

The Seven Challenges®:
An Effective Treatment for Adolescents with Co-occurring Substance Abuse and
Mental Health Problems

¹Sally J. Stevens, Ph.D.

²Robert Schwebel, Ph.D.

¹Bridget Ruiz, B.A .

¹ Sally J. Stevens, Ph.D., and Bridget S. Ruiz, B.A. are affiliated with the University of Arizona Southwest Institute for Research on Women - 1103 E. University, P.O. Box 210025, Communications 108, Tucson, AZ 85721.

² Robert Schwebel, Ph.D. is a private practice psychologist and the developer of The Seven Challenges Program - 431 S. Brighton Lane Tucson, AZ 85711.

Send correspondence to: Sally J. Stevens, Ph.D. U of A – SIROW 1103 E. University P.O. Box 210025 Communications 108, Tucson, AZ 85721 (520) 626-9558; fax (520) 621-1533; email: sstevens@dakotacom.net

Key Words: adolescents, outcomes, treatment approaches, mental health, substance abuse

This research was supported by grants 5KD1-TI11422 from the Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Substance Abuse Treatment (CSAT) Adolescent Treatment Models Program. The views expressed here are those of the authors and do not necessarily represent the policies or viewpoints of the funding agencies.

ABSTRACT

Recent developments in the provision of the substance abuse treatment for adolescents has included a focus on age appropriate treatment with consideration of adolescents' relatively low level of motivation for treatment and high incidence of co-occurring substance use and mental health problems. This study examines three and six-month substance use and mental health outcomes for youth (n=36) participating in The Seven Challenges Program. Results indicate significant reductions in both substance use and mental health related measures at three months with all measures except substance abuse frequency continuing to improve at the most distal six month assessment. The Seven Challenges treatment model is presented along with a discussion of the findings.

INTRODUCTION

Historically, providers of adolescent substance abuse treatment typically used treatment approaches geared toward adults and adult patterns of substance use, with only minimal modifications (Dasinger, Shane, & Martinovich, 2004; Dennis, Dawud-Nourski, Muck, & McDermeit, 2003a). Recently, however, providers have begun to modify treatment to more effectively address the distinct complexities associated with adolescent substance abuse (Cavanaugh & Muck, 2004; Stevens, 2005). Likewise until recently, evaluations of adolescent treatment practices in the community have been few and methodologically limited (Dennis et al, 2003a; Young, Corley, Stallings, Rhee, Crowley, & Hewitt, 2002). To address the gap in knowledge, the Center for Substance Abuse Treatment (CSAT) established the Adolescent Treatment Models (ATM) Program designed to identify existing models of adolescent treatment that were thought to be exemplary, evaluate their effectiveness, and work to collaborate in formalizing the models into disseminable manuals. The ten selected programs for inclusion in the ATM program offered a wide range of levels of care: outpatient; short term and intensive inpatient; step-down models (brief residential followed by outpatient); residential; and modified therapeutic communities. They utilized a broad spectrum of clinical approaches, each with a theoretical basis for its approach for providing treatment for adolescents (Stevens & Morral, 2003).

Initially, all of the model programs studied in the CSAT-ATM Program were required to include a comparison group. In Tucson, Arizona the University of Arizona ATM research team selected The Seven Challenges Program and was given permission by Providence Service Corporation to include Seven Challenges as a comparison to the

model program, La Cañada, under study. The Seven Challenges Program provides another perspective on the problem of adolescent substance abuse, starting with the recognition of the early stage of change of adolescents who enter treatment for alcohol and other drug (AOD) problems, and with a concurrent awareness of the developmental challenges faced by adolescents.

Early Stages of Change:

Most adolescents do not voluntarily seek substance abuse treatment; rather they are brought to treatment by parents, schools, and most frequently the courts (Dennis et al, 2003a; Stevens, Hasler et al., 2003). Applying the Transtheoretical Model (Prochaska, Norcross & DiClemente, 1992, 1994), one might expect adolescents to be in the early stages of change – precontemplation or contemplation – particularly given that most do not enter treatment voluntarily. While there is limited research on stage of change among adolescent substance users entering treatment, a few studies have shown that youth are typically in the early stage of change at treatment entry. In a study by Stevens and Murphy (1999), youth enrolled in a Seven Challenges program reported, on average, to be in a contemplative stage of change. On a 8 point scale (1 = precontemplative to 8 = maintenance), the average stage at treatment entry was 3.2; “I have a problem with alcohol and other drugs and am almost ready to make some changes or I have already made some small changes”. Many youth do not perceive that they have a problem with drugs and are reluctant to give up the perceived benefits of their drug use behavior (Schwebel, 2004; Stevens, Furhiman, & Ruiz, 2005). Two principal reasons contribute to this perception. First adolescents see their substance use as normative, which statistically could be considered accurate (Laviola, Marci, Morely-Fletcher, & Adriana, 2003;

