JCN Journal of Clinical Nursing

Journal of Clinical Nursing

Relationship between attention deficit hyperactive disorder symptoms and perceived parenting practices of school-age children

Dong Hee Kim and Il Young Yoo

Aims and objectives. To examine the relationship between the perception on parenting practices and attention deficit hyperactivity disorder (ADHD) symptoms in school-age children.

Background. Psychosocial attention deficit hyperactivity disorder intervention approaches emphasise environmental risk factors at the individual, family and community level. Parenting variables are strongly related to attention deficit hyperactivity disorder symptom severity.

Design. A cross-sectional questionnaire survey.

Methods. The participants were 747 children and their parents in two elementary schools. The instruments used were Korean Conners Abbreviated Parent Questionnaire and Korean version Maternal Behavior Research Instrument (measuring four dimensions of parenting practices: affection, autonomy, rejection, control). Descriptive and logistic regression analyses were performed.

Results. The rejective parenting practice was statistically significant in logistic regression controlling gender and age of children, family structure, maternal education level and socio-economic status. The rejection parenting is associated with attention deficit hyperactivity disorder symptoms in children (OR = 1·356).

Conclusions. These results suggest the importance of specific parenting educational programmes for parents to prevent and decrease attention deficit hyperactivity disorder symptoms. It would be more effective rather than focusing only on the child's attention deficit hyperactivity disorder symptoms, developing educational programmes for parents to prevent rejection parenting practice and improve parenting skills in the family system.

Relevance to clinical practice. When developing a treatment programme for children with attention deficit hyperactivity disorder, healthcare providers should consider not only the child's attention deficit hyperactivity disorder symptoms, but also the parenting practices. Comprehensive interventions designed to prevent rejection and improve parenting skills may be helpful in mitigating attention deficit hyperactivity disorder symptoms.

Key words: attention deficit hyperactivity disorder, parenting skill improvement, perceived parenting practice

Accepted for publication: 24 June 2012

Introduction

Attention deficit hyperactivity disorder (ADHD) is one of the most common disorders in paediatric psychiatry setting. It is characterised by developmentally inappropriate high levels of inattention, hyperactivity and impulsive behaviour and affects 2–7% of school-age children across different contexts and cultural settings (Cho & Shin 1994, Scahill & Schwab-Stone 2000, Yang *et al.* 2006). The symptoms of ADHD impair functioning across multiple domains, including home, school and social relationships. Some studies have shown that affected children are more likely to have lower grades in school, be suspended or expelled from school (Schubiner *et al.* 2000), commit motoring offences, abuse legal and illicit substances, have poor social relationships and have lower occupational status (Johnston & Mash 2001).

Authors: *Dong Hee Kim*, RN, PhD, Associate Professor, Sungshin University College of Nursing, Seoul; *Il Young Yoo*, RN, PhD, Professor, Yonsei University College of Nursing, Seoul, Korea

Correspondence: Il Young Yoo, Professor, Yonsei University College of Nursing, 50 Yonsei-ro, Seodaemun-gu, Seoul 120-752, Korea. Telephone: +82 2 2228 3273.
E-mail: iyoo@yuhs.ac

Accurate diagnosis of ADHD and treatment is important, and several psychostimulants are known to be effective in reducing ADHD core symptoms and fostering improvement in behaviour, learning, executive functioning and social interactions. Despite these gains, the use of psychostimulants in children remains controversial and is limited by high rates of discontinuation (Modesto-Lowe *et al.* 2008). Parents may question their long-term safety and addictive properties or express concerns regarding their side-effect profile (Olaniyan *et al.* 2007). However, many children with ADHD symptoms are not diagnosed for different reasons, or symptoms are not severe enough to be diagnosed as true ADHD and may seek other interventions such as behavioural or environmental modification (Evans *et al.* 2008, Heriot *et al.* 2008).

Psychosocial approaches to treat ADHD symptoms include interventions at the individual, family and community levels (Jensen *et al.* 2001, Lloyd *et al.* 2010). It is known that children with ADHD symptoms have difficulties in relationships with their parents. Many researchers reported that children with ADHD are less compliant and more negative in parent–child interactions, and their parents use more commands, more negative statements and less praise (Johnston & Mash 2001, Waschbusch 2002). Negative parenting is unlikely to be the ultimate cause of ADHD (Barkley *et al.* 1992); however, previous studies suggested that parenting variables are closely related to exacerbations or continuation of ADHD symptoms (Biederman *et al.* 1995, 1996). Another words, the problematic parenting does not cause ADHD, but it can negatively affect ADHD symptoms. Early assessment and intervention about parenting practices are very important in terms of improving ADHD symptoms of a child.

