

A Comparative Evaluation of Parent Training for Parents of Adolescents with Developmental Disorders

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ABSTRACT

Background In the present study, we evaluated the effectiveness of a parent training (PT) program in Japan for parents of adolescents with developmental disorders (DDs). In Japan, there were no separate programs for parents of children with DDs in early adolescence and beginning to assert their independence from their families despite the many parent-child conflicts and secondary disorders arising from the children.

Methods The parents of forty-four adolescent children ranging in ages from ten to seventeen were assigned to either a control group or an experimental group. The program comprised two hour biweekly sessions for three months. The program we examined in this program are: how to praise, stress management for parents, cognitive restructuring, how to scold, problem-solving communication training and how to make a behavior contract. To compare the effectiveness of this program in the control and experimental groups, two-way analysis of variance was used to analyze data collected using psychological assessment scales such as the Strengths and Difficulties Questionnaire (SDQ), the Child Behavior Checklist (CBCL), the Conflict Behavior Questionnaire for Parents (CBQ), and the Beck Depression Inventory (BDI-II).

Results The results showed a significant difference between pre- and post test scores on CBCL, BDI-II, and CBQ, but not on SDQ. The findings indicate that children's behavioral problems and parent-child conflict in the experimental group were improved at the end of the program.

Conclusion Accordingly, special programs are needed for adolescent PT as well as PT programs for children with DDs.

Note: For this study 'adolescent' is considered minors aged ten to eighteen, 'children' is considered minors aged nine and under.

Key words adolescence; developmental disorder; parent training

In Japan, parent training (PT) is a known method of support for parents of children with developmental disorders (DDs).^{1–4} In other countries, these PT programs consisted of individual sessions, out-reach programs, and telephone programs.^{5–8} In contrast, the PT program in Japan is implemented by approximate ten-person group work sessions. Recently this PT program has become the main family support for attention deficit hyperactivity disorder (ADHD).^{9–12} Additionally, in Japan, there is no specific program for parents of adolescent-age children with DDs,¹³ despite the many parent-child conflicts and secondary disorders that are known to arise from said adolescent children. These adolescent children are also often in the developmental stage of asserting their independence from their families. Takahashi¹⁴ reported that it is more difficult for parents to have a relationship with a child who has a DD, particularly in adolescence, as compared to a neurotypical child.

Nomura et al.¹⁵ pointed out that the depression rate for mothers of children with pervasive developmental disorders (PDDs) is higher than that of mothers of neurotypical children. The depression rate for mothers of children with PDDs was 40% compared to 20% for mothers of neurotypical children. Furthermore, 10% of mothers of children with PDDs experienced severe depression compared to 1% of mothers of neurotypical children.

According to these studies, a support program is needed for parents of children of all ages who have developmental disorders. Specifically, the need for the development of a PT for parents with adolescent children afflicted with DDs has been stressed.^{16–18} PT

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Abbreviations: ADHD, attention deficit hyperactivity disorder; ASD, autism spectrum disorder; BDI, Beck Depression Inventory; CBCL, Child Behavior Checklist; CBQ, Conflict Behavior Questionnaire for Parents; DD, developmental disorder; LD, learning disorders; PDD, pervasive developmental disorder; PT, parent training; SDQ, Strengths and Difficulties Questionnaire

programs for parents of children with DDs teach the method of training these children basic hygiene, manners and social interactions with the parents. Whereas, PT for adolescence teaches fence-mending (mend relations) by parent-child communication, the process of making promises(groundrules) between parent-child, and parental stress management. No general consensus has been reached as to the effectiveness of PT programs for adolescents. Cedar et al.¹⁹ did not find any correlation between PT and adolescents' age but, in their meta-analysis study, Serketich et al.²⁰ found that the overall effectiveness of PT decreases as the child gets older. Ruma et al.²¹ indicated that group PT would be less effective with older children because as they increase in age the following occurs: i) the children develop a stronger sense of emerging identity; ii) the children strive for more autonomy; iii) the children's peers often become a stronger source of influence; iv) the children spend less and less time at home. Smith et al.²² said family support is needed specializing in the development of programs for children in adolescence. Chronis et al.²³ pointed out it is important for teachers and parents to cooperate in encouraging the children themselves to make time schedules and do their homework.

Based on these studies, we believe the support needed for parents of adolescents with DDs is different from the needs of parents of younger children with DDs. As such, we need to create a new specialized program for parents of adolescents with DDs.

The present study evaluates the effectiveness of a PT for parents of adolescents with DDs.

