

## Regular Article

# Behavioral parent training for Taiwanese parents of children with attention-deficit/hyperactivity disorder

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### Abstract

It has been observed that it is relatively difficult for children with attention-deficit/hyperactivity disorder (ADHD) to follow social rules and behave in a socially desirable manner. The ADHD children in Chinese culture, which emphasizes Confucian values, might encounter even greater adjustment difficulties. The purpose of the present study is to implement a behavioral parent training program in a Confucian environment and examine its effectiveness. Twenty-three ADHD preschoolers (age: 3–6 years) and their parents were selected to participate in the present study. Fourteen of these 23 parents completed a 10-session parent training program. Parent ratings of ADHD/oppositional defiant disorder (ODD) symptoms and problem behaviors at home were collected at the first, fourth, sixth, seventh, and tenth sessions. Three instruments were used to evaluate treatment outcome: the Disruptive Behavior Rating Scale-Parent Form, Child Attention Profile, and Home Situations Questionnaire. The results showed that both ADHD/ODD symptoms and home behaviors of these 14 children improved significantly after the parent training. There was also a significant decline in the severity of symptoms and problem behaviors at home with the progression of training. These findings support the effectiveness of this parent training program for parents of ADHD children in an environment of Confucianism. Limitations of the present study and future direction for research are discussed.

**Key words** attention-deficit/hyperactivity disorder, children with ADHD, Confucianism, parent training.

## INTRODUCTION

In the process of socialization children gradually internalize their cultural values and social norms and learn to become good citizens of their society. It has been observed that it is relatively difficult for children with attention-deficit/hyperactivity disorder (ADHD) to follow rules and behave in a socially desirable manner. ADHD is a common mental disorder in childhood with symptoms of inattention, hyperactivity, and impulsivity, which usually appear during preschool years at

both home and school and can last for many years without intervention.<sup>1–3</sup> Parents of ADHD children have often experienced difficulty managing their children's misbehavior.<sup>2</sup> It is reported that the prevalence rate of ADHD in Taiwan (5–10%) is relatively higher compared to other areas (e.g. 3–7% in USA).<sup>1,4,5</sup> Due to cultural influences, Taiwanese parents of ADHD children might have encountered greater pressure in their effort to discipline their ADHD children.<sup>6</sup>

Confucianism is a widespread value system in Chinese societies. Even in a modern society such as Taiwan, Confucian values are still the dominant moral doctrine and the guiding principle in many forms of social interaction.<sup>7</sup> The primary characteristic of socialization in a Confucian society is an overriding emphasis on the development of moral character through education and the provision of a wholesome environment, thereby placing the primary responsibility for

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socialization upon parents by means of modeling and punishment in the home situations.<sup>8</sup> In addition, Confucianism emphasizes filial piety and a hierarchical family relationship and mandates specific requirements on how children ought to relate to their parents. That is, parents always occupy a superior position to their children no matter how old the child is; children should always obey their parents; and strict discipline should be practised at home.<sup>9</sup> Therefore, parents were supposed to constantly monitor their children's behavior to prevent them from developing poor habits and bad characters. However, because Taiwan has been rapidly transformed into a multicultural society due to industrialization and globalization, the family structure has greatly changed and the strict discipline viewpoint has been challenged. Parents in younger generations often found themselves at a loss between traditional and modern views of child-rearing practise.

Behavior management skills have long been considered to be effective in child-rearing practise and have been taught to many parents of children with behavior problems. Most behavioral parent training programs consist of six components: (i) to understand the factors contributing to and the influences of parent-child interaction on their children's misbehavior; (ii) to teach parents to use clear, simple, and brief commands to increase compliance of children; (iii) to pay attention to desirable behavior and to ignore misbehavior; (iv) to use the token economy system and behavior contingency for desirable behavior and misbehavior; (v) to use time-outs to decrease misbehavior; and (vi) to teach skills to manage misbehavior outside of home situations.<sup>10</sup> Among these programs, Barkley's parent training program has received empiric support for its effectiveness in reducing behavior problems of ADHD/oppositional defiant disorder (ODD) children.<sup>11</sup>

However, despite its root in Western culture, Barkley's parent training program bears some similarities to Confucian values. Generally, both Confucian parenting and behavioral parenting emphasize the influence of learning and environment on child development as well as the parental role in the socialization of their children. Specifically, the emphasis on parental attention to and supervision of children's behavior in behavioral parenting is consistent with that of parental monitoring of children's behavior in Confucian parenting. Furthermore, the focus on child compliance in behavioral parenting fits well with the Confucian concept of filial piety. The use of the time-out technique in behavioral parenting is also similar to the common discipline technique of 'facing the wall and reflecting on your misbehavior' in Confucian parenting.

