

• 行为问题研究 •

【编者按】 国内外研究表明,儿童单项行为异常的发生率高达30%~50%,行为综合征的发生率为8%~20%。家长对存在的问题虽感到困扰,但不能及时重视,采取积极措施。儿童行为问题需早期识别、重视以及治疗,以免对患儿身心健康产生较大影响。本期以“儿童行为障碍”为问题点出发,探讨多种行为障碍,如注意缺陷多动障碍、抽动障碍的治疗、预后以及影响因素,并分析遗传与环境因素对青少年问题行为的共同影响。

儿童注意缺陷多动障碍预后及其影响因素研究进展

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【摘要】 儿童注意缺陷多动障碍(ADHD)不仅存在于儿童期,大约50%以上的患儿成年后仍存在明显的症状,如果ADHD症状控制欠佳,会持续对患儿及其家庭产生不利影响,阻碍患儿的学业、社会和情感功能和正常的行为发展,造成学习成绩差、职业地位低、滥用药物危险性增加和犯罪等不良后果。严重影响患儿的社会功能和生活质量,严重者还会出现精神障碍或人格障碍。儿童期ADHD症状越重,共患其他疾病,治疗情况,不利的家庭和社会因素及不良的生物遗传学因素等,均与ADHD持续到成年期的不良预后有关。本文主要就ADHD成年期预后及其影响因素研究进展进行阐述和分析。

【关键词】 注意力缺陷障碍伴多动; 儿童; 预后; 影响因素分析

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Recent Advances in the Prognosis and Influencing Factors of Attention Deficit Hyperactivity Disorder in Children

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【Abstract】 Over 50% of the persons who suffer from attention deficit hyperactivity disorder (ADHD) in childhood, still have obvious ADHD symptoms in adulthood. If the symptoms are poorly controlled, they can continue to exert negative impacts on the patient and his family, hinder the patient's academic, social functioning and emotional functioning and behavioral normal development, resulting in poor academic performance, low occupational status, increased risk of drug abuse, and even committing a crime. ADHD seriously impairs the patient's social functioning and quality of life, even leads to mental or personality disorders. Many factors, such as severe ADHD symptoms in childhood, comorbidities, inappropriate treatment, poor family and social environments, and biogenetic causes are associated with the poor prognosis of the disease in adulthood. This article mainly expounds and analyzes recent advances in the prognosis of childhood-onset ADHD in adulthood and influencing factors.

【Key words】 Attention deficit disorder with hyperactivity; Child; Prognosis; Root cause analysis

注意缺陷多动障碍(attention deficit hyperactivity disorder, ADHD)是儿童期最常见的行为障碍^[1]。其病因复

杂,核心症状是注意缺陷、多动和冲动。ADHD会对儿童产生明显的功能性影响,如导致学习困难、成绩较差、与家人和同龄儿童关系紧张及缺乏自尊、运动协调障碍。我国学龄前儿童ADHD的患病率为4.31%~5.83%^[2]。20世纪60年代到70年代初期,医学界一直将ADHD看作是只局限于儿童的疾病,但近几十年来,大量研究资料表明,儿童期ADHD可持续至青少年期,甚至是成年期^[3-5]。2000年,美国精神医

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学会精神疾病诊断与统计手册第四版(修订版)(Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision, DSM-IV-TR)中正式承认了成年人ADHD的存在^[6]。研究表明,儿童期ADHD中30%~70%到了成年期仍存在明显的症状,这使得患者在工作、学习、家庭生活及人际关系等诸多方面均出现明显问题^[3, 7-9],有些甚至可以发展为成年期人格障碍或其他更严重的精神障碍^[3, 10]。BIEDERMAN等^[10]的10年随访研究结果也表明,ADHD患儿组成年期符合DSM-IV中ADHD诊断标准者达到58%。儿童期ADHD持续至成年期的比例如此之高,但就目前来看,影响儿童期ADHD预后的因素尚不十分明确^[11],一般认为与生物学因素、疾病临床特征、治疗相关因素和家庭环境因素等有关^[12]。