Note: For this study 'adolescent' is considered minors aged ten to eighteen, 'children' is considered minors aged nine and under.

SUBJECTS AND METHODS

Subjects

All minors were clinically diagnosed with autism spectrum disorders (ASDs), ADHD or learning disorders (LDs) according to the DSM-IV-TR guidelines. The minor's ages ranged from 10.8 to 17.2 years. The subjects consisted of forty-four mothers, and two fathers. Informed consent was obtained from all parents.

Design

Subjects were assigned to one of two groups determined by the following conditions: i) Experimental group: practitioner-assisted group PT was implemented across six sessions, comprising five groups that completed the training between 2008 and 2011. In this group twenty-four parents of adolescents with DDs participated for 3 months and ii) Control group: twenty parents participated and were required to take the psychological pre and post tests without completing the 3-month training program. The control group consisted of twenty parents. Seven of the twenty parents in the control group, later joined the experimental group.

No differences were found between the experimental and control groups in terms of descriptive characteristics (Table 1).

The facilitator of the experimental group was the first author who was attending a doctoral course with a certified clinical psychotherapist.

Psychological assessment scales

To assess the impact of the adolescent's problem behaviors, the parents completed the burden and impact scales from the Strengths and Difficulties Questionnaire (SDQ),²⁴ and the Child Behavior Checklist (CBCL).²⁵ The scales have been proven to discriminate between clinical populations of children with diagnoses. SDQ is a brief behavioral screening questionnaire for three to sixteen year olds. SDQ is composed of twenty-five questions with the responses recorded on the 3 likert scale.

Table 1. Demographic characteristics of the sample (n = 44)

Variable	Experimental group (n = 24)		Control Group (n = 20)		t (v)	P
	M	s	M	s		
Child's age M (s)	13.01	1.61	14.1	2.48	-2.45 (44)	n.s.
Gender Child (% male)	75		71.4			n.s.
Parent's age M (s)	42.2	4.02	42.44	7.28	-0.09 (44)	n.s.
Gender Parent (% male)	4.2		5.0			n.s.

M, average value; n.s., no significant difference.

CBCL is a method of identifying problem behavior in children aged four to sixteen years old. To assess the impact of communication and conflict in parent-adolescent interactions, the Conflict Behavior Questionnaire for Parents (CBQ)₂₆ was used. CBQ is a twenty question 2 choices self-report. To assess the impact of the depression of parents, the Beck Depression Inventory (BDI-II)²⁷ was used. BDI-II is one of the most widely used instruments for measuring the severity of depression.

Program content

This program was comprised of lectures, group works, and homework. Parents in the experimental group received training in positive interactions with their children, including how to praise, how to scold, reframing, cognitive restructuring, problem-solving skills and how to make a behavior contract (Table 2).

Statistical analysis

A two-way ANOVA analysis was used to examine whether there is a significant difference for each psychological assessment measure in order to show the average value of the data both pre and post PT for parents of adolescents with DDs program. All statistical analysis was carried out using SPSS version 22.0 (IBM, Armonk, NY).

Ethical Considerations

This study was approved (No.1889) by the ethics committee of Tottori University. The subjects were assured

that participation was voluntary, that they could withdraw at any time without facing negative consequences, that their anonymity would be protected and that the data obtained would not be used for purposes other than research. Participants gave written informed consent.

RESULTS

Psychological testing

Effects on the experimental group compared to the control group were tested with a two-way factorial analysis of variance, using the posttest outcome as the baseline score. Results are shown in Table 3.

The result showed that there was a significant difference among pre- and post tests scores on CBCL, BDI-II, and CBQ but not on SDQ. There was a main effect of time, pre- and post test, on attention problems $\{F(1, 42) = 7.88, P < 0.01\}$, thought (cognitive) problems $\{F(1, 42) = 4.19, P < 0.05\}$, social problems $\{F(1, 42) = 3.88, P < 0.10\}$, and aggressive behavior $\{F(1, 42) = 4.09, P < 0.10\}$ in CBCL. In CBQ total scores, there was a main effect of group $\{F(1, 42) = 5.10, P < 0.05\}$. There was also an interaction effect of conduct problems in SDQ $\{F(1, 42) = 3.07, P < 0.10\}$ and CBQ total scores $\{F(1, 42) = 7.10, P < 0.05\}$.

