

Effect of Modified Short-Term Parent Training Group Therapy among Children with Attention Deficit Hyperactivity Disorder

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Abstract

This study aims to investigate the efficacy of modified short-term parent training group therapy among children with Attention Deficit Hyperactivity Disorder (ADHD) from Taiwanese experience. Children with attention deficit hyperactivity disorder (ADHD) were diagnosed by DSM-IV criteria. Their parents were invited to attend modified short-term parent training group therapy. The parents were then asked to complete the Swanson, Nolan and Pelham Rating Scale-Revised ADHD and oppositional defiant disorder (ODD) subscale (SNAP-IV), child behavior check list (CBCL), and parental symptom check list (SCL-90) before and after modified short term parenting group therapy. Findings showed that inattention, hyperactivity and ODD symptoms of children with ADHD were significantly improved (all $p < 0.001$). Problematic behavior of children (aggression, attention problems, social problems, and externalization) and their parental symptoms (somatization, obsession, global severity, and PST) were also changed after modified short-term parent training group therapy. Therefore, the short-term modified parent training group therapy is effective for children with ADHD and is recommended as the first part of a combined treatment for children with ADHD. The key points of this study are that modified short-term parent training group therapy is effective and worthy to try as the first part of a combined treatment for children with ADHD.

Parental stress and symptoms may need to be addressed as part of the treatment for a child with ADHD.

Keywords: ADHD, short term parent training group therapy

Introduction

The prevalence of ADHD is high ranging from 3.2% to 15.8% (Schmidt & Petermann, 2009) and if left untreated could develop serious consequences in later life that may lead to problems in society (Bernfort, Nordfeldt, & Persson, 2008). Therefore, cost-effective treatment for children with ADHD is important. A Multimodal Treatment Study of ADHD (MTA) by the National Institute of Mental Health (NIMH) in The United States, combined pharmacotherapy and behavior therapy and found it a most effective treatment for children with ADHD (Jensen et al., 2007; Jensen et al., 2001). Children with ADHD have poor self-regulation skills therefore it is essential that their primary caregiver be trained to have the skills needed to shape their problematic behavior by using behavior therapy other than just taking medication. Cognitive-behavioral therapy based parent training group therapy is a cost-effective treatment in relieving inattentive/hyperactive symptoms (Bernfort, et al., 2008; Danforth, Harvey, Ulaszek, & McKee, 2006; Hamilton & Armando, 2008; Huang, Chao, Tu, & Yang, 2003;

Salbach et al., 2005; Scott et al., 2009, 2010; Svanborg et al., 2009), correcting problematic behavior (Dretzke et al., 2009; Hautmann, Hanisch, Mayer, Pluck, & Dopfner, 2008; Hautmann et al., 2009), relieving parenting stress (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993; Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004; McKee, Harvey, Danforth, Ulaszek, & Friedman, 2004; Pouretamad, Khooshabi, Roshanbin, & Jadidi, 2009), improving parental discipline ability (Anastopoulos, et al., 1993; Chacko et al., 2009; Erhardt & Baker, 1990; Pisterman et al., 1989; Scott, et al., 2009; Weinberg, 1999; White & Wellington, 2009), and lowers medical costs (Myren, Thernlund, Nysten, Schacht, & Svanborg, 2010) among children with ADHD. In summary, Barlow's several meta-analysis studies reported group-based parent-training program are undeniably effective on child mental health (Barlow & Coren, 2001; Barlow, Coren, & Stewart-Brown, 2002; Barlow & Parsons, 2002a, 2002b).

