

ATTENDANCE PATTERNS

Identifying Factors Associated with Patterns of Student Attendance and Participation in a Group Tier 2 Preventive Intervention: Implications for Adaptation

Elise T. Pas, PhD¹; Lauren Kaiser, PhD²; Jill Rabinowitz, Ph.D. ¹;

John E. Lochman, PhD³; Catherine P. Bradshaw, PhD⁴

¹Johns Hopkins University, Bloomberg School of Public Health; ORCID 0000-0001-5000-4681

²Millersville University

³University of Alabama

⁴University of Virginia, Curry School of Education

Authors' Notes

Correspondence regarding this article should be addressed to Elise T. Pas, Johns Hopkins University, Bloomberg School of Public Health, 415 N. Washington Street, Office 501, Baltimore, MD 21231, E-mail: epas@jhu.edu

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Abstract

The extent to which youth attend Tier 2 evidence-based intervention is an important dimension of implementation. This study examined attendance patterns of 369 middle schoolers involved in a randomized trial testing the impact of Coping Power, an evidence-based Tier 2 preventive intervention. We conducted latent profile analysis to examine student attendance at the 25 Coping Power sessions and found three attendance patterns: 69.9% had *high and stable* attendance, 19.5% of youth had *moderate and modestly declining* attendance, and 10.6% had *poor and sharply declining* attendance. We then examined whether students of a particular gender and race or in single-gender/race intervention groups were more likely to demonstrate certain attendance patterns and whether there were mean differences across attendance patterns on student behavioral risk, affect, and group engagement; group characteristics (e.g., group behavioral norms); and individual contacts with the group leader. Analyses indicated students with the *poor and sharply declining* attendance pattern had higher early-session negative affect than students with the other two attendance patterns and were less likely to be in gender-balanced groups than students with *moderate and modestly declining* attendance. Students with *moderate and modestly declining* attendance spent more time in contacts with group leaders than students with *high and stable* attendance. Students with high attendance were in groups with the highest early-session group attendance rates. Implications of these findings for adaptation and tailoring of the Tier 2 Coping Power program are discussed.

KEYWORDS: Coping Power, engagement, group composition, negative affect

Identifying Factors Associated with Patterns of Student Attendance and Participation in a Group Tier 2 Preventive Intervention: Implications for Adaptation

Although the evidence base for tiered preventive interventions and the conceptualization of implementation fidelity has increased and evolved over the past two decades (e.g., Dane & Schneider, 1998; Domitrovich et al., 2008; Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Durlak & DuPre, 2008; Dusenbury, Brannigan, Falco, & Hansen, 2003), there has been considerably less consideration of how implementation can be optimized to improve outcomes (Lloyd, Bruhn, Sutherland, & Bradshaw, 2019). Youth attendance in prevention programs is an important but understudied aspect of fidelity (Hagermoser Sanetti, Gritter, & Dobey, 2011). Moreover, research examining factors associated with youth attendance in group-based Tier 2 preventive interventions is needed to inform intervention adaptation (i.e., a priori, systematic additions or changes to an intervention; see Berkel, Mauricio, Schoenfelder, & Sandler, 2011) and tailoring (i.e., in-the-moment changes or modifications in response to participants' reactions to the intervention; Berkel et al., 2011) to optimize attendance and outcomes.

In the current study, we explored youth attendance in a Tier 2 preventive counseling group intervention called Coping Power (Lochman & Wells, 2002, 2003), which addresses student feelings, hostile attributions in social situations, and social problem solving. Prior RCTs of an elementary school version of Coping Power demonstrated reduced student aggression in the classroom, delinquent behavior, and the use of tobacco, alcohol, and illicit drugs (Lochman & Wells, 2002, 2003). Based on the results of multiple randomized controlled trials, Coping Power has been listed as an evidence-based program on several clearinghouses, including the Institute of Education Sciences, What Works Clearinghouse (U.S. Department of Education, 2011) and National Registry of Evidence-based Programs and Practices created by the Substance

Abuse and Mental Health Services Administration. It has mostly been studied in elementary schools, where attendance issues are likely the least challenging. However, as youth transition to middle school, attendance becomes more of a concern (Eccles et al., 1993). As such, the overarching goal of this study was to examine middle schoolers' attendance patterns for the evidence-based, Tier 2 Coping Power program. Specifically, we explored a broad set of student, group, and group leader factors associated with better student attendance; these factors can inform the adaptation and tailoring of the program to optimize outcomes of the Tier 2 program.

Attendance as an Indicator of Fidelity

Theoretical models of program implementation highlight the multidimensional nature of implementation fidelity and there is general agreement on five elements of fidelity (Dane & Schneider, 1998): *adherence* (i.e., implementing as intended; Century, Rudnick, & Freeman, 2010), *exposure* or *dosage* (i.e., amount or quantity of the intervention delivered; Dusenbury et al., 2003), *quality of delivery* (e.g., the skill with which the intervention was implemented; Berkel, et al., 2011), *participant responsiveness* (e.g., participant engagement with or enthusiasm; Berkel et al., 2011), and *program differentiation* (i.e., extent to which an intervention is different from others; Berkel et al., 2011 refer to this broadly as fidelity). One problematic feature of extant attendance literature is the variability in how it is defined and measured; it has been called attendance (Charlebois, Brendgen, Vitaro, Normandeau, & Boudreau, 2004a; Charlebois, Vitaro, Normandeau, Brendgen, and Rondeau, 2004b), dosage (Durlak & DuPre, 2008; Charlebois et al., 2004a; Dusenbury et al., 2003; Dane & Schneider, 1998), retention (Prado, Pantin, Schwartz, Lupei, & Szapocznik, 2006), engagement (Ellis, Lindsey, Barker, Boxmeyer, & Lochman, 2013), program intensity (Allen, Philliber, & Hoggson, 1990), and participant responsiveness (Berkel, Mauricio, Schoenfelder, & Sandler, 2011; Durlak

& DuPre, 2008; Dusenbury et al., 2003). In the current study, we treat attendance rates as an outcome of interest, conceptualized as dosage/exposure (i.e., amount delivered; Dusenbury et al., 2003).

Importance of Attendance to Achieve Outcomes

In addition to conceptualizing attendance as a component of fidelity, it also has been framed as a measure of “behavioral engagement” (Staudt, 2007) and an important factor related to intervention effectiveness, as both a *moderating* variable for group counseling intervention effects (e.g., Gillis, Kivlighan, & Russell, 2016) and *mediator* of the relationship between implementation fidelity and outcomes (e.g., Berkel et al., 2011). Preliminary research on Coping Power in elementary schools indicated improved engagement (i.e., measured more broadly than just attendance) was associated with reductions in externalizing behaviors (Lindsey et al., 2019).

Although achieving high levels of Tier 2 intervention attendance is important, it is challenging for practitioners and researchers alike. In mental health settings, attrition and no-show rates have ranged from 36 to 45% (Staudt, 2007), whereas other reviews reflect a much wider range (i.e., from nearly no attrition to nearly full-sample attrition, see Charlebois et al., 2004b). School-based research on psychoeducational and social emotional Tier 2 group interventions in elementary schools provides a more optimistic outlook. Prior research on Coping Power indicated average student attendance in the groups ranged from 83% (Lochman & Wells, 2002) to 87% (Lindsey et al., 2019). Other intervention studies have indicated that about half of the students attended two-thirds or more of the sessions (see Charlebois et al., 2004b) and nearly 90% of students attended more than half of the sessions (i.e., Conduct Problems Prevention Research Group [CPPRG], 2002). Even when the majority of students attend most sessions, there are still a large portion (e.g., up to a quarter) who do not. Given the association between

attendance and outcomes, additional school-based research is imperative to identify attendance (and non-attendance) patterns and examine correlated factors to inform the a priori adapting or in-the-moment tailoring of Tier 2 interventions to enhance participant attendance and outcomes.

Factors Predicting Attendance in School-based Tier 2 Interventions

There has been limited explicit empirical investigation of factors related to declining attendance, and even less direct analysis of factors related to student attendance in school-based Tier 2 group interventions. To our knowledge, only one study explored correlates of attendance to school-based, Tier 2 social emotional interventions (Charlebois et al., 2004b), which indicated clinician contacts with students are the most important predictor of attendance. Two other studies of Coping Power explored student group attendance, but as part of a larger construct of engagement (Ellis et al., 2013; Lindsey et al., 2019). Ellis and colleagues (2013) showed engagement fluctuated over time and that there was an interrelation between student and parent engagement. Similarly, Lindsey and colleagues (2019) demonstrated students with higher engagement midway through the intervention had lower levels of externalizing behaviors at follow-up. Below we review in greater detail the limited available research examining factors related to attendance.