With some modifications, Barkley's parent training program might be a promising answer to the needs of

today's Taiwanese parents. Therefore, it is the purpose of the present study to adopt and implement Barkley's parent training program in Taiwan and to examine its effectiveness. The hypotheses of the present study are as follows:

1. After the parent training program, symptoms of inattention, hyperactivity-impulsivity, and oppositional defiant behavior decrease significantly.
2. After the parent training program, the amount of problem situations and severity of problem behavior at home decrease significantly.
3. Along with the progression of parent training sessions, there is a linear declining trend in the severity of ADHD/ODD symptoms as well as the amount of problem situations and severity of problem behavior at home.

## METHODS

### Subjects

From May 1999 to December 2000, 3-6-year-old preschoolers with a primary diagnosis of ADHD were referred by child psychiatrists at the Developmental Delay Clinic of Kaohsiung Medical University Hospital to be screened for the present study. Initial screening based on chart reviews excluded children who had comorbid pervasive developmental disorder or mental retardation and/or whose parents had less than high school education or severe psychopathology.

After the initial screening, all the eligible families were further evaluated by a clinical psychologist using Barkley's semistructured interview questionnaire with prospective parents to further clarify their children's diagnoses.<sup>11,12</sup> The final sample included 23 families of ADHD children. There were 20 boys (87%) and three girls (13%), with an average age of 65 months ( $SD=13.20$ ; range: 35-83 months); and the range of their IQ was 76-145. Most target children (65%) had a diagnosis of ADHD with comorbid ODD. Five (21%) had a single ADHD diagnosis. Three (13%) had other comorbid problems (i.e. separation anxiety disorder and specific phobic disorder) in addition to ADHD. As to ADHD subtype, there were 11 (48%) combined-type, five (22%) inattentive-type, three (13%) hyperactive-impulsive-type, and four (17%) not otherwise specified-type. Four children (17%) were on stimulant medication regularly. Six (26%) were occasionally receiving sensory integration training and one (4%) had irregular physical therapy.

In the final sample, there were 22 mothers (96%) and one father (4%), with an average age of 35.2 years ( $SD=3.88$ ; range: 26-45 years). Most parents had a college education (65%) and were employed (74%).

## Measures

Three instruments were used to repeatedly evaluate the ADHD/ODD symptoms and home behavior of the target children. Participating parents completed the following rating scales at five different assessment times across the training course (i.e. at sessions 1, 4, 6, 7, and 10).

### *Disruptive Behavior Rating Scale-Parent Form*

The Disruptive Behavior Rating Scale-Parent Form (DBRS-PF)<sup>11,12</sup> is designed on the basis of the *Diagnostic and Statistical Manual of Mental Disorders* (4th edn; DSM-IV) criteria. It consists of 26 items in three subscales: inattention (nine items), hyperactivity-impulsivity (nine items), and oppositional defiant behavior (eight items). Parents rate their children's behavior using a four-point Likert scale, from 0 (never/rarely) to 3 (always). Three scores can be computed from the DBRS-PF: inattention; hyperactivity-impulsivity; and an oppositional defiant behavior score.

### *Child Attention Profile*

The Child Attention Profile (CAP)<sup>13</sup> is designed on the basis of the Child Behavior Checklist-Teacher Report Form (CBCL-TRF).<sup>14</sup> It consists of 12 items in two subscales of inattention (seven items) and hyperactivity (five items). Parents rate their children's behavior using a three-point Likert scale, from 0 (never/rarely) to 2 (always). Three scores can be computed from the CAP: inattention; overactivity; and total score.

### *Home Situations Questionnaire*

The Home Situations Questionnaire (HSQ)<sup>12</sup> was developed to evaluate the severity of behavior problems of ADHD/ODD children in home situations. The HSQ consists of 16 items describing everyday home situations. Parents first endorse problem situations and then rate the degree of problem severity in each of the endorsed situations from 1 (mild) to 9 (very severe). Parent ratings result in three scores: total number of problem situations; total score of problem severity; and average problem severity (i.e. total score of problem severity/total number of problem situations).