However, previous results are inconsistent, and study interpretation has been hampered by methodological limitations. An important issue regarding the parenting practice concerns the multidimensionality of parenting. In general, there is an overall agreement that there are several dimensions of parenting relevant to children's behaviour, and it is important to examine these dimensions as unique predictors, instead of studying them in isolation or combining the dimensions (Aunola & Nurmi 2005).

Another limitation in the previous studies examining parenting issues is that data were collected by reports from parents only. Kwon's (2009) study showed that parents' reports and children's reports on parenting practice did not have significant correlation. To develop interventions to promote effective parenting practice, it is important to assess children's perception on parenting practice rather than report from parents only.

This study attempted to examine the relationship between each dimension of parenting practice and children's ADHD symptoms. Parenting practice was measured by collecting data directly from school-age children, and children's behaviour was measured by collecting data from parents. By identifying significant dimensions of parenting practice, more effective programme for parenting education can be developed, and the vicious cycle of problematic parenting practice, exacerbation of ADHD symptoms and more problematic parenting practice can be stopped.

Methods

Sample and setting

Two public elementary schools in Seoul metropolitan area were selected by convenient sampling method. All children and their parents of fourth to sixth grade students comprised the study population. Among 1027 child–parent pairs who were eligible for this study, 747 pairs (72·7%) participated.

Data collection procedure

After obtaining the approval from Institutional Review Board at Yonsei University Health System, the elementary schools in the research area were approached, and the first two schools agreeing to participate in the study were selected. Written consents for participation were obtained from parents and children. The self-reported survey questionnaire was given to the parents and children by take-home mail. The direction to fill out questionnaire and researcher's email address and telephone number was attached on questionnaire. Parents filled out demographic variables and Korean Conners Abbreviated Parent Questionnaire (K-ACRS), and children filled out parenting practice. Data collection was carried out from 1 October to 30 November 2006. A total of 759 questionnaires were obtained, and final analysis was carried out with 747 questionnaires as 12 questionnaires had missing items.

Measurement tools

Demographic characteristics

Demographic variables included child's age, child's gender, parents' age, marital status, maternal educational level, economic status and family structure.

ADHD symptoms

The screening of ADHD symptom was measured with Korean Conners Abbreviated Parent Questionnaire (K-ACRS),

a widely used and accepted clinical and research instrument in Korea (Jang & Ha 2009,). It has 10 items on a 0–3 scale, with 0 being 'never' and 3 being 'very much'. It is a self-administering instrument that assesses behaviours of children age between 7 and 12 years. The cut-off score is 16 points, and a score over 16 is indicative of ADHD (Oh & Lee 1989). Cronbach's α score for this study was 0·86.

Perceived parenting practice

Children's perception on parenting practice was measured with Lee's (1983) modified version of Shaefer's Maternal Behavior Research Instrument. Cronbach's α was 0·93 at the time of modification. The 48-item questionnaire includes four dimensions of parenting practice; affection, autonomy, rejection and control with 12 items on each dimension. This tool was developed for children's self-report on perceived parenting practices. Affection means the extent of warmth, responsiveness, trust, support and positive feedback. Autonomy means acceptance and development of autonomy. Rejection means indifference, verbal abuse and negative emotion directed towards the child. Control is the denial of the child's autonomy, restriction of behaviour and a strict parental approach. All items were measured on a 5-point scale. The scores for each dimension range from 12 to 60. Cronbach's α scores for each dimension for this study were 0·85–0·88.

Statistical analyses

Descriptive analysis was carried out to examine the general characteristics of the participants. The relationship between the parenting practice and child's ADHD symptom was assessed using logistic regression.

Results

Demographic characteristics of participants

The average age of children was 10·34 years; 42% was boys, and 58% was girls. Fifty-nine per cent of mothers were high school graduates, and the majority came from nuclear family households. Most mothers reported in middle class of economic status. In this study, 3·5% mothers reported their children showed ADHD symptoms score 16 or higher (Table 1).

