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Brief Research Article

Efficacy of Parent Management Training in ADHD Children Using Kazdin's Model

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ABSTRACT

Attention deficit hyperactivity disorder, or ADHD is a neuropsychiatric condition affecting preschoolers, children, adolescents, and adults around the world, characterized by a pattern of diminished sustained attention, and increased impulsivity or hyperactivity. It is the most common behavioral disorder which develops in childhood and later becomes apparent in the preschool and early school years (Alizadeh et al., 2015; Cheng & Myers, 2005). Psychosocial treatments for ADHD are generally combined with medication as medication alone cannot address parental concerns around child management issues and behaviour. Parent training is the most commonly prescribed psychological intervention for ADHD. Aim & Method-The aim of the study was to find out the effectiveness of the Parent Management Training (PMT)model by Kazdin in a sample of 30 children and adolescents in the age group of 10 to 18years. The participants were divided into 2 groups- the study group received PMT along with medication while the control group received only medicine. Results indicated that the study group had better improvement as compared to the control group suggesting that the parent management training module by Kazdin is an effective treatment for children with ADHD.

Keywords*: ADHD, Parent Management Training, Kazdin Model*

INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a common childhood disorder which is known to affect 3% to 5% of school-age children (Fewell & Deutscher, 2002). As per Pelham & Gnagy (1999), The behaviours which are associated with ADHD -inattentive, hyperactive and impulsive behaviours resulting in serious impairment in academic achievement of the child in school. Further they also affect their relationship with parents, siblings, and peers.

ADHD children are often at a higher risk for several negative outcomes including alcohol or other substance abuse, low self-esteem, and criminal behaviour as compared to other children (Sonuga-Barke, et al., 2001; Mash & Barkley, 1998). Previous research also indicates that a lack of proper treatment may cause further problems for children with ADHD (Thomas & Corcoran, 2003). Hence, the issues of early detection , early intervention and effective treatment of childhood ADHD need to be addressed by all concerned including state.

Various approaches to treatment of ADHD include behavioural training for parents of children with ADHD, social skills training involving social skills groups, and behavioural interventions targeted at school and home alone which is supplemented with medication management. Of these, the most commonly used intervention for ADHD is behaviour parent training. Behavioural parent training provides instruction for implementing behavior modification techniques to parents and these techniques are based on social learning principles. Techniques applied are; direct instruction, role-play and modelling to teach parents to reinforce positive behaviours while decreasing the use of punitive strategies, and managing stubborn, defiant and inappropriate behaviours effectively (Cunningham *et al*. 1993). Parent training works directly with parents to enable them to enhance and modify their own parenting skills in order to improve their relationships with the child (Pelham et al., 1998). Parent training also includes teaching parents to learn how to identify a child's behaviour and manipulate the antecedents and consequences of the behaviour. This also helps in understanding the target behaviour and monitor these problematic behaviours. Finally parents are taught to reward behaviours which are prosocial through positive attention, praise and tangible rewards, while the unwanted behaviours are minimized by ignoring and time-out in a planned manner (Lonigan, Elbert, & Johnson 1998; Chronis et al., 2001). Parent-training programme helps in improving the child management skills for the parents, enhances their self-confidence, reduces stress and mitigates oppositional behaviour (Webster-Stratton & Hammond 1997).

Parent training is based on the observation that parents of ADHD children tend to use inefficient and controlling strategies for parenting (Mash & Johnston 1990) and in the parent- child relationship the use of such strategies is predictive of poor outcome (Taylor *et al*. 1996).

In India, there are increased parent- child conflicts as parents often place higher value on patriarchal control and family relationships, instead of applying open communication, closed communication is used. Further

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parents hold diverse views on morality from their children (Chadda & Deb, 2013). Despite evidence that parents struggle with issues of monitoring, disciplining, setting limits, there exist very few parenting programs in India to assist parents. (Chadda & Deb, 2013).

Moreover, Parental Behavioural training has been used in this study as an intervention strategy for children with ADHD as well as oppositional defiant disorder (ODD) and conduct disorder (CD) (Pelham et al., 1998; Brestan & Eyberg, 1998), and many internalizing disorders as well. Although there is comorbidity between ADHD and CD/ODD, it is still not clear whether parent training is effective in reducing antisocial behaviour and symptom severity in ADHD children with or without comorbid CD/ODD. Appropriate guidelines by NICE (2008) recommend parent training as an intervention in ADHD, however; it is based on studies conducted in children under twelve years of age. Nonetheless, they recommend parent training as the first line of treatment for parents or carers of school age children with moderate ADHD.

However, the relationship between ADHD and parent training needs to be examined as a mechanism for development of behaviour problems might be different. In the present study an effort was made to establish whether parent training is effective in reducing ADHD symptom severity and associated problems in children and adolescents with ADHD. This was also an effort to fill up the research gap of Indian studies in this area.

