

# A Systematic Review of Different Parenting Styles Relate to Different Outcomes in ADHD Offspring

Tong Qiu<sup>1,\*</sup>

<sup>1</sup> School of Public Administration, Guangdong University of Foreign Studies, Guangzhou, Guangdong 510000, China

\*Corresponding author. Email: 20181103212@gdufs.edu.cn

## ABSTRACT

As for ADHD children, the way their parents get along with them affects several aspects of their lives. Since mostly the systems and structures that ADHD children live in do not provide sufficient help to them and couldn't always help them negotiate these life challenges particularly well. Therefore, family intervention is essential to them. This systematic review aims to summarize a sort of outcomes of ADHD children when facing different types of parenting styles. Such as academic outcomes, social-emotional functioning, behavior and intelligence level. Articles indexed in Web of Science, CNKI and Science Direct were searched, using collocations such as "parenting style" AND "ADHD" OR "attention-deficit/hyperactivity disorder" AND "parenting" OR "parent". 24 empirical articles were identified as relevant to this study. A considerable amount of tools are used to assess those outcomes in children. We found that parents of ADHD children used more permissive parenting style and authoritarian parenting style than parents of typical children. Results indicated slight but significant moderation between several outcomes.

**Keywords:** ADHD, parenting style, academic outcomes, ADHD symptoms

## 1. INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a behavioral disorder consisting of hyperactive, inattentive and impulsive behaviors. Three primary subtypes are defined, which are remarkably inattentive subtypes, remarkably hyperactive-impulsive subtype and a subtype combined both of them. It is one of the most common chronic health problems disorders in children. Studies have shown [1] that for children with bad behavioral discipline problems, long-term negative intervention not only fails to achieve the purpose of behavior correction, but also may increase the aggravation of internalizing and externalizing behaviors, causing a negative effect on the physical and mental health of children. Family environment is the earliest and most important place for children to contact, and parents' family education plays an indispensable role in children's growth. A harmonious family environment has a positive effect on children's physiology and mental health, behavior style, interpersonal communication and values [5]. However, children's behavioral problems will lead to negative emotional involvement of parents. Especially when negative behavior occurs, parents usually respond with blame, restriction, punishment or violence to correct those behaviors. This will aggravate the illness of

children by reinforcing externalizing behaviors such as irritability, behavioral problems like aggressiveness and hostility, forming a vicious circle.[1]. Therefore, a scientific and appropriate parenting style is not only conducive to the relief of symptoms of children, but also important for their physical and mental health. It has a long-term, persistent and subtle influence on children's physical and mental development, which is of great significance to their physical and mental growth, and is the key link affecting children's lifelong development[1]. As for those children with ADHD, a good upbringing environment can greatly relieve their symptoms, and improve their functional outcomes.

### 1.1. Current study

A previous study in China showed that a high control over ADHD children along with high responsiveness level and high rate of intimacy by parents contributes to higher rates of code of conduct and attentive, as well as high intelligence quotient in ADHD children [1].

Yousefia et al. [2] discussed the stress and rearing styles of mothers with ADHD children.

Recently, Bhide et al. [3] revealed how perceived parenting style alters the social and emotional

functioning and academic functioning in their children with ADHD, with using samples from the community instead of clinical samples.

Additionally, Jones et al.'s study [4] showed how parenting style moderates the relationship of ADHD symptoms and academic adjustment to college.

Not long ago, Li et al. [5] explored the relationship between ADHD children's behavioral problems and parenting style, which ADHD symptoms in children may be related to environmental factor such as parenting style. It also provided theoretical basis for clinical intervention of ADHD children.

In a previous study, Hutchison et al. [6] examined the impact of parenting style on child executive functioning within ADHD Children.

### ***1.2. Parenting and its importance in ADHD children***

Parenting style is a combination of parents' attitudes and behaviors, which illustrates stability situationally and spatially. Baumrind [7] categorized parenting styles into three types: authoritative, authoritarian and permissive parenting style. Parents tend to control their children properly but strictly, along with high responsiveness level and high level of intimacy with their children in authoritative parenting style [2]. Parents have clear and reasonable requirements for their children, and restricts their unreasonable capricious behavior to urge them to strive to achieve the goals. In addition, they also care for their children initiatively. Research generally confirms that aspects related with a "positive" attitude in parenting, for instance rational, democratic, and authoritative, helps develop self-confidence, independence, and academic functioning [3].