Student individual characteristics. A handful of studies explore student characteristics related to attendance or attrition in clinic or school-based interventions. Findings suggest that student demographics may not be associated with attendance in *school-based* interventions and specifically Coping Power in elementary schools (Lindsey et al., 2019). For other interventions (e.g., therapy), child age, race, gender, and SES were similarly not related to clinic service involvement (Chu & Kendall, 2004). In school-based mental health clinics, significant associations between race and income have emerged, whereby African American/Black and poor

caregivers were the least likely to engage (Burnett-Zeigler and Lyons, 2010). Parents with low income were similarly more likely to drop out of parent-training programs (Firestone & Witt, 1982) and psychotherapy sessions (Kazdin & Mazurick, 1994), whereas parents with above-poverty level income were more likely to engage in parent intervention (Prado et al., 2006).

Related to school-based intervention attendance is school attendance, which has important associations with demographics. Recent research showed American Indian and Pacific Islander students, followed by African American/Black and Hispanic students, had the highest absenteeism (U.S. Department of Education, 2019). Given increased risk for student risk-taking, fighting, and substance use (Maynard et al., 2017), students who have attendance problems are likely to be those that would most benefit from Tier 2 interventions. Thus, student or family demographic characteristics may be important, yet studies are inconclusive, and warrant further analysis.

Student risk and need. Prior research conducted outside of schools has indicated a relationship between student behaviors at baseline and intervention engagement, attendance, or attrition (Kazdin & Mazurick, 1994; Kazdin & Whitley, 2003, 2006). In school-based group intervention studies, the findings are mixed. A recent analysis of Coping Power student group engagement (i.e., measured as a composite of attendance and ratings of in-group participation) showed higher levels of baseline externalizing behaviors were associated with lower early student group engagement (i.e., sessions 1-8; Lindsey et al., 2019). Other research has not reported such an association between behavior problems and intervention group attendance (Charlebois et al., 2004b). Thus, both student behavioral need and risk may be important but have not been conclusively linked to Tier 2 intervention attendance in school settings.

Group compositional and contextual factors. There has been a large body of research focused on how group composition relates both to outcomes as well as group affiliation, but specifically for adults. Underlying concerns about group composition and group dynamics lie themes of power, advantage, tokenism, and identity (e.g., Curşeu & Sari, 2015; Kanter, 1977, 2006). For group-based mindfulness interventions aimed at preventing substance use relapse, participants in groups comprised of more White participants (Greenfield et al., 2018) and more female participants (Roos, Stein, Bowen, & Witkiewitz, 2019) had improved outcomes relative to those in groups with a larger proportion of participants of ethnic/racial minorities and males. Further, single gender groups have been hypothesized to better facilitate adult group affiliation (Sugarman et al., 2016). Among adolescents participating in school-based substance use programming, boys and girls provided higher ratings of satisfaction and engagement in groups with more girls, however, these outcomes were not associated with drug and alcohol use (Garcia, Bacio, Tomlinson, Ladd, & Anderson, 2015). Among Italian graduate students, there were no gender-composition findings (Lo Coco, Gullo, Lo Verso, & Kivlighan, 2013), which may reflect age or cultural differences.

Also of importance are the group norms that are established around group attendance. Group counseling theory purports the importance of attendance for both individual outcomes and for creating a positive dynamic for an effective group (e.g., Yalom & Leszcz, 2005), although there has been limited empirical research on this association. In work settings, organizational researchers have found a greater absence norm (i.e., group behavioral patterns of absenteeism) is associated with individual absences (e.g., Rentsch & Steel, 2003). The same has been shown in group counseling with young adults (Kivlighan, Kivlighan, & Cole, 2012). Given early

adolescents' greater reliance on peers for behavioral modeling, this could be an important contextual issue to consider for middle schoolers' Tier 2 intervention attendance.

Participant engagement. Clinician-rated engagement has been referred to as processes occurring within a group (Prado et al., 2006) and participant involvement (Chu & Kendall, 2004). Taking a multi-component view of engagement, attendance has also been referred to as “behavioral engagement” (Staudt, 2007) and measured as one variable of interest within a broader engagement construct (e.g., Ellis et al., 2013; Lindsey et al., 2019). It is important to disentangle attendance from other engagement measures (e.g., when assessing engagement as participant responsiveness) and, if measured early, this could serve as a warning sign for later poor student attendance or dropout from the group. Recent Coping Power research has explored engagement as a variable of great interest, but included attendance as well as other measures (i.e., group participation, rule following, goal attainment, and out-of-group homework completion) in one engagement construct (Lindsey et al., 2019).

In related work on parent engagement, clinician ratings on the Groupwork Engagement Measure (GEM; Macgowan, 1997) assessing talk time and efforts to achieve goals were significantly related to parent retention and session attendance (Prado et al., 2006). Similarly, among adults convicted of violent crimes, treatment engagement (i.e., measured using a different rating scale) was also found to be associated with treatment completion (Drieschner & Verschuur, 2010). There has been less attention to the association between engagement and attendance in the context of group-based Tier 2 interventions for youth and most frequently, the GEM measure has been used as an outcome of interest rather than a predictor.

Another related indicator of engagement is the affect one displays when attending group interventions. There has been limited exploration of positive/negative affect as a predictor of Tier

2 group session attendance for adolescents. Affect is related to school functioning, academic achievement (Weber, Wagner, & Ruch, 2016), and resilience (Xi, Zuo, & Wu, 2013). Similarly, affect during group sessions may relate to group functioning (e.g., enjoyment), and persistence in the difficult work of the group; those with negative affect may not find the sessions enjoyable and may stop coming to the sessions. This may be especially true of a behaviorally-focused program for students, like Coping Power, which requires students to engage in problem solving, planning, and perspective-taking that may otherwise be difficult for them.

Contacts with the facilitating group leader. The rapport that a group member has with the clinician/group leader may also be an important factor for attendance. Multiple studies have reported using individual contacts between the group leader and individual group members as a means to promote a positive rapport (e.g., Charlebois et al., 2004b; Prado et al., 2006). Individual contacts with group members is the only group leader behavior that has been shown to uniquely predict students' persistence and attendance in a school-based program (Charlebois et al., 2004b). Such contacts are an integral part of Coping Power (Lochman, Wells, & Lenhart, 2008) and thus examining contacts in relation to attendance would expand the literature.

The Current Study

The current study investigated the patterns of student attendance in the Tier 2 Early Adolescent Coping Power school-based intervention. This study builds on prior work on youth engagement in Coping Power with upper elementary school students (e.g., Ellis et al., 2013; Lindsey et al., 2019) by exploring attendance in the Tier 2 group sessions among middle schoolers. Importantly, we isolated attendance as a separate indicator of fidelity (i.e., dosage) and examined its association with other early-session engagement measures. Consistent with the Coping Power model, we examined attendance across the three phases of the intervention (see

Procedures section) using latent profile analysis (LPA; Laursen & Hoff, 2006; Masyn, 2013) to identify common patterns of attendance over the course of the school year. Although LPA is an exploratory approach, we formulated some broad hypotheses that there would be distinct attendance patterns, including a majority of students who attended the majority of sessions (i.e., high attendance pattern; Lindsey et al., 2019; Lochman and Wells, 2002). We also expected a relatively smaller class of poor(er) attendance.

Our second aim explored whether and how student factors (demographics and behavioral risk, affect, and group engagement), group compositional factors and group norms, and individual contacts with the group leader related to attendance patterns. Available research on other programs and in other settings has been somewhat mixed. The above-reviewed literature suggested that student demographics may not be associated with attendance (e.g., Lindsey et al., 2019), but there may be better attendance among youth (1) with lower behavioral need (e.g., Lindsey et al., 2019), (2) with higher early-group engagement (e.g., Prado et al., 2006) and positive affect (e.g., Weber et al., 2016; Xi et al., 2013), (3) in single-gender (Garcia et al., 2015) and perhaps single-race groups, (4) in groups with better attendance norms (Kivlighan et al., 2012), and (5) with more group leader contacts (e.g., Charlebois et al., 2004b). This study is intended to elucidate factors to consider in adapting and tailoring this Tier 2 intervention.

Method

Participants

Data from this study were collected as part of a randomized controlled trial (RCT) of the Early Adolescent Coping Power intervention conducted in 40 middle schools (7th graders), half of which were randomly assigned to receive the intervention and half to control. The current analysis included the 369 7th grade students across the 20 intervention middle schools in

Alabama (10 schools) and Maryland (10 schools). The goal was to recruit 6 or 7 students per school, each year for three years. On average, there were just over 18 students recruited in each school ($M = 18.45$). Eight student participants were excluded from this attendance study because they transferred schools within the first 4 sessions of the intervention (i.e., received less than 50% of the first phase). The majority of students were male (i.e., 61.8%). The largest racial/ethnic group was African American/Black students (73.4%) followed by White students (16.8%). All other racial/ethnic groups comprised fewer than 5% of the sample. The school groups were comprised of 62.91% males ($SD = 4.87$) and 72.28% African American/Black students ($SD = 4.41$) on average, suggesting an even distribution of male and African American/Black students across schools.