SAMHSA, 2004), and time-limited to the teens years, as they argue, “I can quit whenever I want.” Second, considering the high incidence of co-occurring problems (Ruiz, Stevens, McKnight, Godley & Shane, 2005; Stevens, Estrada, Murphy, McKnight & Tims, 2004; Tomlinson, Brown & Abrantes, 2004), many youth may be using drugs to cope with life; thus contributing to their perception that their lives would not be better without drugs (Stewart-Sabin & Chaffin, 2003). Even among those who do see a reason to change, many doubt their self-efficacy in being able to change, perhaps rightfully so, because they lack the preparation and requisite skills for successful coping without drugs.

The Expectation of Immediate Abstinence:

Adult substance abuse treatment typically demands immediate and total abstinence (Denning, Little & Glickman, 2004). Historically, adolescent drug treatment has followed suit, setting similar expectations upon youth. Typically, youth are expected to immediately stop using drugs and are drug tested for evidence of their drug-free status as a result of juvenile justice involvement or other external reasons. Furthermore, sometimes abstinence is a requirement for admission to a program. The expectation of immediate abstinence should work well with those motivated youth who are seriously concerned about the consequences of their drug use, prepared to quit using, and capable of successfully coping without alcohol or other drugs. However, this expectation could be problematic for others; including youth who do not think they have a problem with drugs; youth who are not prepared or do not see a way to cope with co-occurring psychological or other problems without drugs; and youth who lack a sense of self-efficacy and who doubt their abilities to maintain abstinence.

Harm reduction approaches (Ruefli & Rogers, 2004) acknowledge that abstinence may not be the goal of some individuals entering substance abuse treatment. Thus, approaches based on harm reduction look for ways to decrease harmful behaviors (e.g. drug use; risking behaviors) while increasing positive behaviors (e.g. treatment engagement; pro-social activities). While practitioners may still view the ultimate goal of treatment as abstinence a process for moving youth from use to non-use may be helpful particularly for those adolescents who have not yet embraced the benefits of abstinence

Recently some adolescent treatment programs have begun to address the client's motivation for treatment. For example, within the ATM Programs, Epoch (Battjes, Sears, Katz, Kinlock, & Gordon 2003) added brief motivational enhancement, and Mountain Manor Treatment Center (Fishman, Clemmey & Adger, 2003) added motivation enhancement to assist clients in identifying the "unmanageability" of their drug use. In *The Seven Challenges Manual*, Schwebel (2004) suggests that the history of high drop out rates and disappointing outcomes of youth enrolled in drug treatment (Kaminer, 2001; Hser et al, 2001) can be explained, perhaps in part, by the initial expectation of immediate abstinence or the expectation of a rapid commitment to abstinence following brief motivational enhancement. This expectation may not closely match the stage of change of much of this client population --- many of whom are mandated to treatment.

The expectation of immediate abstinence for all clients might also work against progress in important developmental challenges faced by adolescents including the interrelated tasks of (1) defining their own independent identities (Erikson, 1963), and (2) mastering formal logical thinking (Inhelder & Piaget, 1958). Identity development is one of the major tasks of adolescence. Research indicated that young adolescents who have

problems with identity development are more likely to use drugs (Jones, 1992, 1994).

Given that adolescents tend to internalize a sense of identity that they construct with their peers (Pugh & Hart, 1999), alcohol or other drugs can be a major part of their identity if substance use is part of their norm. Programs that dictate or attempt to control substance use are likely to be met with resistance by adolescents whose identity at the time of treatment entry is defined by drug use and wrapped within a peer group that embraces substance use (Rowe, Parker-Sloat, Schwartz & Liddle, 2003). Young people need an opportunity to think things through for themselves and to reach their own conclusions -- a successful program would likely guide youth through this process.