METHOD

Objective of the study: To find the efficacy of Kazdin's model of parent management training in children with ADHD.

Sample: A group of 30 participants from the age group of 10-18 years diagnosed as Attention Deficit Hyperactivity Disorder as per DSM 5 was collected using purposive sampling method. These 30 Ss were selected from a data pool and were randomly allocated into 2 groups consisting of 15 participants each. Group 1 received PMT with Treatment As Usual. Group 2 received only TAU. PMT was given to both parents if available or the key caregiver who was defined as someone who looks after and spends most of the time taking care of the child/ adolescent. Written informed consent was obtained from the participants and their caregiver parents in the beginning of the study.

TOOLS USED

1. Socio demographic and clinical data sheet- To collect demographic details this sheet was used. Which included age, sex, educational qualification of child and parents along with their occupation, domicile and SES. In this tool clinical variables such as chief complaints, age of onset, duration of illness were also included.
2. ADHD rating scale- This tool is a teacher-report or parent-report inventory (DuPaul et. al. 1998) which consists of 18 questions about a child's behaviour over the past 6 months; It is rated on a 4-point Likert scale where 0 is never or rarely, 1 is sometimes, 2 is often and 3 is very often. It gives a raw score for hyperactivity-impulsivity and inattention. The raw scores are then converted into percentile scores for inattention, hyperactivity-impulsivity as well as both combined.
3. Child Behaviour Checklist (CBCL)- This tool was used as a measure to evaluate maladaptive emotional and behavioural problems (Achenbach, 1991). It has 8 constructs or syndromes consisting of 113 items; The responses are recorded using a Likert scale where 0= not true, 1= somewhat or sometimes true, and 2= very true/often true.

Parent management training module by Kazdin, (2008) was used; applying this training module, 12 sessions were conducted. Each session continued from 45 minutes- 1 hour. Per week 2 sessions were conducted within 6 weeks.

Sessions Details	
Pre-treatment introduction and orientation	Session 7: Family meeting
Session 1: Defining, observing and recording behaviour	Session 8: Low-rate behaviours
Session 2: Positive reinforcement: point incentive chart and praise	Session 9: Reprimands
Session 3: Time out from reinforcement	Session 10: Compromising (1st session)
Session 4: Attending and planned ignoring	Session 11: Compromising (2nd session)
Session 5: Shaping and school program	Session 12: Skill review, practice and termination
Session 6: Review and problem solving	Booster session after 15 days

STATISTICAL ANALYSIS

Statistical analysis was done using SPSS version 25. To analyse the data, applying descriptive statistics, chi square and t test.

RESULTS

The average age of the children was 12.87 ± 1.88 years. Their age of onset was 5.73 ± 1.58 years. Majority of children in both PMT and TAU groups belonged to the urban population.

Parents' sociodemographic details: The average age of fathers and education were 39.40 ± 3.86 years and 14.73 ± 3.08 (in years of schooling) years respectively. The average age of mothers and education was 32.67 ± 3.49 years and 14.00 ± 4.22 years. Majority of the mothers in

both the groups were housewives and fathers were employed in private jobs.

Table 1: Sociodemographic profile of children receiving PMT with TAU and TAU only

Variables		PMT+TAU (N=15) n (%)	TAU (N=15) n(%)	χ^2 (df=1)	p
Gender	Male	14 (93.3)	14 (93.3)	.001	1.00
	Female	1(6.7)	1 (6.7)		
Child education	1-5th class	7 (46.6)	5 (33.3)	3.00	.39
	6-10th class	8 (53.3)	10 (66.7)		
DOI	0-5 years	5 (33.3)	7 (46.6)	10.23	.17
	6-10 years	10 (66.7)	8 (53.3)		
SES	Lower and middle	10 (66.7)	9 (60)	.14	.70
	Higher	5 (33.3)	6 (40)		

Table 2. Comparison of study variables between children receiving PMT with TAU and TAU only

Domains	PMT + TAU (N=15)	TAU (N=15)	t (df=28)	P
	Mean ± SD	Mean ± SD		
Baseline ADHD	37.53 ±5.98	40.13 ± 5.38	.459	.650
Baseline CBCL	46.07 ±12.13	50.73 ±12.20	.624	.538
Post ADHD (after 6 weeks of intervention)	34.33 ±5.56	39.33 ± 5.563	2.378	.024*
Post CBCL (after 6 weeks of intervention)	43.00 ±12.14	48.00± 12.148	2.413	.023*
Follow up ADHD (after 2 weeks if follow up)	32.54 ±5.48	38.67 ± 5.486	3.148	.024*
Follow up CBCL (after 2 weeks if follow up)	40.00 ± 12.84	46.00 ±12.845	2.357	.026*

