2011

Effectiveness of the Coping Power Program in Middle-school Children with Disruptive Behaviours and Hyperactivity Difficulties

Diomaris E. Jurecska
George Fox University

Elizabeth Hamilton
George Fox University, ehamilton@georgefox.edu

Mary A. Peterson
George Fox University, mpeterso@georgefox.edu

Effectiveness of the Coping Power Program in middle-school children with disruptive behaviours and hyperactivity difficulties

DIOMARIS E. JURECSKA, ELIZABETH B. HAMILTON and MARY A. PETERSON

The purpose of this article is to discuss the effectiveness of the Coping Power Program (CPP); an evidence-based treatment delivered in a group format to at-risk middle-school children. Initially, two groups were randomised and formed: an intervention group of 24 CPP sessions and a control group. All students were enrolled in public schools from two rural counties in the United States. Out of the 119 total participants 63 (37 male) were in the intervention and 56 (35 male) were in the control group. From the larger intervention group, a subset of students was identified as 'significantly improved'. Using the Behavior Assessment Scale for Children-2 (BASC-2), a pre- and post-intervention measure showed that students with clinically significant hyperactivity and behavioural difficulties scores were the most sensitive to the group intervention.

***Key words*: disruptive behaviours, hyperactivity, school, evidence-based-treatment.**

School-age children and youth are particularly vulnerable to mental health problems which can adversely impact their developmental trajectory. Current epidemiological data indicate a worldwide prevalence of child and adolescent mental disorders of approximately 20% (World Health Organization (WHO), 2003). Specifically, the prevalence of disruptive behaviours and hyperactivity issues is a raising global health concern ranging from 2% to 18% in developed nations (Soma *et al*., 2009). Despite the need, access to mental health services can be scarce (Peterson *et al*., 2009). Data compiled by the WHO (2005) show that despite cross-national and cross-cultural variability in the availability of age-appropriate interventions, there is no country in the world where the documented need for child and adolescent mental health services is adequately met. Several factors influence the interplay between barriers to services for the school population, with rural or isolated communities at the highest risk due to both financial and geographical factors. For example, the ratio of school psychologists to students in rural areas of the United States is 1 to 1,200 (Slade, 2003). While a service disparity exists in all countries of the Americas, 26% of these countries lack even basic clinical mental health provisions for children and adolescents (Rhode *et al*., 2004).

A compilation of research suggests that programmes that promote mental health in schools are among the most effective of all school-based intervention efforts (Stewart-Brown, 2006). The potency of the school arena as a viable and accessible delivery site has been highlighted in recent reviews of child mental health as a resource for poor countries, including China (Whitman *et al*., 2008) and Nigeria (Omigbodun, 2008). The cross-national applicability of school-based programmes is supported by a recent study by Hoven and colleagues (2008), conducted on five continents in countries with varying levels of economic development as well as diverse cultural milieus. The dissemination of a psycho-educational programme through the school setting was shown to be a cost-effective method to affect positively the awareness of child mental health problems for students, parents and teachers.

The consequences of untreated hyperactive behaviour in the educational arena can be particularly devastating (for review, see DuPaul and Weyandt, 2006). School-based problems for youth attention deficit hyperactivity disorder (ADHD) include lower grade point averages, lower class rankings and fewer cumulative years of education (Barkley *et al*., 2006). Additional long-term difficulties include retention, school drop-out and the attainment of lower occupational rankings (DuPaul and Weyandt, 2006). Therefore, the need for feasible and effective group interventions within school settings is a challenge that requires rapid attention.

ADHD symptoms are further associated with social dysfunction, including peer rejection, interpersonal relationship problems and increased conflict with both peers and adults (Barkley *et al*., 2006; McQuade and Hoza, 2008; Nijmeijer *et al*., 2008). Follow-up studies have also shown that youth with hyperactive symptoms are at elevated risk of developing significant psychopathology, including disruptive behaviour disorders, mood disturbance, anxiety disorders

and substance abuse problems (Biederman, Monuteaux, Mick *et al*., 2006; Biederman, Monuteaux, Spencer *et al*., 2006). The profound long-term negative implications of non-remediated ADHD behaviours further indicate the need for urgent and effective interventions during the school years.