Authoritarian parenting style is characterized by high control over their children but little responsiveness towards the behavior of the child, and they also emphasize obedience from their children [2]. Such parents have harsh commands towards their children, not realizing that demanding too much is a way of suppressing a child's personality. Lacking in enthusiasm and demand unconditional obedience from their children, those kind of parents rarely consider about their children's feedback, and incapable to cultivate and encourage them promptly [2]. On the contrary, "negative" dimensions in parenting causes problems with children's social, emotional and academic adjustment, and makes their academic functioning getting worse, which is associated with poorer academic achievement in children [4].

Permissive parenting style by contrast is marked by little control of parents but high level of positive attention. This type of parent is full of endless expectations and love for their children, giving them

everything they want unconditionally, but they make few demands on their children. As they grow older, these children tend to become dependent, impulsive, childish and selfish.

In general, it is very important to study the correlation between parents and ADHD children's dysfunction, because this disorder has a profound impact on the developmental trajectory of the individual's life. There are various approaches to explore multiple associations between negative parenting attitudes, parenting stress and parental well-being and negative parenting behaviors [2]. It assumes that children's outcomes do not depend on the individual, but on the adaptability of the interaction between the individual and the environment due to reciprocation [6]. In other words, a child's experience in the environment changes his or her behavior. In the meantime, evolutionary behavior from an altered child also influences the environment of their own. What's more, establishing an ongoing relationship of parents' rearing styles and academic adjustment in ADHD patients throughout childhood to college could provide a better understanding of the unique challenges these populations is facing and identify targets for intervention for researchers.

With research articles of this topic lack of a systematic review and summary, it is necessary to have a review intended to provide a summary of the impact of different parenting style on functional outcomes of their children with ADHD, as well as an overview of how to better assist healthcare providers in raising their ADHD offspring. Therefore, this systematic review mainly contributes to (1) summarize certain kinds of parenting styles used by parents whose children suffers from ADHD, (2) identify the impact parenting style on ADHD children's academic outcomes and functioning, (3) informs the psychosocial outcomes of children with ADHD when different parenting styles are being conducted, and (4) examine factors which affects parents' or caregiver's attitude and behaviour towards ADHD children.

## **2. METHODOLOGY**

Styles can be applied using the style palette available within the template. To activate it the press Ctrl+Shift+S. Apply the style as required based on the content and context. (Please don't highlight your text in yellow.) By searching articles indexed in the databases of Science Direct, CNKI and Web of Science, and a combination of expressions including "parenting styles" AND "ADHD" OR "attention-deficit/hyperactivity disorder" AND "children" AND "academic outcomes" OR "academic attainment" are used as key words. Articles which have low relevance with the topic were rejected, for instance they (1) were clearly not examining parenting style; (2) research were not conducted within ADHD children or adolescents; (3) were not quantitative research; (4) were

case reports or case series; (5) were review paper. Relevant references in this paper have also been examined from databases for possible inclusion in this review.

The studies included in this review met the following four criteria: (1) illustrated parenting style and the relationship of several outcomes with ADHD children; (2) quantitative questionnaires were used to examine the impact; (3) examined the result variables of ADHD children; (4) were original research articles. There is no date limit of articles when searching of these databases above. 24 articles were found related to this topic and 6 articles were included to meet the requirements of this review finally.

### **3. MEASUREMENTS**

Among all the collected articles, questionnaires such as Parental Authority Questionnaire, Parenting Styles and Dimensions Questionnaire (PSDQ) were used. The Parental Authority Questionnaire includes 30 questions parenting style is marked by authoritative, authoritarian and permissive styles. The questionnaire uses 5 point scale evaluates patterns from totally agree to totally disagree. As for another scale which assessed parenting styles, the PSDQ included 62 parenting behaviors that measured the authoritative, authoritarian and permissive parenting style. Answers were represented on a 5-point scale: (1) never, (2) sometimes, (3) half of the time, (4) often, and (5) always.

ADHD symptoms were measured by The Conners' Adult ADHD Rating Scale–Self-Report: Short Version (CAARS-S:S) for adults [4]. The Conners 3 ADHD index and The Diagnostic Interview Schedule for Children IV was used to screen for ADHD children [3].

