

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/216875019>

Predictors of treatment attendance among adolescent substance abusing runaways: A comparison of family and individual therapy modalities

Article in *Journal of Family Therapy* · February 2011

DOI: 10.1111/j.1467-6427.2010.00530.x

CITATIONS

11

READS

77

5 authors, including:



Gizem Erdem

Koc University

28 PUBLICATIONS 315 CITATIONS

SEE PROFILE



Denitza Bantchevska

The Ohio State University

7 PUBLICATIONS 100 CITATIONS

SEE PROFILE



Heather A Katafiasz

University of Akron

7 PUBLICATIONS 142 CITATIONS

SEE PROFILE



Predictors of treatment attendance among adolescent substance abusing runaways: a comparison of family and individual therapy modalities

Natasha Slesnick,^a Gizem Erdem,^b Jennifer Collins,^b
Denitza Bantchevska^b and Heather Katafiasz^b

This study explored and compared predictors of session attendance among substance abusing runaway adolescents and their parents using three manual-driven interventions: ecologically-based family therapy (EBFT), motivational enhancement therapy (MET), and the community reinforcement approach (CRA). Individual and family-level variables, as well as time between intake and first session were used as predictors of session attendance. Adolescents ($N = 179$) between the ages of 12–17 years old were recruited from the only runaway shelter in Columbus, Ohio. The findings showed that adolescents assigned to EBFT were more likely to attend at least one therapy session than those assigned to either CRA or MET. Fewer days between intake and the first therapy session were associated with higher family therapy attendance. Overall, individual and family factors predicted therapy attendance but these factors differed depending upon the treatment modality.

Keywords: substance misuse, adolescents, family and individual treatment.

Introduction

Adolescents recruited from runaway shelters ('runaways') report high rates of family and individual problems, but few controlled treatment evaluation studies have been conducted. The US Department of Health and Human Services (2003) defines runaway teens as those who have left home for at least 24 hours without their parent's or

^a Professor Natasha Slesnick, Department of Human Development and Family Science, Couple and Family Therapy Program, The Ohio State University, 135 Campbell Hall, 1787 Neil Ave, Columbus, OH 43210, USA. E-mail: slesnick.5@osu.edu

^b Graduate students, MSc, Department of Human Development and Family Science, Couple and Family Therapy Program, The Ohio State University, 135 Campbell Hall, 1787 Neil Ave, Columbus, OH 43210, USA.

guardian's permission. These adolescents and their families are considered to be difficult to engage and maintain in substance abuse treatment (Slesnick *et al.*, 2000), which is of particular concern because treatment retention consistently predicts positive treatment outcomes (Stark, 1992). Researchers have sought to identify predictors of adolescent treatment engagement more generally and studies report a wide range of predictors across diverse samples and treatment modalities. The goals of this study were to explore and compare predictors of session attendance for three manual-driven interventions with substance abusing runaway adolescents and their parents. Information on factors associated with session attendance can be particularly useful for modifying engagement efforts early in the therapy process with the goal of improving treatment retention and ultimately, treatment outcomes.

Drawing conclusions from the literature regarding predictors of adolescent treatment attendance is difficult. Participants vary from adolescent suicide attempters (Piacentini *et al.*, 1995), anorexics (Lock *et al.*, 2006), juvenile offenders (Austin and Wagner, 2006; Rowe *et al.*, 2004), aggressive children (Kazdin and Mazurick, 1994; Kazdin *et al.*, 1993) and runaway and homeless adolescents (Slesnick, 2001; Slesnick *et al.*, 2008; Slesnick and Prestopnik, 2004). Some of these studies report that socioeconomic characteristics impact on treatment attendance (Austin and Wagner, 2006; Piacentini *et al.*, 1995) while others show no such relationship (Lock *et al.*, 2006; Prado *et al.*, 2006). Similarly, prevention and intervention studies indicate that family environment characteristics such as family dysfunction and chaos or organization (Kazdin and Mazurick, 1994; Kazdin *et al.*, 1993; Perrino *et al.*, 2001; Prado *et al.*, 2002), parental monitoring (Gorman-Smith *et al.*, 2002) and the nature of the parent-adolescent relationship impact on treatment attendance (Perrino *et al.*, 2001; Slesnick, 2001). However, these studies also report conflicting findings, with some reporting that family chaos is associated with worse attendance (Kazdin and Mazurick, 1994; Kazdin *et al.*, 1993; Perrino *et al.*, 2001) and others showing that higher family stress is associated with higher attendance (Prado *et al.*, 2002). Further complicating conclusions can be drawn across studies of different modalities. Thus, predictors of individual therapy attendance are likely to differ from those of family therapy attendance (Liddle, 2004). A systematic examination of predictors of individual and family therapy attendance might help clarify the potential similarities and differences across modalities.