Procedures

Data Collection. During the spring of each year, sixth grade teachers completed the 6-item Reactive and Proactive Aggression Questionnaire (RPQ; Dodge, Lochman, Harnish, Bates, & Pettit, 1997) about each 6th grade student. The parents of students with elevated scores were approached for active consent for their child to participate in the study during the next school year. Students provided assent to participate once their parent consented and could choose when to attend (i.e., no requirements for their attendance were made and no incentives provided), though group leaders encouraged attendance by picking students up from class for group and by meeting individually with students if they resisted coming to group. Data reported here were collected at baseline (i.e., in the fall of 7th grade) and over the course of the 7th grade school year, while the intervention was administered. Teachers provided consent to participate in the study. Seventh grade teachers were consented to complete data ratings of students, support the students, and engage with the group leader for the teacher professional development component. Some

data completed by teachers were utilized in this study. Group leaders recorded data about student attendance, engagement, and affect within the groups after each session, as well as their individual contacts with each student throughout the year. These data are the main focus of this study. All measures are described below. The study was approved by the institutions' Institutional Review Board approval.

Intervention. The intervention groups were conducted during the students' 7th grade year. The *Early Adolescent Coping Power* (EACP; Bradshaw, Lochman, Powell, & Ialongo, 2017) group Tier 2 intervention is comprised of a student component (i.e., the focus of this paper) as well as parent and teacher components. This intervention was based on the original *Coping Power* intervention (Lochman & Wells, 2002, 2003; Lochman et al., 2008), but was adapted to include fewer student sessions and to incorporate content specifically applicable to early adolescent students. As noted earlier, prior elementary school-based research indicated reductions in student aggression in the classroom (e.g., fighting, harming others), delinquent behaviors (e.g., theft, assaults, property destruction), and tobacco, alcohol and illicit drug use (Lochman & Wells, 2002, 2003). The EACP program was piloted in the Baltimore City Schools in 2007-2009 and post-intervention results indicated that the program reduced children's aggressive behavior and prevented substance abuse (Bradshaw et al., 2017).

The student component consists of both group sessions and individual contacts. Specifically, there were 25 group sessions, each lasting 45-60 minutes; they were held approximately one time per week for the majority of the school year. The first eight sessions (Phase 1) focused on the delivery of content and concepts to the students and on developing group norms, setting short- and long-term goals, organizational and study skills, awareness of feelings, anger coping and self-control, coping self-statements, relaxation techniques, and

perspective-taking. In the 9th through 15th session (Phase 2), students learned to apply the concepts taught by practicing perspective-taking and social problem-solving using the “PICC” (Problem Identification Choices Consequences) model. This phase culminated in the student group creating a video to teach others the concepts that they had learned. In the final Phase (i.e., sessions 16-25), the students further applied their skills to scenarios and challenges early adolescents face, including relationship development (i.e., friendship and romantic), social aggression, cyberbullying, problem solving about damaged relationships and neighborhood problems, refusal skills, deviant peer groups and centrality of group membership, and positive quality development. In addition, the group leader were expected to have 3-5 individual contacts with each student, to further build rapport, monitor progress, reinforce content, and provide any content a student missed during the group (see Lochman et al., 2008).

Measures

Group leader measures following groups. After each session, group leaders completed a group fidelity form where they recorded data about attendance, adherence to the objectives for that specific session, and student participation and engagement in sessions. In addition, they also provided short behavioral and engagement ratings about each student within the group. Below we describe the components utilized here in detail.

Attendance data. After each session, group leaders reported whether a student was absent, partially attended, or attended the entire time. For the purpose of this paper, absence was coded as 0 and partial and full attendance was coded as 1; this allowed us to sum the number of sessions attended across each phase (i.e., sessions 1-8 for Phase 1, sessions 9-15 for Phase 2, and sessions 16-25 for Phase 3) and divide the number of sessions attended by the total number of sessions offered during the Phase (i.e., expected to be 8 for Phase 1, 7 for Phase 2, and 10 for

Phase 3). When the schedule did not allow for all 25 sessions to be delivered (e.g., school closure, deviations in testing schedules), group leaders were advised by a program developer to either drop session content altogether or collapse content during four pre-selected sessions into neighboring sessions and code each session attendance as partial attendance for all students. This was part of our decision to code partial attendance as 1 in this study; further, during any specific session, only 3-17 students were coded as partially attending (i.e., < 5% of the sample). Approximately 61.7% of the groups received all 25 sessions; an additional 16.7% of the groups had 24 sessions delivered; 8.3% had 23 sessions delivered, 3.3% had 22 sessions delivered; and 10% had 21 sessions delivered in this study.

Student demographics. Student demographic data were collected in a survey adjoined to the Behavioral Assessment System for Children (see details below). Included in these analyses were student gender (coded male = 1, female = 0) and race; given the large proportion of African American/Black students in the sample, race was coded as 1 for African American/Black and 0 for all others.

Student behavior. Teachers reported on youths' symptoms using the Behavioral Assessment System for Children (BASC-2: Adolescent, ages 12-21; Reynolds & Kamphaus, 2004). Teachers reported on all subscales of the BASC measure at baseline; the externalizing and internalizing symptoms composites were included here. The externalizing scales included aggression (10 items, $\alpha = .71$), conduct problems (12 items, $\alpha = .91$), and hyperactivity (11 items, $\alpha = .78$). There were three scales of internalizing behaviors, including: anxiety symptoms (7 items, $\alpha = .81$); depressive symptoms (11 items, $\alpha = .83$); and somatization (8 items, $\alpha = .83$). Teachers rated the frequency of each behavior on a four-point Likert scale ranging from *never* (0) to *always* (3). To calculate scale scores, each item was summed and then converted into a *t*-

score using the BASC scoring manual; composite scores were derived based on all scale scores. The BASC has demonstrated adequate reliability and validity (Reynolds & Kamphaus, 2002). The student externalizing and internalizing symptoms scores were used as an individual predictor. In addition, the average externalizing and internalizing symptoms *t*-scores for each group were calculated and assigned to each individual student for analysis.

Positive and negative affect. Group leaders also rated the positive and negative affect of each student using the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). Specifically, the group leaders were provided with a list of four adjectives each for positive (i.e., excited, attentive, active, and enthusiastic) and negative (i.e., irritable, upset, hostile, and nervous) affect. Group leaders responded about the extent to which each student displayed each, from *very slightly/not at all* (1) to *extremely* (5). We averaged the four positive and four negative items separately for each session; we then averaged the positive and negative affect scores across the first three sessions and utilized these two variables as indicators of early-session affect.

Participant engagement. In the same online form, group leaders answered 8 items from the Groupwork Engagement Measure (GEM; MacGowan, 1997, 2006) regarding each student in the group. This measure has been used in prior counseling research (e.g., Prado et al., 2006). After each session, the group leader responded to two items each regarding each student's attendance, each student's contributions to the group, how positively each student related to the group leader as well as one item each about each student's working on solutions for their own and others' problems. The group leaders rated each item on a scale of *rarely* (1) to *most or all of the time* (5). For this study, all items were averaged for each session; we then averaged the engagement for the first three sessions and utilized that variable as an indicator of early-session engagement.

Group demographic composition. Based on gender and race data for each group, two dummy codes each (i.e., for gender and race) were created; one indicated if it was a single gender/race group (1 = yes, 0 = no) and the other indicated whether there was race/gender balance whereby a 1 indicated that each student in the group had at least one other student in with the same gender/race as them in the intervention group (i.e., there was balance) and a 0 indicated that there was at least one student in the group who was the sole member of their gender or race group.

Early group attendance norm. Data from the first three sessions were used to generate a group-attendance rate (i.e., the number of students present at the first, second, and third sessions each divided by the total students in the group and then averaged) as an early-session indicator of the norm set for attending the group.

Individual student contacts. As per the EACP protocol, 3-5 individual sessions were to be held between the group leader and each student to augment the group sessions. After each individual meeting with a student, the group leaders documented the date of the contact and length of the contact. These data were utilized to calculate the total number of contacts the group leaders had with each individual student and the total number of minutes spent in those contacts.