1 ADHD的成年期预后

ADHD的临床症状会随年龄增长而发生变化,不同维度的症状变化也不一致,不同亚型的患儿预后也有差异。儿童ADHD到成年后的表现可以归纳为以下3种情况。

1.1 成年后社会功能良好 一般而言,ADHD患儿随年龄增长,神经系统发育逐渐完善,冲动等症状会逐渐减轻乃至消失^[13]。这部分患儿ADHD的临床症状在成年期之前完全缓解,其能够很好地适应社会生活。ADHD的临床表现只是一组一过性的症状。这些成年后社会功能良好的ADHD患儿仅占15%~30%^[11]。

1.2 成年后仍存在注意力不集中、冲动症状和社会功能问题 这部分患儿成年后会残留注意力不集中和冲动的症状,而且社会功能问题会更加明显,社会适应能力差。例如人际交往差、学习工作困难、冲动易激惹等。这部分患儿占50%~60%^[12]。

与多动、冲动症状相比,注意缺陷症状更容易持续到成年期^[14]。成年ADHD的注意缺陷症状表现形式转化为做事拖延以及时间管理差,而多动症状转化为内心不安宁,冲动症状转化为对于挫折的耐受性差^[15-16]。

这些症状持续到成年期的ADHD患者,其社会功能各个方面均会出现持续性的损害。受症状的影响,其通常受教育程度低,经常留级或不能毕业^[2, 17]。即使工作以后,在公司常职位较低,工作业绩差^[17-18]。人际关系方面,缺少亲密朋友,家庭关系不和谐,离婚率也较高^[17]。

大部分观察性研究显示,患有ADHD的成年人具有一定的共同特征,其平时无法平静下来,容易觉得无聊,因此不断寻求新鲜刺激,容易出现家庭危机,对他人的情感判断迟钝等。其会比正常人经历更多工作上的挫折、社交挫败、自卑、滥用药物等^[17-19]。

WEISS等^[17]曾对104例ADHD患儿进行了长达15年的追踪观察。结果15年后其中61例平均年龄达到25岁,有39例(64%)仍存在多动、冲动、注意力集中困难等症状,22例症状严重程度属中重度。并且与对照组相比,其学历偏低,车祸发生率更高,社会适应能力更差,人格上也更为幼稚。

需要注意的是并非所有的成年ADHD均起病自儿童期,近期有研究对新诊断的成年ADHD患者进行回顾性分析,结果发现有部分患者在儿童期并不符合ADHD的诊断标准^[20]。

1.3 成年后出现明显的精神问题和/或人格障碍 这部分患儿占10%~15%^[21]。研究表明,ADHD患儿成年期患精神障碍的危险性增加,包括反社会型人格障碍、成瘾性障碍、情感障碍和焦虑障碍等^[22],其中以情感障碍和焦虑障碍最为常见^[10, 23-24]。ADHD患儿在成年后发生双相情感障碍的比例为38%^[23]。此外,18%~24%的ADHD患儿在成年期出现反社会型人格障碍^[2, 10, 17-18],在这部分患者中有10%~20%可诊断为药物滥用^[18]。

2 影响预后的因素

虽然目前影响ADHD预后的因素尚不十分明确^[11],但众多研究表明,儿童ADHD症状持续到成年期是多种因素共同作用的结果,其中包括遗传因素、共患病因素、家庭环境因素、治疗因素等^[11, 25]。

2.1 生物学因素 ADHD有较强的遗传学因素,平均遗传度为75%^[26]。目前研究认为遗传因素不但是ADHD重要的发病原因^[27-28],也是其症状持续存在的主要原因^[29-31],在疾病的发展过程中决定了症状的稳定性和演变情况。关于易感基因的研究发现,多巴胺转运体基因40 bp可变串联重复序列9/10基因型是ADHD症状持续存在,以及家庭、教育和职业功能不良的预测因素^[32];儿茶酚胺氧化酶(catechol-O-methyltransferase, COMT)基因Val/Met多态性与以后出现品行障碍(conduct disorder, CD)及反社会型人格障碍相关^[29, 33-34]。单胺氧化酶(monoamine oxidase, MAO)基因变异程度与反社会行为有关。研究显示,家系中有反社会行为的亲属,其ADHD患病率远高于对照^[29]。

2.2 儿童期ADHD的严重程度 儿童期症状的严重程度与成年期ADHD存在密切相关^[35]。有研究显示,儿童期ADHD的严重程度是青少年早期出现物质滥用的主要相关因素^[36],也是成年后出现反社会型人格障碍的主要预测因素^[37]。一项双生子回顾性研究显示,多动症状的条目数越多,此后出现反社会型人格障碍及犯罪行为的风险越高^[38]。