In the current study three theoretically distinct interventions were compared, the community reinforcement approach (CRA, Meyers

and Smith, 1995), ecologically based family therapy (EBFT, Slesnick, 2001, obtainable from the lead author) and motivational enhancement therapy (MET, Miller and Rollnick, 2002). Since both EBFT, developed for use with runaway adolescents and their family members (Slesnick and Prestopnik, 2005, 2009) and CRA, developed for homeless adolescents (Slesnick *et al.*, 2007) and marijuana abusing adolescents (Dennis *et al.*, 2004), had had evidence of a positive outcome, these were considered viable and promising interventions. CRA is operant-based, theoretically addressing change through increasing coping skills, while EBFT uses a family systems theoretical orientation, influencing change through improving family interaction. Although all family systems interventions are conceptually very similar, EBFT is home-based, includes therapeutic case management and utilises concepts from contextual family therapy (Boszormenyi-Nagy and Krasner, 1986). In particular, the fundamental human need to be connected to others in trustable and loving relationships is one of the most salient targets of EBFT intervention. Due to ethical concerns, a no-treatment control condition was not tested. However, as a minimal intervention MET has shown utility (World Health Organization, 2006). In particular, a multinational trial of brief interventions in primary care settings showed a significant decrease in daily alcohol consumption following a 5 to 15 minute intervention with a healthcare provider. Therefore, in this study, MET was offered in four sessions (versus 14 sessions for CRA and EBFT) and was considered a viable control condition.

Based upon prior research, this study examined socioeconomic variables (age, gender and ethnicity) and family-level variables (conflict, cohesion, parent monitoring and autonomy or control) as predictors of treatment attendance among runaway adolescents receiving individual or family therapy. Furthermore, striking while the iron is hot – engaging families soon after their intake – has been associated with better treatment attendance (Slesnick, 2001). The relationship between adolescent's coping and treatment retention has not been studied, though intuitively, since attending therapy sessions can be considered a type of task oriented or adaptive coping, it is likely that adolescents with higher task-oriented coping might attend more therapy sessions. Therefore, the relationship between adolescent's level of task-oriented coping and attendance was explored. Finally, as the total number of runaway episodes has been associated with severity of problem behaviour, including return visits or recidivism to the runaway shelter (Baker *et al.*, 2003), the

association between the runaway episodes and treatment retention was explored.

Method

Participants

All participants were recruited from the only adolescent runaway shelter in Columbus, Ohio. The participants were part of a larger, ongoing clinical trial comparing treatments for substance abuse. The participants ($N = 179$ adolescents and their primary caretaker) had to be between the ages of 12 to 17 years, to have had the legal option of returning home, to have had at least one parent willing to participate and to have had to meet DSM-IV (American Psychiatric Association, 2000) criteria for alcohol or drug abuse or dependence.

Procedure

A research assistant engaged adolescents who were staying at the runaway shelter. After an initial screening to determine their eligibility and interest, the adolescents' consent to contact their parents was obtained and the research assistant contacted their parents or legal guardian. If the parent agreed to participate and provided written consent, initial assessments for both parent and adolescent were scheduled within 24 hours when possible. During the initial assessment interview, written assent was obtained from the adolescent and the research assistant administered the computerized diagnostic interview schedule for children (Shaffer, 1992), with sections on drugs, alcohol and psychosis to determine formal eligibility. Adolescents not meeting the eligibility criteria continued with treatment as usual through the runaway shelter. Upon completion of the baseline assessment, adolescents were randomly assigned to one of three treatments: (1) MET ($n = 61$), (2) CRA ($n = 61$) or (3) EBFT ($n = 57$).

Treatment conditions

MET assumes that the client is responsible for and capable of change; the therapist's role is to enhance the client's intrinsic motivation (Miller and Rollnick, 2002). MET is a four-session approach based on the principles of expressing empathy, developing discrepancies between actual and desired behaviour, rolling with resistance and supporting the client's self-efficacy (Miller *et al.*, 1992; Miller and

Rollnick, 2002). Sessions focus on eliciting and reinforcing the clients' 'change talk' and increasing their motivation to change their substance use.

The 14-session CRA is based on operant behavioural principles (Meyers and Smith, 1995). The therapist helps the client identify triggers as well as the short-term positive and long-term negative consequences of substance use using a functional analysis. Alternative behaviour that competes with substance use is identified. CRA teaches new communication and problem-solving skills and increases coping skills through role play and discussion.

EBFT is a 14-session family systems intervention that also includes concepts from Bronfenbrenner's theory of social ecology (1979) and contextual family therapy (Boszormenyi-Nagy and Krasner, 1986). The EBFT therapist works with the youth and primary caretaker to target specific dysfunctional interactions that correspond to the development and continuation of problem behaviour. The intervention is focused on the social interactions among all participants that create the type of skill sets and emotional baseline for use in social interactions within and across systems.

Materials

All data for the current analysis were collected using interviews and self-administered questionnaires. A socioeconomic questionnaire was administered by the research assistant to the youth. Age, gender, race or ethnicity and number of runaway episodes were reported. The number of days to the first therapy session was determined from the number of days that had elapsed between the completion of the baseline assessment interview and the first therapy session. This study's dependent variable, the proportion of sessions attended, was determined by dividing the number of sessions the client attended by the total number of sessions offered in that treatment condition.

