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A Naturalistic Evaluation of a Group Intervention for Parents of Youth with Substance Use Disorders

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Abstract

Parents of youth with substance use disorders (SUDs) often play a vital role in successful treatment, yet little is known about interventions designed to help them cope with the stress of this role, especially as delivered in real-world settings. Evaluations of such interventions could potentially inform adaptations to enhance their clinical utility. Parents of youth with SUDs attending a clinician-led group based on the CRAFT model completed measures at intake, 4- and 8-weeks. Parents ($n=545$) attended an average of 3.7 sessions; 12% completed all 8 weeks. Analysis of demographic predictors of retention indicated that older parents attended more sessions on average. Overall stress did not change across time points ($p>0.05$). However, parents reported improvement in parent empowerment as measured by the Parent Empowerment Scale, a novel measure of parent empowerment in coping with their child's SUD ($p<0.001$). Clinician led evidence-informed group services may improve parents' perceived ability to help their child with their SUD. Low retention rates highlight the need to better understand the factors contributing to retention, and the potential value of adaptations to shorten the intervention. Programs serving youth with SUDs may wish to consider integrating such group services to support parents.

Keywords

Substance Use Disorders; Youth; Parent Support; Community Reinforcement and Family Training; Measurement Based Practice

Introduction

Family members of individuals with substance use disorders (SUDs) experience significant stress and high medical costs of their own as a consequence of their family member's SUD (Orford, Velleman, Natera, Templeton, & Copello, 2013; Weisner, Parthasarathy, Moore, & Mertens, 2010). While these improve following the individual's engagement in SUD treatment (Weisner et al., 2010), parents of youth (i.e., adolescents and emerging adults) may not experience this improvement due to lower rates of youth SUD treatment engagement (Han, Hedden, Lipari, Copello, & Kroutil, 2015) and higher rates of early treatment dropout compared to older adults (Brorson, Arnevik, Rand-Hendriksen, & Duckert, 2013; Hedden & Gfroerer, 2011; McHugh et al., 2013; McKellar, Kelly, Harris, & Moos, 2006). Youth are also disproportionately affected by SUDs (Center for Behavioral Health Statistics and Quality, 2016; Grant et al., 2015), yet are less ready for treatment and change more generally compared to older age groups (DiClemente, Doyle, & Donovan, 2009; Hedden & Gfroerer, 2011). Thus, there is a need for treatments designed specifically to help parents of youth with SUDs manage their stress and gain skills for supporting their child. Such interventions, also described as "unilateral" treatments (Miller, Meyers, & Tonigan, 1999), are traditionally provided to caregivers across different roles, including parents, spouses, and other significant others. While often focused on treatment engagement of the loved one, they also appear to improve family members' well-being independent of this outcome (Kirby, Marlowe, Festinger, Garvey, & LaMonaca, 1999; Roozen, De Waart, & Van Der Kroft, 2010). Such improvements for family members, including parents, are arguably meaningful targets in their own right (Orford et al., 2013).

Historically, family members of individuals with SUDs have been referred to community support groups, such as Al-Anon/Nar-Anon, or to a clinician to help the family implement the Johnson Intervention (Johnson, 1986). Interventions that facilitate engagement in Al-Anon/Nar-Anon, community-led groups focused on mutual support and "loving detachment" (Timko, Laudet, & Moos, 2014), do improve family members' overall functioning (Miller et al., 1999). However, this "detached" approach may be ill-suited for parents of youth under age 18, and the developmental stage of "emerging adulthood" between the ages of 18 and 30 years is also distinct for SUD treatment, such that true "detachment" may not be feasible (Arnett, 2005; Bergman, Kelly, Nargiso, & McKowen, 2016). The Johnson Intervention (Johnson, 1986) is clinician led, and focuses on encouraging SUD treatment engagement by sharing the impact loved ones' use has had on others. While arguably more active, the confrontational approach contradicts evidence-based motivational principles (White & Miller, 2007), and many family members (around 70%) do not follow through with this approach (Meyers, Miller, Smith, & Tonigan, 2002; Miller et al., 1999). Furthermore, there is limited evidence that the Johnson Intervention leads to improvements for family members themselves (Roozen et al., 2010). Thus, while parents of youth with SUDs are in need of effective resources to improve their own well-being, traditional approaches may not be well suited to this population.