Normative data for the HSQ, CAP, and ADHD items in the DBRS-PF are available.<sup>12,15-17</sup> All three measures have adequate internal consistency and test-retest reliability.<sup>15-18</sup> The HSQ also has adequate concurrent, predictive, and construct validity.<sup>16,17</sup>

## Parent training program

The present study adopted the parent training program developed by Barkley for parents of children with ADHD/ODD.<sup>11</sup> The goal of this program is to enhance the ability of parents to manage their children's misbehavior through a series of steps. First, parents learn about the causes of misbehavior in defiant children and general concepts of behavior management. Second, parents learn how to increase their children's compliance to parental commands by using direct, clear, and brief commands as well as by providing positive consequence contingent upon their children's desirable behavior. Finally, parents learn how to reduce their children's misbehavior by providing an immediate negative consequence contingent upon their children's misbehavior.

Five consecutive parent groups were conducted in the Developmental Delay Clinic. Each parent group was formed whenever there were at least four to six eligible participants. Each group was led by a senior clinical psychologist and a clinical psychology trainee. Three to four Masters students in psychology served as observers and case managers in the program. All the staff were under a clinical psychologist's supervision. Before and after each session a staff meeting was held to prepare and discuss the training procedure for that session.

There were nine weekly sessions and one booster session (scheduled 4 weeks after the ninth session). Each session lasted approximately 1 h. Parenting skills for behavior management in home situations were taught in sessions 1-6; parenting skills for behavior management outside the home were taught in sessions 7-9; and these parenting skills were reviewed and reinforced in the booster session. For each session, parents were asked to complete specific homework. At the start of each session, leaders reviewed the homework from the last session before turning in the homework to case managers. Whenever parents made mistakes or had problems in their homework, the case managers would meet with the parents immediately after the training session to discuss the problems.

## Data analysis

Descriptive statistics were used to organize the demographic data of both target children and their parents. Independent *t*-test and  $\chi^2$  test were used to compare the demographic data between the participants and dropouts. To examine the change in parent ratings before and after the program, paired *t*-test was conducted. Repeated-measure trend analyses were also conducted to examine the change in parent ratings across the training course.

## RESULTS

### Demographic characteristics of the target children and their parents

Of 23 families, nine (39%) dropped out of the program at different times during the training and the remaining 14 families (61%) completed the program. Therefore, the demographic data of the target children and their parents were analyzed and presented in terms of their participating status (Table 1).

There were no significant differences between participating parents and dropouts with regard to their age, gender, level of education, and marital status as well as age, gender, diagnoses, and medication treatment of their children. However, there is a significant difference in employment status of parents ( $\chi^2=6.66$ ;  $P<0.05$ ), with more participating parents having stable employment than dropout parents.

The reasons for dropouts included a mixture of scheduling problems, denial of their child's problem, dysfunctional family, and family relocation. Four dropouts were in the same group conducted between

December 1999 and March 2000. The training schedule was inadvertently interrupted by the long break for Chinese New Year. Parents in that group were so overwhelmed at that time that four decided to stop training. Three parents dropped out of the present study because of denial of the problems with their children since the start of the program. Two parents reported incidents of family violence and needed individual intervention before they could continue parent training. Two families moved out of the city where the training was conducted due to job changes.

### Reduction in symptoms of ADHD and ODD

Pre- and post-training comparison showed significant decreases in inattention scores on DBRS-PF ( $t=3.28$ ;  $P<0.01$ ) and CAP ( $t=2.89$ ;  $P<0.01$ ), hyperactivity-impulsivity scores on DBRS-PF ( $t=3.85$ ;  $P<0.01$ ) and CAP ( $t=4.98$ ;  $P<0.01$ ), as well as oppositional defiant behavior scores on DBRS-PF ( $t=3.78$ ;  $P<0.01$ ) after training (Table 2).

**Table 1.** Demographic characteristics of target children and their parents

Variable	Participant ( $n_1=14$ )		Dropout ( $n_2=9$ )		$t/\chi^2$
	f (%)	M (SD)	f (%)	M (SD)	
Target children					
Age (in months)		64.0 (12.88)		66.9 (14.26)	0.50 <sup>†</sup>
Gender					1.10 <sup>‡</sup>
Boy	13 (93%)		7 (78%)		
Girl	1 (7%)		2 (22%)		
Diagnostic impression					0.67 <sup>‡</sup>
ADHD	4 (29%)		1 (11%)		
ADHD+ODD	10 (71%)		5 (56%)		
Other comorbidity	0 (0%)		3 (33%)		
Stimulant medication	3 (21%)		1 (11%)		0.41 <sup>‡</sup>
Parents of target children		34.3 (3.71)		34.3 (3.71)	-0.87 <sup>†</sup>
Age (in years)		35.8 (4.02)			-0.87 <sup>†</sup>
Gender					0.67 <sup>‡</sup>
Father	1 (7%)		0 (0%)		
Mother	13 (93%)		9 (100%)		
Education level					1.81 <sup>‡</sup>
High school	3 (21%)		4 (44%)		
College	10 (72%)		5 (56%)		
Postgraduate	1 (7%)		0 (0%)		
Marital status					-
Married	14 (100%)		9 (100%)		
Employment status					6.66 <sup>‡*</sup>
Employed	13 (93%)		5 (56%)		
Non-employed	1 (7%)		4 (44%)		

ADHD, attention-deficit/hyperactivity disorder; ODD, oppositional defiant disorder.