The coping inventory for stressful situations (Endler and Parker, 1990) assessed the degree to which the respondent employed different coping strategies. The task-oriented coping sub-scale, used as a predictor in the current study, measures the extent that adaptive coping strategies are employed. The internal reliability of the task-oriented coping sub-scale with this sample was 0.96. The family environment scale (Moos and Moos, 1994) assessed the adolescent's perception of family conflict and cohesion. Internal reliabilities for the

cohesion and conflict sub-scales in the present study were 0.66 and 0.53, respectively.

Two measures were used to assess the characteristics of the parent-child relationship. The six-item parental monitoring scale developed for children and adolescents between the ages of 9 to 17 years (Li *et al.*, 2000) assessed the adolescents' perceptions of their parent's monitoring them. The reliability for this scale was 0.87. The adolescents reported their perception of control versus autonomy in the parent-child relationship using the parental bonding instrument (PBI; Parker *et al.*, 1979). Parker (1989) and others have documented the suitability of using the PBI with adolescent participants (Cubis *et al.*, 1989; Giles and Price, 2008) including homeless adolescents (Dadds *et al.*, 1993). The overprotection sub-scale assesses the respondents' perception of the extent to which their parent tries to control the adolescents' behaviour or permits the adolescents to govern their own activities. Higher scores on this scale indicate greater overprotection and control or less autonomy. The reliability for this sub-scale was 0.72.

Overview of data analyses

Firstly, univariate analyses determining means and standard deviations were completed. Hierarchical linear regression was used to predict proportion of sessions attended for EBFT, CRA and MET treatment conditions for those who attended at least one therapy session. The independent variables were entered into the equation in four steps. After controlling for socioeconomic variables (Step 1), adolescents' task-oriented coping and number of runaway episodes (Step 2), the number of days to the first therapy session (Step 3) and family variables (Step 4) were regressed on the proportion of sessions attended.

Results

Characteristics of the participants

Most of the participants ($n = 147$; 86%) were currently enrolled in school and sexually active ($n = 145$; 81.5%). Many adolescents ($n = 67$; 37.4%) reported one or more prior arrests. More than a quarter of the participants had been placed in foster care ($n = 46$; 25.7%). In addition, about half of the participants reported a history of physical

abuse ($n = 60$; 51.7%) and approximately one-third reported sexual abuse ($n = 55$; 31.1%).

Table 1 presents the characteristics of the participants across the three treatment conditions. Chi square tests and one-way ANOVAs were conducted to test for differences in socioeconomic characteristics, family variables, number of runaway episodes, coping and the number of days between the intake interview and the first therapy session across the three treatment modalities. It was found that days between the intake and the first session significantly differed across three conditions [$F(2) = 4.35$, $P < 0.05$]. A follow-up post hoc test (Tukey) revealed fewer days between the intake and the first treatment session among those assigned to EBFT than to MET ($P < 0.05$) but not to CRA ($P > 0.05$). The groups did not differ along any of the other variables (Table 1).

Treatment assignment, engagement, and treatment attendance

Further analysis included comparing treatment groups by the total number of participants assigned to each therapy condition and the number who attended at least one therapy session (Table 1). The chi square tests suggested that the number of participants who never attended any sessions was significantly lower in EBFT ($n = 7$) compared to CRA ($n = 16$) and MET ($n = 21$) [$\chi^2(2) = 7.93$, $P < 0.05$]. Overall, the average percentage of total therapy sessions attended did not differ across treatment groups for all those assigned to treatment (intent to treat) [$F(2) = .98$, $P > 0.05$] nor did attendance differ among those who attended at least one therapy session (engaged) [$F(2) = 0.92$, $P > 0.05$].

Predictors of EBFT attendance

Socioeconomic factors (gender, age and ethnicity) explained 12% of the variance in EBFT attendance, but the contribution to the regression model was not statistically significant ($P > 0.05$) (see Table 2). Girls attended EBFT sessions more frequently than boys ($\beta = 0.33$; $P < 0.05$). In addition, those who attended a therapy session closer to the date of the baseline assessment (for example, those who were engaged more quickly) attended more EBFT sessions ($\beta = .38$; $P < 0.05$) and accounted for a further 8.2% of the variance. Finally, adolescents in less cohesive families ($\beta = .43$; $P < 0.05$) with less reported parental overprotection or control (for example, more autonomy) ($\beta = .42$; $P < 0.05$)

TABLE 1 Characteristics of participants across treatment conditions

	Total	Treatment modality			Test statistic
		EBFT	CRA	MET	
	n = 179	n = 57	n = 61	N = 61	
Socioeconomic characteristics					
<i>Gender (n, %)</i>					
Female	94 (52.5)	31 (54.4)	33 (54.1)	30 (49.2)	$\chi^2 (2) = .41 P > 0.05$
Male	85 (47.5)	26 (45.6)	28 (45.9)	31 (50.8)	
<i>Age</i>	15.34 (1.2)	15.3 (1.1)	15.15 (1.4)	15.59 (1.2)	F (2) = 2.01 P > 0.05
<i>Race or ethnicity (n, %)</i>					
African-American	116 (64.8)	37 (64.9)	39 (63.9)	40 (65.6)	$\chi^2 (4) = .23 P > 0.05$
White, non-Hispanic	46 (25.7)	14 (24.6)	16 (26.2)	16 (26.2)	
Mixed, other	17 (9.5)	6 (10.5)	6 (9.8)	5 (8.2)	
Adolescent variables					
Runs (n) [†]	3.21 (5.30)	2.59 (2.20)	3.87 (7.29)	3.12 (4.91)	F (2) = .83 P > 0.05
Task-oriented coping	44.1 (17.86)	43.87 (19.06)	47.16 (17.21)	41.32 (17.13)	F (2) = 1.5 P > 0.05
Treatment variables					
Days to first session [†]	34.81 (31.56)	26.29 (23.4)	35.49 (31.7)	45.62 (37.11)	F (2) = 4.35* P < 0.05

