Behavioral Parent Training vs.

THE JUNE ISSUE of *Attention* magazine reported on the comments made by professionals from the U.S. Centers for Disease Control and Prevention (CDC) in a press conference and associated press release[1] concerning the relative prevalence in the use of behavioral parent training (BPT) versus ADHD medications for the management of ADHD in young children. The CDC had conducted an analysis of two healthcare claims databases up to 2011 that 75 percent of preschool children with ADHD received medication while 45-54 percent received psychological services, which may include BPT. They expressed concern over this situation given the most recent practice guidelines in pediatrics that recommended using BPT first before enrolling children in a medication trial.

The CDC spokespersons were admonishing physicians for too frequently employing medication with young children before trying BPT. They recommended that all young children with ADHD get BPT first before receiving ADHD medications. This certainly sounds reasonable on the face of it, though it isn't the best approach, as I will show below. But the CDC representatives erred even more when they further asserted that BPT is as effective as medication for managing ADHD and that, unlike medication, it has no side effects.[2] Both statements are incorrect given the existing scientific literature.

Just one study

First, consider that the CDC report is just one study representing a slice in time dating to a few years ago when their survey was conducted. It does not necessarily reflect the trends occurring in the United States over time. A recent study by Kimberly Hoagwood with the National Institutes of Health and her colleagues found that the trends in providing services to children with ADHD who are under Medic-

Medication for Preschoolers with ADHD

by Russell A. Barkley, PhD

aid were all in the direction of increasing adherence to professional practice guidelines. More children were, in fact, now receiving combined therapies and specifically psychological treatments in addition to medication than had been the case just a decade earlier. Here is the abstract of their paper:

> . . . . we analyzed trends over ten years (2001-10) from Medicaid claims data describing changes over time in medication, psychotherapy, and combined treatment services for children diagnosed with attention deficit hyperactivity disorder (ADHD). Over this time, more children received treatments that conformed to practice standards, including the use of combination treatments of medication and psychotherapy. Rates of combined treatment increased by 74 percent, rates of psychotherapy alone more than doubled, and rates of medication alone decreased by 18 percent. Rates of diagnoses without any reimbursed treatment decreased by 39 percent. These trends suggest increasing adherence to clinical practice standards by providers serving children with ADHD in the Medicaid population, although the quality of those services is unknown."[3]

Mind you, these trends were in evidence six years ago and have likely continued to the present time, giving us more reason to believe that clinicians are increasingly following recommended guidelines for managing children with ADHD. There is no reason to think this has not been the case for preschoolers with ADHD specifically although that age group was not separately analyzed in this report. This report, however, does not address the sequencing issue raised by the CDC—that BPT should always be given first and medication only afterward. But the report is encouraging in showing that more children are at least getting the combined therapy than was the case a decade earlier.

The question of effectiveness

Yet even if we accept the CDC report as reflective of current practice, the CDC representatives are simply wrong in their reasoning as well as in other comments made to the media. For one thing, the scientific evidence shows that BPT is not nearly as effective as ADHD medications for the management of ADHD symptoms specifically in preschool children. That evidence indicates that BPT is more effective at helping parents manage child misbehavior generally and to a lesser extent in reducing the child's defiance, oppositional behavior, and conduct problems generally. Even a review of the research by the CDC admitted that this is the case.[4] BPT is also more likely to change the behavior of parents and specifically their management skills than it is to change the behavior of children; a finding also acknowledged in that same CDC review of the evidence. In changing parental behavior and reducing parental stress, children may become more compliant and show less disruptive behavior. But these outcomes are not the specific symptoms of ADHD.

The evidence also shows that even where such changes do occur in parental behavior and parent-child interactions, they may not persist over time so well once the treatment is terminated. And such improvements certainly do not generalize to other adults who did not undergo the training (such as partners, grandparents, teachers, babysitters, etc.) and do not generalize to other settings where the intervention is not being used (the neighborhood, larger community, preschools, etc.). Nor is there any evidence that such improvements from BPT lead to a reduction in the risks that ADHD poses to young children, such as their markedly higher risk for accidental injury and poisoning, bullying and being bullied, victimization by others, obesity, peer rejection, and antisocial behavior (such as lying, stealing, and fighting).