The effectiveness of school-level programmes for students with ADHD-like behaviours was demonstrated by Tymms and Merrell (2006), who implemented interventions in 2,040 schools (73,367 students) using a booklet with evidence-based elements that provided guidelines for teachers on how to teach students who display inattention, hyperactivity and impulsivity. Their findings showed that the dissemination of evidence-based advice had a significant positive effect on both the attitudes and behaviour of students with ADHD characteristics as well as on teachers' quality of life.

The sixth grade has been identified as a critical period in the life of a student. Usually at around 11 years of age, sixth graders' transition to multiple teachers rather than one primary teacher in elementary school, academic demands increase and the social milieu includes older adolescents engaging in high-risk behaviours (Peterson *et al*., 2009). When a student who is already demonstrating disruptive classroom behaviour experiences the additional pressure of the middle-school transition, there is a heightened vulnerability, suggesting that 6th grade may be an optimal time for a group intervention designed to increase positive behaviour and enhance coping skills. The purpose of this article is to explore the effectiveness of the Coping Power Program (CPP), an evidence-based group intervention for at-risk students identified with hyperactive and disruptive classroom behaviours.

The CPP is a school-based anger-coping programme originally developed for at-risk youth to help prevent future substance abuse (Lochman and Wells, 2002). It was later enhanced to include a parent component as a further aid in the attempt to prevent substance abuse issues among emerging adolescents (Lochman and Wells, 2004). Because the number of substance abuse issues is still relatively low with children in late elementary school, this age group has been identified as an ideal target group, especially since they will soon transition into middle school where school stressors and peer pressures increase. Additionally, providing children with coping skills and improved self-awareness at an earlier age prepares them better to deal with these pressures, thus decreasing the likelihood of high-risk behaviours (Lochman *et al*., 2007). Although the CPP was developed as a targeted preventive intervention, it has been effectively disseminated to children with conduct disorder and oppositional defiant disorder in outpatient settings (Van de Wiel *et al*., 2003, 2007; Zonnevylle-Bender *et al*., 2007).

The school environment is pivotal on many levels as it offers the opportunity to observe some of the main intervention components on almost a daily basis, components that may not be readily obvious at home. These include social competence, self-regulation and school bonding. Struggles in these areas are indicators for increased likelihood of poor adaptation in the middle and high school years. Some of the key programme features to address these important components include goal development, organisation and study skills, anger awareness and management, problem-solving strategies and emotional awareness of self and others (Lochman *et al*., 2007).

As part of a research programme through the Clinical Psychology graduate programme at a small, private university in the northwest, four elementary schools in two primarily rural counties were approached to consider participating in the CPP. This programme, as previously mentioned, is designed to provide at-risk youth a series of group sessions to address behaviour concerns and to improve the youths' pro-social coping skills in preparation for entrance into middle school.

Method

Participants

One hundred and nineteen students enrolled in four public schools from two rural counties in Oregon participated in the current study. Participant ages ranged from 10 to 12 with a mean age of 11.59 ($SD = .39$ years). Participants were randomly assigned by an independent third party to either an intervention group of 63 (37 male) or a control group of 56 (35 male). All participants resided in rural counties with approximately 45% identified as living at or below the poverty level (descriptive statistics are shown in Table 1).

A subset of 20 participants from the initial sample who appeared most responsive to treatment (defined as greater than 1.5 standard deviation on the composite subscales of the Behavior Assessment Scale for Children-2 (BASC-2)) was selected for additional analysis. For clarification, we defined 'responsive to treatment' as an improvement in behaviour, in which case the behaviour of the subset is bound to be significantly improved compared to the rest of the sample.

The purpose of this analysis was to determine if the change of behaviours associated with hyperactivity was signifi-

Table 1. Descriptive statistics: gender, age and ethnicity

Variables	*Female*		*Male*	
	n	%	*N*	%
Age (*M**)	12.2	–	12.8	–
Ethnicity		–	–	–
Hispanic American	2	10	6	30
African American	1	5	2	10
European American	4	20	5	25
Total	7	35	13	65

*M** = Mean.

cantly different for the responder subset than for the aggregate of all students. The at-risk sample of 13 boys and seven girls was identified through sixth-grade teacher ratings using the BASC-2 Teacher Rating Scale (TR). These sixth graders included nine European American, eight Hispanic American and three African American students. Average age in this subset was 12.39; *SD* = .29.

Procedure

Prior to enrolling in the study, parents of participating students provided informed consent and assent was obtained from the children. Identifying information and selected clinical information have been changed to protect participants' identities.