Family variables					
Cohesion	4.13 (2.32)	4.29 (2.09)	4.43 (2.25)	3.69 (2.56)	F (2) = 1.65 $P > 0.05$
Conflict	5.51 (1.99)	5.42 (2.19)	5.44 (1.89)	5.67 (1.9)	F (2) = .28 $P > 0.05$
Parental overprotection	20.33 (6.87)	20.61 (7.76)	20.04 (5.92)	20.34 (6.96)	F (2) = .09, $P > 0.05$
Parental monitoring	20.78 (6.41)	20.35 (6.77)	20.0 (6.24)	21.97 (6.16)	F (2) = 1.62, $P > 0.05$
Therapy attendance					
Intent to treat		n = 57	n = 61	n = 61	
Sessions attended (n)		6.84 (5.66)	5.36 (4.60)	1.62 (1.64)	
Sessions attended (%)		.48 (.38)	.38 (.33)	.40 (.40)	F (2) = .98, $P > 0.05$
Engaged (one or more sessions)		n = 50	n = 45	n = 40	
Sessions attended (n)		7.80 (5.39)	7.27 (3.84)	2.48 (1.39)	
Sessions attended (%)		.55 (.38)	.52 (.27)	.62 (.35)	F (2) = .92; $P > 0.05$

* $P > 0.05$.

^bThe variable was log-transformed before the analysis. Mean (SD) if not mentioned otherwise. CRA, community reinforcement approach; EBFT, ecologically based family therapy; MET, motivational enhancement therapy.

TABLE 2 Hierarchical regression analysis in predicting therapy attendance

	EBFT attendance (n = 50)			CRA attendance (n = 45)			MET attendance (n = 40)		
	β	t	ΔR^2	β	t	ΔR^2	β	t	ΔR^2
Constant		.48			1.12			2.07*	
Step 1: Characteristics			.12			.06			.26*
Gender (female)	.33	2.34*		.05	.33		.14	.85	
Age	.26	1.85		.003	.02		.37	2.41*	
Ethnicity (Black)	.05	.35		.36	2.06*		.20	1.36	
Step 2: Adolescent variables			.000			.002			.27**
Number of runs [†]	.05	.42		.10	.60		.38	2.63*	
Task oriented coping	.14	1.06		.08	.48		.50	3.31**	
Step 3: Treatment variable			.08*			.001			.009
Days to first session [†]	.38	2.7*		.08	.48		.15	1.06	
Step 4: Family variables			.25**			.34**			.04
Cohesion	.43	2.98**		.23	1.17		.26	1.42	
Conflict	.23	1.51		.35	1.84		.09	.48	
Parental overprotection	.42	2.94**		.12	.75		.08	.54	
Parental monitoring				.61	3.58**		.04	.22	
Final model									
F (d.f.)	3.14** (10)			2.04 (10)		3.54** (10)			
R square	.46			.41			.58		
Adjusted R square	.31			.21			.41		

* $P < 0.05$; ** $P < 0.01$.[†]The variable was log-transformed before the analysis.

CRA, community reinforcement approach; EBFT, ecologically based family therapy; MET, motivational enhancement therapy.

attended more EBFT sessions than other adolescents. Family factors accounted for a further 25.4% of the variance in EBFT attendance while the number of runaway episodes and task-oriented coping strategies were not associated with EBFT attendance. Altogether, the full model explained 46% of the variance in EBFT attendance.

Predictors of CRA attendance

The regression model revealed that ethnicity and parental monitoring were significantly associated with CRA attendance rates. Specifically, adolescents who were Black or African-American ($\beta = 0.36$; $P < 0.05$) and who reported higher levels of parental monitoring ($\beta = 0.61$; $P < 0.001$) attended CRA sessions more frequently than other adolescents. After controlling for all other variables, the family environment factors still accounted for 34% of the variance in CRA attendance. The final model explained 41% of the variance in CRA attendance.

Predictors of MET attendance

Socioeconomic factors explained 26.2% of the variance in MET attendance and younger adolescents attended MET sessions more frequently than older adolescents ($\beta = .37$; $P = .05$). After controlling for age, gender and ethnicity, runaway episodes ($\beta = 0.38$; $P < 0.05$) and higher levels of task-oriented coping strategies ($\beta = 0.50$; $P < 0.05$) were significantly associated with higher MET attendance rates. Neither days to first session nor family variables predicted MET attendance. The full model accounted for 58% of the variance in MET attendance.