Table 1 Demographic characteristics of study subjects (n = 747)

Characteristic	n (%)	Mean ± SD	Range (year)
Gender of a child			
Male	314 (42·0)		
Female	433 (58·0)		
Age of a child		10·34 ± 1·23	7–15
Father's age		44·27 ± 4·57	34–60
Mother's age		39·34 ± 3·16	32–53
Family structure			
Extended	196 (26·3)		
Nuclear	551 (73·7)		
Paternal education			
Middle school or less	24(3·2)		
High school	131(17·5)		
College or more	592(79·3)		
Maternal education			
Middle school or less	68 (9·1)		
High school	200 (26·8)		
College or more	479 (64·1)		
SES			
High	208 (27·9)		
Middle	405 (54·2)		
Low	134 (17·9)		
ADHD			
>16	26 (3·5)		
<16	721 (96·5)		

The perceived parenting score

Affection scores were between 17 and 59, with an average of 46·44. Autonomy scores were between 18 and 52, with an average of 40·89. Rejection scores were between 19 and 56, with an average of 33·81. Control scores were between 16 and 59, with an average of 45·00 (Table 2).

The relationship between perceived parenting practice and ADHD symptoms

The affection, autonomy, control scores of parenting practice did not show statistically significant relationship with ADHD symptoms. The rejective parenting practice was statistically significant in logistic regression after controlling gender and age of children, family structure, educational level of parents and socio-economic status. The odds ratio (OR) of ADHD symptoms of children perceiving their parenting practice as rejective was 1·356 (confidence interval: 1·136–1·618) (Table 3).

Table 2 Perceived parenting score (n = 747)

Variable	Mean	Mode	Median	SD	Range
Affection	46·44	45	47	6·07	17–59
Autonomy	40·89	35	34	4·73	18–52
Rejection	33·81	40	41	5·27	19–56
Control	45·00	43	45	5·47	16–59

Table 3 The relations between perceived parenting practice and ADHD symptoms

	Parenting practice affection OR (95% CI)	Autonomy OR (95% CI)	Rejection OR (95% CI)	Control OR (95% CI)
ADHD	0·894 (0·793–1·009)	0·969 (0·842–1·115)	**1·356 (1·136–1·618)**	1·017 (0·896–1·154)

The OR was adjusted for gender, age, family structure, maternal education level, economic status.

Discussion

Parents of children with ADHD symptoms are important source of external feedback, but these children tend to have more fragile relationships with their parents. Parenting practice has been considered the important factor in the aggravation of ADHD symptoms (Marshall *et al.* 1990, Rothbaum & Weisz 1994, Ryu 2008). The present study was designed to increase understanding of the relationship between children's perception of their parenting practice and ADHD symptoms.

In this study, 3·5% of participants had 16 point or higher K-ACRS, which can be classified as having significant level of ADHD behaviour. This is within the average percentage of Korea statistics that states 2–7 per cent of school-age children have ADHD (Yang *et al.* 2006). However, considering none of the participants are known to have a definite diagnosis of ADHD, it can be considered high. According to the result of this showed that children with ADHD symptoms perceived their parents more rejective, but affection, autonomy and control dimensions of parenting practice did not have statistical significance. These findings agree with the results of the previous studies which stated that problematic parenting could be one of the important factors related to child's ADHD symptoms (Morrell & Murray 2003, Seipp & Johnston 2005).

Children with ADHD symptoms often ignore parental requests, fight with siblings and peers, disturb neighbours and elicit negative reactions from teachers. These behaviours of children with ADHD symptoms can lead to difficulty in parenting practice, which may result in rejection. The parents of children with ADHD symptoms may have difficulty in using responsive parenting style owing to their child's disorganised and poorly regulated behaviours (Johnston & Mash 2001). These parents tend to be critical of their children and give more verbal direction, repeated commands, verbal reprimands and correction (Lindahl 1998, Alizadeh *et al.* 2007, Modesto-Lowe *et al.* 2008). Also, parents of children with ADHD symptoms have high level of childrearing stress and require a great deal of patience. They also frequently experience social distress related to their child's disruptive behaviour in various settings (Johnston & Mash 2001, Cunningham 2007). These stress that the parents experience can manifest as negative effects on the parenting practice for children. Increased abusive behaviour and negative emotions like rejection or hostility have been reported among parents of children with ADHD compared to children in control group (Shaw *et al.* 2001, Modesto-Lowe *et al.* 2008). Rejective parenting practice can lead children to develop negative self-identity, in turn, may increase emotional unstability and vulnerability (Nolan *et al.* 2003, Schneider *et al.* 2003, Akse *et al.* 2004, Brotman *et al.* 2009). These psychological problems of children can have a great impact on children's overall development as well as ADHD symptoms.