BASC-2 Pre-test

After the first week's introduction to the programme, participants were asked to complete a pre-test Behaviour Assessment System for Children, Second Edition, Student Rating Scales (BASC-2 SRP). Primary teachers completed a pre-test BASC-2 TR for each test student as well as identified control group students in this study.

Group curriculum

The manualised programme included leader and student workbooks which guided the weekly meetings. The four group leaders included two psychologists and two doctoral-level candidates who were extensively trained in the Coping Power intervention in an initial two-day CP training workshop provided by a psychologist from the programme's development site. In order to maintain programme integrity and maximise standardisation across group leaders, bi-monthly team leader meetings were held throughout the duration of the intervention.

Group activities took place during recess or lunchtime in order to accommodate students' academic schedules. Weekly meetings were held in a single session format of 30–40 minutes per session. Discussions included both written and verbal exercises designed to enhance participants' understanding of emotions and behaviours of both self and others. Group discussions included how one's ability to understand and cope with different emotions and behaviours impacts not only on the individual but also on his or her peers. Additionally, at various times throughout the programme, all students were asked to obtain teacher feedback on the progress of different student-identified goals, such as completing homework, paying better attention in class and improving peer relationships.

BASC-2 post-test

Upon completion of the CPP, the students were asked to complete a post-programme BASC-2 SRP, and the same teachers who originally completed the pre-programme BASC-2 were asked to complete a post-programme BASC-2 TR for each given child.

Instruments and materials

BASC-2

Once each school's faculty identified the target students, a teacher with knowledge of and history with each child completed a pre-programme BASC-2 TR. The BASC-2 TR is an assessment tool for evaluation of adaptive and problem behaviours and takes approximately 10–20 minutes to complete (Reynolds and Kamphaus, 2004). Teachers completed a BASC-2 TR for both the treatment and control groups. The authors report that the BASC-2 TR has a mean internal consistency scale of .88 (.81–.95). The TR has a composite of .89 (.81–.92) and scales at .81 (.64–.90; Reynolds and Kamphaus, 2004).

Group curriculum

The CPP, an evidence-based treatment (EBT) developed by John Lochman and Karen Wells, was originally targeted for youth with substance issues and/or anger control problems (Lochman and Wells, 2002). The original programme was adapted to a number of needs, and the programme used in this study was an abbreviated version lasting an average of six to seven months. There were 24 different components to be administered as an in-school programme. Due to school-based time constraints, some of the components were combined, shortening the total length of programme implementation.

Results

The scales identified for the purposes of this study were taken from the BASC-2 TR, with a focus on hyperactive behaviour, identified in the literature as extremely problematic within the school environment (Biederman, Monuteaux, Mick *et al*., 2006). Higher scores on the measure represent negative characteristics and/or problem areas.

Teacher report scales

Paired sample *t*-tests were used to analyse the differences between the pre and post scores for this subset of responders. Consistent with the literature, the responders demonstrated a significant decrease in behaviours associated with hyperactivity (t, $19) = 3.120$, $p = .006$ (see Table 2).

There were significant differences in the reduction of problematic behaviours associated with hyperactivity when comparing the subset of responders to the remaining stu-

Table 2. Pre and post scores

	Pre		*Post*	
	Mean	*Standard Deviation*	*Mean*	*Standard Deviation*
Hyperactivity*	62.20	14.77	58.25	12.54

$P = .006$ * $p < .01$; indicates that change from T_1 to T_2 is statistically significant.

dents. Specifically, the responders showed significantly fewer problematic behaviours than their peers. This significant difference only occurred in the hyperactivity subscale. Changes in other subscales were not significantly different between the responders as compared to the other students in the study. Thus, it appears that the behaviours associated with hyperactivity are particularly salient to overall improvement in behaviour as reported by teachers.

Discussion

The results of this study indicate that children with disruptive and hyperactive behavioural issues are receptive to group interventions within school settings. These findings support the growing body of literature demonstrating the feasibility and effectiveness of implementing evidence-based group intervention for children who are most in need of the services (for a review, see DuPaul and Weyandt, 2006). As previously stated, the middle-school years represent a particularly vulnerable period for all students. Because youth with ADHD behaviours are at particular risk of continuing a trajectory towards clinically significant mental health problems (Biederman, Monuteaux, Mick *et al*., 2006; Biederman, Monuteaux, Spencer *et al*., 2006), this is a group that particularly merits well-timed treatment programmes.