Discussion

This study examined predictors of runaway adolescent's therapy attendance for three manual-driven interventions. Little similarity in predictors of attendance was observed among the therapies, which included family (EBFT) and individual (CRA and MET) modalities. This might partially explain the mix of findings currently found in the literature. That is, comparing predictors across studies that examine treatment outcomes for different therapy modalities might have little practical utility. In order to understand predictors of treatment engagement and retention, researchers might need to examine each therapy separately as the observed differences in predictors might be

due in part to the match between the treatment approach or philosophy and the participant's needs, strengths or desires.

Predictors of EBFT attendance

Hogue and Liddle (2009) suggest that when family therapy is compared to other manualized and well-designed alternative treatments, few differences in overall treatment retention are found. Similarly, this study did not find differences in the overall total proportion of possible sessions attended among the three manualized treatments. However, it appears that family therapy, overall, may be more effective at initially engaging adolescents compared to individual therapies, as significantly more adolescents assigned to EBFT attended at least one family therapy session compared to CRA and MET. Perhaps, once assigned to family therapy, parents and adolescents encourage one another to attend. Family therapy might be perceived as more closely meeting the needs of these families as it allows a forum to discuss and resolve family struggles that led to the adolescent residing at the runaway shelter.

Family therapy also yielded the shortest engagement time between intake and the first treatment session. Furthermore, striking while the iron is hot or having a first session with families soon after the intake was associated with attending more therapy sessions among those assigned to family therapy. This finding replicates that of a sample of shelter-recruited runaway adolescents in another part of the USA (Slesnick, 2001). There was no such effect for either individual therapy conditions. Possibly, quick engagement allows family therapists to assist the family in resolving the runaway crisis, which might enhance the confidence in and connection of the family to the therapy process.

Family therapy was especially successful at engaging those adolescents who reported feeling less connected to their parents at the baseline interview. Not feeling close to parents is a common complaint among shelter-residing runaways, as is the desire to repair the parent-child relationship (Teare *et al.*, 1991). One goal of EBFT is to help family members emotionally reconnect with one another and this focus might have served to motivate families to attend more sessions. On the other hand, adolescents feeling controlled by their parents or reporting less autonomy attended fewer family therapy sessions. Possibly, parents who are more controlling might be less willing to attend therapy sessions for fear of losing control, even

though therapeutic efforts are made to empower parents when negotiating the parent–adolescent relationship.

Girls attended more EBFT therapy sessions than boys, although no gender differences were found in the other treatment conditions. Several research studies report that girls are more open to discussing emotional and relationship issues than boys (Burleson, 2003; Hsieh and Hollister, 2004; Impett and Peplau, 2006). Since EBFT includes a large focus on relationship and emotional topics this might explain the association of higher attendance among girls than boys. According to Shillington and Clapp (2003) most substance abuse treatment research has not identified differences in treatment retention among adolescent boys and girls. Those who do report differences generally report that girls are likely to attend more sessions (Hsieh and Hollister, 2004) and to also have more positive treatment outcomes than boys (Williams and Chang, 2000). For family therapy specifically, few studies report engagement rates or outcomes by gender. This is probably due to the limitations in power associated with small sample sizes (Ozechowski and Liddle, 2000). Among those that have, no gender differences in treatment retention were found when family therapy was compared to non-family based interventions (Azrin *et al.*, 2001; Liddle *et al.*, 2001; Robbins *et al.*, 2006; Waldron *et al.*, 2001). The dissimilarity between this and the current findings might be due to interactional dynamics that are particular to runaway families or, possibly, the other family therapy interventions are not as intensely focused on emotional connection as the current family therapy intervention.

Research is needed to explore more fully the role of gender in treatment retention. Currently, the question of whether substance abuse treatment interventions should be tailored to differences among boys and girls is still unanswered as few studies investigate the moderating role of gender. The current study suggests, and future research might confirm, that boys receiving family therapies that focus primarily on emotional and relational issues might need targeted engagement strategies to help them manage the associated anxiety and stress.

Predictors of CRA attendance

African-American adolescents attended more CRA sessions than did adolescents of other ethnic or racial groups. Studies that compare treatment attendance by race and ethnicity suggest that African-American adolescents attend fewer therapy sessions overall than other groups (McCaul *et al.*, 2001). This finding is therefore particularly

encouraging, as it suggests that African-American adolescents felt connected to the therapy process. Possibly, the intervention may have been especially effective at addressing their treatment needs – although future research will need to confirm this finding. There were no differential effects of attendance by race or ethnicity in the other treatment conditions and the interventions, overall, were well-attended regardless of the participants' ethnic or racial background.

In addition, adolescents reporting higher parental monitoring attended more CRA sessions. Intuitively, parents who are more active monitors of their child's activities might also facilitate or encourage their child's treatment attendance. Using a family-based prevention intervention, Gorman-Smith *et al.* (2002) reported the opposite finding – lower levels of parental monitoring predicted higher engagement. Again, this suggests that treatment modalities, in this case individual versus family-based modalities, differ in terms of who is most likely to be retained in the assigned treatment; attendance appears to depend partially upon the perceived needs and strengths of the adolescent and family and how those needs and strengths are addressed or utilised by the intervention.