The Community Reinforcement and Family Training (CRAFT; Meyers, Miller, Hill, & Tonigan, 1998) model is a clinician-led unilateral family treatment approach built on behavioral principles. CRAFT interventions support family members in making their

support contingent on functioning and treatment engagement of the individual with a SUD. Such interventions are arguably better suited to the role of parents of youth with SUDs, who must navigate an already complex developmental context of increasing autonomy, together with the functional impairment associated with SUDs (Bergman et al., 2016). Indeed, this unique context provides an opportunity to extend CRAFT principles into an area of overlap with Contingency Management approaches (Meyers, Roozen, & Smith, 2011), given the role of parental financial support for many in this age group. In this way, behavioral approaches such as CRAFT are active, yet significantly less confrontational than the Johnson approach, which may account for comparatively better retention of family members in CRAFT (Miller et al., 1999). The CRAFT model also directly targets the overall well-being of the family member (Miller et al., 1999), and improves mental health for loved ones, regardless of whether their loved one with a SUD engages in treatment (Kirby et al., 1999; Roozen et al., 2010).

The majority of CRAFT research to date has focused on randomized controlled trials of individual-level services for a variety of family member roles (e.g., romantic partners, parents; Kirby et al., 2015; Waldron, Kern-Jones, Turner, Peterson, & Ozechowski, 2007). While there is some evidence to suggest that CRAFT benefits parents specifically (Waldron et al., 2007), few CRAFT studies have focused exclusively on parents. Furthermore, though there is preliminary evidence that individual level services are feasible within a community clinic (Dutcher et al., 2009), the underutilization by clinics of such evidence-based services (Kirby et al., 2015) suggests that group-based interventions may be a more practical approach (Foote & Manuel, 2009). While the results of one pilot suggest that group-based CRAFT may not result in the same improvements for loved ones' functioning (Manuel et al., 2012), mixed roles of group members in the study may have limited the effectiveness of support, given how distinct the parental role is from that of romantic partners and other family members (Foote & Manuel, 2009).

The current study aimed to evaluate the effect of a CRAFT-informed group for parents of youth with SUDs in a naturalistic setting. Specifically, we had three goals. The first was to examine the effect of group participation on general parental stress. Second, while some have hypothesized that CRAFT improves parental well-being through improved efficacy and empowerment (Roozen et al., 2010), only one study to date has examined the direct effect of a CRAFT-based intervention on this aspect of loved ones' experience, using an unpublished measure (Manuel et al., 2012). Thus, we also examined parents' perceived ability to help their child with their SUD, using a measure designed specifically for this purpose. Finally, we sought to assess the feasibility of incorporating this intervention in real-world clinical settings by examining parent group attendance and retention.

Methods

Participants

Participants included $n = 545$ parents of youth (14–26 years of age) who self-presented for a 8-week clinician-led group from September 2010 through November 2014, and October 2016 through May 2017. Group members had to be a parent or serve in a parental role for a youth with a SUD to attend group. The current data were collected as part of quality

assurance and improvement monitoring for this service. Parents were free to complete or decline to complete the measures. The local Institutional Review Board (IRB) approved use of de-identified program outcome data for the current analyses.

Intervention

Data for these analyses were collected as part of measurement based care efforts within our clinic (Wilens, McKown, & Kane, 2013), which provides a CRAFT-informed clinician-led group for parents of youth (14–26 years of age) with SUDs. The 8-session group provides psychoeducation on the nature and treatment of SUDs (e.g., epidemiology, etiology, phenomenology, and variety of treatment/recovery options), contingency management training based on the CRAFT model, and, in the spirit of CRAFT, emphasizes the importance of parental self-care. Table 1 provides session titles and brief descriptions for each of the 8 sessions. The group was provided free of charge, and parents did not have to have a child engaged in treatment at the clinic to attend, as a main goal of the group was to positively affect family functioning dynamics that could potentially increase the chances of the child's treatment engagement. Parents were also permitted to participate if their child received treatment elsewhere at any point during group. Admission occurred on a rolling basis in keeping with real-world practice.