Previous research has validated the effectiveness of the Coping Power Program as a viable intervention for mainstream middle schoolers (Peterson *et al*., 2009). Current results expand the clinical application of the CPP abbreviated session with identified at-risk students by highlighting the particularly salient treatment effects for hyperactive behaviours. Overall, teacher ratings provided an indicator of significant positive changes in the behaviours displayed in the classroom by the at-risk students. Alternative benefits of the decrease of disruptive behaviours from the at-risk students may also increase the quality of life of the teacher and the overall educational milieu.

The importance of continued efforts to develop optimal school-based services is particularly relevant, as many behavioural and psychological disorders can be prevented or moderated through early identification and intervention, especially through the school system (Intercamhs, 2007). The role of school-based mental health services is especially critical in light of research documenting that approximately half of adult mental disorders begin before the age of 14 (Kessler *et al*., 2005). The concept of the health promoting school (HPS), implemented worldwide under WHO headquarters' Global School Initiative (2008) presents a comprehensive co-ordination of all available community resources in order to unite policy, education, psychosocial environmental factors and access to services. The current study joins a gradually expanding body of research documenting the feasibility and potency of resource-effective intervention within the school setting.

Limitations

The first limitation of the current study pertains to subject characteristics. There were a relatively small number of participants in the identified at-risk group, with homogeneity of ages. Although the results are statistically sound, external validity might be increased by including a greater number of youth from varied backgrounds, as well as by extending age range. Future studies of school-based interventions that include a larger and more diverse range of students may help determine optimal strategies for delivering the most clinically effective and cost-efficient programmes to students with problematic behaviours.

The second limitation has to do with the intervention delivery method. As noted above, in order to maximise the integrity of programme delivery, the four group leaders were all extensively trained using the standardised delivery protocol, and actively co-ordinated team service delivery throughout the duration of the project. However, because different leaders were used to deliver the intervention within the four school systems, there may have been subtle confounds in programme implementation related to differences in the facilitators' personal style.

Future research

In sum, the current project illustrates the use of school-based programmes as an effective intervention technique. It is our belief that the long-term success of providing effective school-based intervention programmes begins with continued research. However, it is also apparent that this long-term success will necessitate input from the school community. Community-driven research that involves both school faculty and parents may be particularly instrumental in facilitating interventions that target students who need the most help and guidance. Finally, the current study highlights the potential of school-based mental health programmes to address the unmet needs of children in rural or otherwise under-served settings in our global community.

References

BARKLEY, R., FISCHER, M., SMALLISH, L. and FLETCHER, K. (2006). Young adult outcome of hyperactive children: adaptive functioning in major life activities. *Journal of American Academy of Child & Adolescent Psychiatry*, 45, 192–202.

BIEDERMAN, J., MONUTEAUX, M., MICK, E., SPENCER, T., WILENS, T., SILVA, J., SNYDER, L. and FARAONE, S. (2006) Young adult outcome of attention deficit hyperactivity disorder: a controlled 10-year follow-up study. *Psychological Medicine*, 36, 167–179.

BIEDERMAN, J., MONUTEAUX, M., SPENCER, E., WILENS, T., KLEIN, K., PRICE, J. and FARAONE, S. (2006) Psychopathology in females with attention-deficit/hyperactivity disorder: a controlled, five-year prospective study. *Biological Psychiatry*, 60, 1098–1105.

DUPAUL, G. and WEYANDT, L. (2006) School-based interventions for children and adolescents with attention-deficit/hyperactivity disorder: enhancing academic and behavioral outcomes. *Education and Treatment of Children*, 29, 2, 341–358.

HOVEN, C. *et al*. (2008) Worldwide child and adolescent mental health begins with awareness: a preliminary assessment in nine countries. *International Review of Psychiatry*, 20, 3, 261–270.

INTERCAMHS (2007) Intercamhs website. [Online at www.intercamhs.org]. Accessed 11/12/07.

KESSLER, R., BERGLUND, P., DEMLER, O., JIM, R. and WALTERS, E. (2005) Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey replication. *Archives of General Psychiatry*, 62, 593–602.

LOCHMAN, J. and WELLS, K. (2002) The Coping Power Program at the middle school transition: universal and indicated prevention effects. *Psychology of Addictive Behaviours*, 16, S40–S54.

LOCHMAN, J. and WELLS, K. (2004) The Coping Power Program for preadolescent aggressive boys and their parents: outcome effects at the 1-year follow-up. *Journal of Consulting and Clinical Psychology*, 72, 571–578.