2.3 共患疾病 破坏性行为障碍(disruptive behavior disorder, DBD)是儿童期ADHD最常见的共患疾病,包括CD和对立违抗障碍(oppositional defiant disorder, ODD),是成年后症状持续存在的重要预测因素^[39]。共患DBD的ADHD患儿超过半数预后不佳。共患ODD的ADHD患儿与单纯ADHD患儿相比,成年期反社会型人格障碍、乙醇滥用、犯罪行为、学业困难等发生率更高,其结局更差,存在更多的社会问题^[40]。SIMONOFF等^[38]及WASCHBUSCH等^[41]研究发现,共患ODD的患儿,其ADHD的症状更容易持续到成年期,并且症状更加严重。同样,共患CD会增加其出现反社会型人格障碍^[18]、物质滥用^[18]和反社会行为^[41]及犯罪行为^[18, 42]的危险性,并且,共患CD的症状条目数越多,其相关性就越强^[42]。

情绪障碍也是儿童期ADHD常见的共患疾病。研究发现25%~45%的ADHD患儿存在情绪失调障碍,表现为攻击行为、情绪不稳定、对挫折的耐受性差和过度兴奋^[43-44]。随访研究发现,情绪失调是独立于注意缺陷和多动、冲动症状的成年

后职业和社会功能不良的危险因素^[45]。

有关重性抑郁障碍 (major depressive disorder, MDD) 与 ADHD 预后的关系研究结果不一致, BIEDERMAN 等^[46-47] 的长期随访研究认为 MDD 不影响 ADHD 患者的预后, 而 LARA 等^[48] 则发现共患 MDD 是 ADHD 症状持续存在的高危因素。最新的 Meta 分析表明 MDD 是 ADHD 持续到成年期的重要危险因素^[25]。

2.4 家庭环境因素 家庭环境因素对 ADHD 的发生所起的作用至今不太明了, 但会对 ADHD 的发展和结局产生影响。良好的社会经济地位和和睦的家庭氛围是 ADHD 患儿成年期预后良好, 尤其是保持良好的教育水平及职业功能的重要的保护因素。家庭冲突、家庭亲密度低和亲子关系差, 与以后出现反社会型人格障碍密切相关^[49-50]。

2.5 智商因素 智力水平也是影响 ADHD 患儿成年期结局的一个重要相关因素, 不仅影响患儿学业表现, 对其工作、生活、社交等方面均有影响^[51]。有研究显示, 低智商是 ADHD 患儿预后不佳的重要相关因素^[37]。但也有研究指出, 智商越高, 越少伴发学习困难, 因此不易被发现, 导致治疗延误, 因此, 成年期精神结局越差^[52], 更容易发生物质滥用^[53]。

2.6 治疗因素 儿童期 ADHD 缺乏规律系统治疗是导致其症状持续的原因之一。不良的依从性常是导致治疗效果差的主要原因。研究显示, 发达国家的患儿对于药物治疗的坚持率为 35%~87%, 印度患儿的服药坚持率仅为 11.3%~16.7%^[54]。影响患儿治疗依从性的主要原因包括: 患儿年龄小、症状严重程度、家庭经济差、多种药物联合治疗、父母反对用药、疗效不显著以及药物不良反应等^[54]。

总之, ADHD 并不是像既往认为的那样, 会随着年龄增长而逐渐消失, 而是一种可以持续到成年期并严重影响社会功能的慢性迁延性疾病。如果不能很好地控制 ADHD 症状, 可能在患者一生中均会对其本人、家庭、朋友和同事等产生影响, 对患儿的学业、社会和情感功能、行为发展产生影响, 导致学习成绩差、职业地位低、滥用药物危险性增加和犯罪等不良后果。儿童期 ADHD 症状越重、早期共患其他疾病、不利的家庭和社会因素及不良的生物遗传学因素等, 均与 ADHD 持续到成年期的不良预后有关, 但对于其特定的预后因素的作用机制尚未完全明确, 仍需进一步深入研究其预后的影响因素, 为今后开展针对性的早期干预提供依据。

本文文献检索策略:

检索数据库: 万方数据知识服务平台、中国知网、PubMed、Medline; 检索关键词: 注意缺陷和分裂性行为障碍、儿童、预后、影响因素分析及其相应的英文。共检出相关文献 240 余篇, 选用发表时间较近、研究设计合理、影响因子较高的论著、综述以及 Meta 分析。

作者贡献: 翟倩进行文章的构思与设计, 文献收集、整理, 撰写论文, 进行论文的修订; 丰雷进行研究的实施与可行性分析; 丰雷、张国富负责文章的质量控制及审核; 翟倩、丰雷对文章整体负责, 监督管理。

本文无利益冲突。

参考文献

- [1] ANTONY A. Study of factors influencing treatment adherence in childhood attention deficit hyperactivity disorder in a tertiary healthcare facility [J]. *Indian J Psychol Med*, 2016, 38 (1): 20-24. DOI: 10.4103/0253-7176.175094.
- [2] 胡虞志, 吴汉荣, 余剑强. 6~12 岁儿童注意缺陷多动障碍的分型及病因研究 [J]. *中国校医*, 1998, 12 (5): 321-324.
HU Y Z, WU H R, YU J Q. Subtyping and inquiring for etiology of children ADHD aged 6 to 12 years [J]. *Chinese Journal of School Doctor*, 1998, 12 (5): 321-324.
- [3] CASTELLS X, BLANCO-SILVENTE L, CUNILL R, et al. Amphetamines for attention deficit hyperactivity disorder (ADHD) in adults [J]. *Cochrane Database Syst Rev*, 2018, 157 (8): CD007813. DOI: 10.1002/14651858.CD007813.
- [4] GAIDAMOWICZ R, DEKSNYTE A, PALINAUSKAITE K, et al. ADHD—the scourge of the 21st century? [J]. *Psychiatr Pol*, 2018, 52 (2): 287-307. DOI: 10.12740/PP/67111.
- [5] 刘寰忠, 钟怡. 2018 版加拿大儿科学会《儿童青少年注意缺陷多动障碍诊疗指南》解读 [J]. *中国全科医学*, 2019, 22 (14): 1641-1647. DOI: 10.12114/j.issn.1007-9572.2018.00.452.
LIU H Z, ZHONG Y. Interpretation of Canadian Pediatric Society clinical practice recommendations for children and adolescents with attention-deficit hyperactivity disorder (version 2018) [J]. *Chinese General Practice*, 2019, 22 (14): 1641-1647. DOI: 10.12114/j.issn.1007-9572.2018.00.452.
- [6] American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 4th edition, text revision (DSM-IV-TR) [M]. Washington, DC: American Psychiatric Association, 2000.
- [7] COOK J, KNIGHT E, HUME I, et al. The self-esteem of adults diagnosed with attention-deficit/hyperactivity disorder (ADHD): a systematic review of the literature [J]. *Atten Defic Hyperact Disord*, 2014, 6 (4): 249-268. DOI: 10.1007/s12402-014-0133-2.
- [8] AGNEW-BLAIS J C, POLANCZYK G V, DANESE A, et al. Evaluation of the persistence, remission, and emergence of attention-deficit/hyperactivity disorder in young adulthood [J]. *JAMA Psychiatry*, 2016, 73 (7): 713-720. DOI: 10.1001/jamapsychiatry.2016.0465.
- [9] RAMOS-OLAZAGASTI M A, CASTELLANOS F X, MANNUZZA S, et al. Predicting the adult functional outcomes of boys with ADHD 33 years later [J]. *J Am Acad Child Adolesc Psychiatry*, 2018, 57 (8): 571-582. DOI: 10.1016/j.jaac.2018.04.015.
- [10] BIEDERMAN J, MONUTEAUX M C, MICK E, et al. Young adult outcome of attention deficit hyperactivity disorder: a controlled 10-year follow-up study [J]. *Psychol Med*, 2006, 36 (2): 167-179. DOI: 10.1017/S0033291705006410.
- [11] AGNEW-BLAIS J C, POLANCZYK G V, DANESE A, et al. Young adult mental health and functional outcomes among individuals with remitted, persistent and late-onset ADHD [J].