Consider the fact that of the fifteen studies reviewed by Ghuman and colleagues[5] that focused on BPT for preschool children with ADHD, only eight were scientifically appropriate in using randomized trials and only

The Preschool ADHD Treatment Study in Summary

by Meghan Miller, PhD

THE PRESCHOOL ADHD TREATMENT STUDY (PATS) is the largest study of the safety and efficacy of the most commonly prescribed medication for ADHD, methylphenidate, in a sample of 3-5.5-year-old children with ADHD. The findings from this study were initially reported in 2006. It was a multicenter, National Institute of Mental Health-funded trial in which preschoolers were carefully evaluated for ADHD, required to have significant ADHD symptoms based on both parent and teacher report, and required to have moderate-to-severe levels of ADHD-related impairment for at least nine months. Preschoolers who responded well to an initial parent training intervention were subsequently not eligible for the study, leaving the researchers with a group of preschoolers whose ADHD symptoms were significant enough to warrant a trial of medication, consistent with current guidelines from the American Academy of Pediatrics that behavioral interventions be used first for preschoolers with ADHD, followed by carefully monitored medication when ADHD symptoms or significant impairment persists.

The study had a complicated design with multiple phases, but the primary findings were focused on safety and effectiveness.

- **SAFETY:** Most children in PATS generally tolerated medication. The most commonly reported side effects were irritable behavior, emotional outbursts, sleep troubles, decreased appetite, and repetitive behaviors. Some of these side effects decreased over time. There wasn't evidence of significant cardiovascular side effects. This study had a higher rate of discontinuation due to medication side effects (11%) compared to similar studies in school-age children (<1% in the MTA study). Ultimately, the conclusion was that fewer preschoolers in this study tolerated methylphenidate than expected, with more side effects than has been typically seen in older children with ADHD, indicating that preschoolers on methylphenidate should be closely monitored.

three of those reported any significant benefit of BPT for the child's ADHD. Even the review of the evidence for BPT by the CDC admitted that there was little evidence concerning the effectiveness of BPT for managing ADHD specifically, so it focused its review on child disruptive behavior more generally. Such paltry and even negative results have continued to the present time.[6] This is especially so when the ratings of improvement are collected from "blinded" observers in which case the effects on ADHD are not significant.[7]

Here is why. BPT is based on social learning theory and specifically the idea that child misbehavior is the result of faulty learning and disrupted parenting. It focuses on improving parent management skills directly and so causing downstream improvements in child compliance and cooperation, not inattention and impulsivity. Impaired parenting certainly does play some role in creating or worsening child defiance. For that reason, BPT would be expected to help families of young children with

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- **EFFECTIVENESS:** Parents and teachers of children in the study rated symptoms at regular intervals throughout the different phases. There was a decrease in parent- and teacher-rated ADHD symptoms at doses of 2.5mg, 5mg, and 7.5mg, but not at the lowest dose of 1.25mg. The average "optimal" dose across all the preschoolers enrolled was 14.2mg. Teachers' ratings actually showed more improvement than did parent ratings.

Another important measurement for evaluating the magnitude of change is called the "effect size." Rather than just telling us that parent-rated symptoms before and after treatment were statistically significantly different, the effect size is a measurement of practical significance. In PATS, the researchers were interested in measuring the magnitude of the difference between ADHD symptoms before and after medication treatment. Despite the improvements in parent- and teacher-rated symptoms, the effect sizes in PATS were small-to-medium sized, whereas effect sizes that we've seen in medication studies of school-aged children with ADHD (the MTA study) are medium-to-large. One possible reason for this difference is that the PATS preschoolers were more impaired than the children in the MTA study.

Another critical question relates to longer-term outcomes of preschoolers with ADHD. To answer this, the PATS preschoolers have been followed years later, finding that most continued to show high levels of ADHD symptoms by the time they reached school age, despite receiving medication treatment for ADHD as preschoolers. This indicates that preschool diagnoses of moderate-to-severe ADHD are generally stable, and ultimately suggests that it's important to continue to work to develop and refine treatments—both medication and behavioral—for preschoolers with ADHD.

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Isn't it wiser for clinicians to consider all of the relevant circumstances of each case and then to implement ADHD treatments in the sequence that makes the most sense for *that* case to reduce the likely harms that child may experience without treatment?

conduct problems. In contrast, poor parenting does not cause ADHD. Thus, improving parenting should not be expected to provide much improvement in child ADHD symptoms. That is why clinical manuals for BPT, such as mine (*Defiant Children*, Guilford Press), make this point specifically in their introductory chapters—BPT is for child defiance and conduct problems more generally, not so much for ADHD symptoms.

