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The use of treatment process variables to differentiate between completers and dropouts for a guided self-change adolescent substance abuse intervention

Mildred Cordaro

Florida International University

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To: Interim Dean Mark Szuchman
College of Arts and Sciences

This dissertation, written by Mildred Cordaro, and entitled *The Use of Treatment Process Variables to Differentiate between Completers and Dropouts For a Guided Self-Change Adolescent Substance Abuse Intervention*, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

Eric Wagner

Marilyn Montgomery

Lindsey Ham

Jonathan Tubman, Major Professor

Date of Defense: November 13, 2006

The dissertation of Mildred Cordaro is approved.

Interim Dean Mark Szuchman
College of Arts and Sciences

Dean George Walker
University Graduate School

Florida International University, 2006

DEDICATION

I dedicate this dissertation to the most important people in my life including my parents, Drew Warriner, and Nicki Brask for their ongoing support throughout this process. This dissertation is also dedicated to Samuel Mathews whose early mentoring and support assisted in the completion of my graduate school experience.

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ABSTRACT OF THE DISSERTATION
THE USE OF TREATMENT PROCESS VARIABLES TO DIFFERENTIATE
BETWEEN COMPLETERS AND DROPOUTS FOR A GUIDED SELF-CHANGE
ADOLESCENT SUBSTANCE ABUSE INTERVENTION

by

Mildred Cordaro

Florida International University, 2006

Miami, Florida

Professor Jonathan Tubman, Major Professor

This study documented differences between substance using adolescent participants who either completed or dropped out of a brief motivational intervention. Therapeutic alliance, working alliance and patient involvement were used to describe differences in treatment process ratings in a sample of majority Latino males who either (a) completed a adolescent substance abuse intervention called Alcohol Treatment Targeting Adolescents In Need (ATTAIN) or (b) dropped out after the first or second Guided Self-Change therapy session. Fifteen-minute segments were copied from the midpoint of previously recorded audio-tapes of Guided Self-Change therapy sessions. Raters were trained to a criterion level of interrater reliability for both the Working Alliance Inventory-Short and Vanderbilt Psychotherapy Process Scale.

Correlations among Working Alliance Inventory- Short and Vanderbilt Psychotherapy Process Scale subscales reflected a general similarity in the assignment of ratings to client-therapist dyads. Findings underscore why these concepts are often used interchangeably in the treatment process literature. The Vanderbilt Psychotherapy

Process Scale patient participation subscale demonstrated substantial empirical differentiation from overall therapeutic alliance. Discriminant function analysis demonstrated the Working Alliance Inventory-Short goal subscale and the Vanderbilt Psychotherapy Process Scale patient participation and therapist warmth and friendliness subscales as successful classifiers of groups of mostly Latino youth based on completion status. Follow-up logistic regression analyses confirmed major findings and successfully predicted group membership. Treatment process constructs can be used as clinical tools to identify participants who may be susceptible to dropping out of treatment services. Further investigation of treatment process may enhance understanding of the influence of alliance between clients and Guided Self-Change therapists. Investigating the role of treatment process as a critical component of brief motivational interventions for substance-using adolescents will inform both practitioners and researchers regarding the effectiveness of community-based substance abuse interventions for adolescents.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
II. LITERATURE REVIEW	7
Developmental Processes Associated With Adolescent Substance Abuse	10
Developmentally Appropriate Modalities for Adolescent Substance Abuse.....	13
Family-Based Approaches	14
Twelve-Step Approaches	16
Therapeutic Community Approaches	19
Cognitive-Behavioral Approaches	21
Motivational Interviewing.....	24
Guided Self-Change	30
Therapeutic Process and Guided Self-Change Strategies.....	35
Client and Therapist Characteristics Related to Treatment Process.....	36
Therapeutic Alliance Background and Definition.....	38
Working Alliance Defined	40
Therapeutic Alliance Overlap	41
Client Involvement Defined.....	42
Empirical Investigations of Therapeutic Alliance and Working Alliance.....	43
Empirical Investigations of Client Involvement	44
Empirical Investigations of Treatment Process and Dropout	45
Gaps in Current Literature and Relevance of Current Study.....	47
The Current Study	50
III. METHODS	52
Participants.....	52
Measures	53
Procedure	57
Statistical Analyses.....	60
IV. RESULTS	66
Step 1: Sample Descriptive	66
Evaluation of Assumptions of Discriminant Function Analysis	67
Factor Analysis of WAI and VPPS subscales	69
Step 2: Question One: Correlations Among Treatment Process Variables	70
Step 3: Question 2: Differences In Status Related to Treatment Process.....	73
Direct DFA for WAI and VPPS Subscales	76
Direct DFA for the WAI subscales	77
Direct DFA for the VPPS subscales	80
Stepwise DFA for the VPPS subscales	81
Step 4: Follow-up Analyses: Predicting Membership Using Treatment Process .	82

V.	DISCUSSION	87
	Summary of Results.....	87
	Synthesis of Literature Review and Results	90
	Research Question One: Correlations Among Treatment Process Variables	90
	Research Question Two: Differences in Completion Status Based on Process....	95
	Implications for Treatment.....	97
	Limitations	101
	Directions for Future Research	103
	REFERENCES	107
	VITA	122

LIST OF TABLES

TABLE	PAGE
1. Demographic Characteristics of Participants.....	54
2. Reliability Data for Treatment Process Scales.....	56
3. Means, Standard Deviations, and Ranges for Treatment Process Variables.....	70
4. Principal Components Analysis for WAI.....	71
5. Intercorrelations Among WAI and VPPS subscales.....	74
6. Means and Standard Deviations of Predictor Variables As a Function of Status.....	78
7. Correlations Between Discriminating Variables and Discriminant Function.....	79
8. Correlations Between Discriminating WAI Variables and Discriminant Function....	79
9. Correlations Between VPPS Discriminating Variables and Discriminant Function ...	83
10.VPPS Independent Variables in Stepwise DFA.....	83
11.Correlations Between Stepwise VPPS Discriminating Variables and Discriminant Function.....	84
12.Summary of LR Analysis Predicting Treatment Completion Status.....	86
13.Excerpts from GSC Therapy Sessions for Treatment Completers.....	91
14.Excerpts from GSC Therapy Sessions for Treatment Dropouts.....	92

Chapter 1: Introduction

Conceptualization

Adolescent substance abuse remains an area of active inquiry among professionals in both the academic and clinical arenas. Adolescents who are consuming harmful levels of alcohol or other substances commonly report a wide range of maladaptive outcomes including: deficits in occupational, family, interpersonal and relational functioning (Shek, 2003). Prevalence rates for drug and alcohol use have begun to level off (Monitoring The Future Study, 2004), but the proportions of adolescents who continue to report both experimental and problem use reinforce the need for effective substance abuse interventions. Most current substance abuse interventions for adolescents are based on previously implemented treatment modalities including family-based approaches (Liddle, Dakof, & Diamond, 1991; Szapocznik, Hervis, & Schwartz, 2001), 12-step approaches (Toumbourou, Hamilton, Ren, Stevens-Jones, & Corey, 2002), therapeutic communities (Muck, Zempolich, Titus, & Fisherman, 2001), and cognitive-behavioral strategies (Beck, Wright, Newman, & Liese, 1993). Several reviews of the effectiveness of these modalities have been conducted and family-based approaches (i.e., Multidimensional Family Therapy and Brief Strategic Family Therapy) and cognitive-behavioral strategies demonstrated the most benefits (Mendel, 2000; Santisteban et al., 2002; Waldron et al., 2001).

Traditionally, the main premises of these treatment modalities have been adapted from substance abuse treatment programs for adults and they may not be sufficiently developmentally appropriate for adolescents. For example, key characteristics of adolescence include normative participation in risk-taking behavior, normative

experimentation with alcohol or illicit substances, a focus on autonomy and self-expression, and ambivalence toward changing risk-related behaviors, including substance and alcohol abuse. In contrast, current substance abuse intervention efforts typically expect therapists to encourage adolescents to abstain from substance use as the primary or most desirable treatment goal. These types of limitations or mismatches have been noted in several widely disseminated treatment modalities. In response, alternative interventions, such as brief motivational interventions (BMIs) including Guided Self-Change (GSC; Sobell & Sobell, 1993, 1998) have been implemented and demonstrate significant potential as efficacious interventions for alcohol and substance abuse among youth (Monti et al., 1999).

The current study focuses on GSC as adapted and delivered in the context of an adolescent substance abuse intervention called Alcohol Treatment Targeting Adolescents In Need (ATTAIN) at Florida International University. Guided Self-Change is based on key constructs of Motivational Interviewing (MI), Motivational Enhancement Therapy (MET), and other brief motivational interventions. Both the GSC and MI modalities support the notion of addressing and reducing clients' "ambivalence" to change substance use-related behaviors, based on Prochaska and DiClemente's (1984) Transtheoretical Model of Change. In addition, the two modalities are couched in the Health Belief model that suggests that the goal of substance abuse treatment can include reducing patterns of substance use, as well as, abstaining from substance use (Sobell & Sobell, 1993). Based on these core ideas, the conceptual premises driving GSC are congruent with some of the central developmental tasks and themes of adolescence. Guided-Self Change allows adolescents to design their own treatment goals, discuss their ambivalence about behavior

change, and decide to what degree they will reduce or stop substance use-related behaviors. Therefore, GSC appears to be developmentally appropriate and empirical investigations currently evaluating the treatment effectiveness of GSC show substantial promise. (Feldstein & Ginsburg, 2006).

One understudied domain of GSC is how treatment process factors contribute to clients' participation in this treatment modality. Greater knowledge regarding variability in treatment process factors during GSC sessions in the context of the ATTAIN program would illuminate several important issues. First, greater descriptive, process-related information about the types of relationships that form between therapists and clients, and how the level of alliance demonstrated distinguishes between adolescents who complete treatment and adolescents who drop out are essential issues about GSC that warrant further attention. Second, examining how the operationalization of treatment process engagement is related to specific indices of the effectiveness of GSC is an important link to the broader literature on treatment process. Further empirical research in this area will help advance the customization of AOD interventions to better meet the needs of specific subgroups of adolescents who may be susceptible to treatment dropout. Evaluation of group differences in treatment process variables between completers and dropouts of the ATTAIN program will allow researchers and clinicians to delineate how treatment process variables can be used to identify clients who may be prone to discontinuing prematurely GSC treatment. Identifying clients who are demonstrating low scores for alliance during the early phases of treatment may assist researcher-practitioners and psychotherapists to reduce their propensity to drop out of treatment, and increase their likelihood of completing the GSC intervention protocol.

Over the past several decades, the domain of treatment process research has been receiving increased empirical attention, particularly as an important determinant of outcomes in treatment interventions. Several core treatment process variables have been identified that have guided relevant empirical treatment process investigations. Specifically, these factors include the concepts of therapeutic alliance, working alliance and client involvement. *Therapeutic alliance* has been broadly defined as the collaborative and affective bond between therapist and client (Bordin, 1975, Martin, Garske, & Davis, 2000). *Working alliance* has been defined as a collaborative partnership between therapist and client and includes three central components related to working alliance: bonds, tasks, and goals (Bordin, 1976; Greenson, 1967; Horvath & Greenberg, 1989). *Client involvement* describes the quality of the client's participation in therapy, as well as his or her hostility and resistance to therapy (Garfield, 1994). The conceptualization of client involvement also includes client optimism, perceived task relevance, and the degree of responsibility accepted for treatment satisfaction (Greenberg & Pinsof, 1986). It is important to note that therapeutic alliance and working alliance often have been used interchangeably in some areas of the treatment process literature (e.g., alliance as a predictor of treatment outcome). The current study defined these constructs as separate and evaluated them for empirical similarities (i.e., the degree of empirical overlap).

Purpose of Study

The current study included the treatment process variables of therapeutic alliance, working alliance, and client involvement, to investigate two specific objectives related to clients' participation in GSC treatment sessions. The first objective focused on bivariate

correlations among the therapeutic alliance, working alliance, and client involvement variables within a restricted sample of adolescents who demonstrated the following demographic characteristics: largely Hispanic males, ages 14 to 18 years, who volunteered for substance use treatment through referral through a community-based organization, such as an alternative school. In addition, describing empirical similarities between therapeutic alliance and working alliance allowed additional documentation of the degree of overlap between the two constructs.

The second objective focused on investigating treatment process factors (i.e., therapeutic alliance, working alliance, and client involvement) that distinguished between adolescents who completed the ATTAIN program and adolescents who dropped out of treatment after the first session of counseling. Identifying significant differences in alliance ratings between completers and dropouts of the ATTAIN program will assist researchers and practitioners to identify potential psychotherapy process-related characteristics of the clients and practitioners (i.e., poor alliance, low level of involvement) that can be targeted early during treatment interventions, and that may be important antecedents for later treatment dropout. In addition, clarifying differences between treatment completers and dropouts will inform literatures related to both treatment process and BMIs such as GSC.

Significance of Study

The current study is timely and significant for several reasons. First, there has yet to be any systematic empirical investigation of recognized treatment process variables with regard to the implementation of GSC sessions with adolescents, and in particular, ethnic or racial minority adolescents. Understanding more fully what processes happen

during GSC treatment will provide positive benefits. In particular, investigating dimensions of treatment process during GSC sessions will inform literatures related to both treatment process and BMIs such as GSC on how alliance within GSC influences processes leading to either treatment completion or treatment dropout.

Second, there is an abundant empirical literature that has established that treatment process, particularly alliance, as a significant predictor of specific treatment outcomes (Martin, Garske, & Davis, 2000). However, empirical investigations of the bivariate correlations between alliance and treatment completion and dropout remain lacking. Thus far, the literature investigating relations between treatment alliance and treatment dropout is minimal. In addition, the few studies that have been conducted with regard to treatment process and dropout (Piper et al., 1999; Robbins, Turner, Alexander, & Perez, 2003) have included several methodological limitations and have yielded mixed results. Extending the currently existing literature on alliance-outcome relations to include empirical documentation of relations between alliance and dropout will serve as an important step in furthering treatment process research.

Third, although treatment process has been investigated across major psychotherapy treatment modalities (i.e., psychoanalytic, humanistic, family-based, cognitive-behavioral) (Horvath & Luborsky, 1993; Martin, Garske, & Davis, 2000), the contributions of treatment process to BMIs such as the GSC modality has not yet received adequate empirical attention. Evaluating specific differences in treatment processes between GSC treatment completers and dropouts will inform researchers and practitioners who implement the GSC modality of the role of treatment process as a therapeutic factor that can impact the overall success of GSC treatment.

Chapter 2: Literature Review

This literature review is comprised of two parts and will highlight several important bodies of literature that are relevant to the main objective of this study which involves distinguishing within a clinical sample of Latino male adolescents between those who completed or dropped out of a Guided Self-Change (GSC) substance abuse treatment-intervention called the ATTAIN program. The first half of this literature review focuses on prevalence rates of substance use among adolescents, along with a description of developmental pathways that lead toward, or buffer against, adolescent substance use. The common treatment modalities (i.e. family-based, 12-step, therapeutic communities, and cognitive-behavioral) for substance use are discussed and are evaluated for their developmental appropriateness for adolescents. Brief motivational interventions such as motivational interviewing and GSC are also discussed and evaluated for their developmental appropriateness, and they are a major focal point of the current study.

The second part of the literature review addresses issues relevant to treatment process. First, client and therapist characteristics and their relation to important treatment processes are highlighted, followed by an introduction to the concepts of therapeutic alliance, working alliance and client involvement, that includes the conceptual background, definition and empirical relevance of each of these concepts. Last, previous studies that have addressed relations between general alliance and dropout are described, followed by discussions of specific deficits in the current alliance-dropout literature and the relevance of the current study.

Adolescent substance abuse continues to be a widespread concern among both practitioners and researchers. The Monitoring the Future studies have tracked recent

prevalence rates for adolescent substance use in the United States and they highlight continuing causes for concern, despite recent gradual declines in illicit drug use among youth (Johnston, O'Malley, & Bachman, 2004). According to the survey, there has been a decline in the annual prevalence rates for any illicit drug use among the nation's 8th graders, from 23.6% in 1996 to 15.2% in 2004. Among those students who indicated any use of illicit substances in the previous 12 months, rates were 15% in 8th grade, 31% in 10th grade, and 39% in 12th grade. The study suggested that the prevalence rates for lifetime illicit drug use were 22%, 40%, and 51% for these grades, respectively.

The use of marijuana, the most frequently used illicit drug among young people, demonstrated a modest decline in prevalence of use from the year 2003 to 2004. Across grades 8, 10, and 12, the lifetime prevalence of marijuana use was 16.3%, 35.1% and 45.7% respectively, and an 18% aggregate drop in past month marijuana use was reported across age categories. In addition, since 1996, there has been a 36% decline in the prevalence of past year use (from 18.3% to 11.8%) among 8th graders. For 10th and 12th graders, past year use prevalence rates demonstrated minimal decrease, (from 28.2% to 27.5% and from 34.9% to 34.3%, respectively) from 2003 to 2004.

A smaller percentage of adolescents have used other types of illicit drugs across the period from 2003 to 2004. Specifically, smaller groups of adolescents have used amphetamines (23.4%), inhalants (19.7%), hallucinogens (12.5%), ecstasy (8.1%), and cocaine (11%) during this period. Currently, national trends have indicated an overall decline in prevalence rates of substance use, including an aggregate 7% decline of any illicit drug use during the past month by 8th, 10th, and 12th graders combined, from 2003 to 2004. In addition, patterns of illicit use between the years 2001 to 2004 revealed a 17%

cumulative decline in drug use across categories of illicit substances (Johnston et al., 2004).

Adolescent alcohol use and misuse have also demonstrated trends suggesting significant public health problems. Based on the Monitoring the Future studies (Johnston et al., 2004), 48% of high school seniors in 2004 reported using alcohol at least once during the past month and 30% of young people reported binge drinking during the past two weeks. Patterns of lifetime alcohol use prevalence among high school students included a modest decline for 8th graders from 45.0% to 43.9%, a slight decline for 10th graders from 66.0% to 64.2% and a small increase for 12th graders from 76.6% to 76.8% from the year 2003 to 2004. The annual alcohol use prevalence rates for 2004 show similar age-graded patterns for 8th, 10th, and 12th graders, 36.7%, 58.2%, and 70.6%, respectively. Flavored alcohol annual use prevalence rates reflected a slight increase, from 55.2% to 55.8%, from 2003 to 2004 for 12th graders, as well. The prevalence rates for past 30-day alcohol use among 8th graders (18.6%) and 10th graders (35.2%) demonstrated slight decreases, while 12th graders reported slightly increased use of alcohol (from 47.5% to 48.0%) from 2003 to 2004. Although slight reductions in overall patterns of adolescent substance use and misuse are documented, adolescent substance use remains a significant public health concern.