- Br J Psychiatry, 2018, 213 (3): 526-534. DOI: 10.1192/bjp.2018.97.
- [12] LEVYA F, HAY D A, BENNETT K S. Genetics of attention deficit hyperactivity disorder: a current review and future prospects [J]. Int J Disabil Dev Educ, 2006, 53 (1): 5-20. DOI: 10.1080/10349120500509950.
- [13] ADAMIS D, GRAFFEO I, KUMAR R, et al. Screening for attention deficit-hyperactivity disorder (ADHD) symptomatology in adult mental health clinics [J]. Ir J Psychol Med, 2018, 35 (3): 193-201. DOI: 10.1017/ipm.2017.49.
- [14] POLANCZYK G, ROHDE L A. Epidemiology of attention-deficit/hyperactivity disorder across the lifespan [J]. Curr Opin Psychiatry, 2007, 20 (4): 386-392. DOI: 10.1097/YCO.0b013e3281568d7a.
- [15] LARSSON J, LARSSON H, LICHTENSTEIN P. Genetic and environmental contributions to stability and change of ADHD symptoms between 8 and 14 years of age: a longitudinal twin study [J]. J Am Acad Child Adolesc Psychiatry, 2004, 43 (10): 1267-1275. DOI: 10.1097/01.chi.0000135622.05219.bf.
- [16] STICKLEY A, KOYANAGI A, TAKAHASHI H, et al. Attention-deficit/hyperactivity disorder symptoms and happiness among adults in the general population [J]. Psychiatry Res, 2018, 265 (5): 317-323. DOI: 10.1016/j.psychres.2018.05.004.
- [17] WEISS G, HECHTMAN L. Hyperactive children grown up [M]. 2nd ed. New York: the Guilford Press, 1993.
- [18] ROMO L, LADNER J, KOTBAGI G, et al. Attention-deficit hyperactivity disorder and addictions (substance and behavioral): prevalence and characteristics in a multicenter study in France [J]. J Behav Addict, 2018, 7 (3): 743-751. DOI: 10.1556/2006.7.2018.58.
- [19] STOREBO O J, PEDERSEN N, RAMSTAD E, et al. Methylphenidate for attention deficit hyperactivity disorder (ADHD) in children and adolescents—assessment of adverse events in non-randomised studies [J]. Cochrane Database Syst Rev, 2018, 32 (5): CD012069. DOI: 10.1002/14651858.CD012069.
- [20] MOFFITT T E, HOUTS R, ASHERSON P, et al. Is adult ADHD a childhood-onset neuro developmental disorder? Evidence from a four-decade longitudinal cohort study [J]. Am J Psychiatry, 2015, 172 (10): 967-977. DOI: 10.1176/appi.ajp.2015.14101266.
- [21] BIEDERMAN J. Impact of comorbidity in adults with attention-deficit/hyperactivity disorder [J]. J Clin Psychiatry, 2004, 65 (2): 3-7.
- [22] STICKLEY A, TACHIMORI H, INOUE Y, et al. Attention-deficit/hyperactivity disorder symptoms and suicidal behavior in adult psychiatric outpatients [J]. Psychiatry Clin Neurosci, 2018, 29 (5): 543-552. DOI: 10.1111/pen.12685.