Measurements were made by using The Student Adaptation to College Questionnaire, which is a 67-item self-report questionnaire including dimensions like academic adjustment, emotional adjustment, social adjustment, and attachment to the institution to investigate academic adjustment [4].

As for executive functioning, all children completed the Wisconsin Card Sort Task: Computer Version (WCST) to do a self-assessment of cognitive flexibility, set-shifting, and executive processing. A questionnaire named BRIEF is designed to exploit eight dimensions of executive functioning in children and adolescents between the ages of 5 and 18 and was completed by parents. They also completed a measure of overall executive functioning which represented children's global executive composite (GEC).

Child Behavior Checklist (CBCL) was used to conduct behavior scores after intervention, including moral conduct, impulsivity, anxiety, physical and mental disorders, learning status and hyperactivity index. The

value of each item ranges from 0 to 3, with higher score indicates a more severe symptom. Integrated Visual And Auditory Continuous Performance Test (IVA-CPT) was used to compare 5 indicators, and a higher score suggests better attention and control. With regard to the measurement of intelligence, Wechsler Intelligence Scale was used to compare the intelligence level of the two groups before and after intervention. A score < 70 was classified as low intelligence level, and the higher the score is the higher the intelligence level is.

## **4. ADHD SYMPTOMS AND ACADEMIC OUTCOMES**

### ***4.1. Academic Adjustment and ADHD symptoms***

Unsurprisingly, college students with a considerable level of ADHD symptoms may have difficulty coping with the college's academic and social environments. An article focusing on whether parents' rearing style will help moderate the relationship of this evidenced that authoritarian parenting is significantly correlating with academic adjustment and ADHD symptoms. For first year students in college, parenting emerged as a moderating effect when academic adjustment significantly decreased as ADHD symptoms increased, with only a more steeply decreasing in academic adjustment as ADHD symptoms increased in high levels of authoritarian parenting. A similar pattern was detected in authoritative parenting which also appeared as a significant moderator of ADHD symptoms and academic adjustment. However, both academic adjustment and the symptoms were not associated with authoritative parenting [4]. In terms of permissive parenting, little evidence is found that it moderates this relationship, within research conducted in a large sample size. Cross-sectional findings revealed that only when the student has a low level of ADHD symptoms, authoritarian and authoritative parenting is related with academic adjustment in college. Specifically, it is proved to be associated with lower levels of authoritarian parenting and improved academic achievement. However, it only happens when ADHD symptoms are not severe and for first-year students only [4]. In general, ADHD status no longer predicted academic outcomes independently, when taking patients' exceptional education status into account [9].

### ***4.2. Academic functioning and ADHD symptoms***

Previous study have found that ADHD symptoms were specifically associated with lower math, and no relationship was found with reading attainment [8]. In another study examined the association between parenting style and children's academic functioning, their perceived parenting style was categorized into

warmth, consistency and anger. Correlations demonstrated that within groups of ADHD children, parenting warmth may not related to academic functioning or other academic outcomes reported by teacher, such as word reading and math computation [3].

As a result, the factor of parenting were no longer associated with any academic outcomes, since no association was found between parenting styles and academic functioning of the child or most of the results reported by teachers in the adjusted analysis for the ADHD group.

### ***4.3. Social-emotional functioning, executive functioning, CBCL behavior score and intelligence level***

Within groups of ADHD children, mostly they received similar levels of parenting warmth, while lower levels of parenting consistency were reported. Gender difference occurred in parenting warmth which girls have the same level compared with those of non-ADHD control, and an attenuated parenting warmth on boys by contrast. Whereas parenting consistency and anger were associated with social-emotional functioning reported by parents and teachers. In relation to parent-reported outcomes, higher parental warmth and lower anger were associated with increased pro-social behavior, self-control, and sense of responsibility in children. Higher parenting consistency was associated with fewer children with emotional problems, peer problems, and pro-social behavior [3].

A result of authoritarian parenting positively associates with Executive Functioning (EF) problems was hypothesized, however there was a marginal negative correlation between authoritarian parenting and the four dimensions completed by children on the WCST. Thus, the results of BRIEF which subjectively completed by parents revealed that ADHD children perceived with authoritarian parenting had more EF problems. Permissive parenting was positively associated with parental-reported EF problems, however authoritative parenting was not linked to any measure of children's EF. With regard to the relationship between parents' rearing style and child functioning, the group of children showed no moderating effect when experienced permissive and authoritarian parenting. In other words, the relationship between parenting style and child functioning (from both the parents and objective measures) did not differ between the child with the diagnosis and the typical child [6].