Statistical Analyses

Descriptive analyses were conducted in SPSS, including frequencies and means. The primary analyses were conducted using Mplus Version 8.0 (Muthén & Muthén, 1998-2017). Three variables were created reflecting the percentage of student attendance during phase 1, 2, and 3 of the intervention, as described in the Method section, and were the variables of interest to identify patterns of student attendance. The latent profile analysis (LPA; Laursen & Hoff, 2006; Masyn, 2013) began with a one-profile model, and the number of profiles was increased until

there was no additional improvement in model fit (Nylund, Asparouhov, & Muthén, 2007). Several model fit indices were examined, including the Akaike Information Criterion (AIC; Akaike, 1987), Bayesian Information Criterion (BIC; Schwartz, 1978), and sample-size adjusted BIC (ABIC; Sclove, 1987). The model that generated the smallest values on these fit indices was considered to have the best fit to the data. The Vuong-Lo-Mendell-Rubin (VLMR) Likelihood Ratio Test, which compared the fit of the model with n profiles to the fit of the model with $n-1$ profiles (Masyn, 2013) was also considered, as was the size of the smallest profile, and entropy. Small class sizes (< 5%) can reflect model overfitting and potential generalizability and replication issues. Entropy is a measure of classification certainty, whereby higher values (> .7) reflect better participant classification (Masyn, 2013). Models were also examined to determine whether profiles were distinct.

Once the profile model was selected, we conducted multinomial logistic regression analyses, using the 3-step procedure, to examine whether membership in the attendance profiles was influenced by (a) student gender and race and (b) the gender and racial composition of the group. Tests of equality of means across profiles were conducted to examine whether the profiles showed mean differences in individual behaviors (i.e., externalizing and internalizing symptoms), early-session engagement and positive and negative affect, group-level characteristics (i.e., early-session attendance norms and group leader-rated group internalizing and externalizing symptoms), and student contacts with the group leader (i.e., total contacts and minutes). These tests held profile membership constant and generated chi-square statistics for omnibus and pairwise comparisons across latent profiles (Muthén & Muthén, 1998-2017). Pairwise comparisons were explored only if the omnibus tests were significant ($p < .05$). We calculated an effect size (phi or ϕ) for all omnibus chi-square tests (Masyn, 2013).

Results

Intervention Delivery Descriptive Data

On average, 24.13 sessions were implemented (i.e., high adherence to session delivery). For each phase, 7.97 of the 8 possible Phase 1 sessions were offered ($SD = 0.18$); 6.69 of the possible 7 Phase 2 sessions were offered ($SD = 0.83$); and 9.47 of the possible 10 Phase 3 sessions were offered ($SD = 0.82$). Students attended nearly 19 out of 25 sessions, on average ($M = 18.82$, $SD = 21.82$ range = 0-25) or 78.82% of sessions. In Phase 1, students, on average, attended 84.78% of sessions ($SD = 18.83$), followed by 78.28% ($SD = 25.92$) and 74.32% ($SD = 30.18$) in Phases 2 and 3 (Table 1). Students received an average of 3.10 contacts with the group leader ($SD = 2.22$, range = 0-15), and spent an average of 65.65 total minutes with the group leader in these contacts ($SD = 70.75$, range = 0-510 minutes), also indicating high adherence to this intervention feature.

Latent Profile Analysis

The three student attendance variables (i.e., percentage of attendance in Phase 1, 2, and 3) were included in the latent profile analysis (LPA). LPA indicated that the lowest BIC, AIC, and ABIC was associated with the four-profile model (Table 2). However, there was a subgroup in the 4-profile model that was very small, potentially indicating model overfitting, and two classes were very similar in their attendance patterns. Given the strong entropy of the 3-profile model, appropriate sample sizes, and the fact that each class was conceptually distinct, we selected the 3-profile model for further analyses.

Based on the percentage of student attendance at each phase (Figure 1), Profile 1 (69.9% of the sample) was named *high and stable*, (referred to as “high” hereafter). Students in this profile consistently and frequently attended sessions across all phases of the intervention, with an

average of nearly 90% of the sessions attended. Profile 2 (19.5% of the sample) was named *moderate and modestly declining* (referred to as “moderate” hereafter). Youth in this class attended about 70% of the sessions in phases 1 and 2 of the intervention, followed by a modest decline in attendance in Phase 3 (approximately 50% attendance). Profile 3 was termed *poor and sharply declining* (referred to as “poor” hereafter; 10.6% of the sample). Youth in this profile displayed moderate attendance at phase 1 (approximately 60% attendance) followed by a sharp decline to 30%, then < 5% attendance in Phases 2 and 3.

Auxiliary Analyses

Student variables. Omnibus chi-square analyses indicated between-profile differences in early-session student negative affect as rated by the group leader ($\chi^2 = 16.00, p < .01, \phi = .21$, Table 4). In particular, students with the declining attendance pattern exhibited higher levels of initial session (i.e., sessions 1-3) negative affect relative to the students with the high attendance and moderate attendance patterns. No between-profile differences were found in student negative affect between the high attendance and moderate attendance patterns. With regard to other behavioral and affect ratings, differences also did not emerge on student early-session positive affect ($p = .84$), student externalizing ($p = .09$) or internalizing symptoms as rated by teachers on the BASC ($p = .49$), or group leader-rated student engagement in the early sessions of the intervention ($p = .43$; Table 4). Demographic differences also were not observed (Table 3).

Group variables. The group-attendance rate in the first three sessions varied by attendance pattern ($\chi^2 = 17.64, p < .01, \phi = .22$; Table 4) as did the gender balance in group composition (OR = 0.23, CI = 0.03 – 1.84, $p = .01$; Table 3). With regard to group-level attendance in the first three sessions, the students displaying high and stable attendance were in groups with significantly higher early-session attendance rates (i.e., group attendance rate of

87.1%) than the students displaying poor and sharply declining attendance (i.e., 78.6% attendance) and moderate attendance (i.e., group attendance rate of 82.6% in the first three sessions). With regard to the gender balance in the groups, students demonstrating the *poor and sharply declining* attendance pattern were significantly less likely to be in gender-balanced groups than students with *moderate and modestly declining* attendance. The group racial composition (Table 3) and group-level (i.e., average scores for the group by teachers on the BASC) externalizing ($p = .49$) and internalizing symptoms ($p = .65$) were not significantly associated with attendance patterns (Table 4).

Group leader contacts with students. With regard to group leader contacts with individual students, significant differences were detected for the total number of minutes spent in these contacts by the group leader and student ($\chi^2 = 7.79, p = .02, \phi = .14$; Table 4), but not the number of contacts made ($p = .08$). Students displaying *moderate attendance* had a greater number of total minutes spent in individual contacts with the group leader (i.e., 83.83 minutes) than the students displaying *high attendance* (i.e., 58.10 minutes). There were no differences observed between the declining profile and either of the other two profiles.

Discussion

This study examined the attendance patterns and factors related to attendance in a group-based Tier 2 preventive intervention among middle school students. This study not only examined attendance patterns for a targeted intervention during a development period (i.e., early adolescence) that is relatively absent in the school-based research literature, but (a) examined attendance as the sole outcome of interest (i.e., not considered with other engagement variables as in prior Coping Power research; e.g., Lindsey et al., 2019) and (b) considered a wide range of student, group, and group leader contact factors as important correlates of student attendance.

Though attendance for Coping Power by middle schoolers was fairly high (i.e., almost 79%), it was a bit lower than in prior research in elementary schools (Lindsey et al., 2019; Lochman & Wells, 2002). We identified three patterns of attendance: those students who always engaged in high attendance (i.e., about 90% of sessions) across all three phases of the intervention; those who had moderate attendance to begin (i.e., about 70% of sessions) with a modest decline in later phases; and those who had poor phase 1 attendance (about 60% of sessions) and steeply declined in the subsequent two phases. The majority of students were in the high attendance class, but a notable proportion (i.e., about 30%) of students were in the moderate and poor attendance classes. For these students, adapting and tailoring Coping Power to promote attendance may be needed.

Leveraging these LPAs, we then examined whether a series of student, group, and group leader contact factors were associated with attendance patterns. We found that individual affect, group composition and attendance norms, and contacts with the group leader were related to attendance patterns. Similar to other school-based research (Chu & Kendall, 2004) and Coping Power literature (Lindsey et al., 2019), student gender and race were not associated with attendance. Interestingly, early-session engagement as rated by the group leader also was not associated with attendance, despite its otherwise well-established interrelatedness with attendance within the literature (e.g., Lindsey et al., 2019).

On the other hand, students in the poor and sharply declining attendance group were rated by the group leader as displaying more negative affect (i.e., irritability, upset feelings, hostility, and nervousness) during the first three sessions than all other students. Prior studies examining the negative affect measures used here have shown an association of negative affect with self-reported internalizing (i.e., depression and anxiety; Wróbel, Finogenow, Szymańska, & Laurent,

[2019]) as well as physiological hyperarousal (Cuicci et al., 2017). Taken together, these findings imply that school-based implementers may need to attune more closely to both the occurrence of co-occurring internalizing and externalizing symptoms among students identified for Tier 2 interventions, and how such co-morbid symptoms may impact intervention attendance in a program, such as Coping Power, targeting externalizing behaviors. A recent study comparing group- versus individually-delivered Coping Power indicated that individual delivery was most effective for students with greater skin reactivity (i.e., a proxy for hyperarousal; Lochman et al., in press). The same may be true for students displaying negative affect.