Post-training session questions for the experimental group

The subjects in the experimental group completed 3 questions after the end of the training session, as follows: i) Was it easy to understand the program? ii) What

Table 2. Program content

Session No	Lecture	Group Works	Homeworks
1	Orientation Fill in the questionnaire Stress management Features of adolescence Development points	Self-introduction	Fill in "Communication assessment sheet"
2	Breaking the ice Positive contact with children	Make a list of how praise children	Work to praise a lot of children
3	Cognitive restructuring Reframing How to scold	Sharing homework	Commands that teens are likely to obey
4	Anger management for parents Problem-solving skills	Sharing homework Think about being "the worst" versus "the best" supervisor	Work to quality time Fill in "Problem-solving sheet"
5	How to make a behavioral contract How to set reward	Sharing homework	Work to create behavioral contract
6	Review this program Fill in the questionnaire	Review	

Table 3. Effect of parent training for parents of adolescents with developmental disorder

		Experimental Group (<i>n</i> = 24)		Control Group (<i>n</i> = 20)		Time <i>F</i> (<i>v</i>)	Group <i>F</i> (<i>v</i>)	Interaction <i>F</i> (<i>v</i>)
		Pretest	Posttest	Pretest	Posttest			
BDI-II								
BDI-II Total	M	14.38	13.25	16.94	12.56	7.90 (1,42)**	2.76 (1,42)	0.09 (1,42)
	<i>s</i>	(9.59)	(10.16)	(11.56)	(10.62)			
SDQ								
Conduct Problems	M	4.08	3.63	2.88	2.94	0.59 (1,42)	0.02 (1,42)	3.07 (1,42)†
	<i>s</i>	(1.95)	(1.69)	(2.00)	(1.81)			
Hyperactivity/Inattention	M	5.67	5.75	5.75	5.19	0.61 (1,42)	1.10 (1,42)	0.11 (1,42)
	<i>s</i>	(2.41)	(2.19)	(2.24)	(2.83)			
Emotional Symptoms	M	4.21	3.54	3.94	4.00	0.70 (1,42)	1.02 (1,42)	0.02 (1,42)
	<i>s</i>	(2.69)	(2.25)	(2.62)	(2.53)			
Peer Relationship Problems	M	4.46	4.46	4.75	4.75	0.00 (1,42)	0.00 (1,42)	0.25 (1,42)
	<i>s</i>	(1.79)	(2.11)	(2.21)	(1.81)			
Prosocial Behavior	M	3.63	4.04	4.56	4.63	0.82 (1,42)	0.45 (1,42)	0.93 (1,42)
	<i>s</i>	(2.16)	(2.10)	(3.33)	(2.94)			
Total Problems	M	18.46	17.50	17.38	17.00	0.75 (1,42)	0.14 (1,42)	0.33 (1,42)
	<i>s</i>	(4.27)	(5.02)	(5.51)	(4.97)			
CBCL								
Anxious/Depressed	M	67.54	64.04	66.56	66.13	2.23 (1,42)	1.39 (1,42)	0.04 (1,42)
	<i>s</i>	(8.95)	(8.31)	(10.05)	(10.63)			
Withdrawn	M	59.46	57.96	57.69	59.06	0.00 (1,42)	1.45 (1,42)	0.02 (1,42)
	<i>s</i>	(10.08)	(7.91)	(8.35)	(7.74)			
Somatic	M	67.54	64.67	66.44	66.06	2.97 (1,42)†	1.76 (1,42)	0.00 (1,42)
	<i>s</i>	(8.96)	(9.77)	(10.26)	(10.13)			
Social Problems	M	68.08	65.79	69.31	66.31	3.88 (1,42)†	0.07 (1,42)	0.11 (1,42)
	<i>s</i>	(8.92)	(8.79)	(10.79)	(7.60)			
Thought Problems	M	66.21	63.25	64.94	62.13	4.19 (1,42)*	0.00 (1,42)	0.12 (1,42)
	<i>s</i>	(11.52)	(10.67)	(11.89)	(13.38)			
Attention Problems	M	68.67	64.54	69.13	65.88	7.88 (1,42)**	0.11 (1,42)	0.17 (1,42)
	<i>s</i>	(7.14)	(8.31)	(7.54)	(8.18)			
Delinquent Behavior	M	63.67	61.75	59.56	60.31	0.18 (1,42)	0.96 (1,42)	1.35 (1,42)
	<i>s</i>	(8.24)	(8.43)	(8.77)	(8.72)			
Aggressive Behavior	M	65.21	63.38	62.63	60.31	4.09 (1,42)†	0.06 (1,42)	1.08 (1,42)
	<i>s</i>	(8.76)	(8.42)	(9.70)	(7.82)			
Internalization	M	67.96	64.58	66.19	66.19	2.63 (1,42)	2.63 (1,42)	0.00 (1,42)
	<i>s</i>	(8.58)	(8.86)	(8.72)	(9.88)			
Externalization	M	65.71	62.83	62.25	61.13	2.91 (1,42)†	0.56 (1,42)	0.85 (1,42)
	<i>s</i>	(9.51)	(9.95)	(9.92)	(7.81)			
Total Problem	M	70.58	67.25	68.75	68.06	3.23 (1,42)†	1.40 (1,42)	0.04 (1,42)
	<i>s</i>	(8.17)	(8.59)	(8.81)	(7.57)			
CBQ								
CBQ Total	M	11.17	8.13	6.19	6.31	4.33 (1,42)*	5.10 (1,42)*	7.10 (1,42)*
	<i>s</i>	(4.20)	(4.78)	(4.67)	(3.38)			