Authoritative parenting significantly associates with lower level of inattentive, impulsive, hyperactivity and anxiety in children and young adolescents [1]. It indicates that parenting intervention combined with psychological nursing can effectively improve the mental status and behavior of children with ADHD, helping them to correct

their behaviors, and improve their cognitive ability, as well as sustained attention and intelligence quotient, which plays an important role in improving the quality of life of children and their parents.

## **5. DISCUSSION**

### ***5.1. Assessment tools***

At present, the main measurement tool is questionnaire, with self-report or reported by parents or teachers. It is advantageous in saving time, money and manpower, and with the results convenient to be quantified for statistical processing and analysis. However, some of the previous studies relied on self-report or reported by parents, which is a drawback that results can be one-sided and subjective. In terms of parenting styles, researchers relied on retrospective reports from college students instead of asking parents about their own parenting styles, which can be affected by recall bias. Therefore, advanced research methods can be adopted in future study, such as combined qualitative research, experimental method, or a mixture of those methods.

### ***5.2. The measurement of academic adjustment***

Some factors that may have a protective effect on students may be covered up due to high levels of ADHD symptoms[4]. It is also possible that clinical levels of psychological comorbidity negates the effect of parenting style on academic achievement, such as the comorbidity of autism or oppositional defiant disorder. This particular interaction has not been studied in either college students or young adults with ADHD, and is worth further investment.

In the study of how parenting style affects the academic adjustment in ADHD adolescents, the sample represented college students, however it is relatively limited in terms of ethnic diversity. Studies examining the relationship between various perceived rearing styles and subsequent child outcomes have suggested the existence of culture-specific patterns. Cultural differences should be contained when examining cultural differences in parenting and the results reported by undergraduate participants, unfortunately the sample was not large enough to contain enough diversity. Therefore, future studies should examine whether the relationship between parenting style, academic adjustment, and ADHD symptoms found in the predominantly the white sample also holds in other, more diverse samples. Of note, there was no over-sample college students with ADHD. Thus, this study should be replicated with college students with ADHD to validate these findings if there is a massive number of students with ADHD participants [4].

### 5.3. Academic functioning

No association was found between parenting style and children's academic ability, nor was there an adjustment analysis of the ADHD group reported by most teachers [3]. It's possible that a child's functioning at school has more to do with the warmth and control strategies that teachers use in school settings, or that a child's social behavior can be better reflected by the evaluations they receive from peers rather than teachers [3]. In addition, the association between parenting styles reported by parents and child outcomes may be overstated due to bias in parents' evaluations of parenting styles and child outcomes.

It's possible that perceiving warmth or anger may internally shape regulated social skills in ADHD children. On the contrary, continuous discipline may result in obvious and observable problem behaviors such as emotional problems or pro-social behaviors such as sharing.

### 5.4. Parent-child interaction

It may be beneficial to provide support and education on the potential long-term consequences for parents of special population, especially for those who are authoritarian and permissive. And targeted interventions that are better suited to educational practices for challenged children are also useful [6]. However, for children with disabilities, authoritative parenting were not associated with the problem of EF. This indicates that there are still other factors needed to be addressed to help improve child functioning, such as parental stress, other aspects of family dynamics, or intervention specifically for the disability itself.

There is an obvious two-way transaction effect between children and parents, with parents' behavior influencing children, and children's behavior influencing parents' behavior[6]. In fact, it is often difficult for parents of children with behavioral problems and/or intellectual disabilities to conduct optimal authority education. It reflects a transactional development process.

## 6. CONCLUSION

In sum, parenting style is not clearly related with academic adjustment in ADHD children, expect when lower levels of authoritarian parenting were associated with improved academic achievement at low levels of ADHD symptoms only and for freshmen in college only. A consistent and anger parenting is associated with social-emotional functioning, with authoritative parenting significantly relieves the symptoms of ADHD. Future intervention may focus on other factors to improve child functioning, for instance parent stress or intervention specifically for the disability. If effective

and appropriate rearing styles was applied to ADHD children, there would be a great improvement in those families.

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