Measures

Demographics.—Demographic information, including age, gender, race, ethnicity, and highest education completed, as well as whether the child with a SUD lived with them full time, were collected from each parent at baseline.

Retention.—Group retention was assessed using completion of follow-up measures at four and eight weeks, as well as clinic data on total number of groups attended, gathered using group sign-in sheets (collected for all but the first $n=48$ participants).

Perceived Stress Scale – 10-item—(PSS-10; Cohen, Kamarck, & Mermelstein, 1983). The 10-item Perceived Stress Scale (PSS) is a widely used measure of general life stress that has also been used in samples of family members of individuals with SUDs (K. Lee et al., 2011). Items ask participants to indicate how often, over the past month, they have felt able or unable to control or manage life stressors, on a scale of 0 (“never”) to 4 (“very often”). A recent meta-analysis reported acceptable validity for this measure, and the psychometric properties of the 10-item version of the PSS are superior to the 4- and 14-item measure (E. Lee, 2012). PSS scores were only available for a subset ($n=314$) of the current sample. Internal consistency of the measure in the current sample was very good (Cronbach's $\alpha=.86$).

A brief 5-item questionnaire, The Parent Empowerment Scale, was constructed by the senior author that evaluated parents' perceptions and experiences related to coping with their child's SUD. Questions were answered on a scale of 0 (“Not at all”) to 10 (“Extremely”):

How well do you understand the nature of addiction and/or substance related problems?

How competent do you feel in your ability to effectively help your son/daughter with their alcohol and/or drug related problem?

How comfortable do you feel in your ability to communicate with your son/daughter about their alcohol and/or drug related problem?

How well are you able to cope with your son/daughter's alcohol and/or drug related problem?

How bothered/stressed are you by your son/daughter's alcohol and/or drug related problem?

A reliability analysis was conducted to determine the internal consistency of the five questions. Corrected item-total correlation values were above $r = .30$ for four of the five questions (George & Mallery, 2003). The value for Question 5, which asked parents how bothered/stressed they are by their child's SUD (and was reverse scored to reflect item content), was significantly lower ($r = 0.12$), and removal of this item resulted in acceptable reliability ($\alpha = .74$) for the remaining items. A follow-up exploratory factor analysis also confirmed that these four items mapped onto a single latent factor that was labeled, "parent empowerment". Thus, the mean of the first four items was used as an index of parent empowerment, and Question 5 was analyzed separately.

Procedure

Participants completed assessments at baseline, four, and eight weeks. To reduce the potential error introduced by extreme delays between attended group sessions, participants were excluded if the period between measures exceeded 8 weeks ($n = 4$ excluded for this reason).

Statistical Analyses

All data were first examined for missing values. In addition to retention statistics, we used a generalized estimating equation model (Poisson distribution) to evaluate demographic and baseline stress and empowerment levels as predictors of total groups attended. To confirm that parental stress differed significantly from population means, parents' stress levels were compared to population mean for the PSS-10 (Cohen & Janicki-Deverts, 2012) using single sample t -tests at each time point. Repeated-measures mixed models were used to evaluate changes in overall stress across the three time points, using an AR1 structure to account for within-subject correlation across time points and the restricted maximum likelihood (REML) estimation method. This approach was also used to examine changes in the Parent Empowerment Scale and its individual items across time points. The mixed modeling approach has a number of advantages over traditional repeated-measures ANOVA designs, with its capacity to handle partial data perhaps the most relevant to the current analyses. As this approach still requires that all data be missing at random, all models also included significant demographic and baseline measure predictors of group retention as covariates.