The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, APA, 2000), defines substance abuse as a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances. General substance abuse can lead to multiple problems associated with daily functioning, including impairments in occupational, family and interpersonal and relational

functioning domains (Latimer, Newcomb, Winters, & Stinchfield, 2000; Shek, 2003). Adolescents who abuse substances can also potentially experience a range of health risk behaviors, including accidents and other sources of serious injuries. These can include automobile-related injuries or death due to driving while intoxicated (Bingham & Shope, 2004) or participation in risky sexual behavior (Cooper, Wood, Orcutt, & Albino 2003), such as unprotected intercourse that may lead to pregnancy, sexually transmitted infections (STIs), or sexual victimization (Dennis & Stevens, 2003).

Developmental Processes Associated with Adolescent Substance Abuse

There is a growing body of literature that has examined associations between adolescent substance use and family-related processes (Kilpatrick et al., 2000; Liddle, 2002; Repetti, Taylor, & Seeman, 2002). According to Lochman and Steenhoven (2002), negative family environmental and parental qualities can lead to, and potentially impact, patterns of early substance use and abuse. Specifically, harsh, inconsistent parenting styles and poor levels of parental monitoring have been associated significantly with developmental pathways increasing the likelihood of adolescent substance abuse (Schmidt, Liddle, & Dakof, 1996). Harsh parenting has been found to be a part of a mediating process that increases the likelihood of adolescent substance abuse (Fergusson & Linsky, 1996). For example, harsh parenting styles can contribute to the development of children's oppositional and aggressive behaviors, which in turn can become a risk factor for subsequent substance use (Diamond, Diamond, & Liddle, 2000; Lochman & Wayland, 1994). A three-wave longitudinal study was recently conducted that linked harsh parenting behavior with children's inability to sufficiently self-regulate emotions and behaviors, which in turn was associated with maladaptive psychological functioning

and alcohol use in early adolescence (Brody & Ge, 2001). Therefore, harsh parenting can contribute, as a developmental precursor, to a mediated process that influences adolescent substance abuse.

Parental monitoring has also been linked empirically to patterns of adolescent substance abuse. High levels of parental monitoring have been found to buffer children and adolescents from substance use (Dishion, Reid, & Patterson, 1988; Lochman & Steenhoven, 2002). However, these studies also highlight the finding that poor parental monitoring contributed to poor social skills and problem behaviors, which in turn, may lead to deviant peer affiliations, and finally to substance use. A recently conducted study that examined relations between family factors including parental monitoring, adolescent drug use, and psychosocial-behavioral factors (i.e., stress, peer alcohol use, deviant behavior) found significant links between mother's level of parental monitoring and adolescent alcohol use (Getz & Bray, 2005). Other risk factors for adolescent alcohol use found in the study were race and ethnicity (i.e., non-Hispanic or Mexican-American ethnicity), previous marijuana use, age, mother's alcohol use, and family conflict. These risk factors were identified as components of a general developmental pathway that demonstrated a mediated process from parental monitoring to adolescent substance abuse. This particular pathway suggested that maladaptive family processes, along with other risk factors, played a significant contributing role to the onset or acceleration of adolescent substance abuse. Prevention- and treatment-oriented interventions for adolescent substance abuse have begun to target specific family-level processes (Liddle, Dakof, & Diamond, 1991; Szapocznik, Hervis, & Schwartz, 2001) to interrupt this mediated developmental pathway..

Other developmental processes associated with the period of adolescence may contribute to the increased likelihood of adolescents engaging in substance use or abuse. The developmental period of adolescence has been conceptualized as a time for the emergence of key themes such as: experimentation in risk behaviors, testing of the limits of personal autonomy, and perceived invulnerability (Zucker, 2000). Accordingly, adolescents may be more likely to engage in risk-taking behaviors (Arnett, 1992; Lerner et al., 1996; Weisz & Hawley, 2002). However, when adolescents abuse substances, their developmental outcomes can be impacted significantly in negative ways. For instance, frequent substance users are more likely to have problems in school, to withdraw socially from peers, to experience relational problems with parents, and to engage in delinquent behaviors (Barnes & Welte, 1986; Brook, Gordon, Brook, & Brook, 1989, Latimer, Newcomb, Winters & Stinchfield, 2000). One study (Hawkins, Catalano, & Miller, 1992) echoed these findings in a school-based study that identified substance-using peers as a significant risk factor for adolescent substance abuse. Getz and Bray (2005) confirmed these findings, using a multi-ethnic school-based sample, and demonstrated that perceived peer alcohol use was a moderate risk factor for heavy alcohol use by adolescents.

In addition, substance use tends to co-occur with a range of other adolescent problem behaviors. These behaviors include: youth aggression and violence, school failure and dropout, depression and other mental health problems, adolescent pregnancy, risky sexual behaviors, and pathological gambling (Lochman & Steenhoven, 2002; Lynch, 2001; Nower, Derevensky & Gupta, 2004). At-risk adolescents typically exhibit multiple problem behaviors, and these problem behaviors, along with poor self-control,

are more likely to lead to both delinquency and substance use (Liddle et al., 2001; Loeber & Keenan, 1994; Wills & Filer, 1996). A recent study (Walden et al., 2004) used a large sample of male and female monozygotic and dizygotic adolescent twins to examine the specific contributions of environmental influences, including peer deviance and parent-child relational problems, to adolescent substance use. The findings of the study confirmed that negative peer characteristics, including delinquency, are significantly associated with early adolescent substance use, and that peer factors along with other environmental influences, accounted for the greatest proportion of overall variance in substance use outcomes. Also, other research suggests that when substance abuse is left untreated, it is likely to continue into adulthood, along with other types of psychopathology (Kandel, Simcha-Fagan, & Davies, 1986; Walden et al., 2004). Therefore, it is crucial that treatment and prevention programs identify risk factors for both normative and clinically significant adolescent substance use trajectories, as well as co-occurring problem behaviors contributing to substance abuse in order to provide appropriate and effective treatment strategies.

Developmentally Appropriate Treatment Modalities for Adolescent Substance Abuse

There are several commonly used treatment modalities available for implementation among adolescent substance users. A majority of currently used adolescent substance abuse treatment modalities have been adopted from adult substance abuse treatment programs. Traditional approaches to the treatment of adolescent substance abuse reflect four distinct modalities: family-based approaches, 12-step approaches, therapeutic communities, and cognitive behavioral strategies (Muck, Zempolich, Titus, & Fisherman, 2001). In addition, therapeutic modalities such as

motivational interviewing (MI; Miller, Yahne, & Tonigan, 2003) and Guided-Self Change are contemporary brief motivational approaches for treating adolescent substance abuse that are gaining support through accumulating empirical evidence of efficacy and effectiveness. Each of these modalities will be discussed briefly along with summaries of existing research assessing the efficacy or effectiveness of each model. In addition, each modality will be evaluated with regard to how developmentally appropriate the principles of the treatment approach are for adolescent substance abuse problems.

Family-Based Approaches

The first model is the family-based approach and this modality is based on the notion that there are family systems, along with other specific developmental factors that contribute to the likelihood of adolescent substance use (Lochman & Steenhoven, 2002). A family systems view of adolescent substance abuse focuses on how adolescent functioning is a reflection of parent-child, sibling, and extended family relationship functioning, including patterns of communication and interaction among various family subsystems (Ozechowski & Liddle, 2000). Parents, in particular may contribute to their adolescent's substance use through harsh parenting, poor parental monitoring, and a lack of parental warmth (Lochman & Steenhoven, 2002). These undesirable or maladaptive parenting qualities have been previously identified as a key part of mediator models, as well as moderators that contribute significantly to pathways promoting adolescent substance use, and are therefore a central focus of family-based intervention programs.

One family-based treatment model, multidimensional family therapy (MDFT) (Liddle, Dakof, & Diamond, 1991) is couched in both developmental and ecological theories, which identify several pathways for change within the multiple systems

involved in maintaining dysfunctional behaviors among adolescent substance abusers (Ozechowski & Liddle, 2000). The MDFT program is an empirically-supported outpatient approach for treating adolescent substance abusers (CSAP, 2000; Mendel, 2000). Several treatment efficacy studies have been conducted to evaluate MDFT. One such study was a randomized controlled trial (RCT) of MDFT in which this treatment modality was compared with two other empirically-supported substance abuse treatments: multifamily educational intervention (MFEI) and adolescent group therapy (AGT). The study evaluated as outcomes levels of substance use, problem behaviors, school performance, and family functioning. The general pattern of results indicated improvement among youth in all three treatments, with MDFT participants showing the largest and most stable improvements on all outcomes (Liddle et al., 2001).

Another empirically validated family-based intervention for adolescent substance abusers is Brief Strategic Family Therapy (BSFT) (Szapocznik, Hervis, & Schwartz, 2001). Brief Strategic Family Therapy is theoretically grounded in Bronfenbrenner's (1979) ecological framework and also targets key interactions of family members that are related to adolescent problem behaviors. In particular, BSFT focuses on consistent, maladaptive patterns of family functioning that hinder the adolescent's improvement, i.e., increases in levels of current substance consumption (Szapocznik, Hervis, & Schwartz, 2001). Studies have been conducted examining the influence of BSFT on adolescent substance abuse. One study demonstrated that BSFT was significantly more effective than a control group in reducing marijuana use, although no differences were found between the two groups for levels of alcohol use (Santisteban et al., 2003).

These family-based interventions appear to be developmentally appropriate for adolescent substance abusers for multiple reasons. First, they acknowledge that adolescent substance abuse does not occur in isolation. Instead, substance abuse is conceptualized as an outcome influenced by interactions and transactions between the adolescent and multiple family systems. Second, these family-based approaches address how patterns of poor family functioning contribute to adolescent substance abuse outcomes. Thus, family processes, such as communication and interaction are targeted in order to decrease adolescent substance use problems.

Despite these developmentally appropriate intervention strategies, these modalities may harbor some limitations as well. For instance, family-based intervention strategies are based on the assumption that family members are motivated and willing or able to participate in the treatment process. Also, successful treatment outcomes are contingent upon members of family dyads understanding how their functioning and interactions contribute to an adolescent's drug use. Last, a family-based approach requires the consistent attendance and participation of family members which may be difficult to implement due to work obligations, lack of transportation, lack of general resources or other barriers to family members' participation.

Twelve-Step Approaches

A second general model that is used to treat adolescent substance users is the 12-step treatment approach. This approach has been cited as the most common model for treating substance abuse among adults (Crape, Latkin, Laris, & Knowlton, 2002). The 12-step treatment model is based on the approach used by the Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) movements that posit "chemical dependency" as a

disease that must be managed throughout the lifespan with abstinence as the primary goal (Winters, 2000). The steps are implemented primarily within a group intervention format, as a series of treatment goals that target abstinence, lifestyle change, maintenance, and communal aftercare (Toumbourou, Hamilton, U'Ren, Stevens-Jones, & Storey, 2002). Typically, counselors implementing or facilitating 12-step programs are recovering substance users who serve as role models who practice drug abstinence for new group members (Winters, 2000).

There have been a number of studies conducted that have examined the effectiveness of 12-step programs administered among adults and the findings yielded mixed or minimal support. Since sponsorship is a central component of the A.A. and N.A. programs, the effectiveness of sponsorship on abstinence has been a focus of evaluation efforts. According to Crape et al. (2002), having a sponsor in AA/NA was not associated with any improvement in sustained abstinence over a 1-year period compared to a non-sponsored group of participants. However, being a sponsor over the same time period was related significantly to improvements in sustained abstinence rates for the sponsors themselves. A study conducted by Kahler et al. (2004) on an inpatient detoxification unit for alcohol dependence employed a brief advice condition and a motivational enhancement condition within a 12-step modality. The findings demonstrated that there was a significant interaction between motivational enhancement and the 12-step condition, indicating moderate associations with treatment outcomes. Other studies demonstrated that consistent attendance at self-help groups and stable participation in step-work were related significantly to reductions in hazardous alcohol use and to improvements in social support (Toumbourou et al., 2002).

Multiple studies have evaluated the overall effectiveness of 12-step treatment programs, and have demonstrated inconsistent or weak findings. For example, Winters et al. (2000) showed that adolescents who completed a 12-step program had significantly higher abstinence rates at both the 6-month and 12-month follow-ups. Despite these findings, other studies have found differing trends in the effectiveness of 12-step treatment programs for outcomes among adolescent substance abusers. Although another study (Alford, Koeler, & Leonard, 1991) found similar trends in abstinence rates at a 6-month follow-up, Alford et al. reported that abstinence rates significantly decreased for males and slightly decreased for females at a 12-month follow-up. The effectiveness of 12-step treatment approaches remains questionable due to these inconsistent findings.

The developmental appropriateness of the 12-step treatment approaches seems limited at best. The overall goal of the 12-step treatment process, abstinence, does not reflect the empirically-based and critical developmental characteristics associated with adolescence. As mentioned earlier, some of the characteristics that reflect specific developmental themes and features of adolescence include autonomy testing, risk-taking, and normative experimentation with risk behaviors. Based on these qualities, using substances is often a means of pursuing or testing independence and assuming adult-like roles (Moffit, 1993). Perhaps even modest levels of substance use can be perceived as a normative experience during adolescence. Unfortunately, 12-step treatment programs view alcohol and drug use as indicative of a life-long disease that requires abstinence as a key indicator of successful outcomes. It is possible that the lack of developmental appropriateness of this strategy contributes to this treatment approach's mixed outcomes among adolescent substance abusers (Winters, Latimer, & Stinchfield, 2000).

Therapeutic Community Approaches

The third model used to treat adolescent substance abuse is the therapeutic community treatment approach. Therapeutic communities (TCs) are longer-term residential programs that typically are comprised of adolescents with severe substance abuse and related behavioral problems (Muck et al., 2001). Adolescent therapeutic communities are modified from an adult-centered approach to therapeutic communities, and typically include a shorter length of stay, limited use of peers and more reliance on staff, a horizontal authority structure among members and the inclusion of parents or other relatives as sponsors in the treatment process (Jainchill, 1997).

Most therapeutic communities are theoretically grounded in the self-help framework (Simpson, Joe, Rowan-Szal & Greener, 1997). The notion underscoring therapeutic communities is that substance abuse is a disorder of the entire person that results from an interruption in normal personality development and deficits in interpersonal skills and goal attainment (Muck et al., 2001). Furthermore, individuals who are dependent on alcohol or other drugs are thought to have psychological and social deficits that precipitate and maintain substance abuse behaviors. Therefore, treatment targets the whole person by changing addiction-promoting attitudes, beliefs, and lifestyles (Stevens & Morral, 2003). Therapeutic communities provide a substance-free, safe and ordered environment within a larger peer group. Within therapeutic communities, adolescents can learn adaptive skills and behaviors that promote the overarching goal of decreasing levels of substance use.

Multiple studies have reported that among clients who enter therapeutic communities, successful outcomes are directly related to the length of stay in treatment

(Hubbard, Craddock, Flynn, Anderson, & Ethridge, 1997; Simpson, Joe, Rowan-Szal & Greener, 1997). Similar trends were found in another study (Liberty et al., 1998). Their study of therapeutic communities found that length of time in treatment rather than specific treatment programs within therapeutic communities accounted for clients' decreases in substance use. Despite this trend, therapeutic communities often experience a gravely impairing attrition rate.

According to De Leon, Hawke, Jainchill, and Melnick (2000), those admitted into therapeutic communities typically leave treatment before behavioral gains indicating treatment success are achieved. The authors also state that the dropout rate is highest during the first 30 to 60 days following admission, and then it proceeds to level off to a lower but constant rate. Currently, efforts are being made to reduce the likelihood of early dropout from therapeutic communities in order to increase and stabilize potential benefits of the treatment strategies typically associated with therapeutic communities. It seems that until the daunting issue of high attrition rates is reduced, the effectiveness of therapeutic communities will remain unclear.

Developmentally, this type of intervention could benefit by addressing normative developmental themes associated with adolescence. Since there is a growing body of literature that suggests that adolescence is associated with normative experimentation with substance use and other risk-taking behaviors (Arnett, 1992), treatment formats and strategies should reflect these critical developmental issues. For example, many adolescents may feel some ambivalence as to whether or not they want to decrease or stop substance use because experimenting with alcohol or drugs is typically a normative adolescent experience related to assuming more adult behaviors and roles. Most

therapeutic communities lack this perspective, and treatment outcomes may benefit by including discussions regarding the degree of the client's ambivalence associated with reducing or abstaining from substance use.

Cognitive-Behavioral Approaches

The fourth prototypical model consists of cognitive-behavioral approaches to treat adolescent substance use problems. This approach views substance abuse as a learned behavior that is amenable to modification through the application of cognitive and behavioral strategies. Cognitive-behavioral techniques attempt to alter a client's thinking as a means to change his or her behaviors (Latimer, Winters, D'Zurilla, & Nichols, 2003). Typical treatment goals focus on the factors that precede and maintain substance use (Beck, Wright, Newman, & Liese, 1993). In addition, these authors state that the typical skills that are central to most cognitive-behavioral substance use interventions include the development of coping skills, such as substance refusal skills and communication skills.

Recent studies have been conducted to evaluate the efficacy of cognitive-behavioral strategies on patterns of post-treatment substance use. Latimer, Winters, D'Zurilla, and Nichols (2003) implemented rational emotive therapy, problem-solving therapy, and learning strategy training as part of an integrated multi-systems treatment (IFCBT) for adolescent substance abuse. The findings of this study demonstrated significant reductions in post-treatment substance use, higher scores for rational problem solving and learning strategies, and lower scores for problem avoidance among adolescent substance abusers. However, limitations of the study were also noted. The

study included a small sample and there was an underrepresentation of both females and youth from ethnic or racial minority groups.