Parents of children with ADHD are often frustrated by their child's challenging behavioral symptoms before they enroll into the group-based parent training program to receive effective treatment. Unfortunately, not many are able to take advantage of this treatment. The challenging factors which exist are the fact that strict behavior therapy such as in the MTA study (MTA, 1999) suggested that it is very hard to obtain in a clinical setting especially for those countries with a limited number of child psychiatrists in service and restricted local insurance payment. In general, only one in twelve children have opportunity to obtain a diagnosis in Taiwan due to distorted parental understanding, insufficient number of professionals, and problematic insurance coverage. Most children with ADHD receive pharmacotherapy. Intensive behavior modification is only made available sporadically to parents with children of ADHD in an out-patient clinic setting. In addition, as we know, most of the parents with children of ADHD are from a lower social economic class (Biederman,

Faraone, & Monuteaux, 2002), with a depressed mother (Chronis et al., 2007). Requiring parents with children diagnosed with ADHD as mentioned above with genetic or environmental adversity to visit a psychiatric out-patient department setting regularly for behavior modification training is a challenging task. Another difficulty is how a limited number of child professionals' can deliver an integrated behavior modification program to parents with children of ADHD within a short time during an out-patient clinic visit.. The traditional parent group training toward general parents according to the textbook e.g. limited parent number or that a 12 session extended group has shortcomings from our local experience. First, a busy career parent finds it is hard to attend a 12 session parenting training group. Second, some parents only want the knowledge or strategy to do initiate behavior modification for their children with ADHD instead of engaging in conversations that involve listening to other parent's complaints or catharsis. All these reasons lead the limited child psychiatrist in Taiwan to seek for a modified, short term parent training group therapy program. We condense the content of 12 group therapy sessions into 4 sessions after several trials of 12 sessions. In order to save precious time, we focused each session into one specific topic. The 4 topics includes the introduction of ADHD diagnosis and effective treatment, how to manage a child with an emotional disability specifically focusing on behavior modification training, parental emotional control, how to handle problematic behavior commonly seen in daily life.

Objectives

This study was designed to use our cross-cultural data to determine other than children with ADHD who received methylphenidate treatment only, whether our modified short term group therapy is effective in our by first Taiwanese experience. We will use symptom severity,

problematic behavior and parental symptom change checklists to compare the effect before and after modified short term parenting training group therapy.

Methods

Participants and data collection

A total of 49 consecutive families with a child between 7 and 12 years of age, with a confirmed ADHD diagnosis made by a child psychiatrist through diagnostic interviews using DSM IV criteria at the outpatient child-adolescent psychiatric department of Mackay Memorial Hospital in Taipei, Taiwan, were included in the study. Participants were excluded if the children had organic psychosis, autism, mental retardation, neurological or systemic disease. The parents were then asked to finish Swanson, Nolan and Pelham Rating Scale-Revised ADHD subscale (SNAP-IV), Child Behavior Check List (CBCL) and Parental Symptom Check List (SCL-90) before and after modified short term parent training group therapy. Demographic data on the children included age, sex, ADHD subtypes, comorbid conditions, school performance, and interpersonal relationships. Parental social demographic information, including father's age and mother's age and social economic status, was collected by using the self-devised questionnaire. Parental socioeconomic status (SES) was classified according to the Hollingshead index as level I-IV (Hollingshead, 1965).

Swanson, Nolan and Pelham Rating Scale-Revised ADHD subscale (SNAP-IV)

Parents and investigators rated ADHD symptoms by using SNAP-IV-C at every follow-up session in order to measure the efficacy of treatment. The SNAP-IV-C consists of the following items: inattention, hyperactivity/impulsivity, and oppositional symptoms. These items reflect the core symptoms of ADHD, as defined in DSM-IV, and oppositional defiant disorder (ODD). The

psychometric properties of SNAP-IV-C in Taiwan have been established (Liu YC, 2006).

Child Behavior Check List (CBCL)

The CBCL is designed to obtain/highlight competencies and behaviour problems of children aged 4-18 years. The questionnaires containing 118 items concerning specific behavioural and emotional problems are completed by parents. The CBCL was translated into Chinese via a two-stage translation (Huang et al. 2004). The internal consistency and 1-month test-retest reliability (all α values and reliabilities > 0.6 except for thought problems) of this Chinese version are satisfactory for Taiwanese patients (Yang, Soong, Chiang, & Chen, 2000). Parents rate their child on how true each item is at present or within the past 6 months using the following sub-scale: 0, not true (as far as they know); 1, somewhat or sometimes true; and 2, very true or often true. These raw scores were converted to age- and gender- normalized T-scores and was then compared with normative scores from a national sample. Checklists with eight or more missing behaviour problem items were excluded from the analyses. There are nine symptom scales measuring behaviour problems in the CBCL. In the interest of parsimony, the present study only analyzed the following six scales: Somatic Complaints, Anxiety/Depression, Social Problems, Attention Problems, Delinquent Behaviour, and Aggressive Behaviour.

