An Investigation of School-Year Follow-up Procedures Following a Summer Treatment Program for Children with ADHD


INTRODUCTION

Behavior modification (Pelham, Wheeler, & Chronis, 1998), stimulant modification (Swanson, Ackerman, Christian, & Wigal, 1993), and the combination of behavior modification and stimulant medication (Pelham & Waslick, 1999) are the evidence-based treatments for attention-deficit/hyperactivity disorder (ADHD). The Summer Treatment Program (STP) has long been a model, intensive, behavioral treatment program for children with ADHD, and participants in the STP benefit from the intensive behavior modification (Pelham, Fabiano, Gnagy, Guintner, & Hoza, in press; Pelham et al., 2006; Pelham & Hoza, 1996).

To investigate the effectiveness of two approaches to follow-up treatment (BMOD and not BMOD), in press; Pelham, Gunsta, & Grady, 1997; Pelham & Hoza, 1996), thirty-nine participants in the STP 2M2 (Coles et al., 2006; Pelham et al., 2003; Burrows-MacLean et al., 2003) were randomly assigned to one of two groups immediately after the summer for follow-up treatment (nine eligible participants did not enroll because the parents were unwilling to start the school year without medication. All of these 9 subjects had been medicated prior to the STP. Participants did not differ from non-participants on measure of ADHD severity or IQ, but non-participants were significantly older than participants (p < .05).

PARTICIPANTS AND SETTING

The results of the school-year portion of the study are presented in this paper. For the results of the home-based component, please see Coles et al. (2003). To investigate the latency to medication use between the two groups, a Kaplan-Meier survival analysis was conducted. Some children withdrew from the study and began medication, even through their teacher/parent ratings did not indicate impairment. In these cases, the date of medication initiation was entered into the survival curve. The survival function is shown significance. The survival curves are displayed graphically in figure 1.

A theoretical moderator of treatment outcome was prior medication use. That is, children who were previously medicated in school would be more likely to have medication initiated during the school year. The percentage of medication naïve children in the BMOD and No BMOD groups who began stimulant medication during the study, and the percentage of children in the BMOD and No BMOD groups who were not medication naïve are presented graphically in figure 2.

MEASURES

Primary Outcome Measure

Latency to Medication Use: The primary goals of this study were to investigate the effectiveness of continuing behavior modification to maintain gains obtained in the STP and also determine whether behavior modification follow-up affected the need for medication. Thus, the number of weeks the child attended school unmedicated is the primary outcome measure.

Secondary Measures

Each week, the child’s parent and teacher completed the IOWA Corners Rising Scale (Lowry & Milich, 1982; Pelham, Milich, Murphy, & Murphy, 1989) and a modified version of the impairment rating scale (Fabiano et al., under review). These measures were used to track the child’s behavior throughout the school year, and implement additional behavior or pharmacological treatments as necessary.

RESULTS

The target sample size for the current study was 230. For the results of the home-based component, please see Coles et al. (2003). Independent sample t-tests were computed on end of treatment IOWA Corners scores on the inattentive/active oppositional defiant factors. Scores for the BMOD group were not significantly different from each other.

DISCUSSION

The results presented herein are preliminary results from a planned three-year study. Given the small sample size, results must be interpreted with caution.

The results of this preliminary investigation document a trend toward a delay in medication use for children assigned to the BMOD group. The results, however, failed to achieve statistical significance (i.e., the null hypothesis was not rejected). Several factors may have contributed to the trend. First, the small sample size may have contributed to the trend, as the sample size was not powered to detect a trend, given the small sample size. Second, the trend may have been masked by the high rate of medication use in the STP. The trend may have been more pronounced.

The results of cross-over to medication by prior medication use have important clinical implications. Children whose parents and/or teachers had the effects of medication were much more likely to return to medication use in school, regardless of whether BMOD consultation occurred or not, replicating similar findings of the MTA study (Pelham, 1999). Perhaps in these cases, parents and teachers knew the effects of medication were immediate, and would therefore result in rapid improvement in behavior. Alternatively, parents and teachers may have had less willingness to work to make a school-based behavioral program effective, if they had knowledge of a treatment that would require less time.

Given these results, for parents and teachers who wish to utilize behavior modification, the use of stimulant medication should be avoided until a behavioral program is established and implemented for a significant period of time.

The small sample size and preliminary nature of these data make any conclusions reached from this study tentative. Given the trend toward significance in the survival analysis, it is expected that with a larger sample size, group differences will become more pronounced, with children in the BMOD group less likely to be on medication, or having medication initiation delayed. A larger sample size is also required to determine the moderating role of medication naïvety.

The study is also limited by the use of only two treatment intensities - BMOD and BMOD of low intensity. Starting with the second cohort and third cohort of subjects, we will include a high intensity BMOD group that will include more parent and teacher visits and the use of contingency management strategies in the classroom. We hypothesize that the high intensity BMOD will reduce or eliminate medication use even further because it will permit parents and teachers to continue working with BMOD and not resort to medication because no other treatment is available.

REFERENCES

Abramowitz, J. (2001). Continuation of stimulant medication after a summer treatment program. Poster presented at the 11th Annual Conference of the Society for the Advancement of Behavior Analysis, Miami Beach, FL.