Predictors of MET attendance

Finally, MET attendance was associated with individual variables (age, number of runaway episodes and task-oriented coping) but not to family variables. Younger adolescents, as well as those with higher task-oriented coping and a higher number of runaway episodes, attended more MET sessions. These adolescents might appreciate the empowering and client-centred approach of MET. In other words, the intervention may have been particularly well received by those adolescents who might be inclined to take matters into their own hands. Similarly, Tober (1991) suggested that the emphases that MET places on personal responsibility and self-efficacy have a particularly strong impact on younger adolescents due to their perceptions that their points of view are usually not taken into account. This might be especially the case among frequent runaways.

Limitations

Several methodological limitations should be considered when interpreting these findings. Firstly, the sample size was small, reducing the power to detect differences in therapy attendance among treatment

conditions. In addition, the participants included substance abusing runaways in a mid-western city whose primary caretakers agreed to participate in the treatment research study. Therefore, results might not generalize to other cities or to non-substance abusing shelter-residing runaways, or to those whose parents are less amenable to being involved in a treatment research study. Finally, other potential predictors of treatment attendance and engagement were not assessed in the current study and should be considered in future research. For example, common factors or 'those that are not specific to particular treatment but common to most types of therapy' (Lohr *et al.*, 2005, p.822) were not tested in this study. Common factors include treatment expectancies, suggestion, persuasion, therapeutic alliance or attention (Jensen *et al.*, 2005; Lohr *et al.*, 2005). Studies suggest that these factors account for a significant amount of variance associated with change and in some cases, even more than factors specific to the intervention under study (Lambert and Barley, 2002; Sprenkle and Blow, 2004).

Conclusions

Despite these limitations the three models accounted for a significant amount of variance (ranging from 41–58%), suggesting that some of the most important factors associated with therapy attendance were successfully identified. In general, this study's findings suggest that individual and family factors predict therapy attendance but these factors differ depending upon the treatment modality. The findings may be useful for identifying those who are likely to show poor retention in the treatment under study, information which can direct service providers to more effectively target their engagement efforts. As an example, special strategies to engage families with parents that limit their adolescent's autonomy might improve attendance rates for family therapy. Also, because low parental monitoring was associated with lower session attendance in CRA, individual therapists might need to understand the relationship between parental monitoring and adolescent attendance and seek to overcome those barriers (which might include reminder calls or addressing logistical barriers).

The lack of similarity in predictors of attendance provides some support for investigating matching treatments to baseline client characteristics. The randomized design protects against selection bias so that the natural selection process of clients to stay in or discontinue a particular treatment can be observed. This offers a

better understanding of which treatment modality is associated with greater acceptance or attendance for particular clients (for example, a better match). Researchers are noting that a one size fits all approach to treatment might not optimize outcomes among individuals (Colby *et al.*, 2004). However, matching treatments to patient characteristics has, at least historically, shown disappointing outcomes (Project MATCH Research Group, 1997). If the most appropriate treatment is offered, adolescents may be more likely to attend sessions that might ultimately lead to better treatment outcomes (for example, Stark, 1992).

Acknowledgement

This work has been supported by National Institute on Drug Abuse grant (R01 DA016603).

References

- American Psychiatric Association (2000) *Diagnostic and Statistical Manual of Mental Disorders* (4th edn). Washington DC: American Psychiatric Association.
- Austin, A. and Wagner, E. F. (2006) Correlates of treatment retention among multi-ethnic youth with substance use problems: initial examination of ethnic group differences. *Journal of Child and Adolescent Substance Use*, **15**: 105–128.
- Azrin, N. H., Donahue, B., Teichner, G. A., Crum, T., Howell, J. and DeCato, L. A. (2001) A controlled evaluation and description of individual-cognitive problem solving and family-behavior therapies in dually-diagnosed conduct-disordered and substance-dependent youth. *Journal of Child and Adolescent Substance Abuse*, **11**: 1–43.
- Baker, A. J. L., McKay, M. M., Lynn, C. J., Schlange, H. and Auville, A. (2003) Recidivism at a shelter for adolescents: first-time versus repeat runaways. *Social Work Research*, **27**: 84–94.
- Boszormenyi-Nagy, I. and Krasner, B. R. (1986) *Between Give and Take: a Clinical Guide to Contextual Therapy*. New York: Brunner and Mazel Publishers.
- Bronfenbrenner, U. (1979) *The Ecology of Human Development*. Cambridge, MA: Harvard University Press.
- Burleson, B. R. (2003) The experience and effects of emotional support: what the study of cultural and gender differences can tell us about close relationships, emotion, and interpersonal communication. *Personal Relationships*, **10**: 1–23.
- Colby, S. M., Lee, C. S., Lewis-Esquerre, J., Esposito-Smythers, C. and Monti, P. M. (2004) Adolescent alcohol misuse: methodological issues for enhancing treatment research. *Addiction*, **99**: 47–62.
- Cubis, J., Lewin, T. and Dawes, F. (1989) Australian adolescents' perceptions of their families. *Australian and New Zealand Journal of Psychiatry*, **23**: 35–47.
- Dadds, M. R., Braddock, D., Cuers, S., Elliott, A. and Kelly, A. (1993) Personal and family distress in homeless adolescents. *Community Mental Health Journal*, **29**: 413–422.