Parental Symptom Checklist-90-Revised (SCL-90-R)

Parents' self-reported symptoms were measured on nine primary dimensions: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoses. The Symptom Checklist-90-Revised (SCL-90-R) is a 90-item self-report system developed in the 1980s by Dero-

gatis (Derogatis, 1975). Each of the items is rated on a five-point scale (0-4) ranging from 'not at all' to 'extremely'. Raw scores are calculated by dividing the sum of the scores for a dimension by the number of items in the dimension. Three global indices are used including global severity index (GSI), positive symptom total (PST), and positive symptom distress index (PSDI). The GSI is the average rating given to all 90 items. The PST is derived by counting the number of items endorsed with a positive response. The PSDI is the average of only the items which are given a positive response. SCL-90-R was translated to Chinese in 1982 and has good psychometric measurement reliability, with a Cronbach α coefficient range of 0.77-0.90. The Chinese version of this scale has been widely applied in both psychiatric ADHD studies (Chang & Chuang, 2000) and non-psychiatric clinical studies (Fuh, Wang, Liu, & Wang, 1999) in Taiwan.

Statistical Analysis

Continuous data were expressed as mean \pm standard deviation, and the categorical data were expressed as frequencies (percentages). We compared differences in SNAP, CBCL, and parental symptom by using chi-square test (or Fisher's exact test) and paired-samples t test (or Wilcoxon signed ranks test), where appropriate. All statistics were performed by SPSS v15.0 (SPSS Inc., 233 S. Wacker Drive, 11th floor, Chicago, Illinois 60606). P-values < 0.05 were considered statistically significant.

Results

Demographic characteristics

A total of 49 ADHD patients were included in this study. The ratio of males to females was 6:1. 53.4% of children with ADHD were combined subtype. 61.6% among them co-exists with other diagnosis. 45.5% of ADHD children were reported to have poor interpersonal relationship and 50% of them had poor school performance. 78.3% of parent with ADHD children confessed they had

parenting stress and 65.9% among them admitted they did not understand ADHD children. Parental social demographic information, including father's age is 43.00 ± 6.14 , mother's age is 40.08 ± 5.35 , and 24.7% of them is from class I social economic status classified according to the Hollingshead index as level I-IV (Not shown).

Swanson, Nolan and Pelham Rating Scale-Revised ADHD subscale (SNAP-IV)

As shown in Table 1, after modified short term parenting training group therapy, the average individual improved significantly on inattentive, hyperactivity and ODD symptom (all $P < 0.001$). Our results indicate that parents of children with ADHD report significant improvement of symptoms (including inattention, hyperactivity, ODD symptoms), and behavioral changes in their children. It is noted that some parental symptoms improved after the parent training concluded.

Problematic symptoms by CBCL

The results of comparisons of CBCL, 10 problematic symptoms of childhood behavior, as shown in Table 2, were found significant improvements on children's aggression, attention problems, social problems, and externalization tendencies χ^2 after parenting group therapy. Borderline significance was noticed on anxiety, depression, delinquent behavior, somatization, and internalization behavior problems. No significant changes were noticed on thought problems and emotional withdrawal of children with ADHD.