Cognitive-behavioral approaches, as an intervention for adolescent substance abuse, are currently producing positive outcomes. In particular, evaluation results are promising when cognitive-behavioral strategies are paired with a multi-systemic framework that acknowledges key interpersonal transactions that occur among adolescents and other family members, considers the salience of overall family functioning, and how multiple contextual or environmental factors may contribute to the onset and maintenance of adolescent substance use problems (Beck, Wright, Newman, & Liese, 1993; Waldron et al., 2001). However, many cognitive-behavioral modalities have yet to incorporate a comprehensive, developmentally appropriate model for the treatment of adolescent substance abuse. The cognitive-behavioral strategies that focus on the normative reasons why an adolescent may not be motivated to change, and why he or she may remain ambivalent about modifying substance-related attitudes and behaviors is lacking within this body of literature. Cognitive-behavioral modalities that include a component addressing motivation are typically using motivational interviewing strategies as a supplement (Barrowclough et al., 2001). Perhaps if cognitive-behavioral approaches incorporated issues surrounding motivation and ambivalence and their links to core issues related to adolescent developmental transitions, improved treatment outcomes would result. This intervention modality would then appear more developmentally appropriate, with additional potential increases in both successful treatment outcomes and their long-term maintenance.

Based on this review of the literature, and with regard to the approaches mentioned thus far, as interventions for adolescent substance abuse are implemented, one critical factor to address is whether these treatment approaches are developmentally appropriate for adolescents. Most adolescents experiment with alcohol as an opportunity to give up childhood tendencies, and to experiment with and explore new behaviors, including adult-like roles (Spear, 2000b), leaving most adolescents with ambivalent feelings about changing their current substance use patterns. Typically, these developmentally normative themes of adolescence are not reflected in abstinence-based intervention strategies or other potentially developmentally inappropriate interventions, and this may be a factor contributing to low or inconsistent levels of treatment engagement and effectiveness as indexed by treatment outcomes.

Instead, adolescents may benefit from harm-reductions models that are designed to decrease the potentially harmful consequences of alcohol or drug use, but do not necessarily recognize abstinence as a necessary and ultimate outcome of treatment. One of the main principles of the harm reduction approach is that some use of alcohol is a common human experience (riley et al., 1999). Abstinence is placed on a continuum along with other alternative options for specific treatment goals as one potential resolution for maladaptive patterns of substance use. One treatment modality that has included multiple developmentally appropriate characteristics, including a harm reduction philosophy is a brief motivational intervention such as motivational interviewing (MI).

Motivational Interviewing

Motivational interviewing is one type of therapeutic modality that offers an effective way to engage adolescents of other difficult to engage populations that use substance and this approach is consistent with a harm reduction philosophy. Motivational interviewing is a more recent intervention approach used to treat substance use. According to Miller, Yahne, and Tonigan (2003), motivational interviewing is a directive, client-centered brief intervention that elicits behavior changes by helping clients resolve and explore their ambivalence about making such decisions. This approach has been cited as one of the most influential and promising treatment strategies for substance abuse problems (Miller & Rollnick, 1991). Motivational interviewing as a clinical intervention strategy was developed to increase client's intrinsic motivation to change substance use.

Motivational interviewing has been derived from the Transtheoretical Model of Behavior change (Prochaska & DiClemente, 1984) and integrates several stages, processes, and levels of human behavior change. According to the Transtheoretical Model, there are five stages that people progress through in order to reach sustainable behavior change. These stages include *precontemplation*, *contemplation*, *preparation*, *action*, and *maintenance*. *Precontemplation* occurs when there is an initial complete lack of self-perceived need to change. *Contemplation* is the next stage characterized by ambivalence and inaction where both the pros and cons of behavior change are being weighed. The third stage is labeled *preparation* whereby change options and alternatives to behavior change are explored. The fourth stage focuses on *action* in which the actual behavior change occurs, followed by the *maintenance* that focuses on maintaining or

preserving desired behavioral changes. Motivational interviewing follows tenets of the Transtheoretical Model and is based on the notion that change occurs when an individual perceives a discrepancy between their current status related to a target behavior and a desired status or pattern of behavior change, as well as when alternative courses of action are being considered (Kanfer, 1986).

According to Miller and Rollnick (1991), motivational interventions can enhance clients' motivation to change current substance use patterns in several ways. First, the authors state that motivation can be increased by giving advice to clients through collaboratively generating an "options and actions" plan to reduce the likelihood of triggers for substance use, and assisting clients in practicing substance use refusal skills. Another principle of motivational interviewing, that can remove barriers to change, is allowing clients as much perceived choice as possible throughout the treatment process. Allowing clients the opportunity to generate their own treatment goals can foster a sense of self-efficacy within clients that was lacking prior to treatment. A third strategy associated with motivational interviewing is decreasing the attractiveness of alcohol or other substance use, and providing personalized feedback that compares the individual's patterns of substance use with the reported averages of normative populations or reference groups. Last, clients are encouraged to connect with a therapist through the mutual exchange of expressed values and other personal information. These strategies can increase the level of motivation that clients have to change current substance use behaviors.

In addition, Sobell and Sobell (1993) reviewed several central features of motivational interviewing that make this approach effective and appropriate for a broad

range of populations. These features consist of: the avoidance of labeling the client as a substance abuser, and using an inquisitive rather than confrontational interaction style to raise the client's awareness of the risks and consequences related to maladaptive patterns of substance use. Also, these authors believe that (a) providing objective feedback to clients in a low key style in order to reduce client resistance and (b) reassuring clients that change is possible are key features of motivational interviewing. Finally, motivational interviewing allows therapists to follow the client's choices in treatment planning and goal setting. Related literature (Sobell et al., 1993, 1998; Sobell, Sobell & Leo, 2000) suggests that client-centered treatment and goal planning increases the client's commitment to change.

Studies of brief motivational interventions have demonstrated their effectiveness in reducing substance use as documented by significant treatment outcomes compared to more traditional treatment modalities (Bien, Miller, & Tonigan, 1993). In particular, motivational interventions are considered an optimal strategy in contrast to other behavior-change strategies, especially for individuals whose attitudes toward substance use reduction fall in the precontemplation or contemplation stages. Heather, Rollnick, Bell, and Richmond (1996) found that motivational interviewing for problem drinkers was significantly more effective than behavior change skills training for classified as precontemplators and contemplators. In contrast, the motivational interviewing and behavioral change strategies were both significantly effective for client classified as endorsing statement indicative of later stages of change. Similar efficacy-related results were also demonstrated in other studies (e.g., Burke, Arkowitz, & Dunn, 2002). These

findings suggested that motivational interviewing and behavior-change treatment strategies showed comparable outcomes against untreated control groups.

Several forms of motivational interviewing have been created in order to adapt this modality to the unique needs of specific clinical populations. For instance, dual diagnosis motivational interviewing was modified from motivational interviewing in order to treat substance-abusing individuals with psychotic disorders. Several studies have applied the principles of motivational interviewing to patients who have both psychotic disorders and co-occurring substance use problems (Martino, Carroll, O'Malley, & Rounsaville, 2000; Martino, Carroll, Kostas, Perkins, & Rounsaville, 2002). Based on a pilot study, their findings demonstrated significant improvements for dually diagnosed patients based on a one-session motivational interview. Another pilot test of motivational interviewing as an introduction for groups of dually diagnosed inpatients also documented the beneficial effects of this therapeutic approach (Van Horn & Bux, 2001). Motivational interview group participants appeared more engaged and appeared to benefit from exploration of their ambivalence regarding change. Motivational interviewing for dually diagnosed populations seems to be a promising new approach for reducing problems associated with co-occurring maladaptive patterns of substance use and serious mental health problems.

Motivational interviewing serves as a significant and potentially efficacious strategy for treating adolescent substance abuse problems. This approach is well suited to treat adolescents given that they commonly report a strong likelihood of engaging in substance use or indifference regarding reduction of alcohol use (Zucker, 2000). In addition, motivational interviewing is central to negotiating client resistance and

addressing ambivalence or indifference regarding substance use (Heather, Rollnick, Bell & Richmond, 1996). This approach is appropriate for a majority of adolescents because it acknowledges their needs for autonomy while normalizing adolescent experimentation with drug or alcohol use.

The effectiveness of motivational interview treatments among adolescent substance abusers has only begun to receive empirical attention, and thus far the results look promising. Roberts, Neal, Kivlahan, Baer, and Marlatt (2000), randomly assigned adolescent participants to a two-session brief motivational intervention comprised of a 1 hour assessment and a 1 hour feedback interview or a no-treatment control group. At the 2-year follow-up, there were significant reductions in alcohol consumption in the motivational interview group compared to the control group, and at the 3-year follow-up participants in the motivational interview group reported additional reductions in drinking behavior (Masterman & Kelly, 2003). Another study (Monti et al., 1999) used a sample of adolescents treated in an emergency room (ER) setting following an alcohol-related event, and randomly assigned adolescents to either motivational interviewing or standard care. The findings suggested that adolescent patients who received motivational interviewing had significantly lower incidences at follow-up of drinking and driving, traffic violations, alcohol-related injuries, and alcohol-related problems than those who received the standard care condition. The results also documented that all participants still demonstrated reduced levels of alcohol use at the 3-month follow-up, regardless of assigned intervention condition and participants reported that the motivational intervention reduced harmful consequences associated with alcohol use, rather than solely reducing their alcohol use.

Motivation for treatment success is central to address since most adolescents presenting for treatment are referred by a parent, school official, or the juvenile justice system, (i.e., treatment participation is not completely voluntary) (Muck, Zempolich, Titus, & Fisherman, 2001). A study conducted by Lincourt, Kuettel, and Bombardier (2002), examined the effectiveness of a pre-treatment, group-based motivational enhancement program for mandated clients who were unable to identify initial treatment goals. The results of the study indicated that court-ordered clients who attended the group motivational interviewing session were significantly less likely to meet criteria for substance abuse dependence, more likely to attend treatment sessions, and more likely to complete treatment successfully, compared to a control group. Therefore, motivational interviewing is a promising approach for promoting better engagement and participation in substance abuse treatment programs among mandated individuals, including adolescents.

Currently, brief intervention models have been modified from motivational interviewing interventions based on the notion of natural recovery or self-change (Sobell, Sobell, & Toneatto, 1992). Natural recovery approaches are drawn from the premise that individuals with substance problems are able to remit or recover from substance use on their own. According to a Canadian general population survey, natural recovery is the predominant and most common pathway to recovery from alcohol problems (Sobell, Cunningham, & Sobell, 1996). In addition, research has indicated that natural recoveries are especially prevalent for individuals who are mildly to moderately dependent on alcohol and drugs, as opposed to individuals who are severely dependent (Sobell, Cunningham, & Sobell, 1996). Despite stereotypes within the alcohol studies field that

alcohol abusers are unable to recover without treatment, natural recovery has become a recognized pathway to recovery (American Psychiatric Association, 2000).

Interest in the cognitive processes associated with natural recovery processes has also grown. According to Sobell and Sobell (1993), decisional balance theory describes the cognitive appraisal process related to consideration of the antecedents and consequences of substance use that contribute to the facilitation of the self-change process. Several studies have been able to empirically support that a cognitive appraisal process has been linked to self-change resolutions of substance problems. For example, Sobell, Sobell, Toneatto, and Leo (1993), found that a significant percentage of individuals (57%) who recover from alcohol or drug abuse without treatment engaged in an identifiable cognitive appraisal process. The cognitive appraisal process was described by the participants as mentally weighing the perceived costs and benefits of continued alcohol or drug abuse versus reducing or stopping current patterns of use. These participants decided ultimately that the consequences of continued excessive drinking or drug use outweighed the benefits of alcohol and drug use.

Guided Self-Change

Based on current empirical support for motivational interventions, natural recovery processes and the decisional balance theory, brief self-change treatment approaches have been created to help individuals who abuse alcohol and other illicit substances to analyze and guide their own behavior change processes (Sobell et al., 1996). Self-change treatment approaches have also been able to address treatment issues neglected by other modalities. These factors include: the need for outpatient treatment for

individuals whose substance problems are not severe, the need for effective brief interventions, and a greater emphasis on self-control processes (Sobell et al., 1993).

Thus far, self-change interventions are demonstrating impressive results. A study that used the self-change approach was implemented by Sobell et al., (2002), and utilized a self-change, community-level mail intervention based on natural recovery studies. The results demonstrated that participants who engaged in the self-change intervention exhibited significant reductions in alcohol use over the year following the intervention. This self-change intervention continued to demonstrate positive changes in alcohol and drug use reduction among adults recruited into this evaluation.

Self-change approaches have been further refined to address specific motivational aspects of changing patterns of substance abuse, the ambivalence regarding behavior change addressed by decisional balance theory, and other skills needed in order to reduce and prevent relapse of drug and alcohol problems. These self-change factors have been incorporated into a new treatment strategy called Guided Self-Change. Guided Self-Change is a brief skills-oriented motivational intervention for addressing drug and alcohol problems (Sobell & Sobell, 1998). Guided Self-Change uses motivational, behavioral and cognitive engagement strategies along with the client's personal experiences to personalize treatment targets, change strategies, and implement substance use goals (Gil, Tubman, & Wagner, 2001). Such guided self-change strategies have produced positive results with regards to the reduction of excessive alcohol consumption. For example, a study conducted by Andreasson, Hansagi, and Osterlund (2002), found that Guided Self-Change strategies significantly reduced alcohol dependence and negative consequences of alcohol use at the 9- and 23- month follow-up periods.

Currently, Guided Self-Change approaches have been implemented with adolescents. For example, a group-based substance abuse intervention for adolescents was evaluated that employed either a motivational interviewing approach or a counseling overview approach during the initial stages of treatment in order to prepare participants for treatment engagement (Battjes et al., 2004). The results demonstrated that participants who received motivational interviewing significantly reduced marijuana use at both the 6- and the 12-month follow-up points. Guided Self-Change treatment materials and strategies have been modified to be more developmentally appropriate for use with juvenile offenders (Tubman, Wagner, Gil, & Pate, 2002). In the ATTAIN program, the context for the current study, a treatment manual has been devised that describes the implementation of five sessions of Guided Self-Change for juvenile offenders. The five sessions are highlighted accordingly below.

The first session emphasizes the objectives of GSC treatment, which are to acknowledge and reduce current patterns of substance use. Individualized feedback on his or her patterns of substance use is provided to the adolescent. This personalized feedback compares the adolescent's levels of substance use with the reported averages of comparable peer groups. The therapist engages the adolescent in a decisional balance exercise, and allows the adolescent to set personal goals for treatment. Self-monitoring exercises are also covered in this session.

The second session allows adolescents to review and compare patterns of substance use reported as occurring during the previous week with current substance use. The adolescent learns about and examines triggers, and the consequences of triggers for substance use. Additionally, this session addresses and normalizes the occurrence of

“slips” and how to manage them, and reviews homework assignments. Finally, adolescents obtain feedback on situations involving substance use, and the therapist discusses with the adolescent his or her perceptions of self-reported substance use problems.

In the third session, the previous week’s patterns of substance use are again reviewed and compared, and the therapist and adolescent examine salient feelings and experiences that impact adolescent problem behaviors. Also, refusal and social skills training exercises are completed, and the therapist and adolescent develop an options and actions plan for negotiating substance use and trigger situations. Personal priorities are addressed and a change plan is developed.

During the fourth session, adolescents examine a second assessment of substance use situational confidence profiles and compare their responses to their responses collected during a baseline assessment. Then the previous week’s patterns of substance use are reviewed along with how the options and actions plans were used to negotiate recent substance use situations. Finally, general causes of stress are reviewed along with how to minimize and cope more efficiently with stress.

The fifth session involves reexamining and discussing goals for change, addressing the past week’s substance use, creating a list of short- and long-term life goals, re-evaluating the adolescent’s perceptions of his or her substance use problems, and generating a list of positive social support resources for maintaining positive behavioral changes. An additional adaptation of Guided Self-Change for adolescents is that they are allowed to request up to two additional sessions upon completion of the fifth session. These booster sessions may be used to address concerns, to review GSC

materials, or to promote relapse prevention. There are two treatment delivery formats of GSC in the ATTAIN program: individual and family format. The family delivery format follows the same manual-based treatment as the individual format but incorporates an additional family member to provide social support for behavior change.

Guided self-change intervention strategies have been tailored for adolescent populations in order to ensure a developmentally appropriate substance abuse intervention modality. Yet, the central features of Guided Self-Change such as the focus on motivation, ambivalence, and client-centered behavior change goals are also preserved in the Guided Self-Change format designed for adolescents. The principles of Guided Self-Change reflect the desires of most adolescents to be autonomous, self-managing individuals. Adolescents participating in Guided Self-Change are encouraged to develop their own goals for change related to substance use patterns and to create their own strategies to reduce the likelihood of responding in a maladaptive manner to salient triggers. Also, adolescents are encouraged to develop their own customized options and actions plans for dealing with triggers or other situations that may foster alcohol or other drug use.

The Guided Self-Change framework acknowledges that abstinence from alcohol or other substances, for adolescents, does not necessarily reflect important developmental themes associated with core transitions of adolescence. Instead, Guided Self-Change treatment goals can accommodate a wide range of choices regarding potential changes in substance abuse patterns, from reducing current substance use patterns to eliminating all substance use. Adolescents in Guided Self-Change treatments choose the type of goals that they perceive as feasible and manageable. During adolescence, experimentation,

risk-taking, and exploration of various adult-like roles are hallmark features of this life transition. These types of characteristics are reflected in the strategies incorporated in Guided Self-Change treatment because they enable this intervention to be a developmentally appropriate treatment modality for adolescents.

In addition, since a substantial number of adolescents are court-ordered into substance abuse treatment programs, versions of the Guided Self-Change intervention modality have been designed to be effective for juveniles as well (Gil, Tubman, & Wagner, 2001). The GSC materials reflect the types of problems associated with adolescent alcohol and drug use, such as risk behaviors, coping with stress, and social skill deficits (Sobell & Sobell, 1993, 1998; Tubman et al., 2002). The GSC format acknowledges that mandated adolescents may not be motivated to change substance use behaviors, and this intervention modality allows adolescents to express and explore ambivalence associated with changing current maladaptive patterns of substance use.