Children's ADHD symptoms create a pattern of dysfunctional parenting practices, placing additional stresses on both children and their parents, which lead to further deterioration of ADHD symptoms. ADHD symptoms and rejective parenting practice go through a vicious cycle because they influence each other. So, it is necessary to develop interventions to help parents to reduce rejective parenting practice and improve child–parent relationship. Furthermore, it was reported that the Korean parents use more rejection–restriction parenting practice than parents of other countries (Lim & Hyun 2002, Kim 2005, Pham *et al.* 2007). For a long time under Confucian influence, it is important for parents to teach and rear children to obey and respect their parents in Korea. Children are required to be polite and quite in public places. However, many young parents employ western style parenting practice, and weakened Confucian influence changed the parenting practice. Parents do not know effective parenting style, especially parenting method of children with behaviour problems. Furthermore, there are more nuclear families in Korea than ever, which means there is no role model for parenting practice for young parents. Also, extended families may promote a warm parenting practice, lots of contact, reduce parental stress and supportive relationships with grandparents (Hwang 2000). It is possible that frustrated parents of children with ADHD symptoms who lack family support use more rejective parenting practice than the parents of children without ADHD symptoms.

Another point is that the positive dimensions of parenting practice, such as affection and autonomy, did not show

significant relationship with children's ADHD symptoms. This may indicate that negative parenting is more influential to children with ADHD symptoms. As four dimensions of parenting practices simultaneously included in the analyses, this implies that the impact of perceived negative parenting practice may override the association of any perceived positive parenting practices on children with ADHD symptoms. Because of this result, it is suggested that rejective parenting practice may be an important target of intervention. As parenting practice is multidimensional concept, it is not easy to develop a specific programme targeting one dimension. Thus, it will be more effective to develop educational programmes to reduce rejective parenting practice while encouraging their positive parenting practices.

These results suggest that further studies are necessary to understand the importance of each domain of parenting practices as well as interactions with other factors related to the aetiology of ADHD symptoms. In the meantime, these findings point to nursing interventions for both parents and their children.

Conclusions

In this study, children with ADHD symptoms perceived parenting practice as more rejective than their counterparts. This study has some limitations. First, the cross-sectional nature of the study requires careful interpretation of the results. Because of this limitation, it is difficult to state the causal relationship between parenting practice and behaviour of children. It is suggested that a study employing longitudinal data. Second, there is a potential bias from unmeasured confounders such as genetic, personality and family stress, which are ubiquitous problems for most observational studies (Faraone *et al.* 1995, DuPaul *et al.* 2001, Salgado *et al.* 2009). Having an acceptable sample size, this problem has minimised, but some of these factors are important variables to be considered in parenting or ADHD studies. Third, another important limitation is related to the procedure of data collection. As a parent and a child filled out the questionnaires at home, it is possible to have interaction and interruption from each other. Finally, schools were selected by convenient sampling method may limit the generalisability of the study findings.

However, despite these limitations, this study shows clearly that the children with ADHD symptoms perceived their parents as more rejective, and this may start the viscous cycle of more ADHD symptoms. Thus, early assessment and intervention with parenting difficulties may offset some of the negative outcomes of the development of children with ADHD symptoms.

Relevance to clinical practice

Healthcare providers can play a valuable role in assessment, referral, management and treatment monitoring for ADHD symptoms in the clinical setting, school or community. Among their roles, the intervention to reduce development of ADHD symptoms is important. This article identified a specific type of parenting practice, which is significantly related to children with ADHD symptoms. Rejective parenting practice showed significantly more ADHD symptoms of children. When developing a treatment programme for children with ADHD or prevention programme for ADHD high risk group, healthcare providers should consider not only the child's ADHD symptoms, but also the parenting practices. Comprehensive intervention programmes designed to prevent rejective parenting practice and improve parenting skills may be helpful in mitigating ADHD symptoms.

Acknowledgements

This work was supported by the Sungshin Women's University Research Grant of 2010.

Contributions

Study design: DHK, IYY; data collection and analysis: DHK and manuscript preparation: DHK, IYY.

Conflict of interest

There is no actual or potential conflict of interest including any financial, personal or other relationship with other people or organisations that could inappropriately influence, or be perceived to influence, our work.