Parental symptoms

Parental symptom results found that somatization, obsession, global severity index (GSI) and the positive symptom total (PST) score were significantly decreased after parenting group therapy (Table 3). Borderline significant improvement was noticed on the decreasing interpersonal sensitivity score. All others, such as depression, anxiety, hostility, phobia, paranoid,

Table 1: Effect of parental group on ADHD and ODD symptom

	Pretreatment(N=41) Mean anSD	Post treatment(N=41) Mean anSD	Z ^a	p-value ^a
Inattention	22.78 ± 4.21	12.76 ± 4.21	-5.28	<0.001***
Hyperactivity	17.61 ctivit	8.22 ctivi	-5.39	<0.001***
ODD symptom	15.68 mptomt	8.95 mptom	-4.46	<0.001***

ADHD: Attention Deficit Hyperactivity Disorder; ODD: Oppositional Defiant Disorder;

a: Wilcoxon Signed Ranks Test; * < 0.05 ; ** < 0.01; ***< 0.001

Table 2: Effect of parental group on child behavior problems change

	Pretreatment(N=39) Mean anSD	Post treatment(N=39) Mean anSD	Z ^a	p-value ^a
Aggression	0.68± 0.30	0.59 ssionm	-2.18	0.029*
Anxiety /Depression	0.39 ty /De	0.30 ty /De	-1.91	0.057
Attention problem	0.87 tion p	0.72 tion p	-3.22	0.001*
Delinquent behavior	0.35 viortp	0.30 viortp	-1.98	0.047*
Social problem	0.66 l prob	0.54 l prob	-2.61	0.009*
Somatization	0.27 izatio	0.19 izatio	-1.83	0.067
thought problem	0.37 ht pro	0.31 ht pro	-1.42	0.155
withdrawal	0.58 rawalo	0.55 rawalo	-0.68	0.499
internalizing behavior	0.41 nalizi	0.36 nalizi	-1.96	0.050
externalizing behavior	0.51 nalizi	0.44 nalizi	-2.39	0.017*

a: Wilcoxon Signed Ranks Test ; * < 0.05

Table 3: Effect of parental group on parental symptom

	Pretreatment Mean anSD	Post treatment Mean anSD	Z ^a	p-value ^a
somatization	0.42± 0.40	0.33 izatio	-2.11	0.035*
obsession	0.59 sionio	0.49 sionio	-2.47	0.013*
Interpersonal sensitivity	0.37 person	0.33 person	-1.71	0.087
depression	0.38 ssionn	0.37 ssionn	-1.50	0.134
anxiety	0.22 tyionn	0.20 tyionn	-0.70	0.482
hostility	0.41 litynn	0.39 litynn	-0.68	0.497
phobia	0.14 aitynn	0.11 aitynn	-0.94	0.349
paranoid	0.30 oidynn	0.27 oidynn	-0.81	0.419
psychotism	0.21 otismn	0.18 oti.34	-1.32	0.187
Other symptom	0.36 sympt	0.37 sympt	-0.42	0.676
GSI	0.34 sympt	0.31 sympt	-2.16	0.031*
PSDI	1.31 *sympt	1.29 *sympt	-1.61	0.108
PSD	23.05 symptom	19.21 sympt	-2.29	0.022*

a: Wilcoson Signed Ranks Test ; * < 0.05

Discussion

Our results indicate that parents of children with ADHD report significant symptom improvement related to inattention, hyperactivity, and ODD symptoms. Positive behavioral changes were reported regarding their children and even some parental symptoms improved after obtaining this type of parent training. The strength of this article is the first introduction to one kind of effective parent training group by comparing the effectiveness before and after intervention.

Children with ADHD often revert to a state of learned helplessness and are not capable of doing behavior therapy by themselves. Researchers and policy makers regard a combination therapy approach to be superior and the most economic and efficient intervention (Foster et al., 2007) than only drug therapy or behavior therapy alone. The unfortunate reality in child mental health care in

The United States and elsewhere is that few children with ADHD receive multimodal therapy (dosReis, Owens, Puccia, & Leaf, 2004) and the limitations in the number of trained professionals is an obstacles which needs to be resolved before combination therapy can be effectively implemented. How to find a modified short-term group therapy to improve parenting skill and to introduce effective behavior modification skills is very important at this present time. This study demonstrates that modified short-term group therapy is more effective in enhancing pharmacotherapy than a regular outpatient visit to the psychiatrist. The convenience factor of being 4 sessions long leads to better compliance for busy career parents and is more time efficient. Currently it is well documented that children with ADHD are often underdiagnosed and undertreated due to a lack of professional clinicians and it is difficult for

parents to receive appropriate services for their child. This kind of group intervention is effective enough to satisfy the parent's need from our present practice experience.