In the past decade, with improved methodologies, investigators have found that adolescent brains are far less developed than previously believed (Rosser, Stevens & Ruiz, 2005). Delayed development is reliably noted in the prefrontal cortex; the mediator of behavioral planning and reasoning (Kwon, 1998), attentional processes (Foster, Eskes, & Stuss, 1994), impulsivity (Murji & DeLuca, 1998) and response inhibition (Roberts, Hager & Heron, 1994). Given this, mastering formal logical reasoning is a challenge for adolescents. With regard to substance abuse treatment, adolescents may need more time and different strategies than their adult counterpart to understand the disconnect between their substance use and life goals.

The expectation of immediate abstinence for all clients, in part, does not take into account the complexity of substance abuse. We know that mental health problems frequently co-occur with substance abuse (Bootzin & Stevens, 2005; Ruiz et al., 2005; Shedler & Block, 1990; Stevens et al., 2004) and that adolescents, by virtue of their age and developmental status, have added challenges in addressing their substance use and

related mental health problems. When narrowly focusing on the immediate cessation of drug use, attention to the psychological underpinnings of the problem are minimized or overshadowed. Youth may be asked to commit to abstinence before they have the requisite life skills or psychological wellness required to successfully maintain their drug-free status.

Finally, the insistence upon immediate abstinence for all clients could undermine the therapeutic relationship as counselors operate from a certain assumption (clients have a drug problem) and attempt to impose a certain goal (commitment to immediate abstinence) both of which may be incongruent with the client's perspective and aspirations. This incongruence could result in a contentious relationships characterized by argumentative exchanges or by dishonesty, in which adolescents merely pretend to make a decision to quit using drugs. The development of a positive client-counselor relationship is important as past research indicates positive client-counselor relationships and treatment alliances enhance psychotherapy outcomes (Brent & Kolko, 1998; Horvath & Luborsky, 1993; Messer, 2003).

Taking into consideration the early stage of change of adolescents entering substance abuse treatment, along with the developmental challenges faced by adolescents, The Seven Challenges Program was developed with the intent to reduce substance abuse and mental health problems of adolescents in need of treatment.

The Seven Challenges Program:

The Seven Challenges® Program was developed specifically for adolescents – paying heed to their stage of change and developmental challenges. An underlying

concept is “to start where youth are at (usually in the early stages of change),” not where professionals “might wish they would be and not where youth might pretend to be (ready, willing, and able to be drug free” (Schwebel, 2004). The program provides a framework for respectfully challenging youth to engage in self-evaluation and a decision-making process. Motivational approaches (Miller & Rollnick, 2002) and other more directive strategies are used to increase awareness of harm from drug use without increasing defensiveness. Concurrently, The Seven Challenges program works with adolescents to address co-occurring mental health problems; empowering them to cope in positive ways without drugs. Schwebel (2004) writes: “In this program youth make informed, internally motivated, and committed decisions to change. They are taught the skills needed to succeed in overcoming drug abuse and drug dependency problems, and then supported in successfully making changes.”

Youth who choose to be abstinent right away -- either because this is required of them by the court or other authorities, or because they feel it is in their best interest – are immediately supported with relapse prevention, although the emphasis is simultaneously on helping to ensure that the decision is solidified by progressing through the rigorous Seven Challenges decision-making process.

Through counseling sessions, supported by readings and nine interactive journals, The Seven Challenges Program assists young people in evaluating their lives; including the needs they are attempting to satisfy by using drugs; and the risks, harm, and potential harm from their drug use. This leads to decision making about drug use; and finally, successful implementation of the changes they wish to make. Seven distinct Challenges (see below) are presented to youth and addressed in treatment. They represent the core of

The Seven Challenges Program.

The overarching framework of The Seven Challenges can best be understood in terms of the cognitive/emotional public health model of decision-making (Janis & Mann, 1977) in which individuals weigh the benefit versus cost of particular behaviors, in this case the use of drugs. Because most adolescents are in the early stage of change when they enter AOD treatment, decisions about using or not using drugs may be deferred in The Seven Challenges Program. Rather initial efforts are directed toward establishing the therapeutic relationship in order to work toward congruence of perspective and goals. Therefore the first of The Seven Challenges focuses on developing an open and honest relationship between the counseling staff and youth, while the remaining challenges can be conceptualized in terms of this decision making model.