Therapeutic Process and Guided Self-Change Strategies

Thus far, this review has discussed key factors associated with adolescent substance abuse. This paper has also explored the developmental characteristics of adolescence that are linked to adolescent substance use, and family processes that contribute to or moderate adolescent substance use. Prototypical adolescent substance abuse treatment programs have been described, their putative effectiveness summarized, and their developmental appropriateness evaluated. Finally, the Guided Self-Change intervention for adolescents has been described. This intervention modality reflects a contemporary, promising approach for reducing or promoting behavior change in adolescent substance abuse and demonstrates specific treatment principles that are

developmentally appropriate for the period of adolescence. The assumptions of Guided Self-Change cast this treatment as developmentally appropriate, and empirical studies are finding that GSC is an effective intervention for intervening in substance use problems among adolescents (Colby et al., 1998; Monti et al., 1999). Yet, more empirical knowledge is needed to address how processes within this therapeutic modality influence the effectiveness of GSC among adolescents receiving this intervention. Specific treatment processes are central components of the impact of standard counseling interventions, including Guided Self-Change, and these will be described in the next section of this review.

Client and Therapist Characteristics Related to Treatment Process

One of the main goals of treatment process research is to study interactions between therapists and clients and to identify key change-related processes within these interactions, as well as outcomes specified by the intervention (Greenberg & Pinsoff, 1986). Multiple variables have been identified as influential contributing factors in the context of treatment process. Among these factors, influencing overall treatment process, are key characteristics of both the client and the therapist. Both client and therapist characteristics have been addressed within the treatment process literature in order to evaluate their contribution to the therapeutic process, as well as treatment outcome or success. Several client attributes that have been linked empirically to the treatment process and therapeutic success include, but are not limited to the following: client expectations, social class, personality, diagnosis, age, sex, intelligence, and length of disturbance (Foon, 1986; Garfield, 1994; Lam & Sue, 2001).

One review of empirical studies found that client expectations, in particular, play a central role in contributing to treatment process and can be linked significantly to treatment outcome (Glass, Arnkoff & Shapiro, 2001). According to another study, clients demonstrate a range of beliefs about treatment and if these beliefs are incongruent with the actual treatment they receive, clients can become dissatisfied and withdraw from the intervention (Rice & Greenberg, 1984). In other words, when clients' expectations regarding therapy are overestimated, clients have a strong likelihood of discontinuing with therapy. The findings of another study (Bachelor, 1995) suggested that the clients' perceptions of their level of trust of the therapist, therapist friendliness, and the level of insight the therapist demonstrated toward the client shaped clients' expectations, and subsequently positively influenced the level of alliance between therapist and client.

Specific characteristics of the therapist are also a source of empirical investigation as contributing factors to the success of treatment process. Among the observable qualities of therapists that have been previously investigated in the research literature are age, sex, gender, professional background, and therapeutic style (Garfield, 1994). In addition, salient internal qualities of the therapist consist of the following characteristics: personality and coping patterns, emotional well-being, personal values, cultural attitudes, therapeutic relationships, social influence attributes, expectancies, and theoretical philosophy or orientation. Both observable and internal therapist qualities can play a critical role in the therapeutic relationship, as well as the overall treatment process. Hartley and Strupp (1983) identified therapist behaviors that were detrimental to the therapeutic relationship. These behaviors included the following: the therapist imposing his or her own values, fostering dependency, making irrelevant comments, and using

inappropriate interventions. A similar study reported that therapists who exhibited poor alliance ratings were characterized by clients as exploitive, critical, moralistic and defensive. In addition, these therapists were reported to have lacked warmth, respect, and confidence (Eaton, Abeles, & Gutfreund, 1993). These studies highlight the point that specific qualities of therapists have significant influences on specific treatment processes, and therapists possessing undesirable attributes can impede or diminish the development of a salient alliance with their clients.

Therapeutic Alliance Background and Definition

Treatment process research typically investigates therapeutic process factors, including therapeutic alliance (Bordin, 1975). Therapeutic alliance has been acknowledged as an important component of therapeutic relationships and therapist-client interaction (Meissner, 2004), and has been established as a common factor across therapeutic modalities as a means for explaining treatment outcome (Lambert & Bergin, 1994). The construct of therapeutic alliance is a conceptual cornerstone of treatment process research and has often been used as a dependent variable to investigate core hypotheses and research questions concerning the factors associated with change processes related to the efficacy of therapeutic interventions. Therapeutic alliance is now considered as the “quintessential integrative variable” of therapy (Woolfe & Goldfried, 1988, p. 449).

The conceptualization of therapeutic alliance can be traced back to the psychodynamic tradition (Saketopoulou, 1999). Sigmund Freud (1958) stated that an attachment by the client toward the therapist (i.e., transference) is a key element to successful analysis, and the conscious aspect of transference is the collaborative alliance

between the client and therapist. In addition, Zetzel (1956) claimed that the therapist-client alliance depends on the client's ability to use healthy aspects of the ego as an ally with the therapist, and this idea serves as the origin of the concept of therapeutic alliance. Although the concept of therapeutic alliance originated in the psychoanalytic literature, the humanistic tradition also influenced early conceptualizations of therapeutic alliance (Kirschenbaum & Jourdan, 2005). Carl Rogers (1951) stated that the patient-therapist relationship is in itself therapeutic, and individual change is contingent upon the therapist displaying a warm, understanding, and empathic stance toward the client. In other words, Rogers's (1957) conception of the therapeutic relationship influenced significantly theoretical and empirical interest in the concept of therapeutic alliance as an essential component of therapy.

In more recent formulations, therapeutic alliance, a transactional variable, has been broadly defined as the collaborative and affective bond between therapist and client (e.g., Bordin, 1975; Martin, Garske, & Davis, 2000). Horvath (2001) also studied the therapeutic alliance construct extensively and included a cognitive aspect that encompassed a collaborative and active commitment to the goals of therapy and the means by which these goals are reached. In addition, Greenson (1967), whose work is generally associated with the conceptualization of working alliance, has noted that there is a clear distinction between the concepts of therapeutic alliance and working alliance. He contended that the therapeutic relationship consists of three components: the working alliance, the transference relationship, and the real relationship (Kokotovic & Tracey, 1990). He claimed that the concept of working alliance emphasizes the patient's ability to work purposefully in treatment, whereas therapeutic alliance highlights the bond between

the therapist and the client. Subsequently, since the inception of the construct of therapeutic alliance, it has been linked to the notion of working alliance due to some related conceptual origins.

According to Andrusyna, Tang, DeRubeis and Luborsky (2001), although the concept of therapeutic alliance has been accepted as an important indicator of treatment success across most major theoretical modalities (i.e., psychoanalytic, family-based, humanistic) the saliency of alliance within cognitive-behavioral therapy remains ambiguous. The controversial role of alliance within cognitive-behavioral therapy is centered on the temporal sequence in the formation of alliance; a discrepancy exists as to whether alliance influences outcome or if the outcome influences the alliance (p. 174). The investigation of alliance within the framework of cognitive-behavioral therapy is sparse, and mixed with regard to findings (Raue & Goldfield, 1994). However, the alliance studies that have been conducted in the context of cognitive-behavioral therapy follow Bordin's (1979) model of alliance: bonds, tasks, and goals that have been conceptually captured in the Working Alliance Inventory (Horvath & Greenberg, 1994). Based on a thorough literature review, the conceptual boundaries between therapeutic alliance and working alliance often seem vague, however the following literature review will attempt both to describe their similarities and delineate their differences.

Working Alliance Defined

Since the theoretical inception of the therapeutic alliance construct, other similar, yet potentially distinct, conceptual dimensions of therapeutic process have evolved, including working alliance (Greenson, 1967) and client involvement. According to Beutler, Machado, and Neufeldt (1994) therapeutic alliance is an overarching construct

and a general heading for related constructs that address therapeutic alliance, as well as other specific therapeutic process factors. One related concept is working alliance. Bordin (1976) modified Greenson's (1967) notion of the working alliance to include an emphasis on a collaborative partnership between therapist and client, as well as three central components: bonds, tasks, and goals. According to Horvath and Greenberg's (1989) conception of working alliance, the meaning of bonds includes the interpersonal dynamics between therapist and client, such as mutual trust, acceptance, and confidence. Tasks refer to the behaviors and cognitions that occur within the therapy session that contribute to the foundation of the therapeutic process. The authors suggest that both therapist and client should perceive these tasks as relevant and efficacious and be willing to accept the responsibility to perform such tasks. Last, the working alliance is characterized by goals that are collaboratively set by both therapist and client and serve as the target of ongoing intervention. Also, Horvath et al. (1989) generated the Working Alliance Inventory (WAI) as a means of measuring nonspecific (theoretical and technique-related) variables impacting the likelihood of successful outcomes in counseling. These authors stated that working alliance, as a treatment process variable, provides opportunities to investigate therapeutic processes across theoretical approaches to contribute to uncovering key factors involved in successful treatment outcome.

Therapeutic Alliance and Working Alliance Overlap

In general, there is an overall disagreement about the therapeutic alliance construct, which has been previously demonstrated to be a challenging and ambiguous operational definition when attempting to draw empirical conclusions. According to Bordin (1979), although there are multiple alliance-related conceptualizations, current

empirical studies often still use therapeutic alliance and working alliance interchangeably. Despite the apparent lack of conceptual clarity, most current definitions of the therapeutic and working alliance include three tenets: the collaborative nature of the therapeutic relationship, the affective bond between therapist and client, and the therapist's and client's ability to agree on treatment goals and tasks. Gaston's (1990) notion of the multiple conceptualizations of therapeutic alliance echoes these cross-cutting components. Gaston systematically integrated various definitions of therapeutic alliance that are found in most rating scales and discovered four components: the patient's affective relationship with the therapist, the patient's capacity to purposefully work in therapy, the therapist's empathic understanding and involvement, and patient-therapist agreement on the goals and tasks of therapy.

Client Involvement Defined

The concept of client involvement as a treatment process factor, is closely related to the concept of therapeutic alliance, and has been considered an excellent predictor of treatment outcome (Gomes-Schwartz, 1978). Accordingly, this client variable reflects, both the client's participation in therapy, as well as the client's hostility and resistance to therapy (Garfield, 1994). Other alliance-related studies suggest that client involvement also includes optimism, perceived task relevance, and responsibility (Greenberg & Pinsof, 1986). When client involvement is paired with therapeutic alliance in empirical studies, a comprehensive perspective of the treatment process can be described.

Empirical Investigations of Therapeutic Alliance and Working Alliance

Treatment process research has been conducted over the past several decades with a narrow focus on more traditional modes of general treatment interventions, i.e.,

psychoanalytic and person-centered therapies (Horvath & Luborsky, 1993). The empirical examination of the therapeutic alliance and working alliance constructs has increased due to consistent findings that there is a significant relationship between the quality of the alliance and therapeutic outcome (Martin, Garske, & Davis, 2000). These researchers conducted a meta-analysis to identify underlying patterns described in the therapeutic alliance literature. The findings of the investigation demonstrated moderate, yet consistent, relations between scores for therapeutic alliance and the quality of specific treatment outcomes.

Studies of both therapeutic alliance and working alliance have demonstrated significant findings across multiple populations and theoretical approaches. For example, an empirical investigation was conducted between alliance, including therapeutic alliance and working alliance, and outcomes within child and adolescent therapy (Shirk & Karver, 2003). The types of developmental, therapeutic treatments for this study included cognitive-behavioral, psychodynamic, client-centered, and eclectic. Each treatment was coded as individual, family, or parent training format. The results of the study suggested significant and consistent associations across developmental levels and across therapeutic orientations and formats for child and adolescent therapy.

A study by Taft et al. (2003) examined treatment process and treatment adherence among participants experiencing partner-related domestic violence using a cognitive-behavioral intervention. The results indicated that therapist working alliance ratings were significantly associated with lower levels of physical and psychological abuse at the 6-month follow-up and were significant predictors of treatment outcome. Another study conducted by Lorentzen, Sexton, and Hoglend (2004) evaluated relations between

therapeutic alliance, cohesion and clinical outcomes for a long-term therapy approach. The results suggested significant associations between the therapist's early ratings of therapeutic alliance with positive outcomes related to client's symptoms.

Empirical Investigations of Client Involvement

The concept of client involvement, as it relates to therapeutic and working alliance, has received a modest amount of empirical attention. Based on a review of the treatment process literature, a few dated, yet substantial studies were found that investigate the implications of client involvement. The first study, conducted by Wiseman and Rice (1989), focused on therapist-client interactions within the process of clinically based change events. Specifically, the therapist's behavior was rated in order to understand the level of the client's engagement within the therapeutic process. The findings demonstrated significant interactions between the therapist's vocal quality and the client's level of engaging in the treatment process.

The second study was facilitated by Windholz and Silberschatz (1988), and used the Vanderbilt Psychotherapy Process Scale (VPPS) to investigate relations between treatment process and outcome for brief psychodynamic psychotherapies. According to this study, client involvement was referred to as patient involvement and operationally defined as patient participation and patient hostility. This study used an adult-outpatient population and found significant associations between the therapist's rating of outcome and patient involvement. This study was based on two previous studies (Gomes-Schwartz, 1978; O'Malley, Suh, & Strupp, 1983) that will be reviewed as well.

Using an earlier edition of the Vanderbilt Psychotherapy Process Scale, O'Malley et al. (1983) were able to describe significant correlations between the process dimension

of patient involvement (i.e., client involvement) and therapeutic outcome. In addition, these significant correlations were based on the perspectives of the patient, therapist, and evaluator. This study also found that the third session of therapy was the most meaningful predictor of outcome for most treatment process variables, including both therapeutic alliance and patient involvement. The empirical investigation conducted by Gomes-Schwartz (1978) was one of the preliminary studies validating the Vanderbilt Psychotherapy Process Scale. As was found in the replicated studies already described, the therapist's ratings of outcome (overall change ratings and target complaints) correlated significantly with patient involvement. Patient involvement was also significantly related to the evaluator's overall change ratings.

Empirical Investigations of Treatment Process and Dropout

A plethora of studies have been conducted that addressed the associations between general alliance (i.e., therapeutic alliance, working alliance, and client involvement) and treatment outcome, across theoretical orientations (i.e., psychoanalytic, humanistic, and cognitive-behavioral), and have found that alliance is consistently related to treatment outcome (Horvath & Symonds, 1991; Horvath & Luborsky, 1993; Safran & Muran, 1995). Findings from meta-analytic reviews have established the therapeutic alliance as a significant predictor of treatment outcome (Martin, Garske, & Davis, 2000). Although assessing relations between treatment process and treatment outcome is a valuable indicator of treatment success, another key objective of substantial importance is the investigation of treatment process variables (i.e., therapeutic alliance, working alliance, and client involvement) and their associations with treatment completion and treatment dropout.

Investigations have been conducted that explore the antecedents for treatment dropout, although the current literature remains sparse. General factors that have been established as predictors of dropout within the adolescent substance-using population include: parental stress; degree of adolescent's anti-social behavior; adverse parenting practices; parental psychopathology, economic factors; and referral source (Gould, Shaffer, & Kaplan, 1985; Kazdin, Stolar, & Marciano, 1995). However, knowledge of the domain of treatment completion and dropout within the treatment process literature remains insufficient with regard to studies of treatment of adolescent substance use problems. A few studies have examined relations between general alliance and dropout and their results are mixed. One study (Robbins, Turner, Alexander, & Perez, 2003) assessed relations between general alliance and retention in family therapy. General alliance was measured individually for both parent and adolescent, as well as at the family level. The results demonstrated that individual measures of parent and adolescent alliance did not predict retention, but those adolescents who dropped out of treatment showed lower scores on alliance measures.

Another study offered more promising results. Piper et al. (1999) investigated treatment process as a predictor of treatment dropout in a brief, interpretive individual therapy as part of a randomized clinical trial. A sample of dropouts was compared to a sample of matched completers on both demographic (i.e., major demographic, diagnostic, and disturbance) and treatment process (i.e., alliance, work, exploration, transference) variables. The results indicated that the treatment process variables differentiated significantly between treatment dropouts and completers. The treatment dropouts demonstrated lower alliance scores, less work, less exploration, and a greater focus on

transference. In addition, Piper et al. reported that none of the demographic variables significantly differentiated the two groups.

Gaps in Current Literature and Relevance of the Current Study

Although the empirical literature on general alliance is abundant among more traditional clinical treatment modalities, the roles of the therapeutic alliance, working alliance and client involvement dimensions for brief motivational interventions such as Guided Self Change (GSC), remain understudied. Thus far, an extensive review of the literature suggests a lack of treatment process research for the motivational interviewing and GSC modalities for adolescent substance abuse treatment. For example, the closest related topics to general treatment process and substance abuse interventions included two studies. The first study examined how individual and family intervention formats related to specific treatment outcomes for a cognitive-behavioral adolescent substance abuse intervention and a multidimensional family-based intervention for adolescent substance abuse (Hogue, Liddle, Dauber, & Samuolis, 2004). The process-outcome findings of Hogue et al. demonstrated a significant relation for the family-based approach. The second study focused on relations between therapeutic alliance, treatment involvement and drinking outcomes. The results suggested that the degree of working alliance was a significant predictor of treatment participation and subsequent drinking behavior during treatment and throughout post-treatment follow-ups (Connors, Carroll, DiClemente, Longabaugh, & Donovan, 1997).

Examining treatment process variables and their unique contributions to GSC strategies for adolescent substance abuse is a critical component of understanding the factors that contribute to successful GSC therapy sessions, and serves as one of the major

foci in the current study. The developmental characteristics associated with adolescence, and how these factors may influence the treatment process creates an additional, unique set of influences. According to Oetzel and Scherer (2003), counseling adolescents is a challenging endeavor since most interventions were originally created for adults and therefore are not developmentally appropriate for young people. These challenges include engaging developmentally immature adolescents, overcoming the stigma that many adolescents associate with psychotherapy, as well as working with adolescents who feel forced into therapy. They contend that fostering a strong therapeutic alliance with adolescents will maximize the degree of therapeutic engagement, a factor that is critical to the success of most clinical interventions. Since GSC strategies seem to reflect a developmentally appropriate treatment approach, the developmental challenges previously described may be resolved based on the conceptual framework and intervention strategies of GSC. Therefore, GSC has the potential to demonstrate empirically the ability to foster significant levels of therapeutic alliance within adolescent populations, and ultimately, to maximize treatment outcome.