Reference

Akse J, Hale WW, Engels RC, Raaijmakers QA & Meeus WH (2004) Personality, perceived parental rejection and problem behavior in adolescence. *Social Psychiatry and Psychiatric Epidemiogy* **39**, 980–988.

Alizadeh H, Applequist KF & Coolidge FL (2007) Parental self-confidence, parenting styles, and corporal punishment in families of ADHD children in Iran. *Child Abuse & Neglect* **31**, 567–572.

Aunola K & Nurmi JE (2005) The role of parenting styles in children's problem behavior. *Child Development* **76**, 1144–1159.

Barkley RA, Anastopoulos AD, Guevremont DC & Fletcher KE (1992) Adolescents with attention deficit hyperactivity disorder: mother-adolescent interactions, family beliefs and conflicts, and maternal psychopathology. *Journal of Abnormal Child Psychology* **20**, 263–288.

Biederman J, Milberger S, Faraone SV, Kiely K, Guite J, Mick E, Ablon JS, Warburton R, Reed E & Davis SG (1995) Impact of adversity on functioning and comorbidity in children with attention-deficit hyperactivity disorder. *Journal of the American Academy of Child & Adolescent Psychiatry* **34**, 1495–1503.

Biederman J, Faraone S, Milberger S, Curtis S, Chen L, Marrs A, Ouellette C, Moore P & Spencer T (1996) Predictors of persistence and remission of ADHD into adolescence: results from a four-year prospective follow-up study. *Journal of the American Academy of Child and Adolescent Psychiatry* **35**, 343–351.

Brotman LM, O'neal CR, Huang KY, Gouley KK, Rosefelt A & Shrout PE (2009) An experimental test of parenting practices as a mediator of early childhood physical aggression. *Journal of Child Psychoogy and Psychiatry* **50**, 235–245.

Cho SC & Shin YO (1994) Prevalence of disruptive behavior disorders. *Korean Academy of Child and Adolescent Psychiatry* **5**, 141–149.

Cunningham CE (2007) A family-centered approach to planning and measuring the outcome of interventions for children with attention-deficit/hyperactivity disorder. *Journal of Pediatric Psychology* **32**, 676–694.

DuPaul GJ, McGoey KE, Eckert TL & VanBrakle J (2001) Preschool children with attention-deficit/hyperactivity disorder: impairments in behavioral, social, and school functioning. *Journal of the American Academy of Child and Adolescent Psychiatry* **40**, 508–515.

Evans SW, Schultz BK & Sadler JM (2008) Psychosocial Interventions Used to treat children with ADHD. *Journal of Psychosocial Nursing* **46**, 49–57.

Faraone SV, Biederman J, Chen WJ, Milberger S, Warburton R & Tsuang MT (1995) Genetic heterogeneity in attention-deficit hyperactivity disorder (ADHD): gender, psychiatric comorbidity, and maternal ADHD. *Journal of Abnormal Psychology* **104**, 334–345.

Heriot SA, Evans IM & Foster TM (2008) Critical influences affecting response to various treatments in young children with ADHD: a case series. *Child: Care Health and Development* **34**, 121–133.

Hwang HJ (2000) The effects of family structures on children's emotional and behavioural problems. *Journal of Kyunggi University*, **44**, 5–14.

Jang EK & Ha EH (2009) The diagnostic utility of the CBCL 1.5-5 for ADHD preschoolers. *The Korean Journal of Clinical Psychology* **28**, 205–221.

Jensen PS, Hinshaw SP, Swanson JM, Greenhill LL, Conners CK, Arnold LE, Abikoff HB, Elloitt G, Hechtman L, Noza B, March JS, Newcorn JH, Severe JB, Vitiello B, Wells K & Wigal T (2001) Findings from the NIMH Multimodal Treatment Study of ADHD (MTA): implications and applications for primary care providers. *Journal of Developmental and Behavioral Pediatrics* **22**, 60–73.

Johnston C & Mash EJ (2001) Families of children with attention-deficit/hyperactivity disorder: review and recommendations for future research. *Clinical Child and Family Psychology Review* **4**, 183–207.

Kim E (2005) Korean American parental control: acceptance or rejection? *ETHOS: Journal of the Society for Psychological Anthropology*, **33**, 347–366.

Kwon MK (2009) Comparison of child-rearing attitudes of parents and problem behavior of children as perceived by parents and children. *Journal of Korean Academy Child Health Nursing* **15**, 164–170.