In Challenge One, great care is taken to create a climate of openness and trust that allows for honest dialogue, and thereby an opportunity for healthy, informed decision-making and behavior change. Challenge One, states: “*We decided to open up and talk honestly about ourselves and about alcohol and other drugs.*”

In Challenge Two, youth identify the perceived benefits of drugs – the needs they are satisfying or attempting to satisfy through their drug use. This increased understanding helps the clients prepare for informed decision-making, and also helps the client and counselor plan a compensatory program in which youth learn healthier, alternative ways to cope with life and meet their needs. Challenge Two states: “*We looked at what we liked about alcohol and other drugs, and why we were using them.*”

In Challenge Three, adolescents identify the harm from their drug use and potential harm; that is, harm that could occur due to high risk behavior, such as driving under the influence, violating laws under the influence, or sex under the influence.

Challenge Three states: “*We looked at our use of alcohol or other drugs to see if it had caused harm, or could cause harm.*”

In Challenge Four, shame and excessive self-blame is addressed by giving clients an opportunity to put their problem behavior in perspective of life circumstances and experiences – those they have endured and those of which they may have been deprived. Excessive external blame (blaming the world for everything) is also countered. Youth who either feel excessive shame or externalize all responsibility for problems find it hard to acknowledge their own mistakes and move forward with personal change. Challenge Four states: “*We looked at our responsibility and the responsibility of others for our problems.*”

In Challenge Five, the developmental urge of preparing for adulthood is considered. It helps youth anticipate future harm if they continue with their drug use, thereby tipping the decisional balance toward change. This challenge also helps youth think and visualize a more positive future, and what it might look like. Optimism and anticipation of a better life (Prochaska, Norcross, & DiClemente, 1994) is what motivates people to move from the contemplation stage to preparation, and finally to action. Challenge Five states: “*We thought about where we seemed to be headed, where we wanted to go, and what we wanted to accomplish.*”

In Challenge Six, youth are asked to make their own decisions about both their life in general and about their drug use. Challenge Six states: “*We made thoughtful decisions about our lives and about our use of alcohol and other drugs.*”

In Challenge Seven progress is monitored and success is acknowledged. Preparation for learning from and dealing with inevitable setbacks is addressed along with strategies for preventing lapses or relapses, when possible. Challenge Seven states: “*We followed through on our decisions about our lives and drug use. If we saw problems, we went back to earlier challenges and mastered them.*”

Outcome Expectations

The Seven Challenges Program takes into account the stage of change of adolescent clients and is designed to be developmentally appropriate. It is expected that youth in the program would learn to make informed, internally motivated, and committed decisions to change; leading to substantial reductions in substance use and in problems related to their substance use. Moreover, it was thought that The Seven Challenges Program would be especially effective in helping youth with their co-occurring mental health problems, as the program does not narrowly focus on substance use but rather on the entirety of the adolescents’ lives. Finally it was expected that the perceived need for treatment would reduce over time in relationship to adolescents’ reduction in substance use and mental health problems.

METHODS

A) Study Overview:

The ATM initiative began in 1998 and was designed to evaluate ten existing substance abuse treatment programs found to be promising models for replication. These ten programs were considered promising models because they were able to provide at least two years of evaluation findings demonstrating successful treatment outcomes. In addition to these 10 treatment programs, evaluators selected at least one other treatment program to serve as a comparison group. As mentioned earlier, The Seven Challenges model was selected as a comparison group to the La Cañada treatment program. While The Seven Challenges Program did not have the two years of evaluation data to be considered for a promising model, it had achieved good outcomes from an earlier 9-month evaluation study (Stevens & Murphy, 1999). The University of Arizona's Institutional Review Board provided initial and annual approvals of the studies protocols. In addition, a Certificate of Confidentiality was applied for and received from the Substance Abuse and Mental Health Administration for further protection of the evaluation data.

B) Participants:

Participants for the present study were recruited from a Providence Service Corporation (Providence) program that was using The Seven Challenges curriculum in a two month intensive outpatient adolescent substance abuse treatment setting. The adolescents were between the ages of 13 and 17 years and all were referred to the program for alcohol and/or drug problems. Adolescents were eligible to participate in the study if they consented, had parental consent, and were enrolled in the substance abuse treatment program. Ninety-five percent (95%) of the adolescents (and parents) entering the substance abuse treatment program elected to participate in the evaluation.

C) Assessment Procedures:

Adolescents enrolled in the study were informed that they would participate in five interviews. These interviews were conducted at baseline and at 3, 6, 9, and 12 months post-baseline. The baseline assessment was completed within 7 days of enrollment into the program. A trained research technician employed by the University of Arizona administered the assessments. Training of the research technician was completed in a 1 ½ day training facilitated by a certified Global Appraisal of Individual Needs (GAIN) (see measures description below) trainer. Ongoing quarterly training and monitoring was provided to ensure staff adherence to study protocols.