A study by Diamond, Liddle, Hogue, and Dakof (1999), raised similar concerns. They agree that building therapeutic alliance between therapist and client is central to successful outcomes, and that this process can become increasingly difficult with adolescent clients. They presume that adolescent autonomy development can have a direct influence on treatment process, and ultimately, upon therapeutic alliance. Church (1994) conducted a study that identified several therapeutic factors that preserve adolescent autonomy while strengthening the therapeutic alliance. These therapeutic factors include: the therapist portraying themselves as a partner rather than as an

authority figure, encouraging adolescents to work toward their own solutions, allowing the adolescent opportunities to convey negative feelings about the therapy and the therapeutic relationship, and providing reasonable structures within the therapy sessions. These same therapeutic factors are reflected within each session of the Guided Self-Change modality and are theoretically couched in the overall intervention format. The current study used a more restricted sample of 14- to 18-year-old, largely Hispanic/Latino males in order to capture a specific developmental period of adolescence which will minimize other sources of extraneous variables related to the ages of the adolescent client within the overall ATTAIN program.

In addition, the current study used the general treatment process variables (i.e., therapeutic alliance, working alliance, and client involvement) to distinguish between groups of adolescents who completed the ATTAIN program, and those adolescents who dropped out of the ATTAIN program after the first or second session. Since treatment processes, including general alliance, have been established as consistent indicators of treatment success across therapeutic modalities (Martin, Gerske, & Davis, 2000), the next critical step was to use treatment process variables to differentiate between treatment completers and their counterparts who leave therapy prior to completion. This serves as an important objective of the current study, since minimal research and empirical documentation has been conducted in the treatment process literature regarding adolescent substance abuse regarding associations between treatment process and dropout. Documenting associations between treatment process and dropout would extend the existing literature on treatment process and substance abuse treatment outcome. In addition, using treatment process variables to explore differences between treatment

completers and dropouts will inform research-practitioners and psychotherapists of additional treatment process characteristics that serve as antecedents to treatment dropout, as well as attrition from randomized clinical trials and other research-based treatment protocols. These potential findings will assist research-practitioners and psychotherapists to identify clients in future treatment interventions that are susceptible to dropping out of treatment. Therefore, this objective was the central focus of the current study.

The Current Study

Since the developmental appropriateness and effectiveness of the ATTAIN Guided Self-Change treatment modalities has received empirical support (e.g., Gil, Wagner & Tubman, 2004), the next step was to investigate how key treatment process variables, including the therapeutic alliance, working alliance and client involvement factors, differentiate subgroups of clients (i.e. treatment completers and dropouts) among a restricted sample of substance-using youth of majority Hispanic/ Latino ethnicity. Specifically, two key research questions were proposed as the main objectives of the current empirical investigation documenting scores for treatment process variables among: voluntarily- referred, substance-using, majority Hispanic/Latino males, 14 to 18 years old, who either completed the ATTAIN program or dropped out of the ATTAIN program after the first or second GSC treatment session. In addition, these research questions extended the current treatment process literature. These empirical questions are as follows:

Research questions:

1. Are measures of therapeutic alliance, working alliance and patient involvement significantly correlated among adolescent participants assigned to GSC treatment in the ATTAIN program?
2. Do treatment process variables differentiate between adolescents who completed GSC in the context of the ATTAIN program, and adolescents who dropped out of the ATTAIN program after the first or second session?

Hypotheses:

1. Treatment process variables (i.e., therapeutic alliance, working alliance, and client involvement) will be significantly intercorrelated within the context of GSC treatment in the ATTAIN program.
2. Specific treatment process variables (i.e., therapeutic alliance, working alliance, and client involvement) will differentiate significantly adolescents who completed the ATTAIN program from those adolescents who dropped out of treatment after the first or second session.

Chapter 3: Methods

Participants

The current study was a preliminary investigation of treatment process factors within GSC using a restricted sample in order to minimize extraneous variables that can potentially influence key processes involved in GSC treatment. The sample was restricted to the following demographic characteristics: majority Hispanic/Latino males, 14 to 18 years old, who were voluntarily participating in the Alcohol Treatment Targeting Adolescents in Need (ATTAIN) study conducted at Florida International University. Approximately 58 male participants were selected for the current study, from all participants who were referred to the ATTAIN program. The ATTAIN program implemented GSC treatment among a broader sample of adolescents ranging from 13 to 21 years old. In the overall study, participants were referred for substance abuse treatment by the Miami-Dade County juvenile justice system, as well as other non-judicial community sources, including alternative schools. Therefore, adolescents within the ATTAIN program consisted of two additional key subgroups: court-mandated and non-mandated adolescents. However, the current study focused on only the non-mandated adolescent subgroup since this group was the larger of the two subgroups with a significant number completing the program. In addition, mandated status may be a proxy for important extraneous variables, including psychopathology, cognitive deficits, or biases in arrest rates.

The demographics of the current study reflect the characteristics of the overall ATTAIN program and included a broad range of ethnicities. Adolescents examined in the current study were predominately (96.6%) drawn from minority population groups.

Hispanic-White adolescents constituted the largest portion of the sample (74.1%), followed by African-American (17.2%), White/non-Hispanic (3.4%) and Hispanic-Black (3.4%) adolescents. A small percentage of the participants (1.7%) identified their ethnicity as Other. The distributions of sample characteristics are presented in Table 1.

It is also important to note that, in the overall ATTAIN program, there was a larger percentage of males (90.8%) than females (9.2%), and while most of the participants (76.5%) were born in the United States, a smaller proportion (23.5%) of the sample included non-native born adolescents. In addition, based on the referral characteristics of adolescents in the ATTAIN program, 68.6% were referred for voluntary treatment from non-judicial community sources, such as alternative schools. With regard to the adolescents who completed the pre-treatment assessment, 19% did not enter treatment, and of those adolescents who did enter treatment, 19% dropped out of treatment. Thus, of those adolescents who completed pre-treatment assessments, 81% entered treatment, and of those adolescents who entered treatment, 81% completed the ATTAIN program.

Measures

The following section describes the measures that were used in the current study along with their psychometric properties. These scales included The Vanderbilt Psychotherapy Process Scale, The Working Alliance Inventory- Short, and the Treatment Completion Form.

Table 1

Demographic Characteristics of Participants (N = 58)

Characteristics	<i>n</i>	%
Age		
Mean	16.32	
Median	17	
Range	13 – 19	
SD	1.16	
Ethnicity		
White/Non-Hispanic	2	3.4%
Hispanic White	43	74.1%
Hispanic Black	2	3.4%
African American	10	17.2%
Other	1	1.7%

Therapeutic Alliance and Patient Involvement. One scale will be used to evaluate the construct of therapeutic alliance and patient involvement. The Vanderbilt Psychotherapy Process Scale (VPPS; Gomez-Schwartz, 1978) is comprised of 44 5-point Likert-type items with a response format ranging from *not at all* (1) to *a great deal* (5). The items assess six dimensions of therapist and client attitudes and behaviors: Negative Relationship (NR), Therapist Exploration (TEXP), Patient Participation (PPAR), Patient Psychic Distress (PPD), Therapist Warmth and Friendliness (TWFR), and Patient Dependency (PD). Examples of the items from the subscales include: the Negative

Relationship subscale, “Reacted negatively to therapist’s comments,” the Therapist Exploration subscale, “Tried to help the patient recognize his/her feelings,” the Patient Participation subscale, “Actively participated in the interaction,” the Patient Psychic Distress subscale, “Describe the patient’s demeanor and feelings of guilt during this hour,” the Therapist Warmth and Friendliness subscale, “Showed warmth and friendliness towards the patient, and the Patient Dependency subscale, “Tried to learn more about what to do in therapy and what to expect from it.” The current study utilized the external rater format of the VPPS for use with segments of taped ATTAIN therapy sessions. Adequate internal consistencies of individual subscales, and the predictive validity of a broad dimension of "patient involvement" (comprising the Patient Participation and Patient Dependency subscales) have been demonstrated in a scale revision study by Smith, Hilsenroth, Baity, and Knowles (2003). The authors found that the Cronbach’s alpha for the scale ranged from .81 to .96 across subscales, and interrater reliability, using Pearson correlation coefficients among the subscales, ranged from .79 to .94.

Working Alliance. The Working Alliance Inventory- Short (WAI-S; Horvath & Greenberg, 1989), consists of 12 items using a 7-point Likert scale. Items are distributed among three subscales: Agreement on Tasks, Agreement on Goals, and Agreement on Bonds. The response format for this scale ranges from *does not correspond at all* (1) to *corresponds exactly* (7). Sample items from WAI-S include: “the client and therapist agree about the things the client will need to do in therapy to help improve his/her situation,” as well as, “the client and therapist are working toward mutually agreed upon goals.” This scale has been identified as conceptually homogeneous, and was designed to

capture Bordin's (1979) perspective of alliance dimensions including tasks, goals, and bonds (Horvath & Greenberg, 1989). In the current study, the WAI-S was completed by external raters using 15-minute segments of audio-recorded GSC therapy sessions. The Cronbach's alpha across subscales ranges from .84 to .93, with most reported coefficients in the higher end of this range (Horvath, 1988; Plotnicov, 1990). In addition, Tichenor and Hill (1989) reported high internal consistency (alpha = .98) and high interrater reliability (.75-.92) for the Observer version of the WAI-S.

Treatment Completion. Treatment completion was evaluated as a dichotomous variable, defined as whether adolescents completed treatment or dropped out of the GSC intervention prior to treatment completion.

The reliability data for treatment process scales used in the current study are presented in Table 2. The independent variables for this study included therapeutic alliance, working alliance, and patient involvement. The reliability for the two scales used were: Working Alliance Inventory- Short (.81) and Vanderbilt Psychotherapy Process Scale (.72).

Table 2

Reliability Data for Treatment Process Scales

	Number of Items	N	Cronbach's Alpha
Working Alliance Inventory	12	58	.81
Vanderbilt Psychotherapy Process Scale	44	58	.72

Procedure

ATTAIN was a 5-year, NIAAA-funded, randomized clinical trial evaluating the efficacy of a brief motivational Guided Self-Change (GSC) intervention among adolescents with past involvement with the juvenile justice system. Adolescents in this evaluation constituted a broad range of diverse ethnic groups. These adolescents were referred either through the Miami-Dade County juvenile justice system or other community sources, including Miami-Dade alternative schools. Upon completion of informed consent procedures by the adolescent and his or her parent or guardian, adolescents were administered a battery of assessments and then randomly assigned to either one of three treatment conditions or to a 10-week wait list control condition. Treatment consisted of five sessions of manualized, Guided Self-Change treatment, and adolescents had the option to choose up to two additional booster sessions after completing the fifth session. Once adolescents completed all required Guided Self-Change sessions, graduate-level student assessment staff administered post-intervention assessments, as well as 3-, 6-, and 9- month follow-up assessments.

The data analyzed in the current study focused on treatment process variables that were hypothesized to be salient to attendance at the Guided Self-Change treatment sessions. The current study included adolescents who were pre-selected from the ATTAIN study database in order to provide better control over potential extraneous variables that may have otherwise diminished the internal validity of the study. First, adolescents were selected based on completion status. Completion status was operationalized as: (a) participants who completed the pre-intervention assessment, and all five therapy sessions or (b) participants who completed the pre-intervention

assessment and at least one therapy session but who did not complete all therapy sessions. Of these adolescents, a more restricted, homogenized sample was selected, limited to the following demographics: males, ages 14 to 18, and non-mandated status. Beyond these inclusion characteristics, participants were selected from both the individual and family GSC treatment formats. Since a smaller percentage of participants received the family GSC treatment format, participants in the family GSC condition will be oversampled in order to select enough participants to ensure a sample size that will produce sufficient statistical power to detect group differences. Using a sample of 58 participants, segments of the middle of the first session of each participant's GSC treatment were selected for generation of specific GSC treatment process variables.

Raters listened to recorded segments of the first GSC therapy session and assisted in the process of generating data for the current study. Raters were recruited from graduate students and undergraduate students at FIU who were selected and trained to a prespecified criterion level for ratings of the Vanderbilt Psychotherapy Process Scale, as well as the Working Alliance Inventory. A total of 15 hours was spent training over three sessions. Following the procedure from the VPPS validation study (O'Malley et al., 1983), training to a criterion level consisted of two parts. First, judges rated 15-minute segments of a GSC therapy session using sessions previously rated by the principal investigator, and compared their ratings with those of the principal investigator. In addition, raters were given a handout that described concrete and behavioral operational definitions of each specific rating. Raters received feedback and discussed any discrepancies with the principal investigator. This step provided raters with information regarding the conceptualization and operational definitions of specific ratings for items

on the scale. Second, the raters continued to rate additional tape segments until they exceed the criterion level of interrater reliability for the VPPS ($r = .70$) and the WAI-S ($r = .80$). These steps were considered “criteria rating standards” for both measures that demonstrated the key criteria for obtaining a specific level of interrater reliability. Two out of the four raters exceeded the interrater reliability criteria rating standards for the VPPS- ($r = .72$) and WAI-S ($r = .81$). It is important to note here that only one of the two raters was blind to the objectives and hypotheses of the study.

The standard procedures and criteria ratings standards for the Working Alliance Inventory were not found in key WAI validation studies, general studies or research handbooks. Therefore, WAI-S rating procedures for the current study reflected the procedures used by O’Malley et al. (1983) for the VPPS described above and ($r = .80$) was used as the standard level of interrater reliability for coding the WAI. The steps used to train raters to rate the WAI in order to obtain the criterion level of interrater reliability mirrored the two steps being used for constructing the VPPS ratings. These steps were followed in an iterative manner until raters reached the criterion level of interrater reliability. Participant demographics were compiled during the initial assessment in the ATTAIN program, and were used to select specific tapes for coding. Cases were selected for inclusion in the study by specific demographic characteristics: males, age 14 to 18 years, from the voluntary referral subgroup who completed at ATTAIN or dropped out after the first or second session of GSC treatment.

Participants selected for the current study had their 15-minute, audio-recorded, first or second GSC therapy session segments copied from the original therapy tapes. These segments were then given to raters. Both treatment process scales used for the

current study were selected specifically for their ability to fulfill the criteria for providing a specific conceptual focus, robust psychometric properties, observer-rating applicability, audio-rating applicability, and efficiency because they involve rating brief segments of therapy sessions without compromising the validity or reliability of the measures. In addition, these measures demonstrate the ability to tap constructs thought to be meaningful across a range of psychotherapeutic modalities (Bergin & Garfield, 1994). External raters recorded their ratings by documenting their responses on a rating sheet.

The Vanderbilt Psychotherapy Process Scale utilizes 15-minute segments of therapy sessions, based on results of published studies of the validity and reliability of this measure, as an adequate representation of within-session interaction necessary to capture key therapy process characteristics (Suh & O'Malley, 1986; Windholz & Silberschatz, 1988). External raters completed the VPPS using the middle 15 minutes of the audio-recorded, first GSC therapy sessions for each ATTAIN participant selected for inclusion in the current study. The WAI-S was completed by external raters who listened to audio-recorded segments of the middle 15 minutes of the first or second GSC session, a sampling technique which has been used in the general procedures of other studies (Cecero et al., 2001). Ratings of the VPPS and WAI-S were counterbalanced to ensure that ordering effects did not occur that could potentially bias scores on these measures. Therefore, raters would alternate which measure was completed first when rating segments of the first or second GSC therapy session for each participant.

Statistical Analyses

The data analyses for this study were conducted using SPSS for Windows package, Version 11.0. All significance tests that were conducted using inferential

statistics used a standard level of alpha set at .05. Power analyses were calculated for both discriminant function analyses and correlational analyses (Cohen, 1988; Horvath & Symonds, 1991). First, the power analysis for ANOVA assumed the following four components: an effect size of .26 which is based on a meta-analytic review of the relations between alliance and treatment outcome (e.g., Martin, Garske, & Davis, 2000), an alpha level of .05, one factor with two levels, and power of .80. This analysis stipulated a sample size of 64 participants per cell. The power analysis for correlational analyses used an alpha level of .01, power of .80, and stipulated a sample size of 108. The statistical procedures that were used included:

Research Question 1:

Are measures of therapeutic alliance, working alliance and patient involvement significantly correlated among participants undergoing GSC treatment in the ATTAIN program?

Pearson bivariate correlations were used to identify relations among ratings of each of the treatment process variables. In addition, treatment process variables were assessed for reliability (i.e., internal consistency).

Research Question 2:

Does treatment process differentiate between adolescents who completed the ATTAIN program, and adolescents who dropped out of the ATTAIN program after the first or second GSC session?

Discriminant function analyses (DFA) was used to identify major differences in scores on treatment process variables between adolescents who completed the ATTAIN program and those adolescents who dropped out prior to completion (i.e., after session 1

or 2). Discriminant function analysis is a multivariate analytic technique that can evaluate several continuous (i.e., discriminating) independent variables and a categorical (i.e., outcome) dependent variable (Harlow, 2005). This current study had three continuous, independent variables (i.e., working alliance, therapeutic alliance, and patient involvement), and one dichotomous dependent variable (i.e., treatment completion or dropout). Although DFA can also be used as a predictive statistical analysis, it is more commonly used to examine variables that differentiate between groups (Harlow, 2005). In the current study, DFA was used to examine how scores for treatment process variables distinguish between treatment completers and dropouts. Thus, DFA is an appropriate statistical analysis for the research questions guiding the current study, based on its ability to assess the degree to which participants can be correctly classified into groups (i.e., treatment completion or dropout) using significant linear combinations of independent variables (i.e., treatment process variables). In addition, DFA is able to maintain stability among correlations in small samples, especially when there are high intercorrelations among the variables included in the analyses.

Discriminant function analysis has several similarities to MANOVA. First, like DFA, the MANOVA model groups categorical variables on one side and continuous variables on the other. However, unlike MANOVA that uses a continuous dependent variable, DFA uses continuous variables as predictors of categorical, dependent variables. Second, DFA and MANOVA are similar due to the focus placed on weighted, standardized, independent variables. Third, the same major statistical assumptions (i.e., normality, linearity, homoscedasticity) that apply to DFA also apply to MANOVA.