Results

Missingness was less than 5% for demographic variables, and values and percentages are based on valid data. Given difficulty with retention discussed in detail below, sample size for the Parent Empowerment Scale was much higher at baseline ($n=545$) than at week 4 ($n=191$) or week 8 ($n=89$). Due to administrative error, the PSS-10 was available only for a subset of the sample, with a similar pattern with respect to available data points (baseline $n=314$; week 4 $n=91$; week 8 $n=42$). For the less than 5% of participants missing a single item on the PSS, mean value replacement was used for the item prior to calculating the total score, in order to maximize use of available data. A small number of participants provided partial data on the Parent Empowerment Scale, and are included only in analyses of the individual items they answered.

Sample Characteristics at Baseline

The majority of participants identified as white (81.8%), and female (60.4%). Parents ranged in age from 26 to 79 years ($M = 55.0$, $SD = 6.7$). Most parents were married or living together as if married (79.7%), and most reported earning an associates' degree or higher (83.6%). More than half of parents (64.6%) reported their child lived with them full time. An additional 9.1% reported their child lived with them half of the time or more.

Retention

Using completion of 4- and 8-week measures as indicators of retention, 36% of parents attended 4 weeks, and 12% attended the full 8 weeks. Clinic data for total number of sessions attended (available for all but the first $n=48$ participants), provided a more detailed picture of retention (Figure 1). Parents attended an average of 3.73 sessions ($SD=2.7$), with 49.8% attending four or more groups, and 17.4% attending 7 or more sessions. Only parental age was a significant predictor of total sessions attended, with older parents attending more group sessions ($b = .01$; 95% Confidence Interval (CI) = .004 to .023, $p = .004$). The remaining variables in the model, including parent gender, education, racial or ethnic minority status, marital status, whether the child lived with the parent full time, as well as baseline levels of overall stress, parent empowerment, and the extent to which parents reported feeling bothered/stressed by their child's SUD (Item 5, evaluated separately from the PES) were not significant predictors of total sessions attended (Table 2).

Overall Stress

Descriptive statistics for the PSS-10 are provided in Table 3. Overall parental stress as measured by the PSS-10 was higher than population mean estimates ($M = 15.84$; Cohen & Janicki-Deverts, 2012) at baseline ($t(313) = 10.48$, $p < .001$), week 4 ($t(90) = 6.87$, $p < .001$), and week 8 ($t(41) = 3.64$, $p = .001$). Mixed model analyses indicated no significant changes in overall parental stress across the three time points ($F(2, 102.40) = 0.103$, $p = .902$; Table 4).

Parent Empowerment

Descriptive statistics for the 4-item Parent Empowerment Scale and individual items are presented in Table 3. The magnitude of the standardized mean differences for the overall

scale and individual items (calculated as Cohen's d) were generally in the small to medium effect size range (Table 3). Results from mixed model analyses are provided in Table 4, while Figure 2 provides a visual representation of the results pattern. Overall parent empowerment changed significantly across the 8-week group, with improvement from baseline to week 4, and week 4 to week 8 ($b = 0.82$, 95% CI = 0.70 to 0.94, $p < .001$; Table 4). As shown in Table 4, item-level analyses mirrored these findings, with significant differences between baseline to week 4, and week 4 to week 8. However, a slightly different pattern was evident for item 5, which was not included in the overall scale because of low internal consistency. Specifically, while the overall effect of time was significant in this model ($b = -0.65$, 95% confidence interval (CI) = -0.80 to -0.50 , $p < .001$), post-hoc analyses of estimated marginal means indicated that parents reported feeling significantly less bothered/stressed by their child's SUD at week 4 compared to baseline (M difference = 0.84, $SE = .13$, $p < .001$), but that these results held steady (i.e., did not improve further) from week 4 to week 8 (M difference = 0.35, $SE = .19$, $p = .067$; Figure 2).