- Dennis, M., Godley, S. H., Diamond, G., Tims, F. F., Babor, T., Donaldson, J. and Funk, R. (2004) The cannabis youth treatment (CYT) study: main findings from two randomized trials. *Journal of Substance Abuse Treatment*, **27**: 197–213.
- Endler, N. S. and Parker, J. D. A. (1990) *Coping Inventory for Stressful Situations: Manual*. Multi-Health Systems, Toronto.
- Giles, G. and Price, I. R. (2008) Adolescent computer use: approach, avoidance, and parental control. *Australian Journal of Psychology*, **60**: 63–71.
- Gorman-Smith, D., Tolan, P. H., Henry, D. B., Leventhal, A., Schoeny, M., Lutovsky, K. and Quintana, E. (2002) Predictors of participation in a family-focused preventive intervention for substance use [Supplemental material]. *Psychology of Addictive Behaviors*, **16**: 55–64.
- Hogue, A. and Liddle, H. A. (2009) Family-based treatment for adolescent substance abuse: Controlled trials and new horizons in services research. *Journal of Family Therapy*, **31**: 126–154.
- Hsieh, S. and Hollister, C. D. (2004) Examining gender differences in adolescent substance abuse behavior: comparisons and implications for treatment. *Journal of Child and Adolescent Substance Abuse*, **13**: 53–70.
- Impett, E. A. and Peplau, L. A. (2006) ‘His’ and ‘her’ relationships? A review of the empirical evidence. In E. Impett, L. Peplau, A. Vangelisti and D. Perlman (eds), *Cambridge Handbook of Personal Relationships* (pp. 273–291). New York: Cambridge University Press.
- Jensen, P. S., Weersing, R., Hoagwood, K. E. and Goldman, E. (2005) What is the evidence for evidence-based treatments? A hard look at our soft underbelly. *Mental Health Services Research*, **7**: 53–74.
- Kazdin, A. E. and Mazurick, J. L. (1994) Dropping out of child psychotherapy: distinguishing early and late dropouts over the course of treatment. *Journal of Consulting and Clinical Psychology*, **62**: 1069–1074.
- Kazdin, A. E., Mazurick, J. L. and Bass, D. (1993) Risk for attrition in treatment of antisocial children and families. *Journal of Clinical Child and Adolescent Psychology*, **22**: 2–16.
- Lambert, M. J. and Barley, D. E. (2002) Research summary on the therapeutic relationship and psychotherapy outcome. In J. C. Norcross (ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 17–32). New York City: Oxford University Press.
- Li, X., Stanton, B. and Feigelman, S. (2000) Impact of perceived parental monitoring on adolescent risk behavior over 4 years. *Journal of Adolescent Health*, **27** (1), 49–56.
- Liddle, H. A. (2004) Family-based therapies for adolescent alcohol and drug use: research contributions and future research needs. [Supplemental material]. *Addiction*, **99**: 76–92.
- Liddle, H. A., Dakof, G. A., Parker, K., Diamond, G. S., Barrett, K. and Tejada, M. (2001) Multidimensional family therapy for adolescent drug abuse: results of a randomized clinical trial. *American Journal of Drug and Alcohol Abuse*, **27**: 651–688.
- Lock, J., Couturier, J., Bryson, S. and Agras, S. (2006) Predictors of dropout and remission in family therapy for adolescent anorexia nervosa in a randomized clinical trial. *International Journal of Eating Disorders*, **39**: 639–647.