Significant improvement in aggression, attention problems, social problems, and externalization tendencies were all significantly associated with parenting group therapy than withdrawn behavior. The possible explanation would be that the content of the parenting group therapy effectively focuses more on acute management of childhood problematic behavior than characteristic changes, thus obvious aggression, attention problems, social problems, and externalization tendency behavior changes are noticed immediately. Another factor to mention is that most of our children with ADHD had combined subtype coexisting with other diagnostic comorbidity. The children had more severe problematic behaviors and really benefited from the enhanced treatment by such group therapy. It is worthy to highlight is that clinicians should focus more attention on children with ADHD with more severe combined subtypes and comorbidity to apply more economic and time saving practices. On the parental symptom assessment, somatization had the greatest improvement. This phenomenon may be due to the tendency of people of Asian origin to express their anxiety or stressful feeling through somatic symptoms. Also studies have also reported that parents of children with combined subtype have more somatic symptoms (Gadow et al., 2000). However, problematic children also have parents with some psychiatric symptoms due to using genetic or environment loading. Such Thus, modified parent group therapy will relieve their

parental symptoms also. One of the limitations of this study design was the small sample size which was clinic-based and involved only one general hospital therefore further large sample side trial would be needed. Other limitations are the absence of a non-disordered control group to compare to the effect of group therapy. Also, the absence of teacher ratings on assessing the ADHD children's symptoms in the study is another shortcoming. Further investigation is still needed in a future study regarding the long term effects of such group therapy.

Conclusions

In conclusion, this article is the first introduction of one kind of effective parent training group by comparing the effectiveness before and after intervention. This modified short-term parent group therapy is available, convenient, and an effective treatment to implement for modern busy parents with children with ADHD. In the future, other variations of modified short term group therapy, e.g. social skill training group, anger management group, and parental emotional control group therapy may be a valuable treatment option to further fulfill the need for behavior modification practices. Treatment compliance might be increased if such effective intervention successfully relieves parenting stress by changing ADHD children's symptoms and their own psychiatric symptoms.

Statement of Interest

None of the authors have any conflicts of interest with regards to this research.

References

- Anastopoulos, A. D., Shelton, T. L., DuPaul, G. J., & Guevremont, D. C. (1993). Parent training for attention-deficit hyperactivity disorder: its impact on parent functioning. *J Abnorm Child Psychol*, *21*(5), 581-596.
- Barlow, J., & Coren, E. (2001). Parent-training programmes for improving maternal psychosocial health. *Cochrane Database Syst Rev*(2), CD002020.
- Barlow, J., Coren, E., & Stewart-Brown, S. (2002). Meta-analysis of the effectiveness of parenting programmes in improving maternal psychosocial health. *Br J Gen Pract*, *52*(476), 223-233.
- Barlow, J., & Parsons, J. (2002a). Group-based parent-training programmes for improving emotional and behavioural adjustment in 0-3 year old children. *Cochrane Database Syst Rev*(4), CD003680.
- Barlow, J., & Parsons, J. (2002b). Group-based parent-training programmes for improving emotional and behavioural adjustment in 0-3 year old children. *Cochrane Database Syst Rev*(2), CD003680.
- Bernfort, L., Nordfeldt, S., & Persson, J. (2008). ADHD from a socio-economic perspective. *Acta Paediatr*, *97*(2), 239-245.
- Biederman, J., Faraone, S. V., & Monuteaux, M. C. (2002). Differential effect of environmental adversity by gender: Rutter's index of adversity in a group of boys and girls with and without ADHD. *Am J Psychiatry*, *159*(9), 1556-1562.
- Chacko, A., Wymbs, B. T., Wymbs, F. A., Pelham, W. E., Swanger-Gagne, M. S., Girio, E., et al. (2009). Enhancing traditional behavioral parent training for single mothers of children with ADHD. *J Clin Child Adolesc Psychol*, *38*(2), 206-218.
- Chang, H. L., & Chuang, H. Y. (2000). Adolescent hyperactivity and general psychopathology. *Psychiatry Clin Neurosci*, *54*(2), 139-146.
- Chronis, A. M., Chacko, A., Fabiano, G. A., Wymbs, B. T., & Pelham, W. E., Jr. (2004). Enhancements to the behavioral parent training paradigm for families of children with ADHD: review and future directions. *Clin Child Fam Psychol Rev*, *7*(1), 1-27.
- Chronis, A. M., Lahey, B. B., Pelham, W. E., Jr., Williams, S. H., Baumann, B. L., Kipp, H., et al. (2007). Maternal depression and early positive parenting predict future conduct problems in young children with attention-deficit/hyperactivity disorder. *Dev Psychol*, *43*(1), 70-82.
- Danforth, J. S., Harvey, E., Ulaszek, W. R., & McKee, T. E. (2006). The outcome of group parent training for families of children with attention-deficit hyperactivity disorder and defiant/aggressive behavior. *J Behav Ther Exp Psychiatry*, *37*(3), 188-205.
- Derogatis, L. R. (1975). SCL-90-R. Baltimore: Clinical Psychometric Research.
- dosReis, S., Owens, P. L., Puccia, K. B., & Leaf, P. J. (2004). Multimodal treatment for ADHD among youths in three Medicaid subgroups: disabled, foster care, and low income. *Psychiatr Serv*, *55*(9), 1041-1048.