*p<.05, **p<.001

Table 3: Comparison at different intervals in PMT + TAU group

Domains		ADHD	t (df=14)	p	CBCL	t (df=14)	p
Baseline (N=15)	Mean± SD	37.53± 5.98	12.22	.021*	46.07± 12.13	13.44	.002*
Post intervention (N=15)	Mean± SD	34.33± 5.56			43.00± 12.14		
Baseline (N=15)	Mean± SD	37.53± 5.98	13.39	.012*	46.07± 12.13	7.06	000**
Follow up (N=15)	Mean± SD	32.54 ±5.48			40.00± 12.84		
Post intervention (N=15)	Mean± SD	34.33± 5.56	10.45	.002*	43.00± 12.14	4.07	.001**
Follow up (N=15)	Mean± SD	32.67± 5.48			40.00± 12.84		

DISCUSSION

The study was conducted with the aim to study the effectiveness of parent management training in attention deficit hyperactivity disorder. The present study was a pre test- post test design. Both the study group and control group were similar in their baseline evaluation. Since the two groups were similar prior to the intervention, the efficacy of the intervention will be more pronounced. Both groups were matched on relevant variables like children's age, gender, education, age of onset, duration of illness, domicile and SES. Parents' age, education, occupation were also matched i.e. similar and in close proximity between the two groups.

On a comparison of study variables after 6 weeks of intervention as well as follow up after 2 weeks, at the end of therapy, it was found that ADHD symptom severity and behavioural problems in children receiving parent management training was significantly decreased than children receiving treatment as usual. There was also a significant difference between baseline scores and scores after 6 weeks of intervention in the PMT group only indicating efficacy of PMT. There was a significant difference between scores after 6 weeks of intervention and scores after 2 weeks of follow up indicating the maintenance effect of PMT. PMT has been known to be one of the most acceptable and effective treatment options by parents, when compared to stimulant medications alone (MTA, 1999); which has been demonstrated in observations of this study. It is an evidence-based treatment for children with externalizing behavior problems (Eyberg et al., 2008).

PMT has been applied to a broad range of problems in children and in different age group populations. There are several core elements of the PMT model with different approaches. Firstly, the intervention is primarily conducted with the parents, with very less contact between the therapist and the child.

Secondly, the therapist tries to shift the parents' attention from problem behaviour towards prosocial goals. Parents are trained to define, monitor, and track a child's behaviour. Praise, positive parent attention, token system were some of the positive reinforcement procedures which are used while ignoring, response cost, and time out in giving clear instructions or commands were used as extinction and mild punishment procedures.

Finally, to promote effective parenting in PMT, modelling, role playing, didactic instruction, behavioural rehearsal, and structured homework exercises are also used. Earlier studies reported that parent training programs in children with ADHD are majorly aimed to reduce behavioural problems through contingency management principles (Barkley, 1987). They are also known to improve problem-solving skills or social skills in children with ADHD (Sheridan & Dee, 1996). Parent training generally results in minimizing the oppositional behaviour of the adolescents, suggesting that the treatment is most useful when parent-child conflict exists (Anastopoulos et al., 1993). Thus, the present observations are supported by previous research findings. Which clearly demonstrates that PMT improves childhood behaviour problems, reduces

parental stress and allows the development of positive parenting competences (Furlong et al., 2013; Froelich et al., 2002).

CONCLUSION

Treatment of primary symptoms of ADHD in school aged children were successfully achieved by parent training in this study. Overall review of previous studies also indicates an increase in confidence amongst parents regarding their child management abilities and self-esteem. It has also been found to reduce the stress of the parents and helps in reducing ADHD symptoms and child noncompliance. The present study indicated the need for future research to include both parents in the treatment program and to continue to investigate any possible differential effects of parent-training. Focus should be given on the possible problems that parents experience and how these experiences influence the effects of the treatment. It is necessary to give importance to parent training programs within the clinical as well as community settings. Lastly, the maintenance effects of the treatment need to be evaluated even after the completion of the study.

Conflict of interest: No conflict of interest

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Letter to Editor

Indian Classical Music Therapy for Pervasive Developmental Disorder: A Case Study

Dear Editor,

Music therapy is transitioning from a social science model that focuses on overall health and well-being to a neuroscientific research field that focuses on addressing motor, cognitive, language, emotional and social deficits in people with neurological disorders. As music therapy in India is nascent and still evolving, there is a need at this stage to make use of the rich musical resources to develop culturally sensitive approaches, techniques, or methods adaptable to clinical applications. R, a 29 year old, diagnosed with Pervasive Developmental Disorder, delineates the benefits of structured Indian classical music intervention towards various cognitive goals, sensory goals, communication goals, improved physical and emotional response, behavior improvement, social cognition, and musical goals. Music therapy assessment and multi-modal problem analysis help identify significant strengths, potentials and resources, which may not be apparent in other formalized assessments. Thus, it can facilitate the development of a systematic method for measuring response to therapy.

Thanks

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Prof. Nalini. Bikkina, Director, GITAM School of Humanities and Social Sciences