- Lohr, J. M., Olatunji, B. O., Parker, L. and Demaio, C. (2005) Experimental analysis of specific treatment factors: efficacy and practice implications. *Journal of Clinical Psychology*, **61**: 819–834.
- McCaul, M. E., Svikis, D. S. and Moore, R. D. (2001) Predictors of outpatient treatment retention: patient versus substance use characteristics. *Drug and Alcohol Dependence*, **62**: 9–17.
- Meyers, R. J. and Smith, J. E. (1995) *Clinical Guide to Alcohol Treatment: the Community Reinforcement Approach*. New York: Guilford Press.
- Miller, W. R. and Rollnick, S. (2002) *Motivational interviewing: preparing people for change* (2nd edn). New York: Guilford Press.
- Miller, W. R., Zweben, A., DiClemente, C. C. and Rychtarik, R. G. (1992) *Motivational-Enhancement Therapy Manual: a Clinical Research Guide for Therapists Treating Individuals with Alcohol Abuse and Dependence*. (NIH Pub. No. 94-3723). Washington, DC: Government Printing Office.
- Moos, R. H. and Moos, B. S. (1994) *Family Environment Scale Manual* (3rd edn). Palo Alto, CA: Consulting Psychologists Press.
- Ozechowski, T. J. and Liddle, H. A. (2000) Family-based therapy for adolescent drug abuse: knowns and unknowns. *Clinical Child and Family Psychology Review*, **3**: 269–298.
- Parker, G. (1989) The parental bonding instrument: psychometric properties reviewed. *Psychiatric Developments*, **4**: 317–335.
- Parker, G., Tupling, H. and Brown, L. B. (1979) A parental bonding instrument. *British Journal of Medical Psychology*, **52**: 1–10.
- Perrino, T., Coatsworth, J. D., Briones, E., Pantin, H. and Szapocznik, J. (2001) Initial engagement in parent-centred preventive interventions: a family systems perspective. *Journal of Primary Prevention*, **22**: 21–44.
- Piacentini, J., Rotheram-Borus, M. J., Gillis, J. R., Graae, F., Trautman, P., Cantwell, C., Garcia-Leeds, C. and Shaffer, D. (1995) Socioeconomic predictors of treatment attendance among adolescent suicide attempters. *Journal of Consulting and Clinical Psychology*, **63**: 469–473.
- Prado, G., Szapocznik, J., Mitrani, V. B., Mauer, M. H., Smith, L. and Feaster, D. J. (2002) Factors influencing engagement into interventions for adaptation to HIV in African American women. *AIDS and Behavior*, **6**: 141–151.
- Prado, G., Pantin, H., Schwartz, S. J., Lupei, N. S. and Szapocznik, J. (2006) Predictors of engagement and retention into a parent-centred, ecodevelopmental HIV preventive intervention for Hispanic adolescents and their families. *Journal of Pediatric Psychology*, **31**: 874–890.
- Project MATCH Research Group (1997) Matching alcoholism treatments to client heterogeneity: project MATCH post treatment drinking outcomes. *Journal of Studies on Alcohol*, **58**: 7–29.
- Robbins, M. S., Liddle, H. A., Turner, C. W., Dakof, G. A., Alexander, J. F. and Kogan, S. M. (2006) Adolescent and parent therapeutic alliances as predictors of dropout in multidimensional family therapy. *Journal of Family Psychology*, **20**: 108–116.
- Rowe, C., Liddle, H. A., Greenbaum, P. E. and Henderson, C. E. (2004) Impact of psychiatric comorbidity on treatment of adolescent drug abusers. *Journal of Substance Abuse Treatment*, **26**: 129–140.

- Shaffer, D. (1992) *The Diagnostic Interview Schedule for Children Version 2.3*. New York: Columbia University.
- Shillington, A. M. and Clapp, J. D. (2003) Adolescents in public substance abuse treatment programs: the impacts of sex and race on referrals and outcomes. *Journal of Child and Adolescent Substance Abuse*, **12**: 69–91.
- Slesnick, N. (2001) Variables associated with family therapy attendance in runaway youth: preliminary findings. *American Journal of Family Therapy*, **29**: 411–420.
- Slesnick, N. and Prestopnik, J. L. (2004) Office versus home-based family therapy for runaway, alcohol abusing adolescents: examination of factors associated with treatment attendance. *Alcoholism Treatment Quarterly*, **22**: 3–19.
- Slesnick, N. and Prestopnik, J. L. (2005) Ecologically-based family therapy outcome with substance abusing runaway adolescents. *The Journal of Adolescence*, **28**: 277–298.
- Slesnick, N. and Prestopnik, J. (2009) Comparison of family therapy outcome with alcohol abusing, runaway adolescents. *Journal of Marital and Family Therapy*, **35**: 1–23.
- Slesnick, N., Meyers, R. J., Meade, M. and Segelken, D. H. (2000) Bleak and hopeless no more: engagement of reluctant substance-abusing runaway youth and their families. *Journal of Substance Abuse Treatment*, **19**: 215–222.
- Slesnick, N., Prestopnik, J. L., Meyers, R. J. and Glassman, M. (2007) Treatment outcome for homeless, street-living youth. *Addictive Behaviors*, **32**: 1237–1251.
- Slesnick, N., Kang, M. J. and Aukward, E. (2008) Treatment attendance among homeless youth: the impact of childhood abuse and prior suicide attempts. *Substance Abuse*, **29**: 43–52.
- Sprenkle, D. H. and Blow, A. J. (2004) Common factors and our sacred models. *Journal of Marital and Family Therapy*, **30**: 113–129.
- Stark, M. J. (1992) Dropping out of substance abuse treatment: a clinically oriented review. *Clinical Psychology Review*, **12**: 93–116.
- Teare, J. F., Furst, D. W., Peterson, R. W. and Authier, K. (1991) Family reunification following shelter placement: child, family, and program correlates. *American Journal of Orthopsychiatry*, **62**: 142–146.
- Tober, G. (1991) Motivational interviewing with young people. In W. R. Miller and S. Rollnick (eds) *Motivational interviewing: preparing people to change addictive behavior* (pp. 248–259). New York: Guilford Press.
- US Department of Health and Human Services (2003) *Incidence and Prevalence of Homeless and Runaway Youth: Final Report. RTI Project Number 07147.017*. Washington: DC: Government Printing Office.
- Waldron, H. B., Slesnick, N., Brody, J. L., Tuner, C. W. and Peterson, T. R. (2001) Treatment outcomes for adolescent substance abuse at 4- and 7-month assessments. *Journal of Consulting and Clinical Psychology*, **69**: 802–813.
- Williams, R. J. and Chang, S. Y. (2000) A comprehensive and comparative review of adolescent substance abuse treatment outcomes. *Clinical Psychology: Science and Practice*, **7**: 138–166.
- World Health Organization (2006) A cross-national trial of brief interventions with heavy drinkers. *American Journal of Public Health*, **86**: 948–955.