Lee WY (1983) *The Relationship of Mother's Educational Views and Child-Rearing Attitudes to Child Development*. Ewha Women's University, Seoul.

Lim YS & Hyun OK (2002) Comparative Study of Korean and YanBian Korean-Chinese mother's parental role satisfaction and child-rearing practices. *Journal of the Korean Home Economics Association* **40**, 23–37.

Lindahl KM (1998) Family process variables and children's disruptive behaviour problems. *Journal of Family Psychology* **12**, 420–436.

Lloyd A, Brett D & Wesnes K (2010) Coherence training in children with attention-deficit hyperactivity disorder: cognitive functions and behavioral changes. *Alternative Therapies in Health and Medicine* **16**, 34–42.

Marshall VG, Longwell L, Goldstein MJ & Swanson JM (1990) Family factors associated with aggressive symptomatology in boys with attention deficit hyperactivity disorder: a research note. *Journal of Child Psychology & Psychiatry* **31**, 629–636.

Modesto-Lowe V, Danforth JS & Brooks D (2008) ADHD: does parenting style matter? *Clinical Pediatrics (Phila)* **47**, 865–872.

Morrell J & Murray L (2003) Parenting and the development of conduct disorder and hyperactive symptoms in childhood: a prospective longitudinal study from 2 months to 8 years. *Journal of Child Psychology and Psychiatry* **44**, 489–508.

Nolan SA, Flynn C & Garber J (2003) Prospective relations between rejection and depression in young adolescents. *Journal of Personality and Social Psychology* **85**, 745–755.

Oh KJ & Lee HR (1989) Assessment of ADHD with Abbreviated Conners Rating Scale. *Korean Journal of Clinical Psychology* **8**, 135–142.

Olaniyan O, dosReis S, Garriett V, Mychailyszyn MP, Anixt J, Rowe PC & Cheng TL (2007) Community perspectives of childhood behavioral problems and ADHD among African American parents. *Ambulatory Pediatrics* **7**, 226–231.

Pham PM, Lee J & Shin I (2007) A cross-cultural study on parenting attitudes of Vietnamese and Korean parents. *The Journal of Child Education* **16**, 235–252.

Rothbaum F & Weisz JR (1994) Parental Caregiving and child externalizing behavior in nonclinical samples: a meta-analysis. *Psychological Bulletin* **116**, 55–74.

Ryu MI (2008) *The Effect Parent's Child Raising Attitude has on the Children*

Propensity for ADHD. Dongguk University, Seoul.

Salgado CA, Bau CH, Grevet EH, Fisher AG, Victor MM, Kalil KL, Sousa NO, Garcia CR & Belmonte-de-Abreu P (2009) Inattention and hyperactivity dimensions of ADHD are associated with different personality profiles. *Psychopathology* **42**, 108–112.

Scahill L & Schwab-Stone M (2000) Epidemiology of ADHD in school-age children. *Child and Adolescent Psychiatric Clinics of North America* **9**, 541–555.

Schneider WJ, Cavell TA & Hughes JN (2003) A sense of containment: potential moderator of the relation between parenting practices and children's externalizing behaviors. *Developmental and Psychopathology* **15**, 95–117.

Schubiner H, Tzelepis A, Milberger S, Lockart NM, Kruger MKelley BJ & Schoener EP (2000) Prevalence of attention-deficit/hyperactivity disorder and conduct disorder among substance abusers. *The Journal of Clinical Psychiatry* **61**, 244–251.

Seipp CM & Johnston C (2005) Mother-son interactions in families of boys with Attention-Deficit/Hyperactivity Disorder with and without oppositional behavior. *Journal of Abnormal Child Psychology* **33**, 87–98.

Shaw DS, Owens EB, Giovannelli J & Winslow EB (2001) Infant and toddler pathways leading to early externalizing disorders. *Journal of the American Academy of Child and Adolescent Psychiatry* **40**, 36–43.

Waschbusch DA (2002) A meta-analytic examination of comorbid hyperactive-impulsive-attention problems and conduct problems. *Psychoogical Bulletin* **128**, 118–150.

Yang SJ, Jung SS & Hong SD (2006) Prevalence and correlates of attention deficit hyperactivity disorder: school-based mental health services in Seoul. *Journal of the Korean Neuropsyiatric association* **45**, 69–76.