According to Harlow (2005), there are several factors that need to be considered before DFA can be applied. First, there should be an equal number of participants across the dependent variable categories in order to produce robust and accurate results. Second, a power analysis should be conducted in order to determine the number of participants needed per group in order to detect specific effect sizes. Third, descriptive statistics including the means, standard deviations, skewness and kurtosis of the distribution of principal variables should be explored, as well as bivariate correlations among all the variables. Fourth, assumptions of normality, homoscedasticity, and linearity should be checked, and can be assessed initially by examining skewness, kurtosis and scatterplots. Other assumptions of DFA to be considered are the following: adequate sample sizes, that means for variables across groups are not correlated with the variances, that variables used between groups are not redundant (Stevens, 2002). Last, the reliability of the measures was assessed by examining the internal consistency (i.e., Chronbach's alpha) of the treatment process variables.

The main model of DFA consists of linear combinations of the independent variables (Stevens, 2002). These weighted linear combinations are also called discriminant functions or discriminant scores (Harlow, 2005). Significant relationships between the linear combinations of independent variables and the dependent, grouping variable are based on the ratio of the variance. In other words, the ratio of the variance between the groups over the variance within groups is examined. In addition, DFA allows the examination of several linear combinations that could potentially distinguish between categories of the dependent variable.

According to Harlow (2005), DFA analyses are a multi-level process conducted at the macro-, mid-, and micro-levels. First, a single, overall macro-level F -test is conducted to examine the variance using Wilk's lambda. A significant macro-level F -test is then followed by one or more mid-level F -tests, depending on the number of linear combinations. A significant mid-level F -test signifies that at least the first linear combination significantly differentiates the dependent outcome variable, and a second significant mid-level F -test indicates a second linear combination also is significantly related to the dependent variable. This process continues until all linear combinations have been tested using F -tests. Subsequently, mid-level effect sizes for each linear combination are also examined. During this analysis, the statistical significance of the eigenvalues (i.e., discriminant criteria) are assessed using the mid-level F -tests. Thus, the size of each eigenvalue indicates the variance for each linear combination (i.e., discriminant function).

The micro-level assessment of DFA focuses on examining the weights for each significant discriminant function. It is important to note that the third set of discriminant scores has been described as the most interpretable (Harlow, 2005) and demonstrates correlations between the discriminant function and dependent variable. The effect sizes are also examined at the micro-level in order to show the proportion of variance shared between the dependent variable and each linear combination. These macro-, mid-, and micro-level steps are the essential procedures for using and interpreting DFA. Last, it is important to note that DFA, like other statistical analyses, is susceptible to decreased internal validity if the following factors are not considered: whether sufficient controls were included, whether results were affected by the sample used, and if measures were

evaluated for their psychometric properties (Harlow, 2005). These factors will be discussed further in the last chapter as they apply to the results of the current study.

Chapter 4: Results

In this study, data analyses were conducted in three steps. First, descriptive statistics for all treatment process variables were calculated to provide information on the distributional characteristics of the scores reported for the WAI-S and VPPS scales for the entire sample. Second, bivariate correlational analyses were conducted to examine the direction and magnitude of linear relations among treatment process variables. Finally, discriminant function analysis (DFA) was used to examine the following treatment process variables: working alliance, therapeutic alliance and patient involvement as discriminant functions of the dependent, outcome variable completion status (i.e., treatment completion or dropout).

Step 1: Sample Description

Possible scores for the Working Alliance Inventory- Short (WAI-S) range from 12 to 84, indicating low to high scores of indices of working alliance in therapeutic relationships. In the current study, means and standard deviations for WAI-S scores for the entire sample included aggregate scores for: overall working alliance (WTOT; $M = 54.40$, $SD = 18.92$), working alliance goals (WGOAL; $M = 17.41$, $SD = 7.09$), working alliance tasks (WTASK; $M = 18.21$, $SD = 6.19$), and working alliance bond (WBOND; $M = 18.79$, $SD = 6.49$). Participants in the treatment completion group were rated as demonstrating above average working alliance scores with regard to rapport with their therapists. In addition, participant scores were highest for the WAI-S dimension of working alliance bond, followed by scores for working alliance tasks and working alliance goals.

Possible scores on the Vanderbilt Psychotherapy Process Scale (VPPS) can range from a low of 44 to the highest attainable score of 220, indicating lower to higher levels of specific dimensions of specific psychotherapeutic processes. Aggregate scores for the entire sample of participants in the study included means and standard deviations for the following VPPS dimensions: total therapeutic alliance (VTOTAL; $M = 112.88$, $SD = 19.24$), therapist exploration (VTEXP; $M = 25.43$, $SD = 5.99$), therapist warmth and friendliness (VTWFR; $M = 25.84$, $SD = 6.23$), patient dependency (VPD; $M = 7.50$, $SD = 2.66$), negative relationship (VNR; $M = 8.33$, $SD = 2.63$), patient psychic distress (VPPD; $M = 11.97$, $SD = 2.68$), and patient participation (VPPAR; $M = 23.60$, $SD = 7.50$). The mean scores for specific dimensions of both the WAI and VPPS suggest that regardless of client completion status, GSC therapists were able to establish rapport with members of this largely Latino sample of substance-using adolescent males, and these results reflect similar patterns of mean scores for working alliance constructs across theoretical orientations, delivery formats, and populations presented in previous studies (e.g., Shirk & Karver, 2003). Descriptive statistics for specific treatment process scale scores are presented in Table 3.

Evaluation of Assumptions of Discriminant Function Analysis (DFA)

The following assumptions will be addressed in this section: unequal sample sizes, missing data, normality of sampling distributions, outliers, linearity, homogeneity of variance-covariance matrices, and multicollinearity. The data were evaluated with respect to the statistical assumptions of discriminant function analysis. First, this study used an equal number of participants in each of the two groups (i.e., completers and dropouts) and did not incur any missing data. Therefore, the assumptions of equivalent

sample size and non-missing data were met. The next assumption taken into consideration was normality of individual variables. With regard to the distributional characteristics of specific psychotherapy process scale scores, few problems were identified concerning patterns of normality based on assessment of either skewness or kurtosis. Skewness coefficients for psychotherapy process scale scores ranged between -.41 and .78, except for the VPPS negative relationship subscale (i.e., 3.6) which reflects the normative low ratings for negative relations assigned to client-therapist dyads in the current sample, i.e., the median score was also the minimum score. Similarly, kurtosis coefficients for the sample ranged between -1.4 and .52 for specific subscales, with the exception of the VPPS negative relationship subscale (i.e., 16.8), once again reflecting the concentration of scores for this subscale close to the median score (i.e., 7.0). Based on these findings, the current sample met assumptions of univariate normality for all the subscales except the VPPS negative relationship subscale.

Linearity was the fourth assumption evaluated. Based on an inspection of bivariate scatterplots for the WAI-S and VPPS variables, the VPPS negative relationship variable was nonlinear. Specifically, the VPPS negative relationship subscale did not exhibit a linear relationship with other WAI-S or VPPS subscales. Fifth, the sample was assessed for multivariate outliers. One case was identified as a multivariate outlier, through a Mahalanobis distance statistic with $p < .001$. However, this case was not deleted since participants in the completion and dropout groups were matched based on similar demographics. Also, deleting the outlier would make the sample sizes of the completion and dropout groups unequal. The sixth assumption tested was related to multivariate homogeneity of covariance, and this assumption was supported based on the

coefficient from Box's test of equality of covariance matrices, since the probability of F (.707) was not smaller than .05. Last, patterns of multicollinearity were tested on the independent variables in the data set. Variables are multicollinear when they are highly correlated, and a few of the WAI-S subscales demonstrated multicollinear correlations ($r = .94-.97$). However, these variables will not be transformed or deleted from the study since one of the objectives of the study is to examine empirical associations among working alliance, therapeutic alliance and client involvement. The WAI-S correlation coefficients will be addressed in the second step of the analyses.

Factor Analysis of WAI-S and VPPS subscales

A factor analysis was conducted on the WAI-S in order to identify the dimensionality of this measure based on patterns of correlations among the variables measured as indicators on the WAI-S. Principal components analysis (PCA) factor analysis was performed on the 12 items from the WAI-S scale. Communality values, which are the sum of squared loadings for a variable across factors, tended to be high. Factor loadings for the WAI-S items ranged from .91 to .94 with the exception of two items that loaded at .67 and .71. In general, this factor was internally consistent, and well defined by the variables. Loadings of variables on factors, communality, and percents of variance are summarized in Table 4. The same procedure was used to examine the factor loadings for the 45 items on the VPPS. However, a factor analysis could not be run on VPPS items because one item does not demonstrate variance among responses. This issue will be addressed in the discussion section.

Table 3

Means, Standard Deviations, and Ranges for Treatment Process Variables

Treatment Process Variables	<i>N</i>	<i>M</i>	Range	<i>SD</i>
Working Alliance				
Working Alliance Inventory Total	58	54.40	17 – 83	18.92
Working Alliance Goal		17.41	4 – 28	7.09
Working Alliance Bond		18.79	6 – 28	6.49
Working Alliance Task		18.19	7 - 28	6.19
Therapeutic Alliance				
Vanderbilt Psychotherapy Process Scale Total	58	112.88	79-147	19.24
Therapist Exploration		25.43	11 – 34	5.99
Therapist Warmth and Friendliness		25.84	11 – 35	6.23
Patient Dependency		7.50	5 – 14	2.66
Negative Relationship		8.32	7 – 23	2.63
Patient Psychic Distress		11.97	8 - 20	2.68
Client Involvement				
VPPS Patient Participation		23.60	11 - 39	7.50

Step 2: Question One: Correlations Among Treatment Process Variables

Pearson bivariate correlations were conducted to identify associations among treatment process variables in order to document empirical similarities in ratings of dyads across dimensions of these measures. As illustrated in Table 5, a majority of the biivariate correlations among subscales of the WAI-S and VPPS demonstrated statistical

significance ($p < .01$). First, the bivariate correlation between total scores of the WAI-S and total scores of the VPPS was significant ($r = .81, p < .01$). This finding reflects a general similarity in the assignment of ratings to client-therapist dyads between the working alliance and therapeutic alliance instruments.

Table 4

Principal-Components Analysis for WAI-S

Item	Factor Loadings	Communality
1	.944	.890
2	.940	.883
3	.937	.879
4	.709	.502
5	.936	.877
6	.917	.841
7	.929	.863
8	.938	.880
9	.925	.856
10	.667	.445
11	.918	.843
12	.918	.842
Eigenvalue	9.60	
% of variance	80.0	

At a broader level, this empirical similarity in ratings assignments between working alliance and therapeutic alliance highlights why these concepts are often used interchangeably in the treatment process literature (e.g., Beutler, Machado, & Neufeldt, 1994). Similarly, scores for WAI-S subscales were significantly correlated with VPPS subscales ($r = -.72$ to $.76, p < .01$). However, the range of intercorrelations (absolute magnitude from $.51$ to $.76$) between the WAI-S and VPPS subscales suggests that although the overall premises of working alliance and therapeutic alliance are substantially similar, there are also specific dimensions of both working alliance and therapeutic alliance that are more empirically distinct or unique than others. For example, the intercorrelation between the WAI-S goal subscale and the VPPS therapist exploration subscale ($r = .58, p < .01$) shows a significant amount of shared variance (33.6%), but the magnitude of this correlation may also suggest a conceptual difference between these dimensions of working alliance and therapeutic alliance, since over 66% of the variance of these indicators is not shared. Second, overall WAI-S and VPPS scores were significantly correlated with the VPPS subscale patient participation, ($r = .77, p < .01$ and $r = .86, p < .01$, respectively). The magnitude of these intercorrelations indicate that while therapeutic alliance and client involvement share a majority of their variance (74.0%), less variance is shared between working alliance and client involvement (59.3%).

Several statistically significant correlations among WAI subscales were identified. Intercorrelations among the WAI-S task, bond and goal subscales ranged from $.83$ to $.94, p < .01$). These results suggest that these WAI-S subscales empirically share a substantial amount of variance and that the bond, task and goal subscales are not as

empirically distinct with regard to objective ratings of this sample compared to their conceptualization and application in the broader treatment process literature. A majority of bivariate correlations among the VPPS subscales were statistically significant, but they exhibited a broader range of shared variance in assigned ratings (absolute magnitude of r ranged from .23 to .79, $p < .01$). The VPPS patient participation subscale that was used to measure the treatment process variable, client involvement, demonstrated statistically significant intercorrelations of medium magnitude ($r = -.24$ to .66, $p < .01$) with the other VPPS subscales. This finding suggests that the client involvement dimension has demonstrated substantial empirical differentiation from overall therapeutic alliance. The only VPPS subscale that did not demonstrate uniformly statistically significant intercorrelations with other VPPS subscales was the negative relationship subscale. Negative relationship scores were not significantly correlated with the therapist exploration ($r = -.25$), the psychic distress ($r = -.23$), or the patient participation subscales ($r = -.24$) suggesting that the degree of negativity of client-therapist relationships covaried only weakly with other dimensions of therapeutic alliance measured in the current study.

Step 3: Question Two: Differences in Completion Status Related to Treatment Process

First, descriptive statistics for each group (i.e., treatment completers or dropouts) were examined. Univariate descriptive statistics associated with the initial DFA were calculated by completion status (i.e., treatment completion or dropout group) for all therapeutic process variables included in the multivariate analyses.

Table 5

Intercorrelations among WAI-S and VPPS Subscales

	1	2	3	4	5	6	7	8	9	10	11
1. WTOT	--										
2. WTASK	.97**	--									
3. WGOAL	.94**	.86**	--								
4. WBOND	.96**	.94**	.83**	--							
5. VTOT	.81**	.80**	.74**	.79**	--						
6. VTWFR	.83**	.76**	.67**	.74**	.83**	--					
7. VPD	.67**	.62**	.69**	.62**	.74**	.52**	--				
8. VNR	-.53**	-.51**	-.47**	-.55**	-.24	-.45**	-.23	--			
9. VPPD	-.71**	-.72**	-.66**	-.67**	-.54**	-.63**	-.45**	.40**	--		
10. VPPAR	.77**	.76**	.71**	.74**	.86**	.56**	.66**	-.24	-.51**	--	
11. VTEXP	.66**	.67**	.58**	.65**	.88**	.79**	.56**	-.25	-.55**	.61**	--

Note. $N = 58$; ** $p < .01$.

Means and standard deviations for WAI-S and VPPS subscales are summarized in Table 6. In addition, univariate analyses indicated significant mean group differences for most WAI-S and VPPS subscales. For the treatment completion group, the means and standard deviations for variables included in the subsequent DFA were: working alliance goals (WGOAL) ($M = 21.83, SD = 5.76$), working alliance tasks (WTASK) ($M = 21.55, SD = 4.88$), and working alliance bond (WBOND) ($M = 22.31, SD = 5.01$). Participants in the treatment dropout group received significantly lower mean ratings for working alliance variables: working alliance goals (WGOAL) [$M = 13.00, SD = 5.37; F(1,56) = 36.45, p < .0001$], working alliance tasks (WTASK) [$M = 14.83, SD = 5.54; F(1,56) = 24.10, p < .0001$], and working alliance bond (WBOND) [$M = 15.28, SD = 5.93; F(1,56) = 23.83, p < .0001$].

A similar pattern emerged between the treatment completion and dropout groups based on scores from the VPPS. Treatment completers received significantly higher ratings across the VPPS subscales, except for the negative relationship and patient psychic distress subscales. Treatment completers received significantly lower mean ratings for patient psychic distress. Treatment completers means, standard deviations, and univariate test statistics included: therapist exploration (VTEXP) [$M = 28.55, SD = 5.22; F(1,56) = 21.35, p < .0001$], therapist warmth and friendliness (VTWFR) [$M = 29.14, SD = 5.00; F(1,56) = 22.23, p < .0001$], patient dependency (VPD) [$M = 8.86, SD = 2.59; F(1,56) = 20.43, p < .0001$], patient psychic distress (VPPD) [$M = 10.79, SD = 2.11; F(1,56) = 13.60, p < .0001$], and patient participation (VPPAR) [$M = 27.59, SD = 7.17; F(1,56) = 22.54, p < .0001$]. Mean ratings for the negative relationship subscale (VNR) (M

= 7.76, $SD = 1.41$) were not significantly different from the mean ratings assigned to the participants who dropped out of GSC treatment.

Participants who dropped out of treatment after the first or second session received the following mean ratings on the VPPS: therapist exploration (VTEXP) ($M = 22.31$, $SD = 5.06$), therapist warmth and friendliness (VTWFR) ($M = 22.55$, $SD = 5.62$), patient dependency (VPD) ($M = 6.14$, $SD = 1.96$), negative relationship (VNR) ($M = 8.90$, $SD = 3.37$), patient psychic distress (VPPD) ($M = 13.14$, $SD = 2.70$), and patient participation (VPPAR) ($M = 19.62$, $SD = 5.49$) subscales. Overall, participants in the treatment completion group received significantly higher mean ratings for most WAI-S and VPPS subscales, compared to participants in the treatment dropout group. However, mean ratings for participants in the treatment dropout group were higher on both the VPPS negative relationship and patient psychic distress subscales than those ratings assigned to members of the treatment completion group. These findings are summarized in Table 7.

Direct Discriminant Function Analysis for the WAI-S and VPPS Subscales

First, a direct discriminant analysis was performed using nine treatment process variables. Independent variables included working alliance goal, working alliance task, working alliance bond, as well as the VPPS subscales for: patient participation, patient psychic distress, patient dependency, therapist warmth and friendliness, negative relationship, and therapist exploration. One discriminant function (WGOAL) was calculated, $F(1,56) = 36.45$, $p < .0001$. The effect size for this function, was Canonical $R^2 = .39$. Thus, this discriminant function accounted for 100% of the total relation between the independent variables and completion status group membership, as well as

the between-group variability. This discriminant function maximally distinguished between treatment completers and dropouts.

The structure (loading) matrix of correlations between the independent variables and the discriminant function, as shown in Table 8, suggests that the best independent variable for distinguishing between treatment completers and dropouts is the WAI-S goal subscale (1.00). It is also important to note that the WAI-S task (.80) and bond (.74) subscales demonstrated strong loadings that did not reach significance but that share a close association with the WAI-S goal subscale. The classification results for the 58 ATTAIN participants suggested that 79.3% of the cases were classified correctly, compared with 20.7 % of the cases that were classified correctly by chance. In other words, 22 of 29 participants were classified correctly as completing the ATTAIN program and 24 of 29 participants were classified correctly as dropping out of the ATTAIN program.