P* < 0.05.*P* < 0.01.†*P* < 0.10.

BDI, Beck Depression Inventory; CBCL, Child Behavior Checklist; CBQ, Conflict Behavior Questionnaire for Parents; M, average value; SDQ, Strengths and Difficulties Questionnaire.

Table 4. Satisfaction with the program (unit: %)

i) Was it easy to understand the program?				
Agree	Mostly agree	Middle undecided	Slightly disagree	Disagree
85	15	0	0	0
ii) What did you learn in the lecture that was helpful when you communicated with your children?				
Agree	Mostly agree	Middle undecided	Slightly disagree	Disagree
92	8	0	0	0
iii) Through the program, did you have a cognitive change with the children?				
Agree	Mostly agree	Middle undecided	Slightly disagree	Disagree
62	38	0	0	0

did you learn in the program that was helpful when you communicated with your children? iii) After completing the program, did you have a cognitive change with your children? The experimental group subjects reported high levels of satisfaction for each question (Table 4).

General impression provided by the experimental group

According to the survey results, the general impression of the experimental group was that praise greatly improved the attitudes of the children, focusing on positive behavior created positive results, interaction within the group caused a feeling of mutual support and shared experiences, and PT experiences triggered an evaluation of past parenting failures.

DISCUSSION

In the present study, we examined the effectiveness of a PT program for parents of adolescents with DDs. Previous reports do not include reports specializing in parents with adolescent children. Until now, programs intended for younger children were used with parents of adolescents with DDs. This proved to be an ineffective method causing major difficulties with parents of adolescent children with DDs. Therefore, it is important that a special program specifically created for adolescents be utilized.

Subjects who completed the program showed improvement in the parent's attitude toward their children, and a reduction in parent-child conflict and behavioral problems of the children directly related to reframing, cognitive restructuring, problem-solving skills, and how to make a behavior contract. The anxious/depression levels of children in the experimental group significantly

decreased, as did parent-child conflict scores compared with subjects in the control group. In addition to the psychological test results, we found that the program significantly improved self-reported positive communication in parent-child interactions. In the beginning stages of the program, we delivered sessions on reframing, cognitive restructuring, how to praise and how to scold. In the final stages of the program, the interaction achieved through making a behavior contract greatly improved satisfaction and the feeling of accomplishment.

We found no significant effects in terms of satisfaction of subjects with the contents of the PT program. However, parents-child relationship improvement might be expected from carefully reviewing how to praise children and parents' anger management.

Improvement of anxiety/depression of CBCL in the experimental group children, and school refusal, or problem behavior can be influenced by improvement in parents-child relationship, or flexibility in how parents perceive the behavior of their children. Future researchers could examine the association between the contents and effects of the PT program.

At present, PT programs for parents of adolescents with DDs have not been overly effective because the programs were directed at PT of younger children's and did not include PT on how to praise, environmental coordination, and functional assessment.

However, PT for parents of adolescents with DDs is needed for therapists to assess the mental condition of the subject. We believe it is necessary to add to the program sessions on stress management, cognitive reconstructing, problem-solving skills, and how to make a behavior contract.

Therapists are required in order to provide psychological knowledge and counseling skills to parents of adolescents with DDs, even more so than parents of younger children's PT programs.

Directions for future research

Future research must be directed at developing appropriate and more effective experimental programs for adolescent children with DDs and also for their parents.

Yearly inspections of follow up data are necessary, in order to analyze whether improvement gains were maintained.

The authors declare no conflict of interest.

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