D) Measures:

The Global Appraisal of Individual Needs or GAIN (Dennis, Titus, White, Unsicker, & Hodgkins, 2003b) was administered during an individual interview by a research technician. It is the primary data source for the present study. The GAIN is a standardized bio-psycho-social assessment designed to assist clinicians and/or researchers in obtaining information for diagnosis, placement, treatment planning and outcomes monitoring that can be used for research, clinical practice, and administrative purposes (Dennis, et. al. 2003b). The content of the GAIN is divided into eight areas: background and treatment arrangements, substance use, physical health, risk behaviors, mental health, environment, legal, and vocational. The GAIN has repeatedly demonstrated excellent internal consistency on core scales related to the frequency of substance use ($\alpha = .80+$), alcohol use ($\alpha = .90+$), drug use disorders ($\alpha = .90+$), and alcohol use disorders ($\alpha = .90+$) (Dennis, 1999). Excellent internal consistency has also been established for measures of

general mental distress, PTSD, ADHD, conduct disorder, traumatic victimization, social support, environmental risk, illegal activity, and school problems (Dennis, Funk, McDermeit, Godley, Scott, & Godley, 1998). The following scales and subscales were computed from the GAIN-I and were used for the present study:

Substance Problem Index (SPI) is composed of 16 recency items (e.g., "When was the last time you...?"), seven of which are based on DSM-IV criteria for dependence, four for abuse, two for substance-induced health and psychological problems, and three on lower severity symptoms of use (hiding use, people complaining about use, weekly use) ($\alpha = 0.87$). Higher scores on this scale represent greater severity of drug problems. A score of 4 or more generally suggests dependence.

Substance Frequency Index (SFI) is an 8-item measure of frequency and severity of alcohol and other drug use and days of problems associated with that use ($\alpha = 0.79$). Higher scores represent increasing frequencies of substance use in terms of days, days staying high most of the day (i.e., high risk of problems) and days in which drugs caused other related problems. People with scores over .14 may have considerable difficulty stopping without significant assistance and/or a controlled environment.

Treatment Motivation Index (TMI) is a 5-item index that provides a count of items endorsed regarding client's perception of his/her own need for treatment, support for treatment and hope for help through treatment. Higher scores on this scale suggest more

internal and/or external motivators for the individual to be in and continue treatment ($\alpha =$ NA).

General Mental Distress Index (GMDI) is a 22-item index based on the Symptom Checklist (SCL-90) and exhibits high internal consistency ($\alpha = 0.88$). Higher scores indicate a greater breadth and severity of internal (e.g., somatic, depression, anxiety) mental distress. Scores from 4 to 6 are considered to be clinically significant, while scores above 7 suggest acute mental distress.

Depression (DSI) is a 9-item index that provides a count of past year symptoms commonly associated with depression, with higher levels also suggesting increasing "indecisiveness" and "hopelessness" ($\alpha = 0.77$).

Anxiety (ASI) is a 12-item index that provides a count of past year symptoms commonly associated with an anxiety disorder, with higher levels also suggesting increasing "psychoticism" ($\alpha = 0.77$).

E) Analysis:

Data for this study was analyzed using the software, Statistical Package for the Social Sciences (SPSS) version 11.0. Frequencies and percentages were used to analyze the baseline descriptive characteristics of the participants gathered from the GAIN. Data reduction techniques were used to develop computed variables (SPI, SFI, GMDI, DSI, ASI, TMI) for data collected from the GAIN. As detailed above, variables used in this

study are in two primary domains including: (1) substance related, and (2) mental health issues.

The computed variables were used to conduct paired sample t-tests from baseline to 3-months and baseline to 6-months. The t-tests confidence interval was set at 95% and significance was determined using a 2-tailed test. Data were used only if a case had a complete set of data (baseline, 3- and 6-month). Those cases that did not meet that criterion were eliminated from the analysis. While forty-two youth participated in the baseline assessment, 86% (n=36) also participated in the 3- and 6-month assessment. Consequently, 36 cases are used in this analysis.

RESULTS

A) Participant Descriptions:

Table 1 provides a description of the study participants. The majority of the youth who participated in The Seven Challenges study were White (53%), and male (75%). The plurality of youth (33%) entered treatment at the age of 16 years; with an average age at baseline of 15.4 years old. The majority of the youth (61%) reported their legal guardian was someone other than their parents together (e.g., single parent; other family member; county or state custody).