The gender distribution within the group was associated with attendance patterns, such that students displaying poor attendance were less likely to be in groups with gender balance, or groups where there was no student who was the only member of their gender group. Prior research has examined gender composition and shown that participants in single-gender groups demonstrate better attendance (e.g., Garcia et al., 2015; Greenfield et al., 2018; Roos et al., 2019). Our findings do not reflect this single-gender effect, but do suggest that it may be important to avoid constructing groups with just one student of a specific gender. Within the current study, efforts were made to ensure there was never a single participant of one gender. In the eight groups in which this occurred, there was a discussion with the participant to ensure the student was comfortable being with only group members of the other gender.

An additional group process variable that was found to be associated with attendance pattern was the early-session average group attendance rate. Limited literature in adult counseling (e.g., Kivlighan et al., 2012), and to a greater extent organizational research, also has indicated that an absence norm or culture predicts individual attendance behaviors. The students displaying the best attendance were in groups with the highest overall group attendance rates in

the first three sessions. It is possible that overall daily school attendance rates were better in these schools. In contrast, poor group attendance is possibly a proxy for school-level attendance issues as well, which likely relates to Tier 2 attendance, and is discussed more below.

Finally, the total time group leaders and students spent in individual contacts was significantly related to attendance patterns. Group leader contacts are generally used to build rapport, deliver missed material, and monitor progress in Coping Power. Group leader contacts seemed to be utilized as suggested in the manual (i.e., to re-engage students), whereby the average for groups was at least 3 contacts, but there were more contacts among those students with moderate attendance. Though you may expect the greatest number of contacts and time for those in the poor and sharply declining attendance group, these students are also likely the students who are more difficult to connect with (e.g., school absenteeism). On the other hand, it is possible that the students in the poorest attendance class did not find the group and individual contacts reinforcing or the intervention socially valid, felt embarrassed to be seen alone with the group leader, or did not connect to the group leader. Future research should examine the quality of these contacts and how contacts are perceived by participants.

Limitations and Future Directions

Although we included a wide range of student and group-level variables, this is not a fully comprehensive examination of variables. For example, including student perspectives on engagement as well as social validity of the program (e.g., feeling the program was important or helpful) could potentially provide a different perspective and useful information both about the attendance patterns emerging and for adaptations and tailoring. In addition, other unmeasured variables included student attendance and out-of-school suspensions at school, which would likely account for some of the Coping Power session absenteeism. Although we tracked student

transfers out of school, we were not able to collect daily school attendance or suspension data, which is an area for future research. This reason for absenteeism is distinct from students present in the building but refusing to attend the intervention and would have different implications for how to rectify the intervention non-attendance issue. Research has well established that both student truancy and school-exclusionary discipline procedures are linked with negative outcomes, including dropout, delinquency, substance use and abuse (London, Sanchez, & Castrechini, 2016). When students receiving Tier 2 interventions are excluded from school for disciplinary issues, this undermines the intervention process by not only contributing to missed sessions, but by further disengaging students. Finally, a wider range of group leader factors (e.g., Chu & Kendall, 2009; Lochman, Powell, et al., 2009) and implementation quality (e.g., Berkel et al., 2011) have been studied in prior research and would have been a strength here.

Given the paucity of literature in the area of factors predicting school-based Tier 2 attendance, the examination of the range of variables in relation to attendance patterns was largely exploratory and therefore replication research is needed. On the other hand, some of the findings align well with extant literature, perhaps implying that these findings are robust. Finally, the attendance in this study was quite high and may have, in part, stemmed from the externally-funded group leader who were supervised to, and thus could and needed to, prioritize high fidelity. Further, these leaders may have more easily built rapport because of their non-affiliation with the school. On the other hand, school-based psychologists, counselors, or social workers may have better rapport as known and trusted school personnel. Regardless, implementation and attendance may differ when implemented by school personnel and is an area for future research.

Implications for Adapting and Tailoring Tier 2 Interventions

These findings have some important implications for the adaptation and tailoring of Tier 2 interventions, like Coping Power, to optimize student attendance in group sessions. We distinguish between adaptation (i.e., a priori program additions) and tailoring (i.e., modifications or variations of the program; see Berkel et al., 2011).

Group composition. Group leaders should be attuned to gender balance when constructing groups. Having a sole member from a gender, or possibly racial, category may affect students' ability to feel comfortable, fully engage, attend, and benefit fully from the intervention. For example, the group leader should ensure that they seek out a balanced group of students at the outset. In the case where consent is denied by some sought students, and balance is reduced, the group leader should ask any student who may be the sole member of a group about their comfort with that situation. Should a student not be comfortable, the group leader needs to determine what is feasible and then explore those options with the student (e.g., recruiting additional students, being offered another group). The group leader should use data to determine what is feasible (e.g., determine whether there are other eligible students, via screening data, in the same group who would benefit from the intervention).

Programmatic. Data-based decision-making and clinical informal assessment may allow for functional adaptations and tailoring of the intervention to reduce negative affect and increase engagement. The program could be adapted to involve a scheduled review of affect, student engagement, and social validity ratings at an early point in the program (e.g., session 4), to determine whether these are interrelated and how to best proceed. For students identified with higher rates of negative affect or low satisfaction, group leaders could engage in more conversations with the student to learn about attendance and engagement barriers and potential solutions or brief functional assessments of displayed negative behaviors. The program materials

could include sample individual contact open-ended questions (e.g., “How satisfied are you with this group?”, “How important is this group to you in meeting your personal goals?” “What could we do to better achieve your goals?”). Collaborating with the student to explore their perspective and feelings could lead to increased therapeutic alliance, which is important for at-risk children in the early and middle phases of intervention (Lindsey et al., 2019) and for generating tailoring ideas (Kazdin, Marciano, & Whitley, 2005).

With regard to assessing the root cause of negative behaviors demonstrated within the group (e.g., informally assessing whether the student is acting out to escape from a group task, access to leader attention, or access to a preferred activity using brief FBA or function-based thinking strategies; e.g., Hershfeldt, Rosenberg, & Bradshaw, 2010) would allow the group leader to tailor accordingly (e.g., provide an activity break or vary the delivery of the content). In the implementation of this study, group leaders tailored the opening journaling activity to reduce the amount of writing required because some students reported this to be a less preferred portion of the program. Another modification could be to respond in the moment with a reflection about what is happening with the student, to address negative affect. For example, an emotion thermometer is introduced early on, to help students understand emotions and their intensity. The group leader could combine a reflection of feeling with use of the emotion thermometer (e.g., “You seem upset. How upset would you say you are, using our emotion thermometer” “Tell us more about what might be upsetting you.”). Additional strategy-use generalization could be prompted by asking questions such as, “Which coping strategy have we learned so far that might help right now?” This should be done with caution and specifically when the group leader has good rapport with a student; though it could be a very powerful addition, it can also result in embarrassing and further alienating the student.

Further, for students displaying a negative affect, the individual format of Coping Power, as opposed to the group delivery, may be a needed tailored response (Lochman et al., 2019). The individual format was adapted from the group format in response to the experience that not all youth are able to work in a group. Because an individual approach is more resource intensive, providing individual delivery to only those students who appear non-responsive to group may be an optimal approach. Evaluating data early in the program would be helpful in making this decision, prior to clear student disengagement.

Group leader training. Many of the aforementioned implications require a high degree of group leader skill and decision-making. Currently, the Coping Power group leader training addresses the program purpose, theoretical underpinnings, structure, content, and behavior management tips for avoiding deviance training, whereby group-delivered interventions for aggressive/disruptive children can result in a peer contagion process (e.g., Dishion & Dodge, 2006). Prior research indicates that group leader approach (e.g., warmth, agreeableness, conscientiousness [Lochman, Powell, et al., 2009], and flexibility [Chu & Kendall, 2009]) was related to student outcomes. A possible implication for a program adaptation would be to add group leader training in the importance of warmth, flexibility, conscientiousness, as well as other indicated areas of possible training need such as data-based decision-making techniques, function-based thinking (Hershfeldt et al., 2010), and motivational interviewing (Wagner & Ingersoll, 2013) for when students display negative emotions. Further, there is no manualized component regarding the individual contacts. This could also be an area for adaptation to provide more structure and guidance for individual contacts given different scenarios or time points in the intervention. An alternative perspective regarding the association between contact time and attendance is that more individual contacts, particularly if students do not find them useful or

reinforcing, could lead to students pulling away and may explain the difference between good attendance and modest attendance, thus highlighting the need to understand the quality of contacts in addition to the quantity. Similarly, unstructured booster sessions have been found to limit the effectiveness of Coping Power (Lochman, Baden et al., 2014). Group leaders may inadvertently reinforce ineffective coping strategies in the absence of structure for the individual contacts. Future training efforts and research should investigate how problem behaviors or negative emotions are addressed by the group leader. Role-play in training settings may help develop this skill to fluency.