- [23] O'MALLEY G K, MCHUGH L, MAC GIOLLABHUI N, et al. Characterizing adult attention-deficit/hyperactivity disorder and comorbid borderline personality disorder: ADHD symptoms, psychopathology, cognitive functioning and psychosocial factors [J]. Eur Psychiatry, 2016, 31 (3): 29-36. DOI: 10.1016/j.eurpsy.2015.09.012.
- [24] HIRSCH O, CHAVANON M, RIECHMANN E, et al. Emotional dysregulation is a primary symptom in adult attention-deficit/hyperactivity disorder (ADHD) [J]. J Affect Disord, 2018, 232 (5): 41-47. DOI: 10.1016/j.jad.2018.02.007.
- [25] CAYE A, SPADINI A V, KARAM R G, et al. Predictors of persistence of ADHD into adulthood: a systematic review of the literature and meta-analysis [J]. Eur Child Adolesc Psychiatry, 2016, 25 (11): 1151-1159. DOI: 10.1007/s00787-016-0831-8.
- [26] FARAONE S V, PERLIS R H, DOYLE A E, et al. Molecular genetics of attention deficit hyperactivity disorder [J]. Biol Psychiatry, 2005, 57 (11): 1313-1323. DOI: 10.1016/j.biopsych.2004.11.024.
- [27] ALEXANDER L, FARRELLY N. Attending to adult ADHD: a review of the neurobiology behind adult ADHD [J]. Ir J Psychol Med, 2018, 35 (3): 237-244. DOI: 10.1017/ipm.2017.78.
- [28] THAPAR A. Discoveries on the genetics of ADHD in the 21st century: new findings and their implications [J]. Am J Psychiatry, 2018, 175 (10): 943-950. DOI: 10.1176/appi.ajp.2018.18040383.
- [29] THAPAR A, LANGLEY K, O'DONOVAN M, et al. Refining the attention deficit hyperactivity disorder phenotype for molecular genetic studies [J]. Mol Psychiatry, 2006, 11 (8): 714-720. DOI: 10.1038/sj.mp.4001831.
- [30] BRIKELL I, LARSSON H, LU Y, et al. The contribution of common genetic risk variants for ADHD to a general factor of childhood psychopathology [J]. Mol Psychiatry, 2018, 22 (6): 231-242. DOI: 10.1038/s41380-018-0109-2.
- [31] HAYMAN V, FERNANDEZ T V. Genetic insights into ADHD biology [J]. Front Psychiatry, 2018, 21 (9): 251-258. DOI: 10.3389/fpsyt.2018.00251.
- [32] WIERS C E, LOHOFF F W, LEE J, et al. Methylation of the dopamine transporter gene in blood is associated with striatal dopamine transporter availability in ADHD: a preliminary study [J]. Eur J Neurosci, 2018, 48 (3): 1884-1895. DOI: 10.1111/ejn.14067.
- [33] THAPAR A, LANGLEY K, FOWLER T, et al. Catechol-O-methyltransferase gene variant and birth weight predict early onset antisocial behaviour in children with attention deficit hyperactivity disorder [J]. Arch Gen Psychiatry, 2005, 62 (11): 1275-1278. DOI: 10.1001/archpsyc.62.11.1275.
- [34] 张净雯, 李新影. 不良同伴交往与儿茶酚胺氧化位甲基转移酶基因的交互作用对青少年问题行为的影响研究 [J]. 中国全科医学, 2019, 22 (14): 1722-1725. DOI: 10.12114/j.