Direct Discriminant Function Analysis for the WAI Subscales

A discriminant function was calculated using only the WAI-S subscales (i.e., WBOND, WTASK, WGOAL) as independent variables in order to classify participants by completion status membership. One discriminant function was calculated $F(1,56) = 36.45, p < .0001$. The effect size of this function, was Canonical $R^2 = .40$. Similar to the initial discriminant function analysis, WGOAL accounted for 100% of the total variance between the three WAI-S independent variables and completion status group membership, as well as the between-group variability.

Table 6

Means and Standard Deviations of Predictor Variables as a Function of Treatment Completion Status

Predictor Variable	Treatment Completion		Treatment Dropout				<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>		
WBOND	22.31	5.01	15.28	5.93	23.83		.000
WGOAL	21.83	5.76	13.00	5.37	36.45		.000
WTASK	21.55	4.88	14.83	5.54	24.07		.000
VTEXP	28.55	5.22	22.31	5.06	21.35		.000
VNR	7.76	1.41	8.90	3.37	2.81		.099
VPPD	10.79	2.11	13.14	2.70	13.60		.000
VTWFR	29.18	5.00	22.55	5.62	22.23		.000
VPPAR	27.59	7.17	19.62	5.49	22.54		.000
VPD	8.86	2.59	6.14	1.96	20.43		.000

Note. *df* (1,56).

Table 7

Correlations between Discriminating Variables and Discriminant Function (Function Structure Matrix)

Variable	Function 1
WAI Goal	1.00
WAI Task	.80
WAI Bond	.74
VPPS Patient Participation	.57
VPPS Psychic Distress	.55
VPPS Patient Dependency	-.55
VPPS Therapist Warmth & Friendliness	.51
VPPS Negative Relationship	-.44
VPPS Therapist Exploration	.38

Table 8

Correlations between Discriminating WAI-S Variables and Discriminant Function (Function Structure Matrix)

WAI Variable	Function 1
WGOAL	.99
WTASK	.81
WBOND	.80

The structure (loading) matrix of correlations between WAI-S independent variables and the discriminant function, illustrates that the WAI-S goal subscale (1.00) maximally distinguished between treatment completers and dropouts. The WAI-S goal subscale is followed by the WAI-S task (.81) and bond (.80) subscales, which demonstrated strong loadings that did not reach statistical significance but share a close association with the WAI-S goal subscale. These findings are summarized in Table 9. Similarly, classification results parallel those for the overall discriminant function analysis. Of the 58 ATTAIN participants, 79.3% of the cases were classified correctly compared with 20.7 % of the cases that were classified correctly by chance. Therefore, 23 of 29 participants were classified correctly as completing the ATTAIN program and 23 of 29 participants were classified correctly as dropping out of the ATTAIN program. It is important to note that a stepwise analytic approach for DFA was also performed on the WAI-S subscales, and this DFA yielded the same findings as the DFA conducted using the direct approach.

Direct Discriminant Function Analysis for the VPPS Subscales

One discriminant function, using a direct approach, was calculated using only the six VPPS subscales. The VPPS subscales (i.e., therapist exploration, negative relationship, patient psychic distress, therapist warmth and friendliness, patient participation, and patient dependency) were used as independent variables in order to classify participants by completion status membership. The calculation for this discriminant function (VPPAR) was $F(1,56) = 22.54, p < .0001$. The effect size for this function, was Canonical $R^2 = .40$, which was medium in magnitude. Thus, patient participation (i.e., client involvement) accounted for 100% of the total variance between

the six VPPS independent variables and completion status group membership, as well as the between-groups variability.

The structure (loading) matrix of correlations between the VPPS independent variables and the discriminant function, illustrated that the VPPS patient participation subscale (.78) strongly differentiated between treatment completers and dropouts. The VPPS patient participation subscale is followed by the VPPS therapist warmth and friendliness (.78), the therapist exploration (.76), and the patient dependency (.74) subscales and all demonstrated strong loadings. These loadings suggest strong relations between the discriminant function and the VPPS subscales, and in particular with both patient participation and therapist warmth and friendliness. Loadings less than .50 are not interpreted. These findings are summarized in Table 9. Classification results for the ATTAIn participants confirm that 82.8% of the cases were classified correctly using the VPPS subscale scores, compared with 17.2 % of the cases that were classified correctly by chance. Thus, 24 of 29 participants were classified correctly as completing the ATTAIn program and 24 of 29 participants were classified correctly as dropping out of the ATTAIn program.

Stepwise Discriminant Function Analysis for the VPPS Subscales

Stepwise discriminant function analysis was used to calculate two discriminant functions for the six VPPS subscales. First, a macro-level F -test identified the VPPS patient participation subscale as the strongest of the two discriminant functions $F(1,56) = 22.54, p < .0001$. The second variable added to the stepwise analysis was the VPPS therapist warmth and friendliness subscale and this second discriminant function and its associated mid-level F -test were significant $F(2,56) = 15.93, p < .0001$. Table 10

provides a summary of these results. These variables shared a combined effect size of Canonical $R^2 = .37$, an effect size of medium magnitude. The two VPPS subscales, patient participation (i.e., client involvement) and therapist warmth and friendliness accounted for 100% of the total variance between the VPPS independent variables and completion status group membership, as well as the between-group variability.

Using the stepwise analytic approach, the structure (loading) matrix of correlations between the VPPS independent variables and the discriminant functions, illustrates that the VPPS patient participation subscale (.83) strongly classifies group differences between clients who were classified as either treatment completers or dropouts. The VPPS patient participation subscale was followed by the VPPS therapist warmth and friendliness (.83), the therapist exploration (.70), and the patient dependency (.52) subscales which all demonstrated strong loadings in the structure matrix. Loadings less than .50 are not interpreted. These findings are summarized in Table 11. Classification results for the ATTAIN participants are similar to those outlined in the direct DFA model applied to the six VPPS subscales. Therefore, classification results were similar in both the direct and stepwise approaches to DFA for the VPPS subscales.

Step 4: Follow-up Analyses: Predicting Group Membership Using Treatment Process Variables

A logistic regression analysis was conducted as a follow-up test to the major analyses of the study (i.e., the discriminant function analyses). Logistic regression was used to predict a discrete outcome (i.e., treatment completion or dropout) from the continuous, treatment process variables (i.e., therapeutic alliance, working alliance, and client involvement) examined in the current study.

Table 9

*Correlations between VPPS Discriminating Variables and the Discriminant Function
(Function Structure Matrix)*

Variable	Function 1
VPPS Patient Participation	.781
VPPS Psychic Distress	-.606
VPPS Patient Dependency	.743
VPPS Therapist Warmth & Friendliness	.775
VPPS Negative Relationship	-.276
VPPS Therapist Exploration	.760

Table 10

VPPS Independent Variables in Stepwise Discriminant Function Analysis

Step	Predictor Variable	Wilks's λ	F (1,56)
1	Patient Participation	.713	22.54***
2	Therapist Warmth Warmth and Friendliness	.633	15.93***

Note. *** $p < .0001$.

Table 11

Correlations between Stepwise VPPS Discriminating Variables and Discriminant Functions (Function Structure Matrix)

Variable	Function 1
VPPS Patient Participation	.833
VPPS Psychic Distress	-.525
VPPS Patient Dependency	.521
VPPS Therapist Warmth & Friendliness	.828
VPPS Negative Relationship	-.334
VPPS Therapist Exploration	.701

Two separate direct logistic analyses were performed predicting completion status as the outcome. The first logistic regression was performed using three working alliance (WAI-S) treatment process predictors: bonds, goals, tasks. The second logistic analysis used the six subscales of the VPPS as predictors: therapist exploration, negative relationship, patient psychic distress, therapist warmth and friendliness, patient participation, and patient dependency. The completion status outcome was best predicted by (a) the goal subscale of WAI-S, as well as (b) the therapist warmth and friendliness and the patient participation subscales of the VPPS. The findings of the previously conducted discriminant function analyses were confirmed through the use of logistic regression analyses, and the results are summarized in Table 12. The positive findings of the logistic regression analyses increase confidence that the assessment of indices of

therapeutic alliance is appropriate to obtain salient indicators for Latino or other minority youth of risk for dropping out of substance abuse treatment.

In summary, therapeutic alliance, working alliance, and client involvement were examined through the WAI-S subscales (i.e., WGOAL, WTASK, and WBOND) and the VPPS subscales (i.e., VTEXP, VTWFR, VPD, VNR, VPPD, and VPPAR). The client involvement construct was measured using the VPPS patient participation subscale (VPPAR). DFA was performed in three steps, and several significant discriminant functions were identified. First, DFA was used to examine both WAI-S and VPPS subscales together followed by examinations of the WAI-S and VPPS independently. One significant discriminant function was found (WGOAL; $F(1,56) = 36.45, p < .0001$) when the WAI-S and VPPS subscales were examined together, as well as when the WAI subscales were examined independently from the VPPS subscales. When the VPPS subscales were analyzed via a direct DFA method, one significant discriminant function for client involvement was identified (VPPAR; $F(1,56) = 22.54, p < .0001$). A stepwise DFA method was also conducted on the VPPS subscales and two discriminant functions were identified, including therapist warmth and friendliness (VTWFR; $F(2,56) = 15.93, p < .0001$) and client involvement. Overall, DFA successfully classified a majority of the sample of substance-using predominantly Latino adolescent male participants into treatment completion or dropout groups using working alliance, therapeutic alliance and client involvement, and these results are interpreted further in the discussion section.

Table 12

Summary of Logistic Regression Analysis Predicting Treatment Completion Status

Variable	B	SE	Wald statistic
WGOAL	-.245	.06	16.44***
VTWFR	-.138	.066	4.37*
VPPAR	-.126	.058	4.67*

Note. * $p < .05$. *** $p < .0001$.

Summary of Results

The current study had two main objectives. First, correlations (i.e., rank-ordered similarities in scores) among therapeutic alliance, working alliance and client involvement were documented. Second, therapeutic alliance, working alliance, and client involvement were used in discriminant function analyses to distinguish between treatment completers and dropouts in a largely Latino sample of substance-using male adolescents. This sample was selected from a larger community-based, randomized clinical trial, the ATTAIN program, implemented in Miami-Dade County. Therapeutic alliance was measured using the Vanderbilt Psychotherapy Process Scale (VPPS), and client involvement was measured using the VPPS patient participation subscale. Indicators of working alliance were assessed using the Working Alliance Inventory-Short (WAI-S).

Descriptive statistics were calculated for the entire sample, as well as by completion status. Overall, participants' scores indicated that they had strong working alliance with GSC therapists, and in particular, the WAI-S bond scores assigned to client and therapist dyads were highest, followed by ratings for working alliance tasks and goals. Participants' mean scores in the treatment completion group indicated significantly higher working alliance with GSC therapists compared to participants who dropped out of treatment after the first or second GSC therapy session. However, unlike results for the overall sample, treatment completers' scores were highest for the WAI-S dimension of working alliance goals, followed by ratings for tasks and bonds.

Mean scores for therapeutic alliance for the entire sample suggested that participants were rated as having less than average rapport with GSC therapists, and that therapist exploration was the most highly rated dimension of therapeutic alliance across the sample. With regard to mean scores for therapeutic alliance by completion status, participants who completed the ATTAIN program were rated as having significantly stronger therapeutic alliance with GSC therapists, compared to their treatment dropout counterparts. When participants were grouped by completion status, the highest mean ratings were assigned to the therapist warmth and friendliness dimension of the VPPS, followed by therapist exploration, patient participation, patient psychic distress, patient dependency, and negative relationship. The last core construct examined in the current study, client involvement, was assessed using the VPPS dimension, patient participation, and mean ratings were higher among treatment completers compared to participants who dropped out after the first or second GSC therapy session.

The first aim of the current study was to identify intercorrelations among participants' scores for therapeutic alliance, working alliance and client involvement in order to document empirical similarities in ratings of both treatment completers and dropouts across dimensions of the WAI-S and VPPS subscales, and this hypothesis was supported. Most bivariate correlations among WAI and VPPS subscales demonstrated statistical significance ($p < .01$), and this finding reflects conceptual similarities among the three treatment process constructs, and why therapeutic alliance and working alliance are often used interchangeably in the treatment process literature (e.g., Beutler, Machado, & Neufeldt, 1994). In addition, working alliance and client involvement were significantly correlated, yet there was evidence for empirical distinctiveness. These

results suggest that working alliance and client involvement are separate, yet related dimensions of treatment process. Last, individual WAI subscales shared large amounts of variance, suggesting that the WAI-S bond, task and goal subscales are not as empirically distinct when rated in this sample, compared to their conceptualization and implementation in the existing treatment process literature (Horvath & Greenberg, 1989; Tracey & Kokotovic, 1989). A majority of the intercorrelations among VPPS subscales were statistically significant, and the VPPS patient participation subscale that was used to measure the treatment process variable, client involvement, demonstrated substantial empirical distinctiveness from more global measures of therapeutic alliance.

The second hypothesis of the current study stated that therapeutic alliance, working alliance, and client involvement could be used to classify participants into two treatment completion status groups, i.e. completers or dropouts. This hypothesis was supported by the results of discriminant function analysis (DFA). The DFA was performed in three steps, and several significant discriminant functions were identified. First, DFA was used to examine the subscales of both the WAI-S and the VPPS together followed by independent examinations of WAI-S and VPPS subscales. One significant discriminant function was found (WGOAL; $F(1,56) = 36.45, p < .0001$) when the subscales of the WAI-S and VPPS were examined together, as well as when WAI subscales were examined separately from the VPPS subscales. When VPPS subscales were examined using a direct DFA method, one significant discriminant function was identified that included client involvement (VPPAR; $F(1,56) = 22.54, p < .0001$). A stepwise method for DFA was also conducted using the VPPS subscales and two discriminant functions were identified that included both therapist warmth and

friendliness (VTWFR; $F(2,56) = 15.93, p < .0001$) and client involvement. Overall, DFA correctly classified the majority of this predominantly Latino sample of adolescent male participants with substance use problems into treatment completion or dropout groups using working alliance, therapeutic alliance and client involvement variables derived from the WAI-S and the VPPS. Excerpts from taped GSC therapy sessions for both completers and dropouts are presented in Tables 13 and 14. These excerpted statements exemplify the between-group differences in dimensions of therapeutic processes for the treatment completers and adolescents who dropped out of treatment.

Synthesis of Literature Review and Results

Research Question One: Correlations Among Treatment Process Variables

This study investigated associations among therapeutic alliance, working alliance and client involvement variables assessed among a sample of adolescent largely Latino males receiving substance use treatment services. The hypothesis derived from Research Question One stated that there were significant empirical similarities among these variables and this hypothesis was supported. The major reason for examining intercorrelations among these treatment process variables stemmed from a review of the existing treatment process literature. While reviewing treatment process constructs, it was found that some of these constructs were being used interchangeably in the treatment process literature. In particular, therapeutic alliance and working alliance constructs were conveyed as distinct in some studies, and yet other studies described therapeutic alliance and working alliance as similar, and interchangeable constructs.

Table 13

Excerpts From GSC Therapy Sessions For Treatment Completers

Completion Status	Excerpt
Completer	(T) What did you get out of this exercise? (C) I realize more...my friends getting arrested and I don't want to. (T) You must be very strong...I am very impressed.
Completer	(T) What are the positive things of using drugs? (C) Getting high...better time...everybody more loose...everybody acts all different...everybody happy. (T) All right that's it! That's your problem use right there.
Completer	(T) You really have a lot of good things about stopping...that's excellent. (C) I don't want to be a burnout. (T) Good, it really sounds like you thought this through.

Note. (T) = Therapist, (C) = Client

There have been several therapeutic process-outcome studies that have used therapeutic alliance and working alliance interchangeably. One such study assessed early levels of therapeutic alliance to predict treatment retention for a sample of substance-abusing adolescents receiving a cognitive-behavioral treatment modality (Hogue et al., 2006). This study measured therapeutic alliance using the Vanderbilt Therapeutic Alliance Scale (VTAS; Hartley & Strupp, 1983). Therapeutic alliance in this study was

defined as a collaborative and task-oriented relationship that formed between therapist and client. Another recent study (Schönberger, Humle, & Teasdale, 2006) examined the development of therapeutic alliance among therapists and clients during brain injury rehabilitation. The terms therapeutic alliance and working alliance were used

Table 14

Excerpts From GSC Therapy Sessions For Treatment Dropouts

Completion Status	Excerpt
Dropout	<p>(T) How confident are you that you will reduce or stop your use?</p> <p>(C) I am pretty sure I can, but I don't know about stopping.</p> <p>(T) You're saying that you don't want to change.</p>
Dropout	<p>(T) Have you thought about stopping...how important is it for you?</p> <p>(C) I don't want to stop using marijuana.</p> <p>(T) No?</p> <p>(C) No.</p> <p>(T) Um...</p>
Dropout	<p>(T) What other cons are there besides getting arrested?</p> <p>(C) Mess up your body.</p> <p>(T) What else?</p> <p>(C) It's fun.</p> <p>(T) Is that positive or negative?</p> <p>(C) Positive.</p>

Note. (T) = Therapist, (C) = Client

interchangeably, and the Working Alliance Inventory- Short was used to measure therapeutic alliance. Another recent study (Principe, Marci, Glick, & Ablon, 2006) examined associations between therapeutic alliance and readiness to change, using the WAI-S to measure the therapeutic alliance construct. These specific studies illustrate how the treatment process constructs therapeutic alliance and working alliance have been used interchangeably. Although therapeutic alliance and working alliance have been documented as tapping different dimensions of treatment process (Horvath & Greenberg, 1989; Martin, Garske, & Davis, 2000) the results of the current study support their conceptual meaning as one and the same. Based on the sample of adolescent, predominantly Latino males included in the current study, therapeutic alliance and working alliance shared a large proportion of variance, which suggests that these constructs are accounting for the same dimension of treatment process. Therefore, therapeutic alliance and working alliance can be used interchangeably in the literature, until measures more effectively distinguish them empirically. However, in order to avoid further confusion, the terminology and meaning of these constructs need to be clarified in the treatment process literature. Specifically, since therapeutic alliance and working alliance are empirically similar, their conceptual meanings should be integrated, and a single term should be selected that conveys the premises of both constructs (e.g., therapeutic-working alliance).