Alcohol (71%), medical (60%), drug (60%), and psychological (57%) problems plagued the families of The Seven Challenges youth throughout their lives. Given the fact that The Seven Challenges youth have been surrounded by alcohol, medical, drug, and psychological problems in their family it may not be surprising that during the 90-days prior to treatment almost all of the youth had used alcohol and marijuana (83% for each). A smaller percentage of Seven Challenges youth reported “harder drug use”

during the 90-days prior to treatment (Cocaine/crack = 33%; Downers = 28%; Speed = 22%).

At baseline, 64% of the youth scored in the “dependence level” for substance problems, 75% scored above the cut point (0.14) for substance frequency which indicates that youth may have difficulty stopping their use of substances, 61% reported having moderate to high motivation for treatment, and 81% scored in the clinical range for general mental distress (e.g., depression; anxiety).

[Table 1 Approx. Here]

B) 3-Month Outcomes:

Tables 2 displays the results from baseline to 3-months on the substance-related and treatment motivation outcomes. The two substance-related variables (SPI and SFI) showed significant decreases in scores (SPI $p=.038$; SFI $p=.001$), which indicates decreased substance severity and a positive outcome. At 3-months the SPI and SFI scores are still at the cut point for dependency and higher frequencies of use; however, they have significantly improved. The TMI also demonstrated a significant reduction ($p=.002$) from baseline to 3-months. This reduction indicates that youth perceive his/her need for treatment being greater at baseline than at 3-months. As shown in Table 2, the sample size decreases from 36 to 33. This was an expected decrease as oftentimes youth report “that they are getting the treatment they need” which led to “not applicable” responses to the yes/no items. These “not applicable” responses were coded as missing data and the cases were excluded from the TMI analysis. However, even accounting for

the missing data, there remains a significant reduction in the participants' perception of their need for treatment at 3-months.

Table 3 displays the results from baseline to 3-months on the mental health outcomes. All three variables (GMDI, DSI, ASI) detected significant reductions in scores from baseline to 3-months at $p < .001$. These decreases indicated improved mental health as reported by the youth. Like the substance-related variables, the mental health scores at 3-months are still in the "clinically significant" range; however, they have achieved statistically significant reductions (improvements) over time.

[Tables 2 and 3 Approx. Here]

C) 6-month outcomes:

Tables 4 displays the results from baseline to 6-months on the substance-related and treatment motivation outcomes. The SPI showed a significant decrease in its score ($p=.004$) and the SFI showed a marginally ($p=.055$) significant change. Youth reported decreases (improvements) in SPI from baseline to 3-months and from baseline to 6-months. Furthermore, at 6-months, the mean score for the SPI decreased out of the severe range. Regarding, the SFI significant changes from baseline to 3-months and from baseline to 6-months were also detected. However, there is a slight, non-significant, increase from 3- to 6-months. Similar to the 3-month outcomes, the TMI also detected a significant reduction from baseline to 6-months. This reduction indicates that youth perceive his/her need for treatment being greater at baseline and reducing at 6-months ($p=.005$). The TMI shows the same steady reductions over time as the SPI.

Table 5 displays the results from baseline to 6-months on the mental health outcomes. All three variables (GMDI, DSI, ASI) detected significant reductions ($p=.000$) in scores from baseline to 6-months. All of the scores steadily reduced over time and at 6-months are well below the clinically significant and acute ranges.

[Tables 4 and 5 Approx. Here]

In summary, all of the 3-month outcome variables (SPI, SFI, TMI, GMDI, DSI, ASI) demonstrated statistically significant positive changes. Moreover, all but one (SFI) 6-month outcome variables detected significant positive changes; with positive changes even more evident at 6-month post baseline.

DISCUSSION

Demographic characteristics of the 36 youth included in this study are typical of adolescents' enrolled in other substance abuse treatment programs located in Tucson, Arizona. Baseline substance use related measures are also reflective of youth who enter substance abuse treatment, while the baseline mental health scores of The Seven Challenges youth were slightly worse compared to adolescents enrolled in other treatment programs in the same geographical area (Stevens, Hasler et al., 2003).