In contrast, medications directly improve the symptoms of ADHD in preschool children. They also have been shown to reduce their risks for negative parental reactions and punishment, accidental injury, antisocial behavior, and obesity, among other positive outcomes. The effects of medication also generalize to the child's behavior with others in and outside the home, as well as to other significant settings, such as the preschool and community settings during the time course the medication is active in the child's body. And medications do not require the need to specifically train all adults caring for the child to get their benefits, as does BPT. The CDC also failed to mention the fact that thirty-three studies have now found that children taking stimulant medication for ADHD have more normal development in the very brain regions underlying their ADHD than do children with ADHD who have not taken medication[8]—a finding known as neuroprotection or neural enhancement. This is something that has not been demonstrated in studies of BPT. So while we can applaud the merits of BPT for helping to improve parent-child relations and especially parental adjustment to raising a difficult child, one should avoid overstating the case that BPT is as effective as medication for managing ADHD symptoms specifically. It simply isn't.

The issue of side effects

Another reason to challenge the CDC comments is their claim that BPT has no side effects. This, too, is false. All effective psychological treatments with scientific support for their utility produce some side effects in a minority of individuals for various reasons that need not be considered here. This is true for BPT. Regrettably, those side effects are not so nearly well documented as are the side effects of medication. But that is simply because those side effects of BPT are not measured and so are not reported routinely in scientific papers on BPT. But as all of us who have done such BPT with parents and conducted research on BPT know full well, and as I reported in some of my own earlier published research, around 15-25 percent of families undergoing BPT report adverse events resulting from treatment. These side effects include increases in child defiance, tantrums, noncompliance, and other forms of resistance to parental authority. It most often occurs when parents attempt to implement the limit-setting strategies routinely taught in these therapies.

In my own career of training over a thousand parents of children with ADHD in my own version of BPT (*Your Defiant Child*, Guilford Press), I have even found that a few children engaged in violence toward their parents, ran away from home, called child protective services to complain that they were being abused, screamed out windows at passersby saying their parents were trying to kill them, attempted to self-provoke vomiting when placed in time out, urinated in the time out corner, destroyed furniture and even broke windows when timed out in their bedroom, or held their breath until they turned blue or even fainted. Many are the ploys some children will try when limits are now set on previously undisciplined behavior and when time out is being implemented as part of BPT. If BPT were a medication, these would be listed on the package insert as side effects, even if uncommon, and perhaps even result in a black box warning.

Consider the results of the PATS

Before we widely adopt the CDC recommendation about BPT, consider the results of the NIMH-funded Preschool ADHD Treatment Study (PATS) done ten years ago to examine the safety and effectiveness of stimulant medication for preschoolers with ADHD.[9] This is the largest study ever done on this issue.

ALL parents were given BPT before being allowed to have their children evaluated on medication. Only those whose ADHD symptoms did not respond well enough to BPT could get medication. The study reported that only half of the families had a positive response to BPT. More telling was the fact that of the 261 families of the preschool children who completed BPT, 70 percent (!) showed a sufficiently poor response to BPT that they continued to meet ADHD severity criteria that warranted their going on to the medication trial. This directly

contradicts the CDC position that BPT is as effective as medication and so should be used first for their young ADHD children before getting medication.

So it makes little sense to adopt some absolute rule that BPT should always be done for families with preschool children having ADHD before medication should be implemented for them. And it makes no sense to mislead parents into believing that BPT is equally as effective as medication for ADHD symptoms and also produces no side effects.

The tailored approach

Now let's also consider the actual situation "on the ground" as physicians are likely to find it. Preschool cases of ADHD in clinical practice vary markedly across children in their severity and in the likelihood of their having comorbid disorders. Some are quite severe, have one or more other disorders (especially oppositional defiant disorder), and for these and other reasons have far higher risks for adverse consequences, such as injuries, than do other cases that may be quite mild and have no other risk factors. Then doesn't it make sense to recommend that in the former, more severe cases that medication should be started immediately, alongside BPT perhaps, while in the latter, milder cases, there is sufficient time and limited downside risk to try BPT before considering a trial on medication? And what of cases where child defiance is not a problem in a child with ADHD? Should that family have to undergo BPT anyway before giving medication to their child?

The clinician also has to consider if BPT is even available in their community and, if it is, whether families can afford it and are likely to attend such classes and implement the strategies. BPT as done by clinicians is certainly not nearly as widely available across the United States as is medication, not all families can attend the classes, and even among those who attend not all will implement the strategies, for various reasons.

In short, isn't it wiser for clinicians to consider all of the relevant circumstances of each case and then to implement ADHD treatments in the sequence that makes the most sense for *that* case to reduce the likely harms that child may experience without treatment?

In many such cases, it will make the most sense to start medication first—to lead with the most effective treatment. Perhaps that will involve initiating a BPT program simultaneously, if available, or waiting to see how well the medication works and if child defiance is sufficient to do BPT. That tailored approach to individual cases is far more reasonable, and probably what clinicians in the CDC survey were doing, than adopting some simplistic, general, and absolutist rule to always use the lesser effective therapy for ADHD (BPT) first as the CDC has done.

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