\* $P<0.05$ . <sup>†</sup>Independent  $t$ -test was used here; <sup>‡</sup> $\chi^2$  test was used here.

Furthermore, the trend analyses of parent ratings across the training course revealed significant declining tendencies in inattention (DBRS-PF:  $F_{1,13}=12.23$ ,  $P<0.01$ ; CAP:  $F_{1,13}=92.11$ ,  $P<0.01$ ), hyperactivity–impulsivity (DBRS-PF:  $F_{1,13}=16.79$ ,  $P<0.01$ ; CAP:  $F_{1,13}=20.76$ ,  $P<0.01$ ), and oppositional defiant behavior (DBRS-PF:  $F_{1,13}=16.28$ ,  $P<0.01$ ). Figure 1 shows the linear trend of symptomatic change across the training course.

**Table 2.** Mean and standard deviation of DBRS-PF, CAP, and HSQ scores before and after training ( $n=14$ )

Scale	Before M (SD)	After M (SD)	t
<b>DBRS-PF</b>			
Inattention	13.0 (5.68)	9.1 (3.58)	3.28**
Hyperactivity–impulsivity	14.1 (5.68)	9.6 (2.65)	3.85**
Oppositional defiant behavior	12.2 (5.32)	6.8 (5.22)	3.78**
<b>CAP</b>			
Inattention	7.7 (2.81)	5.4 (2.82)	2.89**
Overactivity	6.7 (2.20)	3.8 (1.97)	4.98**
<b>HSQ</b>			
No. problem situations	11.9 (3.83)	10.5 (4.22)	1.83
Mean severity of problem	4.5 (1.63)	3.0 (1.06)	5.89**

DBRS-PF, Disruptive Behavior Rating Scale-Parent Form; CAP, Child Attention Profile; HSQ, Home Situations Questionnaire.

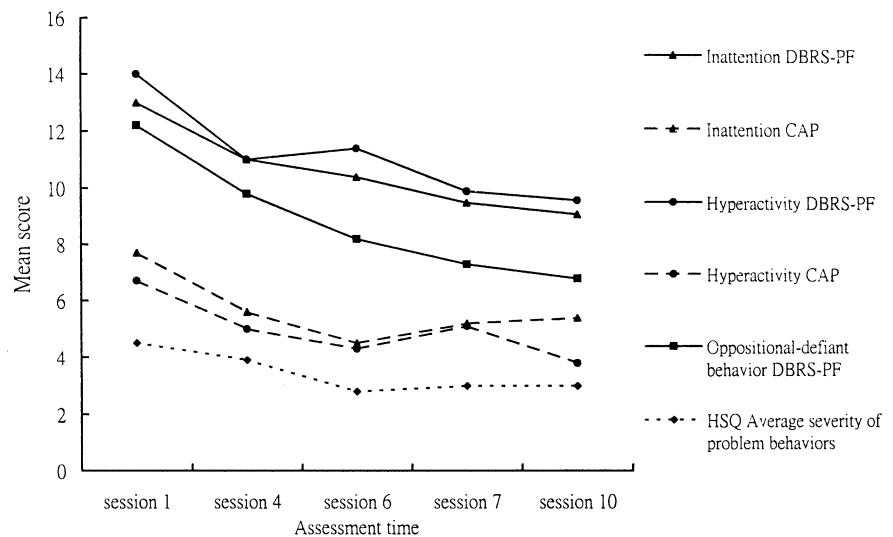
\*\* $P<0.01$ .

### Decrease in behavior problems in home situations

After the training there were significant decreases in total score ( $t=5.51$ ;  $P<0.01$ ) and average severity score of behavior problems ( $t=5.89$ ;  $P<0.01$ ) in a variety of home situations (Table 2). Although there was also a decrease in the total number of problem situations endorsed by parents, it failed to reach statistical significance ( $t=1.83$ ;  $P=0.09$ ). Again, the trend analyses of parent ratings across the training course revealed significant declining tendencies in total severity score ( $F_{1,13}=29.79$ ;  $P<0.01$ ) and average severity score ( $F_{1,13}=46.36$ ;  $P<0.01$ ). Figure 1 showed the linear trend of changes in average severity of problem behaviors at home.