LOCHMAN, J., WELLS, K. and MURRAY, M. (2007) The Coping Power Program: preventive intervention at the middle school transition. In P. Tolan, C. Reynolds and R. Kamphaus (eds), *BASC-2: Behaviour Assessment System for Children Manual* (second edition), pp. 185–210. Circle Pines, MN: AGS Publishing.

MCQUADE, J. and HOZA, B. (2008) Peer problems in attention deficit hyperactivity disorder: current status and future directions. *Developmental Disabilities Research Review*, 14, 4, 320–324.

NIJMEIJER, J., MINDERAA, R., BUITELAAR, J., MULLIGAN, A., HARTMAN, C. and HOEKSTRA, P. (2008) Attention-deficit/hyperactivity disorder and social dysfunctioning. *Clinical Psychology Review*, 28, 4, 692–708.

OMIGBODUN, O. (2008) Developing child mental health services in resource-poor countries. *International Review of Psychiatry*, 20, 3, 225–235.

PETERSON, M., HAMILTON, E. and AARON, R. (2009) Starting well: facilitating the middle school transition. *Journal of Applied School Psychology*, 25, 286–304.

REYNOLDS, C. and KAMPHAUS, R. (2004) *Behavior Assessment System for Children* (second edition). Circle Pines, MN: American Guidance.

RHODE, L., CELIA, S. and BERGANZA, C. (2004) Systems of care in South America. In H. Remschmidt, M. Belfer and I. Goodyer (eds), *Facilitating Pathways: Care, Treatment, and Prevention, in Child and Adolescent Mental Health*, pp. 42–51. Berlin: Springer.

SLADE, E. (2003) The relationship between school characteristics and the availability of mental health and related health services in middle and high schools in the United States. *The Journal of Behavioral Health Services and Research*, 30, 4, 382–392.

SOMA, Y., NAKAMURA, K., OYAMA, M., TSUCHIYA, Y. and YAMAMOTO, M. (2009) Prevalence of attention-deficit/hyperactivity disorder (ADHD) symptoms in preschool children: discrepancy between parent and teacher evaluations. *Environment Health and Prevention Medicine*, 14, 2, 150–154.

STEWART-BROWN, S. (2006) *What is the Evidence on School Health Promotion in Improving Health or Preventing Disease and, Specifically What is the Effectiveness of the Health Promoting Schools Approach*. Copenhagen: WHO Regional Office for Europe's Health Evidence Network (HEN).

TYMMS, P. and MERRELL, C. (2006) The impact of screening and advice on inattentive, hyperactive, and impulsive children. *European Journal of Special Needs Education*, 21, 3, 321–337.

VAN DE WIEL, M., COHEN-KETTENIS, P. and Van ENGELAND, H. (2003) Application of the Utrecht Coping Power Program and care as usual for children with disruptive behavior disorder in outpatient clinics: a comparative study cost and course of treatment. *Behavior Therapy*, 34, 421–436.

VAN DE WIEL, M., MATTHYS, W., COHEN-KETTENIS, P., MAASSEN, G., LOCHMAN, J. and Van ENGELAND, H. (2007) The effectiveness of an experimental treatment when compared to care as usual depends on the type of care as usual. *Behavior Modification*, 31, 3, 298–312.

WHITMAN, C., ALDINGER, C., ZHANG, X. and MAGNER, E. (2008) Strategies to address mental health through schools with examples from China. *International Review of Psychiatry*, 20, 3, 237–249.

WORLD HEALTH ORGANIZATION (WHO) (2003) *Caring for Children and Adolescents with Mental Disorders*. Geneva: WHO.

WORLD HEALTH ORGANIZATION (WHO) (2005) *Child Mental Health Atlas*. Geneva: WHO.

WORLD HEALTH ORGANIZATION (WHO) (2008) *What is a Health Promoting School?* Geneva: WHO.

ZONNEVYLLE-BENDER, M., MATTHYS, W., VAN DE WIEL, M. and LOCHMAN, J. (2007) Preventive effects of treatment of disruptive behavior disorder in middle childhood on substance use and delinquent behavior. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46, 1, 33–9.

Correspondence

Diomaris E. Jurecska
Behavioral Pediatrics Clinic
Children's Hospital Oakland
645 4th Street
Oakland
CA 94607
USA
Email: djurecska@mail.cho.org;
diomaris@jurecska.com