Overall, the data indicates that at baseline the Seven Challenge's youth have serious problems related to their use – suggesting drug dependency; and, most would have difficulty stopping their use without treatment. In spite of this, motivation for treatment was only moderate adding to the accumulating evidence of the early stage of change of adolescents at substance abuse treatment entry. When looking at mental health

problems at baseline, the data suggest that they are considerable - with the average general mental health score in the range for acute mental distress.

The research literature indicates that substance and mental health related measures have generally evidenced significant reductions from baseline (treatment entry) to treatment discharge or shortly thereafter. Likewise, the three month substance and mental health related outcomes for Seven Challenges showed significant improvements – following the two month intensive outpatient program. However, unlike other adolescent treatment outcome studies in which more distal effects typically show a gradual increase (return) toward baseline levels, outcomes for this Seven Challenges study did not. In fact, except for frequency of drug use, substance related problems along with the three mental health measures (GMDI; DSI; ASI) all continued to improve at the six month follow-up.

Reasons for the continued improvement in substance and mental health related problems at six months remains somewhat unclear. However, it is thought that The Seven Challenges treatment model with its 1) initial focus on client-counselor treatment alliance, 2) attention to adolescents' early stage of change, 3) developmentally appropriate curriculum, and 4) emphasis on the entirety of the adolescents life contribute to those positive findings. It is particularly interesting that these six month outcome findings were demonstrated in concert with the slight (.14 to .15) increase in the frequency of substance use at 6 months. It may be that these adolescents have either altered the type of drug used or reduced the amount of drug used on each occasion (frequency is determined by drug use occasions) resulting in fewer problems associated with their drug use.

Given such positive outcomes one may question whether peer contagion may have contributed to these positive effects. A substantial body of research indicates peer contagion effects for deviate and health risk behaviors (Prinstein & Wang, 2005). Moreover, past research has indicated that group interventions may have iatrogenic effects (Dishion & Dodge, 2005). With regard to the positive findings reported here one might question whether positive peer contagion effects might have occurred. Further research is needed to allow for more complex analysis of the assumptions of treatment relatedness noted above as well as the complexities of the research findings.

The significant reduction in treatment motivation at both the three and the six month follow-up points may, in part, be due to missing data from the “not applicable” response (n=5). The “non applicable” response was selected when participants chose the response “that they were getting the treatment they need”. Still, this is a highly significant finding indicating reductions in internal motivators (e.g. perception of drug problem; drug dependency) and/or reductions in external motivators (e.g. court, school, parental pressure). Given the positive outcomes in the substance use and mental health related variables, the decrease in treatment motivation was interpreted as a positive effect. Further research is needed to illuminate the relationship between treatment motivation and behavior change.

There are limitations to this study. First, given the small sample size and the lack of a comparison group the findings must be cautiously considered. Second, while the study was conducted by an outside evaluator, the data included in the analysis was gathered from the self report of the youth. Third, because of financial limitations collateral information could not be collected for the Seven Challenges cohort. Finally,

because this research was part of a national study the investigators were asked to use Treatment Motivation Index. While closely related to “stage of change” the authors caution that the two concepts may not be completely synonymous. Additional research is needed to test both the replicability and generalizability of the study’s findings.

Regardless of the limitations of this study, the substance use and mental health outcomes at both three and six months post treatment entry are impressive. Given these positive outcomes along with the flexibility of The Seven Challenges to be used in various settings (outpatient; residential; school-based), this treatment model provides an excellent approach for intervening with substance involved youth with co-occurring mental health problems.

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Table 1. Participant Descriptions (n=36)

	<i>N</i>	<i>%</i>
<u>Race/Ethnicity:</u>		
...Caucasian	19	53
...Latino/Hispanic	11	31
...Bi-racial	6	17
<u>Gender:</u>		
...Male	27	75
...Female	9	25
<u>Mean age at baseline</u>		
13	2	6
14	7	19
15	8	22
16	12	33
17	7	19
<u>Legal custody other than parents together</u>	22	61
<u>¹Family History of:</u>		
...Alcohol problems	24	71
...Medical problems	21	60
...Drug problems	21	60
...Psychological problems	20	57
<u>Alcohol and Drug Use (past 90-days):</u>		
...Alcohol	30	83
...Marijuana	30	83
...Cocaine/crack	12	33
...Downers	10	28
...Speed	8	22
<u>²Outcome Variables at baseline:</u>		
...Substance Problem Index (SPI)	23	64
...Substance Frequency Index (SFI)	27	75
...Treatment Motivation Index (TMI)	21	61
...General Mental Distress Index (GMDI)	29	81

¹ Sample size reduced due to missing data. Percentages calculated based on valid data.