System-level support. Implementation of a multicomponent manualized intervention requires resources and support. As mentioned earlier, group leaders were hired specifically for implementation of this innovation, which led to little role confusion as compared to school-based mental health practitioners, who likely would attempt to implement this program in addition to a large case load of other duties that often take precedence (e.g., evaluations, IEP Meetings, crisis-response, etc.). Group leaders in this project met weekly to review data about group attendance and engaged in team problem solving for students demonstrating absenteeism (e.g., sharing re-engagement and content make-up strategies), which could be difficult to replicate in schools. However, a major implication of the generally high attendance rates is that school personnel will similarly need to prioritize intervention attendance, set measurable attendance or dosage goals, review session data, and engage in self-reflection and collaborative problem solving to address issues of disengagement as they arise. School-based mental health professionals should consult with school or district administrators, teams, or other school mental health colleagues to determine how to receive support, feedback, and accountability throughout implementation.

Conclusion

The findings from this study provide evidence that even within the context of overall high attendance, there is a need to attune to attendance of individual students. Further, there are clear variables that are associated with attendance that can be addressed in proactive adaptations or in-the-moment tailoring. Leadership by school psychologists and other mental health professionals is needed to prioritize implementation of and attendance to Tier 2 interventions, comprise groups in a thoughtful manner, monitor progress with students and tailor the intervention when signs indicate disengagement, and persist with the most resistant and negative students (Lochman, Powell, et al., 2009). School-based mental health professionals and other program implementers may require additional training and supervision on how to make adaptations to program content and in-the-moment tailoring decisions in a way that optimizes the outcomes of the program, without compromising fidelity and program integrity. This is an important topic for future research on pre-service and in-service training of mental health clinicians.

References

- Akaike, H. (1987). Factor analysis and AIC. *Psychometrika*, *52*, 317-332.
- Allen, J.P., Philliber, S., & Hoggson, N. (1990). School-based prevention of teenage pregnancy and school dropout: Process evaluation of the national replication of teenage outreach program. *American Journal of Community Psychology*, *11*, 505-524.
- Berkel, C., Mauricio, A.M., Schoenfelder, E., & Sandler, I.N. (2011). Putting the pieces together: An integrated model of program implementation. *Prevention Science*, *12*, 23-33.
- Bradshaw, C. P., Lochman, J., Powell, N., & Ialongo, N. (2017). Preventing bullying in middle schoolers by using the Coping Power Program: A targeted group intervention. In Bradshaw, C. P. (Ed.). *Handbook on Bullying Prevention: A Lifecourse Perspective*. New York: National Association of Social Workers Press. pp. 215-220.
- Burnett-Zeigler, I., & Lyons, J. S. (2010). Caregiver Factors Predicting Service Utilization Among Youth Participating in a School-based Mental Health Intervention. *Journal of Child and Family Studies*, *19*(5), 572-578. <https://doi.org/10.1007/s10826-009-9331-5>
- Century, J., Rudnick, M., & Freeman, C. (2010). A framework for measuring fidelity of implementation: A foundation for shared language and accumulation of knowledge. *American Journal of Evaluation*, *31*(2), 199-218.
- Charlebois, P., Brendgen, M., Vitaro, F., Normandeau, S., Boudreau, J. F. (2004a). Examining dosage effects on prevention outcomes: Results from a multi-modal longitudinal preventive intervention for young disruptive boys. *Journal of School Psychology*, *42*, 201-220.

- Charlebois, P., Vitaro, F., Normandeau, S., Brendgen, M., & Rondeau, N. (2004b). Trainers' behavior and participants' persistence in a longitudinal preventive intervention for disruptive boys. *Journal of Primary Prevention, 25*, 375-388.
- Chu, B. C., & Kendall, P. C. (2004). Positive association of child involvement and treatment outcomes within a manual-based cognitive-behavioral treatment with anxiety. *Journal of Consulting and Clinical Psychology, 72*(5), 821-829. doi: 10.1037/0022-006X.72.5.821
- Chu., B.C., & Kendall, P.C. (2009). Therapist responsiveness to child engagement: Flexibility within manual-based CBT for anxious youth. *Cognitive and Behavioral Practice, 11*, 44-55.
- Ciucci, E., Baroncelli, A., Tambasco, G., Laurent, J., Catanzaro, S. J., & Joiner, T. E., Jr. (2017). Measuring positive affect, negative affect, and physiological hyperarousal among Italian youth: Translations of the PANAS-C and PH-C. *Journal of Psychopathology and Behavioral Assessment, 39*(3), 373–382. doi: 10.1007/s10862-017-9596-8.
- Conduct Problems Prevention Research Group. (CPPRG, 2002). The implementation of the Fast Track Program: An example of a large-scale prevention science efficacy trial. *Journal of Abnormal Child Psychology, 30*(1), 1-17.
- Curşeu, P. L., & Sari, K. (2015). The effects of gender variety and power disparity on group cognitive complexity in collaborative learning groups. *Interactive Learning Environments, 23*(4), 425-436. doi: 10.1080/10494820.2013.788029
- Dane, A.V., & Schneider, B.H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clinical Psychology Review, 18*, 23-45.

- Dishion, T. J., & Dodge, K. A. (2005). Peer contagion in interventions for children and adolescents: moving towards an understanding of the ecology and dynamics of change. *Journal of Abnormal Child Psychology*, *33*(3), 395-400.
- Dodge, K. A., Lochman, J. E., Harnish, J. D., Bates, J. E., & Pettit, G. S. (1997). Reactive and proactive aggression in school children and psychiatrically impaired chronically assaultive youth. *Journal of Abnormal Psychology*, *106*(1), 37-51.
- Domitrovich, C. E., Bradshaw, C. P., Poduska, J., Hoagwood, K., Buckley, J., Olin, S., Romanelli, L. H., Leaf, P. J., Greenberg, M. T., & Ialongo, N. S. (2008). Maximizing the implementation quality of evidence-based preventive interventions in schools: A conceptual framework. *Advances in School Mental Health Promotion: Training and Practice, Research and Policy*, *1*(3), 6-28. doi:10.1080/1754730X.2008.9715730
- Drieschner, K. H., & Verschuur, J. (2010). Treatment engagement as a predictor of premature treatment termination and treatment outcome in a correctional outpatient sample. *Criminal Behaviour and Mental Health*, *20*(2), 86-99. doi: 10.1002/cbm.757
- Durlak, J.A., & DuPre, E.P., (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology*, *41*, 327-350. doi: 1007/s10464-008-9165-0
- Dusenbury, L.A., Brannigan, R., Falco, M., & Hansen, W.B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research*, *18*, 237-256.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit

- on young adolescents' experiences in schools and in families. *American Psychologist*, *48*(2), 90-101.
- Ellis, M.L., Lindsey, M.A., Barker, E.D., Boxmeyer, C.L., & Lochman, J.E. (2013). Predictors of engagement in a school-based family preventive intervention for youth experiencing behavioral difficulties. *Prevention Science*, *14*, 457-467.
- Firestone, P., & Witt, J. E. (1982). Characteristics of families completing and prematurely discontinuing a behavioral parent-training program. *Journal of Pediatric Psychology*, *7*, 209–221.
- Fixsen, D.L., Naoom, S.F., Blasé, K.A., Friedman, R.M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231).
- Garcia, T. A., Bacio, G. A., Tomlinson, K., Ladd, B. O., & Anderson, K. G. (2015). Effects of sex composition on group processes in alcohol prevention groups for teens. *Experimental and Clinical Psychopharmacology*, *23*, 275-283.
- Gillis, H. L. (L.), Jr., Kivlighan, D. M., Jr., & Russell, K. C. (2016). Between-client and within-client engagement and outcome in a residential wilderness treatment group: An actor partner interdependence analysis. *Psychotherapy*, *53*(4), 413-423. doi: 10.1037/pst0000047
- Greenfield, B. L., Roos, C., Hagler, K. J., Stein, E., Bowen, S., & Witkiewitz, K. A. (2018). Race/ethnicity and racial group composition moderate the effectiveness of mindfulness-based relapse prevention for substance use disorder. *Addictive Behaviors*, *81*, 96-103. doi:10.1016/j.addbeh.2018.02.010