- issn.1007-9572.2018.00.309.
- ZHANG J W, LI X Y. Interacting effect of deviant peer affiliation and comt rs4680 polymorphism on adolescent behavioral problems [J]. Chinese General Practice, 2019, 22 (14): 1722-1725. DOI: 10.12114/j.issn.1007-9572.2018.00.309.
- [35] KESSLER R C, ADLER L A, BARKLEY R, et al. Patterns and predictors of attention-deficit/hyperactivity disorder persistence into adulthood: results from the national comorbidity survey replication [J]. Biol Psychiatry, 2005, 57 (11): 1442-1451. DOI: 10.1016/j.biopsych.2005.04.001.
- [36] MOLINA B S, PELHAM W E Jr. Childhood predictors of adolescent substance use in a longitudinal study of children with ADHD [J]. J Abnorm Psychol, 2003, 112 (3): 497-507.
- [37] FERGUSSON D M, LYNKEY M T, HORWOOD L J. Attentional difficulties in middle childhood and psychosocial outcomes in young adulthood [J]. J Child Psychol Psychiatry, 1997, 38 (6): 633-644.
- [38] SIMONOFF E, ELANDER J, HOLMSHAW J, et al. Predictors of antisocial personality. Continuities from childhood to adult life [J]. Br J Psychiatry, 2004, 184: 118-127.
- [39] GUNES H, TANIDIR C, ADALETLI H, et al. Oppositional defiant disorder/conduct disorder co-occurrence increases the risk of internet addiction in adolescents with attention-deficit hyperactivity disorder [J]. J Behav Addict, 2018, 7 (2): 284-291. DOI: 10.1556/2006.7.2018.46.
- [40] VALDIMARSDÓTTIR M, HRAFNSDÓTTIR A H, MAGNÚSSON P, et al. The frequency of some factors in pregnancy and delivery for Icelandic children with ADHD [J]. Laeknabladid, 2006, 92 (9): 609-614.
- [41] WASCHBUSCH D A, PELHAM W E Jr, JENNINGS J R, et al. Reactive aggression in boys with disruptive behavior disorders: behavior, physiology, and affect [J]. J Abnorm Child Psychol, 2002, 30 (6): 641-656.
- [42] SIMONOFF E, ELANDER J, HOLMSHAW J, et al. Predictors of antisocial personality. Continuities from childhood to adult life [J]. Br J Psychiatry, 2004, 184 (2): 118-127.
- [43] SHAW P, STRINGARIS A, NIGG J, et al. Emotion dysregulation in attention deficit hyperactivity disorder [J]. Am J Psychiatry, 2014, 171 (3): 276-293. DOI: 10.1176/appi.ajp.2013.13070966.
- [44] POSNER J, KASS E, HULVERSHORN L. Using stimulants to treat ADHD-related emotional lability [J]. Curr Psychiatry Rep, 2014, 16 (10): 478. DOI: 10.1007/s11920-014-0478-4.
- [45] BARKLEY R A, FISCHER M. The unique contribution of emotional impulsiveness to impairment in major life activities in hyperactive children as adults [J]. J Am Acad Child Adolesc Psychiatry, 2010, 49 (5): 503-513. DOI: 10.1097/00004583-201005000-00011.
- [46] BIEDERMAN J, PETTY C R, CLARKE A, et al. Predictors of persistent ADHD: an 11-year follow-up study [J]. J Psychiatr Res, 2011, 45 (2): 150-155. DOI: 10.1016/j.jpsychires.2010.06.009.
- [47] BIEDERMAN J, PETTY C R, O'CONNOR K B, et al. Predictors of persistence in girls with attention deficit hyperactivity disorder: results from an 11-year controlled follow-up study [J]. Acta Psychiatr Scand, 2012, 125 (2): 147-156. DOI: 10.1111/j.1600-0447.2011.01797.x.
- [48] LARA C, FAYYAD J, DE GRAAF R, et al. Childhood predictors of adult attention-deficit/hyperactivity disorder: results from the World Health Organization World Mental Health Survey Initiative [J]. Biol Psychiatry, 2009, 65 (1): 46-54. DOI: 10.1016/j.biopsych.2008.10.005.
- [49] SIEBELINK N M, BÖGELS S M, BOERBOOM L M, et al. Mindfulness for children with ADHD and mindful parenting (MindChamp): protocol of a randomized controlled trial comparing a family mindfulness-based intervention as an add-on to care-as-usual with care-as-usual only [J]. BMC Psychiatry, 2018, 18 (1): 237. DOI: 10.1186/s12888-018-1811-y.
- [50] 李杨, 杨金伟, 周郁秋, 等. 注意缺陷多动障碍儿童问题行为及其影响因素分析 [J]. 中国全科医学, 2017, 20 (29): 3600-3605. DOI: 10.3969/j.issn.1007-9572.2017.07.y06.
- LI Y, YANG J W, ZHOU Y Q, et al. Analysis on the problem behaviors and influencing factors in children with attention-deficit hyperactivity disorder [J]. Chinese General Practice, 2017, 20 (29): 3600-3605. DOI: 10.3969/j.issn.1007-9572.2017.07.y06.
- [51] MONUTEAUX M C, MICK E, FARAONE S V, et al. The influence of sex on the course and psychiatric correlates of ADHD from childhood to adolescence: a longitudinal study [J]. J Child Psychol Psychiatry, 2010, 51 (3): 233-241. DOI: 10.1111/j.1469-7610.2009.02152.x.
- [52] DALSGAARD S, MORTENSEN P B, FRYDENBERG M, et al. Conduct problems, gender and adult psychiatric outcome of children with attention deficit hyperactivity disorder [J]. Br J Psychiatry, 2002, 181: 416-421.
- [53] SATTERFIELD J H, FALLER K J, CRINELLA F M, et al. A 30-year prospective follow-up study of hyperactive boys with conduct problems: adult criminality [J]. J Am Acad Child Adolesc Psychiatry, 2007, 46 (5): 601-610. DOI: 10.1097/chi.0b013e318033ff59.
- [54] SITHOLEY P, AGARWAL V, CHAMOLI S A. A preliminary study of factors affecting adherence to medication in clinic children with attention-deficit/hyperactivity disorder [J]. Indian J Psychiatry, 2011, 53 (1): 41-44. DOI: 10.4103/0019-5545.75561.
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