	Range=0-45 M=12 SD=11.75
(1) Not clinically anxious ^a	5(62.5)	5(62.5)	8(53.33)	9(60)	13(56.52)	14(60.87)
(2) Clinically anxious ^b	3(37.5)	3(37.5)	7(46.67)	6(40)	10(43.48)	9(39.13)
BDI (Range=0-63)	Range=2-43 M=20 SD=12.39	Range=1-20 M=7 SD=7.17	Range=2-46 M=19 SD=14.74	Range=0-35 M=11 SD=11.32	Range=2-46 M=19 SD=13.69	Range=0-35 M=9 SD=10.10
(1) None or ^c minimal	2(25)	6(75)	7(46.67)	10(66.67)	9(39.13)	16(69.57)
(2) Mild to ^d moderate	1(12.5)	1(12.5)	0	1(6.67)	1(4.35)	2(8.70)
(3) Moderate ^e to severe	4(50)	1(12.5)	4(26.67)	2(13.33)	8(34.78)	3(13.04)
(4) Severe ^f	1(12.5)	0	4(26.67)	2(13.33)	5(21.74)	2(8.70)

Note: ^aNot clinically anxious= BAI 0-12, ^cClinically anxious=BAI 12-63, ^eNone or minimal=BDI 0-9, ^dMild to moderate=BDI 10-18, ^eModerate to severe=BDI 19-29, ^fSevere=BDI 30-63

Table 3

Correlations between age, level of education, length of treatment, reported social support and reported stress

		BAI Improvement	BDI-II Improvement	Age at Orientation	Total Number Years of Education	Number of weeks in group	Total Support
BDI-II Improvement	Pearson correlation	0.521	-	-	-	-	-
	Sig. (2 tailed)	0.011*	-	-	-	-	-
Age at Orientation	Pearson correlation	0.214	-0.316	-	-	-	-
	Sig. (2 tailed)	0.328	0.142	-	-	-	-
Total Number Years of Education	Pearson correlation	-0.084	0.023	-0.139	-	-	-
	Sig. (2 tailed)	0.704	0.916	0.527	-	-	-
Number of Weeks in Group	Pearson correlation	-0.294	0.219	-0.479	-0.001	-	-
	Sig. (2 tailed)	0.174	0.315	0.021*	0.996	-	-
Total Support	Pearson correlation	0.348	-0.13	0.152	-0.213	-0.442	-
	Sig. (2 tailed)	0.103**	0.553	0.49	0.33	0.035*	-
Total Stress	Pearson correlation	0.114	0.164	0.1	-0.09	0.299	-0.17
	Sig. (2 tailed)	0.604	0.456	0.649	0.683	0.166	0.437

Note: *. Correlation is significant at the 0.05 level, **. Correlation is significant at the 0.1 level.