- Dretzke, J., Davenport, C., Frew, E., Barlow, J., Stewart-Brown, S., Bayliss, S., et al. (2009). The clinical effectiveness of different parenting programmes for children with conduct problems: a systematic review of randomised controlled trials. *Child Adolesc Psychiatry Ment Health*, 3(1), 7.
- Erhardt, D., & Baker, B. L. (1990). The effects of behavioral parent training on families with young hyperactive children. *J Behav Ther Exp Psychiatry*, 21(2), 121-132.
- Foster, E. M., Jensen, P. S., Schlander, M., Pelham, W. E., Jr., Hechtman, L., Arnold, L. E., et al. (2007). Treatment for ADHD: is more complex treatment cost-effective for more complex cases? *Health Serv Res*, 42(1 Pt 1), 165-182.
- Fuh, J. L., Wang, S. J., Liu, H. C., & Wang, H. C. (1999). The caregiving burden scale among Chinese caregivers of Alzheimer patients. *Dement Geriatr Cogn Disord*, 10(3), 186-191.
- Gadow, K. D., Nolan, E. E., Litcher, L., Carlson, G. A., Panina, N., Golovakha, E., et al. (2000). Comparison of attention-deficit/hyperactivity disorder symptom subtypes in Ukrainian schoolchildren. *J Am Acad Child Adolesc Psychiatry*, 39(12), 1520-1527.
- Hamilton, S. S., & Armando, J. (2008). Oppositional defiant disorder. *Am Fam Physician*, 78(7), 861-866.
- Hautmann, C., Hanisch, C., Mayer, I., Pluck, J., & Dopfner, M. (2008). Effectiveness of the prevention program for externalizing problem behaviour (PEP) in children with symptoms of attention-deficit/hyperactivity disorder and oppositional defiant disorder--generalization to the real world. *J Neural Transm*, 115(2), 363-370.
- Hautmann, C., Hoijtink, H., Eichelberger, I., Hanisch, C., Pluck, J., Walter, D., et al. (2009). One-year follow-up of a parent management training for children with externalizing behaviour problems in the real world. *Behav Cogn Psychother*, 37(4), 379-396.
- Hollingshead, A. (1965). *Two-factor index of social position*. New Haven, CT: Yale University, Department of Sociology.
- Huang, H. L., Chao, C. C., Tu, C. C., & Yang, P. C. (2003). Behavioral parent training for Taiwanese parents of children with attention-deficit/hyperactivity disorder. *Psychiatry Clin Neurosci*, 57(3), 275-281.
- Jensen, P. S., Arnold, L. E., Swanson, J. M., Vitiello, B., Abikoff, H. B., Greenhill, L. L., et al. (2007). 3-year follow-up of the NIMH MTA study. *J Am Acad Child Adolesc Psychiatry*, 46(8), 989-1002.
- Jensen, P. S., Hinshaw, S. P., Swanson, J. M., Greenhill, L. L., Conners, C. K., Arnold, L. E., et al. (2001). Findings from the NIMH Multimodal Treatment Study of ADHD (MTA): implications and applications for primary care providers. *J Dev Behav Pediatr*, 22(1), 60-73.
- Liu YC, L. S., Shang CY, Lin Ch, Tu C, Gau SS. (2006). Norm of the Chinese Version of the Chinese version of the Swanson, Nolan, and Pelham, version IV scale for ADHD. *Taiwanese J psychiatry*, 20(4): 290-304.