Currently, there remains a lack of consistency with regard to the meanings bestowed upon therapeutic alliance and working alliance in the treatment process literature. Unlike the studies previously mentioned, other treatment process-outcome studies have differentiated between therapeutic alliance and working alliance, both

conceptually and through variables measured empirically. In particular, working alliance has been integrated into empirical research as a construct distinct from therapeutic alliance. For example, a recent study (Hatcher & Gillaspay, 2006) was conducted to validate the Working Alliance Inventory-Short Revised (WAI-SR), based on earlier versions of the WAI and WAI-S (WAI; Horvath & Greenberg, 1989; WAI-S; Tracey & Kokotovic, 1989). The WAI-SR follows the conceptual framework of the WAI scales, and these are based on Bordin's (1979) notion of alliance that was defined primarily by the bonds, tasks, and goals that develop between therapists and their clients.

The Hatcher and Gillaspay (2006) study highlights two important points. First, the treatment process variable, working alliance, is defined as being independent of the treatment process variable therapeutic alliance. In contrast, the bivariate correlations summarized in the current study suggest that therapeutic alliance and working alliance are not as empirically distinct as presented in much of the existing treatment process literature, due to significant amounts of shared variance. Specifically, ratings of therapeutic alliance and working alliance were highly intercorrelated in the current study, suggesting that they are either not empirically distinct constructs or alternatively, that the current measures of, and assessment strategies for, the working alliance constructs limit construct validity. Second, the three dimensions of the WAI-S, i.e., bond, task, and goals, were also found to be highly intercorrelated in the current study, and these results also document a lack of distinctiveness among aggregate ratings for each subscale in this sample. The development of the WAI-SR (Hatcher & Gillaspay, 2006) is an attempt to address this concern via the revision of the WAI-S to differentiate more clearly among the bond, task, and goal subscales.

Although the aggregate ratings of therapeutic alliance and working alliance were significantly intercorrelated in the current study, the results of the bivariate correlations among ratings of working alliance and client involvement demonstrate more empirical separation than ratings of WAI-S subscales. As previously mentioned, ratings of working alliance and client involvement were more modestly intercorrelated, suggesting that while these constructs are significantly correlated, they also manifest significant unique variance. In other words, it is more likely that working alliance and client involvement are empirically distinct dimensions of overall treatment process. A review of the treatment process literature did not identify any empirical studies that focused solely on client involvement as an indicator of treatment process. Based on the results of the current study, the construct of client involvement deserves additional attention as an informative measure of treatment process.

Research Question Two: Differences in Completion Status Based On Treatment Process

Several discriminant function analyses were calculated to identify which linear combinations, composed of treatment process variables, correctly classified participants into two groups: adolescents who completed the ATTAIN program and those who dropped out of treatment after the first or second session of therapy. Three separate DFA methods yielded two overall discriminating functions. These discriminant functions highlighted the significance of the goal dimension of the WAI-S and the patient participation (i.e., client involvement) subscale of the VPPS-S in the classification of ATTAIN participants on the basis of completion status. First, the WAI-S goal subscale accounted for 100% of the variance between the discriminant functions and scores. These results are similar to those found in several published studies assessing working alliance.

Most empirical studies using working alliance to examine treatment process have focused on relations between treatment process and specific treatment outcomes (Martin et al., 2000; Orlinsky, Ronnestad & Willutzki, 2004). Specifically, these studies typically use ratings of working alliance to predict treatment retention or dropout (e.g., Shelef, Diamond, Diamond, & Liddle, 2005). In a review of the treatment process literature, no other studies were identified that used working alliance to differentiate between treatment completers and dropouts.

Client involvement, as measured by the patient participation subscale of the VPPS, was the second significant linear combination to distinguish between adolescent client groups based on completion status. Again, client involvement proved to be a meaningful factor associated with treatment process, influencing treatment completion status. However, client involvement, as an indicator of treatment process, has not received enough empirical attention in the treatment process literature, and in particular among ethnic minority adolescents. Based on the findings in the current study, client involvement has been identified as an important and promising dimension of overall therapeutic alliance, and it needs to be investigated systematically as a potentially important component of treatment process influencing treatment completion among minority youth experiencing substance use problems.

Overall, significant support was garnered for both hypotheses examined in the current study. The goal subscale of the WAI-S and the patient participation subscale of the VPPS successfully differentiated, within a sample of mostly Latino male adolescents who were referred for treatment by a community agency, clients who either completed or dropped out of a GSC substance abuse treatment intervention. Although several process-

outcome studies focusing on substance-using adolescents are currently available (e.g., Hogue et al., 2006; Robbins et al., 2006; Shelef, Diamond, Diamond, & Liddle, 2005) a review of the extant treatment literature did not identify published studies that included samples of substance-using, Latino, adolescent males. In addition, process-outcome studies utilizing GSC treatment formats were not found in published literature.

The current study advances several understudied domains. First, the findings of this study supplement a small collection of treatment completion-dropout studies. As previously mentioned, although there are a substantial number of treatment process-outcomes studies, interest in treatment completion-dropout has only begun to gain momentum. The body of literature focusing on the GSC treatment modality also benefits from the findings of the current study. To date, there has yet to be a treatment completion-dropout study conducted within the framework of GSC treatment strategies. Also, these findings support that GSC, like other theoretically-driven treatment modalities, has a strong alliance component among GSC therapists and clients. Last, this study highlights high alliance scores among a unique minority sample of mostly Latino, substance-using male youths. Overall, the findings of this study provide support for the salience of therapeutic alliance within the context of GSC strategies among GSC therapists and minority youth.

Implications for Treatment

The findings of this study provide several important implications for treatment. In general, the results of the study underscore the importance for counseling practitioners to attend to working alliance when delivering substance abuse treatments, since the working alliance goal dimension successfully differentiated between adolescent clients who

completed treatment and those who dropped out. Furthermore, the negative relationship dimension of the VPPS demonstrated no significant differences by completion status group. This finding suggests that adolescents who completed treatment were not perceived as having a significantly more positive relationship with their GSC therapists. In addition, assessing scores for client involvement early in the therapeutic relationship and bolstering the client's participation in therapy may increase treatment retention. Using working alliance or client involvement measures as clinical tools may help practitioners to become aware of the risk of client disengagement and the related risk for dropout early on in the implementation of a treatment program. Future studies are needed that use working alliance and client involvement measures as tools to identify specific groups of adolescents who may be prone to dropout from treatment. For example, a prospective study could investigate whether strategies of transferring clients with poor working alliance or client involvement to different counselors would be associated with improvements in retention status. Reassigning participants who exhibit lower scores for working alliance or client involvement to other therapists may bolster overall scores for indices of alliance and decrease clients' likelihood of dropping out of treatment.

Working alliance and client involvement can also be used to investigate the influence of therapist and client characteristics on treatment process. The findings of the current study support the use of working alliance and client involvement as determinants of therapist's and client's characteristics' impact on treatment process. These findings demonstrated that the goal dimension of working alliance successfully differentiated between treatment completers and dropouts. In addition, the therapist warmth and friendliness dimension and client involvement dimension of the VPPS scale also

successfully classified clients by completion group membership. These findings highlight specific contributions of both therapist and client attributes toward the overall treatment process.

Other studies have found similar results, and these studies also demonstrate the importance of considering the influence of therapist and client qualities on treatment process (Ackerman & Hilsenroth, 2003; Constantino et al., 2005; Hill et al., 2006). One particular study (Mohl et al., 1991) reported that clients demonstrating strong alliance with a therapist were more likely to like their therapist, gain a new understanding of self, and feel more liked and respected by their therapist. In addition, therapists with strong alliance scores were reported as being warm, friendly and able to facilitate a greater sense of understanding. Another study explored how client characteristics influenced treatment process (Hill et al., 2006). This study found that client involvement was positively associated with successful session outcome. Overall, the current study has demonstrated support for the use of working alliance and client involvement as constructs that can be used to explore therapist and client qualities on treatment process. A deeper investigation of the associations between working alliance and client involvement with therapist and client characteristics can benefit overall treatment process by bolstering alliance between therapist and clients and reducing clients' likelihood of dropout from treatment.

The major findings of the current study show that working alliance and client involvement are effective classification tools for identifying potential treatment completers and dropouts. These findings can inform and benefit counseling training programs. Counselors who are trained to identify clients demonstrating scores of weak alliance may be able to reduce their likelihood for treatment dropout. Addressing the

importance of fostering a strong working alliance and client involvement as a means of reducing the likelihood of treatment dropout can contribute to a strong relationship between therapist and client and overall successful treatment outcome.

Last, given the growing Latino population in the United States (Alarcon, 2001) it is imperative to attend to factors that contribute to successful treatment completion. One such factor that has been documented as being associated with successful therapeutic outcomes among Latino populations is alliance (Bernal, Bonilla, Padilla-Cotto & Perez-Prado, 1998). One study found that general alliance accounted for 45% of the variance in treatment completion compared to other factors such as symptom severity, age, and number of sessions for Latino clients. These findings underscore alliance as a central influence upon treatment success, and support the results of the current study. The positive findings of the current study were also based on a sample of largely Latino, substance-using male adolescents, and these results suggested that working alliance and client involvement are factors that can be used to differentiate and predict treatment completion or dropout. In other words, GSC therapists exhibited a strong working alliance with Latino clients who completed the treatment intervention, and these clients were rated independently as having strong engagement in the therapeutic session with GSC therapists.

In addition, concerns have been raised regarding the underutilization of mental health services among the Latino population (Alegria, Canino, Rios et al., 2002). The underutilization of mental health services by Latinos has been associated with issues such as stigma, language usage, and acculturation level and these culture-relevant concerns may create barriers to treatment (Gloria & Peregoy, 1996). Given these cultural issues, it

is imperative to explore factors that can offset potential barriers to treatment, such as core treatment process variables. In fact, therapeutic alliance is one such factor that has been cited as a particularly important factor contributing to treatment effectiveness among Latino populations (Anez et al., 2005). According to the authors, establishing a therapeutic alliance that takes into account cultural factors with Latino clients may decrease treatment barriers. Based on these studies and the findings of the current study, working alliance and client involvement are two factors that should be taken into consideration when investigating the effectiveness of treatment among Latino populations.

Limitations

Despite the overall significant results of the current study, several methodological and statistical issues must be taken into consideration as potential limitations of the study. First, participants were not randomly assigned to completion status groups, but were pre-selected based on the following limited set of demographic characteristics: age 14 to 18 years, predominantly Hispanic/Latino ethnicity, male gender, and non-mandated status. Although the use of restrictive inclusion criteria potentially improved the internal validity of the study by decreasing the likelihood of potential confounding variables (e.g., gender, criminal history), the results of this study may not generalize to other youth populations beyond the one included in the sample. Since this study used pre-selected groups, the results should be interpreted carefully. The results of the current study should be replicated using a sample of females or a sample of males and females from another geographic location.

Second, the research assistants who were recruited to rate the WAI-S and VPPS measures were undergraduate and graduate students. These raters did attain the criterion standard set for defining minimum acceptable interrater reliability. However, if licensed practitioners were used, ones who had more extensive clinical experience, to administer rating scales, this may have changed the findings of the study. Also, of the three raters initially trained for the purposes of assessing interrater reliability, the two raters who reached the specified criterion for establishing acceptable interrater reliability were an undergraduate student and the principal investigator. Therefore, only one rater was completely blind to the hypotheses of the study. The same raters rating all the same measures may account for some of the shared variance in the subscales of the WAI-S and the VPPS. It is also important to note using only two raters to rate all measures may have contributed to the lack of variance on one item of the VPPS. Due to the lack of variance for this VPPS item, a factor analysis was unable to be run.

The current study used DFA to differentiate between clients who completed treatment and those who dropped out. Although DFA was an appropriate statistical technique, it also has several limitations. According to Harlow (2005) there are a few considerations to take into account after using DFA. First, DFA should be followed up with an experimental design that investigates the nature of relations between the grouping and discriminating variables in a more rigorous manner. Second, it is questionable whether sufficient controls were included in the current study. Potential control variables (i.e., statistical covariates) may have been related to the outcome of the study, but were not considered a focus of the study. For example, frequency of substance use, therapists' characteristics, client psychopathology, social support, and delivery format may have

influenced the clients' dropout status. Last, measures were administered at only one time point, and their administration also may have impacted the results of the study.

Administering scales at multiple time points for each participant would provide evidence regarding the temporal ordering of specific treatment process variables.

Directions for Future Research

The future steps to expand upon the current study would include improving upon the previously mentioned limitations. Reducing these limitations would help to generate more robust findings that could enhance and expand the current literature on, and inform treatment completion and dropout. A follow-up study that builds upon the current study would include improved features such as a larger sample of participants from a different geographic location. Participants from the overall sample could then be randomly selected into smaller samples of clients who then complete or dropout of treatment. Raters would be recruited who had obtained extensive clinical assessment experience, and all raters would be blind to the hypotheses of the study. In addition, extraneous variables such as frequency of substance use, therapist characteristics, and client psychopathology would be assessed and statistically controlled to safeguard the internal validity of the study. Alliance measures that demonstrate clear psychometric evidence for both reliability and validity, and which clearly tap alliance constructs would be used to explore treatment process.

The sample used to investigate the research questions of the current study was largely limited to a minority population of substance-using, male youth. Future studies can reexamine the same research questions among different samples of youth (i.e., females, African-American youth). Examining the same research questions using a

different set of demographics inclusion criteria would evaluate the external validity of the results of the current study to other populations. Addressing the generalizability of the current results for other populations would further unveil the role of treatment process as a classification tool and predictor of treatment completion or dropout.

Despite the potential limitations of the current study, the pattern of significant group differences in therapeutic process variables documented herein yielded several significant implications for future research. First, the findings of this study can facilitate new directions of investigation for future treatment process research. The high intercorrelations between the VPPS-S and WAI-S scales, as well as high intercorrelations documented among the WAI-S subscales raise several concerns about the empirical uniqueness of these constructs. Ongoing efforts to revise and validate these scales, such as recent efforts to improve the WAI-SR (Hatcher & Gillaspay, 2006), can better ascertain whether these constructs are as empirically unique as conceptualized in the treatment process literature. Further scale revisions may improve incrementally their psychometric properties and ensure that items are accurately tapping specific alliance-related constructs. In addition, client involvement has demonstrated significant promise as a variable that can capture the predictive validity of specific treatment processes by differentiating between treatment completers and dropouts. Furthermore, unlike therapeutic alliance, client involvement can be used in conjunction with working alliance to examine multiple simultaneous aspects of treatment process in future research endeavors. The further development and validation of scales assessing client involvement would benefit this understudied dimension of the treatment process literature.

Second, this study attended to a currently untapped topic related to research on treatment completion-dropout status. Specifically, this study used treatment process variables to examine groups differences by completion status within the context of brief motivational interventions (BMIs), and in particular GSC, within a predominantly minority community-based treatment setting. Although there are numerous published process-outcome studies investigating alliance within the context of multiple therapeutic modalities, there has been to date a lack of completion-dropout studies investigating alliance within the context of GSC treatment delivery. Furthermore, the sample used for this study was a minority adolescent population. Additional empirical attention is needed with regard to both process-outcome and completion-dropout studies within the context of GSC treatment delivery.

Third, additional exploration of the contributions of client and therapist characteristics, as well as dyadic characteristics in additional studies of treatment process would potentially pose fruitful questions for future research. The current sample included only male predominantly Latino participants, and these participants were rated as manifesting strong levels of working alliance with GSC therapists. An interesting research question for a future study would include documenting any gender differences in completion status related to scores for working alliance and client involvement.

Ultimately, the findings of this study have informed both the treatment process and the GSC-related bodies of research literature. In general, the working alliance and client involvement constructs can be used as clinical tools to identify participants who are exhibiting lower levels of alliance, and who may be susceptible to dropping out of treatment services. For example, the WAI-S could be administered to clients in an early

therapy session in order to minimize potential for dropout from later therapy sessions. Improving the strength of the overall alliance between clients and therapists may minimize potential dropout and bolster client retention in treatment or intervention services. In addition, further investigation of treatment processes within GSC treatment delivery formats may enhance our understanding of the influence of alliance between clients and GSC therapists. Investigating the role of specific elements of treatment process as critical components of brief motivational interventions (BMIs) for substance-using adolescents will inform both practitioners and researchers regarding the effectiveness of community-based substance abuse interventions for adolescents.

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VITA

MILLIE CORDARO

- 2006 Ph.D. Candidate in Applied Developmental Psychology with an emphasis in Mental Health Counseling
Florida International University, Miami, FL
- 2002 M.A. in Psychology
University of West Florida, Pensacola, FL
- 2000 B.A. in Psychology
University of West Florida, Pensacola, FL

TEACHING EXPERIENCE

- 2006-2007 Visiting Instructor, *University of West Florida.*
- 2002-2006 Adjunct Instructor, *Florida International University.*

PRESENTATIONS

- Cordaro, M., Tubman, J., & Wagner, E. (January, 2007). *Differences in treatment process among adolescent participants of a Guided Self-Change substance abuse intervention.* Poster will be presented at the 2007 Society for Social Work and Research Conference, San Francisco, CA.
- Cordaro, M., & Mathews, S. (February, 2007). *Gender differences in relational motivation orientation among emerging adults.* Poster will be presented at the 2007 Emerging Adulthood Conference, Tucson, AZ.
- Cordaro, M., Montgomery, M. J., Hernandez, L., & Han, H. P. G. (March, 2004). *Differentiation of self, attachment, and psychosocial intimacy as predictors of identity maturity in emerging adults.* Poster presented at the 2004 Society for Research in Identity Formation Conference, Baltimore, MD.
- Hernandez, L., Cordaro, M., & Montgomery, M. J. (May, 2003). *The co-occurrence of identity and emotional distress, peer victimization, and alcohol and other drug use among adolescents.* Poster presented at the 2003 Society for Research in Identity Formation Conference, Vancouver, BC, Canada.

Cordaro, M. & Mathews, S. (July, 2001). *Gender Differences, Weaknesses, and Sexual Victimization*. Poster presented at the Southeastern Psychological Association Conference, Atlanta, Georgia.