### DISCUSSION

The results support the hypotheses of the present study that Barkley’s parent training program could effectively enhance the ability of Taiwanese parents to manage their ADHD children and reduce their ADHD/ODD symptoms and severity of problem behavior at home. This finding is consistent with evidence in this literature and supports the generalizability of such a parent training program across cultures.<sup>19–23</sup> The finding that parents reported only a slight post-training decrease in the total number of problem situations at home has some interesting implications. First, it is likely that after the training parents became better observers of their children’s behavior, even mild misbehavior, at home. Second, this finding might reflect a realistic limitation of any interventions for ADHD children. That is, it is unrealistic to expect that these ADHD children’s misbehavior at home would com-



**Figure 1.** Linear trend in attention-deficit/hyperactivity disorder/oppositional defiant disorder (ADHD/ODD) symptoms and problem behaviors at home across the training course.

pletely disappear after the training. However, with improved parenting skills, although parents might still find that their children misbehaved in a variety of home situations, the severity of their misbehavior declined significantly.

It is just as important to learn from failure as to learn from success, especially considering the relatively higher dropout rate in the present study. When examining the data from the dropouts in detail, there are several findings worthy of discussion here.

First, the significant difference between participants and dropouts in their employment status suggests that economic factor seems to play an important role in the success of mental health intervention. In fact, two families in the present study had to quit training because of job changes that resulted in family relocation. As previous research has indicated, the primary stressor for caregivers of children with ADHD is the economic factor, and the ADHD symptoms itself are the secondary stressor.<sup>24</sup> Second, the timing of intervention is also crucial to its success. Four families dropped out of the training during the long break of Chinese New Year, which usually is a busy and probably stressful time for many Taiwanese families. Third, the parental readiness for professional help and family cohesion are also important moderating factors for the success of parent training.<sup>25,26</sup> It has been suggested that parental cooperation and effectiveness are crucial to the success of behavior treatments for ADHD children.<sup>27</sup> Parents who have failed to recognize their children's behavior problems would lack the motivation to remain in the training. Family violence could put the target child under even higher risk and require more intensive intervention than parent training at the time. This finding alerts researchers and mental health professionals to the importance of the issues of training schedule and participant selection, which should be taken into consideration in future studies and clinical practise.

Nevertheless, the findings of the present study should be interpreted with caution given certain limitations in its research design. Due to ethical considerations and difficulty recruiting participants, a control group was not included here. It is an ethical concern to have parents in a control group who would repeatedly evaluate symptomatic behaviors and disruptive home behaviors of their children without providing needed services. Of course, one should not ignore the possibility of developmental change over time when evaluating the treatment outcome. However, this issue might not be so critical here because of the short-term nature of the training program. There is no apparent reason to predict that significant developmental changes should occur within such a short period of time given no obvious intervention, especially when all the target

children were still within the same developmental stage. Even if any developmental change occurred, it should be negligible. This point is supported by the fact that most developmental measures are designed to assess developmental change over at least a period of 6 months.

Of course, there are still many important issues that were not addressed by the present study. It is unclear in what way Confucian values might interact with the components in Barkley's parent training program. Are there any conflictual or facilitating factors involved? What kinds of modification are needed when implementing such a parent training program in Taiwan in order to maximize its effectiveness? In future studies, outcome measures should include not only parent ratings of their children's behaviors but also self-report of parenting behaviors/styles in order to evaluate the behavioral changes of both target children and their parents. Furthermore, data about parental perceptions of Confucian parenting and behavioral parenting should be collected and compared before and after the training. These empiric data might help further modify this parent training program to better fit the needs of Taiwanese parents in child-rearing practise.

## CONCLUSIONS

The current study presents some preliminary evidence that supports the effectiveness of Barkley's parent training program for Taiwanese parents of ADHD children. Because traditional child-rearing practise in Taiwan, which is mainly based on Confucianism, has been challenged at the turn of the century, this finding is quite encouraging. In light of certain similarities between the Confucian parenting and behavioral parenting, it might be promising to develop a parent training program that incorporates both Confucian values and behavioral management skills to help young generations of parents become more effective in their parenting and establish new order in their families. The present study is only the beginning of an effort to explore this possibility and more research is needed in the future.

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