- Hagermoser Sanetti, L.M., Gritter, K.L., & Dobey, L.M. (2011). Treatment integrity of interventions with children in the school psychology literature from 1995 to 2008. *School Psychology Review, 40*, 72-84.
- Hershfeldt, P. A., Rosenberg, M. S., & Bradshaw, C. P. (2010). Function-based thinking: A systematic way of thinking about function and its role in changing student behavior. *Beyond Behavior, 19* (3), 12-21.
- Hill, C. E. (2005). Therapist techniques, client involvement, and the therapeutic relationship: Inextricably intertwined in the therapy process. *Psychotherapy: Theory/Research/Practice/Training, 42*, 431–442.
- Kanter, R.M. (1977). *Men and Women of the Corporation*. New York: Basic Books.
- Kanter, R. (2006). Some effects of proportions on group life: Skewed gender ratios and responses to token women. In J. M. Levine & R. L. Moreland (Eds.), *Small groups: Key readings* (pp. 37–54). New York, NY: Psychology Press.
- Kazdin, A. E., & 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., & Whitley, M. K. (2003). Treatment of parental stress to enhance therapeutic change among children referred for aggressive and antisocial behavior. *Journal of Consulting and Clinical Psychology, 71*(3), 504-515.
- Kazdin, A. E., Marciano, P. L., Whitley, M. K. (2005). The therapeutic alliance in cognitive-behavioral treatment of children referred for oppositional, aggressive, and antisocial behavior. *Journal of Consulting and Clinical Psychology, 73*, 726-730.

- Kazdin, A. E., & Whitley, M. K. (2006). Pretreatment social relations, therapeutic alliance, and improvements in parenting practices in parent management training. *Journal of Consulting and Clinical Psychology, 74*(2), 346-355. doi: 10.1037/0022-006X.74.346.
- Kivlighan Jr, D. M., Kivlighan Iii, D. M., & Cole, O. D. (2012). The group's absence norm and commitment to the group as predictors of group member absence in the next session: An actor-partner analysis. *Journal of Counseling Psychology, 59*(1), 41-49. doi: 10.1037/a0025506
- Laursen, B. P., & Hoff, E. (2006). Person-centered and variable-centered approaches to longitudinal data. *Merrill-Palmer Quarterly, 52*(3), 377-389.
- Lindsey, M. A., Romanelli, M., Ellis, M. L., Barker, E. D., Boxmeyer, C. L., & Lochman, J. E. (2019). The influence of treatment engagement on positive outcomes in the context of a school-based intervention for students with externalizing behavior problems. *Journal of Abnormal Child Psychology, 47*(9), 1437-1454. doi: 10.1007/s10802-019-00525-6
- Lloyd, B. P., Bruhn, A. L., Sutherland, K. S., & Bradshaw, C. P. (2019). Progress and priorities in research to improve outcomes for students with or at risk for emotional and behavioral disorders. *Behavioral Disorders, 44*(2), 85-96. doi: 10.1177/0198742918808485
- Lo Coco, G., Gullo, S., Lo Verso, G., & Kivlighan, D. M., Jr. (2013). Sex composition and group climate: A group actor-partner interdependence analysis. *Group Dynamics: Theory, Research, and Practice, 17*, 270-280. doi: 10.1037/a0034112.
- Lochman, J.E., Baden, R.E., Boxmeyer, C.L., Powell, N.P., Qu. L., Salekin, K.L., & Windle, M. (2014). Does a booster intervention augment the preventive effects of an abbreviated version of the Coping Power Program for aggressive children? *Journal of Abnormal Child Psychology 42*,367-381.

Lochman, J.E., Powell, N.P., Boxmeyer, C.L., Qu, L., Wells, K.C., & Windle, M. (2009).

Implementation of a school-based prevention program: Effects of counselor and school characteristics. *Professional Psychology: Research and Practice, 40* (5), 476-482.

Lochman, J. E., Glenn, A .L., Powell, N. P., Boxmeyer, C. L., Bui, C., Kassing, F., Qu, L.,

Romero, D., & Dishion, T. (in press). Group versus individual format of intervention for aggressive children: Moderators and predictors of outcomes through four years after intervention. *Development and Psychopathology*.

Lochman, J. E., & Wells, K. C. (2002). Contextual social-cognitive mediators and child

outcome: A test of the theoretical model in the coping power program. *Development and Psychopathology, 14*(4), 945-967.

Lochman, J. E., & Wells, K. C. (2003). Effectiveness of the coping power program and of

classroom intervention with aggressive children: Outcomes of a 1-year follow-up. *Behavior Therapy, 34*(4), 493-515.

Lochman, J.E., Wells, K.C., & Lenhart, L.A. (2008). *Coping Power child group program:*

Facilitator guide. New York, NY: Oxford.

London, R. A., Sanchez, M., & Castrechini, S. (2016). The dynamics of chronic absence and

student achievement. *Education Policy Analysis Archives, 24* (112).

<http://dx.doi.org/10.14507/epaa.24.2741>

Macgowan, M. J. (1997). A measure of engagement for social group work: The Groupwork

Engagement Measure (GEM). *Journal of Social Service Research, 23*, 17-37.

Macgowan, M. J. (2006). The Group Engagement Measure: A review of its conceptual and

empirical properties. *Journal of Groups in Addiction and Recovery, 1*, 33-52.

Masyn, K. (2013). Latent class analysis and finite mixture model. In T. D. Little (Ed.), *The*

- Oxford handbook of quantitative methods: Statistical Analysis (551-611)*. New York, NY, US: Oxford University Press.
- Maynard, B. R., Vaughn, M. G., Nelson, E. J., Salas-Wright, C. P., Heyne, D. A., & Kremer, K. P. (2017). Truancy in the United States: Examining temporal trends and correlates by race, age, and gender. *Children and Youth Services Review, 81*, 188-196. doi: 10.1016/j.chilyouth.2017.08.008
- Muthén, L. K. & Muthén, B. O. (1998-2017). *Mplus user's guide*. Eighth Edition. Los Angeles, CA: Muthén & Muthén.
- Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007a). Deciding on the number of latent classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(4), 535-569.
- Prado, G., Pantin, H., Schwartz, S.J., Lupei, N.S., & Szapocznik, J. (2006). Predictors of engagement and retention into a parent-centered, eco-developmental HIV preventive intervention for Hispanic adolescents and their families. *Journal of Pediatric Psychology, 31*, 874-890.
- Rentsch, J. R., & Steel, R. P. (2003). What does unit-level absence mean? Issues for future unit-level absence research. *Human Resource Management Review, 13*, 185–202
- Reynolds, C. R., & Kamphaus, R. W. (2002). *The clinician's guide to the Behavior Assessment System for Children (BASC)*. Guilford Press.
- Reynolds, C. R., & Kamphaus, R. W. (2004). *BASC-2: Behavior assessment system for children, second edition manual*. Circle Pines, MN: American Guidance Service.
- Roos, C. R., Stein, E., Bowen, S., & Witkiewitz, K. (2019). Individual gender and group gender composition as predictors of differential benefit from mindfulness-based relapse

- prevention for substance use disorders. *Mindfulness*. Advance online publication. doi: 10.1007/s12671-019-01112-y
- Schwartz, G. (1978). Estimating the dimension of a model. *Annals of Statistics*, 6(2), 461-464.
- Sclove, S. L. (1987). Application of model-selection criteria to some problems in multivariate analysis. *Psychometrika*, 52(3), 333-343.
- Sugarman, D. E., Wigderson, S. B., Iles, B. R., Kaufman, J. S., Fitzmaurice, G. M., Hilario, E. Y.,.... Greenfield, S. F. (2016). Measuring affiliation in group therapy for substance use disorders in the Women's Recovery Group study: Does it matter whether the group is all-women or mixed-gender? *American Journal of Addiction*, 25(7), 573-580. doi: 10.1111/ajad.12443
- Staudt, M. (2007). Treatment engagement with caregivers of at-risk children: Gaps in research and conceptualization. *Journal of Child and Family Studies*, 16, 183-196.
- U.S. Department of Education. (2019). *Chronic absenteeism in the nation's schools: A hidden educational crisis*. Retrieved from <https://www2.ed.gov/datastory/chronicabsenteeism.html#intro>
- U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse (2011, October). Intervention report: Coping Power. Retrieved from <http://whatworks.ed.gov>.
- Wagner, C. C., & Ingersoll, K. S. (2013). *Motivational Interviewing in Groups*. New York: Guilford.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063.

- Weber, M., Wagner, L., & Ruch, W. (2016). Positive feelings at school: On the relationships between students' character strengths, school-related affect, and school functioning. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 17(1), 341–355. doi: 10.1007/s10902-014-9597-1.
- Wróbel, M., Finogenow, M., Szymańska, P., & Laurent, J. (2019). Measuring positive and negative affect in a school-based sample: A polish version of the PANAS-C. *Journal of Psychopathology and Behavioral Assessment*. doi: 10.1007/s10862-019-09720-7
- Xi, J.-Z., Zuo, Z.-H., & Wu, W. (2013). Daily emotional states and emotional self-regulation, strategies among high school students with different resilience levels. *Chinese Mental Health Journal*, 27(9), 709–714.
- Yalom, I. D., & Leszcz, M. (2005). *The theory and practice of group psychotherapy* (5th ed.). New York, NY: Basic Books.