Discussion

The current study sought to evaluate the effect of a CRAFT-informed group for parents of youth with SUDs in a naturalistic clinic setting, using data collected via routine measurement as part of usual care. Findings reveal the utility of such ongoing measurement for informing ongoing care provision, as well as some of its challenges. As hypothesized, parents reported improvements in their ability to manage and cope with their child's SUD. However, their overall stress did not change across the 8-week group. The sample also showed low rates of retention over the 8-week group, with some evidence that older parents attended more sessions. Together, these findings suggest implementing evidence-informed group-based interventions for parents of children with SUD may help parents understand more about the nature of SUD, help them cope better, and empower them to assist their child more effectively.

While previous work has theorized that CRAFT interventions' effects on overall functioning are mediated through increased parental efficacy (Roozen et al., 2010), only one study had taken the initial step of examining whether CRAFT targets this directly, using an unpublished measure (Manuel et al., 2012). Results indicate that, in a real-world clinical setting, parents' perceived ability to manage and cope with their child's SUD, measured by the Parent Empowerment Scale, showed significant improvements at the 4- and 8-week time points. Specifically, parents reported feeling better able to understand addiction, to help their child with their SUD, to communicate with their child about their SUD, and to cope with their child's SUD within the first four weeks of group, and reported additional improvement at 8 weeks across all items. A similar pattern was seen in parents' report of feeling less bothered or stressed by their child's SUD (an item excluded from the overall scale due to low internal consistency), with a significant decrease at week 4 that held steady through week 8. These findings suggest that even parents who only attended the first four groups benefitted from the intervention, though those who stayed longer benefitted incrementally more. It also suggests that parental efficacy may be positively affected by CRAFT-informed treatment. Reliability analyses indicated some opportunity for refinement of the Parent Empowerment Scale, which may also benefit from additional items targeted by the

intervention, such as parental knowledge of community-based resources. The mediational model proposed by Roozen and colleagues (2010), in which improvements in parental self-efficacy lead to broader improvements in parents' functioning, remains to be tested.

In contrast to parents' increased feeling of efficacy, overall stress did not change during the 8-week group. While previous studies of individual CRAFT treatment for parents have reported improvement in broad measures of mental health and functioning (Miller et al., 1999; Waldron et al., 2007), one pilot of a group intervention similarly reported that parental mental health and family functioning did not improve (Manuel et al., 2012). Thus, treatment provided in a group format may not impact general functioning in the same way as individual-level treatment. However, together with the pattern of change in parents' feelings of being bothered/stressed by their child's SUD in the sample (e.g., reduction at week 4, which held steady rather than showing additional improvement at week 8), an alternative hypothesis is that changes in overall stress simply take longer to occur. The fact that the majority of CRAFT studies measure outcomes at 12 weeks (Manuel et al., 2012; Miller et al., 1999; Waldron et al., 2007), further supports this possibility. While this hypothesis will need to be tested directly, it is also consistent with theoretical work dating back over thirty years, suggesting that changes in overall stress occur after improvements in coping strategies for stressful situations (Lazarus & Folkman, 1987). In sum, future work will need to more closely examine the timing of changes in parental stress in response to CRAFT approaches broadly and across delivery formats (i.e., individual and group).

The retention rates in this naturalistic clinic study were lower than those reported in formal intervention studies of CRAFT, including one study using an individual format within a community clinic (76.8% retention at 4 weeks; Dutcher et al., 2009), as well as a pilot study of group CRAFT (M sessions attended = 6.9; Manuel et al., 2012). Lower retention rates are not uncommon in the transition from research to usual care settings (Goetter et al., 2015), and this likely reflects a number of factors, including characteristics of formal treatment research (i.e., screening, coordination, and strong retention resources and efforts). Retention was also likely impacted by characteristics of the program, in that parents who presented for group with children in crisis may have been referred to individual treatment after attending 1–2 group sessions. Indeed, though analyses controlled for the available predictors of retention, following triaged parents would have provided valuable data. This represents one key “lesson learned” with respect to the use of measurement based practice, in that following cases across “levels of care” is a challenging but important consideration in the design of measurement collection within a given clinic. While the research to practice gap and triage process may account for some retention difficulty, less than half of the sample attended four or more sessions of the eight week group. Such low rates may also point to the value of identifying the most active components of the treatment, in the service of developing a shorter protocol.