²SPI reflects the percent of youth who scored 4+ which generally suggests dependence.

SFI reflects the percent of youth with scores over 0.14 which suggests considerable difficulty stopping us

TMI reflects the percent of youth who scored 3+ which indicates greater motivation for treatment.

GMDI reflects the percent of youth that reported scored 4+ which is considered in the clinical and acute ranges for mental distress.

Table 2. Substance Related and Treatment Motivation Changes from Baseline to 3-Months Post Baseline

	<i>N</i>	<i>Baseline</i>	<i>3-Month Post</i>	<i>Significance</i>
Substance Problem Index (SPI)	36	5.97	4.58	*0.038
Substance Frequency Index (SFI)	36	0.22	0.14	**0.001
Treatment Motivation Index (TMI)	¹ 33	2.94	2.21	**0.002

Notes:

¹The sample size is reduced due to missing data for any of the five items.

SPI is comprised of 16-recency items. Higher scores on this scale represent greater severity of drug problems. A score of 4 or more generally suggests dependence.

SFI is a 8-item measure of frequency and severity of alcohol and other drug problems. Higher scores represent increasing frequencies of substance use. Youth with scores over 0.14 may have considerable difficulty stopping

TMI is a 5-item measure that counts the clients perception of his/her need for treatment. Higher scores represent more internal and/or external motivators to be in and continue treatment.

*p < 0.05

**p < 0.01

***p < 0.001

Table 3. Mental Health Changes from Baseline to 3-Months Post Baseline

	<i>N</i>	<i>Baseline</i>	<i>3-Month Post</i>	<i>Significance</i>
General Mental Distress Index (GMDI)	36	8.53	4.36	***0.000
Depressive Symptom Index (DSI)	36	3.36	2.03	***0.000
Anxiety Symptom Index (ASI)	36	3.33	1.56	***0.000

Note:

GMDI is a 22-item index. Higher scores indicate a greater breadth and severity of internal mental distress. Scores from 4 to 6 are considered to be clinically significant while scores above 7 suggest acute mental distress.

DSI is a 9-item index that provides a count of symptoms commonly associated with depression. Higher scores indicate a greater number of depression type symptoms endorsed by the youth.

ASI is a 12-item index that provides a count of symptoms commonly associated with anxiety. Higher scores indicate a greater number of anxiety type symptoms endorsed by the youth.

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Table 4. Substance Related and Treatment Motivation Changes from Baseline to 6-Months Post Baseline

	<i>N</i>	<i>Baseline</i>	<i>6-Month Post</i>	<i>Significance</i>
Substance Problem Index (SPI)	36	5.97	3.42	**0.004
Substance Frequency Index (SFI)	36	0.22	0.15	0.054
Treatment Motivation Index (TMI)	¹ 31	2.94	2.03	**0.005

Note:

¹ The sample size is reduced due to missing data for any of the five items.

SPI is comprised of 16-recency items. Higher scores on this scale represent greater severity of drug problems. A score of 4 or more generally suggests dependence.

SFI is an 8-item measure of frequency and severity of alcohol and other drug problems. Higher scores represent increasing frequencies of substance use. Youth with scores over .14 may have considerable difficulty stopping

TMI is a 5-item measure that counts the clients perception of his/her need for treatment. Higher scores represent more internal and/or external motivators to be in and continue treatment.

*p < 0.05

**p < 0.01

***p < 0.001

Table 5. Mental Health Changes from Baseline to 6-Months Post Baseline

	<i>N</i>	<i>Baseline</i>	<i>6-Month Post</i>	<i>Significance</i>
General Mental Distress Index (GMDI)	36	8.53	1.92	***0.000
Depressive Symptom Index (DSI)	36	3.36	0.94	***0.000
Anxiety Symptom Index (ASI)	36	3.33	0.61	***0.000

Note:

GMDI is a 22-item index. Higher scores indicate a greater breadth and severity of internal mental distress. Scores from 4 to 6 are considered to be clinically significant while scores above 7 suggest acute mental distress.

DSI is a 9-item index that provides a count of symptoms commonly associated with depression. Higher scores indicate a greater number of depression type symptoms endorsed by the youth.

ASI is a 12-item index that provides a count of symptoms commonly associated with anxiety. Higher scores indicate a greater number of anxiety type symptoms endorsed by the youth.

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$