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Table 1.

Descriptive Statistics for all Included Variables

	Minimum	Maximum	<i>M</i>	<i>SD</i>
Phase 1 session attendance rate (%)	12.50	100	84.78	18.83
Phase 2 session attendance rate	0	100	78.28	25.92
Phase 3 session attendance rate	0	100	74.32	30.18
Student race (1 = Black)	0	1	0.74	0.44
Student gender (1= male)	0	1	0.62	0.49
Individual baseline Teacher BASC: Externalizing	43	100	63.63	12.36
Individual baseline Teacher BASC: Internalizing	39	96	54.32	10.68
Positive Affect	1.17	4	2.77	0.59
Negative Affect	1.00	3.50	1.83	0.41
Session 1 group attendance rate (%)	42.86	100	85.70	15.39
% of African American students in the group	0	100	73.53	30.90
Single race group (group comprised of all students of one race = 1)	0	1	0.43	0.50
Balanced race group (No student in group was the only member of racial group = 1)	0	1	0.37	0.48
% of male students in the group	0	100	62.17	22.57
Single gender group (group comprised of all students of one gender = 1)	0	1	0.15	0.36
Balanced gender group (No student in group was the only member of gender group = 1)	0	1	0.74	0.44
Group mean on baseline Teacher BASC: Externalizing	48.00	77.86	63.64	7.07
Group mean on baseline Teacher BASC: Internalizing	41.33	73.67	54.43	6.89
Clinician-rated participant Engagement	1.38	4	3.06	0.41
Individual clinician contacts with student	0	15	3.10	2.22
Minutes of individual student clinician contacts	0	510	65.65	70.75

Note. BASC = Behavioral Assessment Scale for Children. Positive and negative affect was only collected in the second year of the trial, accounting for the lower sample sizes.

Table 2.
Fit Indices for Latent Profile Analysis Models with 1-4 Profiles

Number of profiles	Number of free parameters	Log likelihood	AIC	BIC	ABIC	VLMR LRT	Entropy	Smallest class size
1	6	-5073.71	10159.42	10182.88	10163.85	--	--	--
2	10	-4876.16	9772.32	9811.43	9779.70	.090	.94	53 (14.4%)
3	14	-4808.80	9645.59	9700.34	9655.93	.169	.92	39 (10.6%)
4	18	-4767.82	9571.65	9642.04	9584.94	.192	.92	18 (4.9%)

Note. AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion, ABIC = Sample-size Adjusted BIC, VLMR LRT= Vuong Lo-Mendell Rubin Likelihood Ratio Test. Entropy is not calculated for the 1-profile model.

Table 3.

Multinomial Logistic Regression Results Involving Demographic and Group-Level Characteristics in Relation to Profile Membership

	Moderate attendance vs. high attendance (ref)	Declining attendance vs. high attendance (ref)	Declining attendance vs. moderate attendance (ref)
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Student Race	1.29 (0.59 – 2.83)	0.71 (0.28 – 1.75)	0.55 (0.21 – 1.38)
Student Gender	1.16 (0.71 -1.88)	0.74 (0.36 – 1.50)	0.64 (0.29 – 1.40)
Single race group	0.80 (0.40 – 1.59)	1.40 (0.39 – 5.03)	1.74 (0.49 – 6.24)
Balanced race group	1.16 (0.52 – 2.59)	0.60 (0.16 – 2.24)	0.52 (0.10 – 2.77)
Single gender group	0.73 (0.44 – 1.23)	0.78 (0.17 – 3.66)	1.07 (0.21 – 5.36)
Balanced gender group	2.72 (0.58 – 12.86)	0.64 (0.21 – 1.97)	0.23 (0.03 – 1.84)

Note. OR = odds ratio; CI = confidence interval. Single-gender/race are coded 1 if all students are the same gender or race; Balanced gender/race are coded 1 if there is at least 2 kids of each represented gender and race in the group (i.e., 0 = there is one student in the group of a particular gender or race). **Bolded** result indicates statistical significance.

Table 4.

Results of Auxiliary Analyses for Individual- and Group-Level Characteristics in Relation to Profile Membership

Symptoms	High Attendance (Profile 1; <i>n</i> = 258, 69.9%)		Moderate Attendance (Profile 2; <i>n</i> = 72, 19.5%)		Declining Attendance (Profile 3; <i>n</i> = 39, 10.6%)		Omnibus χ^2 test			Pairwise Comparisons ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	χ^2	<i>p</i>	ϕ	
Individual ES	62.55	16.62	64.53	23.22	69.30	20.61	4.85	.09	.11	N/A
Individual IS	53.85	18.26	55.95	16.35	54.43	11.72	1.43	.49	.06	N/A
Positive Affect	2.78	1.19	2.72	0.71	2.77	0.57	0.34	.84	.03	N/A
Negative Affect	1.79	0.88	1.83	0.59	2.12	0.59	16.0	<.005	.21	3 > 1, 2
Group ES	63.24	18.70	64.85	15.71	64.18	12.87	1.41	.49	.06	N/A
Group IS	54.24	16.22	55.50	17.09	53.70	7.46	0.86	.65	.05	N/A
Group Attendance	0.87	0.26	0.83	0.21	0.79	0.15	17.64	<.005	.22	1 > 2, 3
Clinician-rated Engagement	3.04	0.87	3.13	0.49	3.09	0.23	1.68	.43	.07	N/A
CL contacts	3.85	4.32	5.19	3.19	4.59	3.15	2.10	0.35	.08	N/A
CL contact minutes	65.04	133.67	100.05	124.22	94.38	110.79	7.79	0.02	.15	2 > 1

Note. ES = externalizing symptoms; IS = internalizing symptoms; CL = clinician.

^aFor significant omnibus tests, all pairwise comparisons are significant at the $p \leq .05$ level.

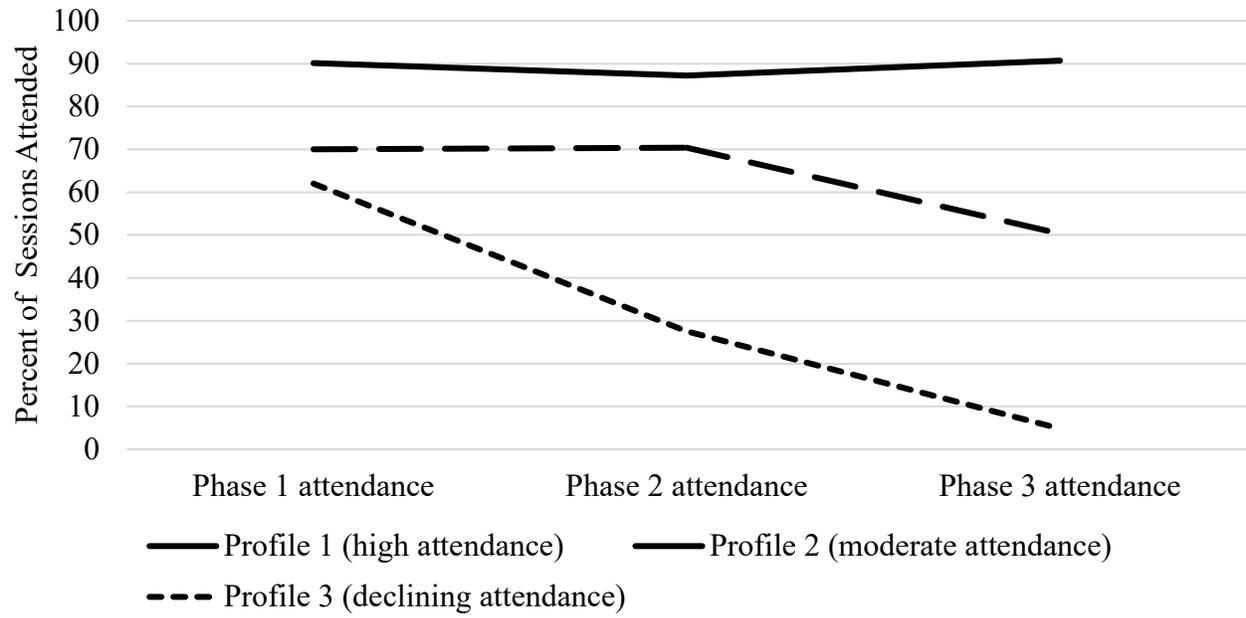


Figure 1. Attendance rates (%) for the 3-profile model.