- McKee, T. E., Harvey, E., Danforth, J. S., Ulaszek, W. R., & Friedman, J. L. (2004). The relation between parental coping styles and parent-child interactions before and after treatment for children with ADHD and oppositional behavior. *J Clin Child Adolesc Psychol*, *33*(1), 158-168.
- MTA. (1999). A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder. The MTA Cooperative Group. Multimodal Treatment Study of Children with ADHD. *Arch Gen Psychiatry*, *Dec*;56(12):1073-86.
- Myren, K. J., Thernlund, G., Nysten, A., Schacht, A., & Svanborg, P. (2010). Atomoxetine's effect on societal costs in Sweden. *J Atten Disord*, *13*(6), 618-628.
- Pisterman, S., McGrath, P., Firestone, P., Goodman, J. T., Webster, I., & Mallory, R. (1989). Outcome of parent-mediated treatment of preschoolers with attention deficit disorder with hyperactivity. *J Consult Clin Psychol*, *57*(5), 628-635.
- Pouretamad, H. R., Khooshabi, K., Roshanbin, M., & Jadidi, M. (2009). The effectiveness of group positive parenting program on parental stress of mothers of children with attention-deficit/hyperactivity disorder. *Arch Iran Med*, *12*(1), 60-68.
- Salbach, H., Lenz, K., Huss, M., Vogel, R., Felsing, D., & Lehmkuhl, U. (2005). [Treatment effects of parent management training for ADHD]. *Z Kinder Jugendpsychiatr Psychother*, *33*(1), 59-68.
- Schmidt, S., & Petermann, F. (2009). Developmental psychopathology: Attention Deficit Hyperactivity Disorder (ADHD). *BMC Psychiatry*, *9*, 58.
- Scott, S., Sylva, K., Doolan, M., Price, J., Jacobs, B., Crook, C., et al. (2010). Randomised controlled trial of parent groups for child antisocial behaviour targeting multiple risk factors: the SPOKES project. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *51*(1), 48-57.
- Svanborg, P., Thernlund, G., Gustafsson, P. A., Hagglof, B., Poole, L., & Kadesjo, B. (2009). Efficacy and safety of atomoxetine as add-on to psychoeducation in the treatment of attention deficit/hyperactivity disorder: a randomized, double-blind, placebo-controlled study in stimulant-naive Swedish children and adolescents. *Eur Child Adolesc Psychiatry*, *18*(4), 240-249.
- Weinberg, H. A. (1999). Parent training for attention-deficit hyperactivity disorder: parental and child outcome. *J Clin Psychol*, *55*(7), 907-913.
- White, K. M., & Wellington, L. (2009). Predicting participation in group parenting education in an Australian sample: the role of attitudes, norms, and control factors. *J Prim Prev*, *30*(2), 173-189.
- Yang, H. J., Soong, W. T., Chiang, C. N., & Chen, W. J. (2000). Competence and behavioral/emotional problems among Taiwanese adolescents as reported by parents and teachers *J Am Acad Child Adolesc Psychiatry*, *39* 232-239.