Low retention rates also indicate the importance of better understanding the factors involved in engagement in parental support services. Baseline levels of overall stress and parental efficacy did not influence the number of sessions attended by the sample, providing the best evidence (within the limitations of the dataset) to support the examination of four- and eight-week outcomes, despite low retention rates. Parental age was the only significant

demographic predictor of retention, with older parents attending more sessions than younger parents. It is possible that this age effect was driven by other factors, such as socioeconomic status, but the lack of educational diversity in the sample would have made this difficult to detect. It is also possible that older parents represented families at a different phase of family development. While the current dataset did not include child's age or other family composition details, these should be examined in future work.

Limitations

There are a number of important limitations that should be considered when evaluating the results from the current study. First, the naturalistic setting presents a number of limitations relative to standard clinical trials in terms of completed assessments. Also, it should be remembered we were testing a "CRAFT informed," group formatted intervention adapted for parents of children with SUDs. As such, results are likely to vary depending on the nature of the implementation of the intervention. Second, without a comparison group, no definitive causal inferences can be made regarding the effects of CRAFT or its specific components, and the parental stress and empowerment findings may be due merely to the passage of time or to more general treatment factors (Kirby et al., 2017). As noted above, low retention rates may be an indicator of some other moderating factor of the effects reported herein, including severity of child's SUD and triaging to individual-level services, or an artifact of survey completion issues. Further, the clinic, which is located within a large teaching hospital, serves a predominantly Caucasian and highly educated population, which also limits the generalizability of the results. Finally, we were not able to evaluate treatment engagement of the child with SUD in response to parent group attendance or changes in parent empowerment, and future work will need to link parent and child outcomes in order to evaluate whether group CRAFT leads to SUD treatment engagement comparable to individual CRAFT (Manuel et al., 2012).

Conclusion

Results highlight the feasibility and potential benefits of implementing a group CRAFT-informed treatment for parents within the context of an existing SUD youth outpatient program. Such implementation may help improve SUD-specific stress and coping for parents of youth with SUDs. Future efforts should more closely examine the timeline of changes in SUD-specific and overall coping for parents, and directly assess whether changes in SUD-specific coping lead to the later improvements in broader functioning reported by the broader CRAFT literature (Roozen et al., 2010). Furthermore, it will be critical to determine whether parental treatment participation and outcomes are linked to initial treatment engagement and recovery for their child. Evaluation of longer-term outcomes for both child and parent represents a critical area for future inquiry, as little is known about the lasting effects of such parent focused interventions, or the long-term comparative value of different approaches to parent support. This report also highlights the value of implementing measurement-based practice models (Kelly & Mee-Lee, 2018) to provide more immediate, and context-specific, knowledge regarding the impact of the implementation of interventions in real-world settings. Indeed, the collection of such data as part of routine care, allows for acknowledgment of the need to enhance retention efforts or otherwise re-evaluate the need

for prolonged treatment of eight weeks. It also informs our own team about the expected magnitude of therapeutic gain which might be amplified by further treatment enhancements.

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Figure 1.
Participant retention across 8 week group.

Figure 2.

Estimated marginal means for the Parent Empowerment Scale and individual items across the 8-week group (Item 5 analyzed and displayed separately). †All variables showed significant differences at $p < .001$ across all time points with exception of Item 5 between Wk 4 and Wk 8.

Table 1.**Group Session Overview**

Session #	Session Content
1	Psychoeducation on SUDs: <ul style="list-style-type: none"> • Diagnostic classification system • Types/Effects of different substances • Review of SUD treatment System • Review of SUD Legal issues
2	Motivating Your Child Into Treatment: <ul style="list-style-type: none"> • Treatment engagement rates • Positive reinforcement of behaviors * • Setting and enforcing appropriate consequences
3	Positive Communication * and Problem Solving Skills *
4	Boundaries and Limits to challenging behavior
5	Marijuana focused session – psychoeducational video and discussion
6	Family Recovery Process in Addiction
7	Neurobiology of Addiction
8	Coping with Relapse ⁺

Note. All parents attended an initial, 30-minute introduction session with group leaders, which provided an overview of clinic and group policies as well as group topics.

Each group began with introduction for new members and check-in for returning members, and ended with a check-out in which parents committed to one self-care activity.

* Core CRAFT Procedures (Meyers et al., 1998)

⁺ Adapted from Hazelden's Matrix Model Family Education (Obert et al., 2000)

Table 2.

Demographic & Baseline Measure Predictors of Total Sessions Attended

	<i>b</i>	<i>SE</i>	<i>p</i>
Demographic Variables			
Parent Gender ^a	−0.08	0.39	.265
Parent Minority Status ^b	−0.09	0.07	.331
Married ^b	−0.14	0.09	.110
Bachelor's Degree ^b	0.12	0.09	.189
Child Lives with Parent ^b	0.16	0.09	.098
Parent Age	0.01	0.004	.004
Baseline Measures			
Perceived Stress Scale	−0.01	0.005	.159
Parent Empowerment Scale	−0.04	0.02	.096
PES Item 5 (Bothered/Stressed)	0.003	0.02	.877

^aNote. Male=1^bYes=1, No=0

Table 3.

Descriptive Statistics for PSS-10 and Parent Empowerment Scale across time points.

Question	Baseline (n=538)	Week 4 (n=191)	Cohen's d (bsl-wk 4)	Week 8 (n=91)	Cohen's d (wk 4-wk 8)
	M (SD)	M (SD)		M (SD)	
Perceived Stress Scale (PSS-10)	19.67 (6.47)	19.19 (4.57)	0.08	18.07 (4.45)	0.25
Parent Empowerment Scale *	5.25 (1.61)	5.99 (1.48)	0.47	6.83 (1.27)	0.59
1. How well do you understand the nature of addiction and/or substance related problems?	6.12 (1.99)	6.80 (1.57)	0.36	7.56 (1.15)	0.52
2. How competent do you feel in your ability to effectively help your son/daughter with their alcohol and/or drug related problem?	4.56 (2.10)	5.48 (1.85)	0.45	6.49 (1.60)	0.57
3. How comfortable do you feel in your ability to communicate with your son/daughter about their alcohol and/or drug related problem?	5.45 (2.43)	5.82 (2.16)	0.16	6.70 (1.90)	0.42
4. How well are you able to cope with your son/daughter's alcohol and/or drug relate problem?	4.89 (2.01)	5.81 (1.75)	0.47	6.58 (1.68)	0.44
5. How bothered/stressed are you by your son/daughter's alcohol and/or drug related problem?	8.62 (1.76)	7.80 (1.98)	0.45	7.49 (1.91)	0.16

Note. Values calculated using all available data for respective time points.

* Parent Empowerment Scale includes only items 1–4.

Table 4.

Mixed Model Analysis Results For Parent Measure Outcomes

Dependent Variable	Intercept			Time			Age		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Overall Stress (PSS-10)	22.73	2.76	<.001	−0.12	.35	.731	−.05	.05	.282
Parent Empowerment Scale	5.02	0.54	<.001	0.82	.06	<.001	−.01	.01	.597
Item 1 (Understand)	5.71	0.64	<.001	0.74	.08	<.001	−.01	.01	.272
Item 2 (Competence)	4.58	0.79	<.001	1.02	.09	<.001	−.02	.01	.118
Item 3 (Communicate)	5.56	0.81	<.001	0.60	.09	<.001	−.01	.01	.380
Item 4 (Cope)	4.39	0.66	<.001	0.88	.08	<.001	−.01	.01	.570
Item 5 (Bothered/Stressed)	9.39	0.61	<.001	−0.65	.08	<.001	−.00	.01	.797