

# ***Case Study of Sensory Integration Dysfunction in Autistic Children from the Perspective of Cognitive Behavioral Theory***

Yuemei He<sup>1,a,\*</sup>

<sup>1</sup>*Guangzhou Huali Science and Technology Vocational College, No. 7 Huali Road, Guangzhou  
Huayi Science and Technology Park, Zengcheng District, Guangzhou, China  
a. 605780616@qq.com  
\*corresponding author*

**Abstract:** Sensory integration dysfunction is not only a problem for the general population but also presents challenges for autistic children. Current domestic research on intervention for sensory integration dysfunction mainly focuses on the medical field with limited intervention in social work, education, and psychology, leading to a significant gap in intervention studies for sensory integration dysfunction in autistic children. Therefore, this study, based on social work and psychological individual case practices, investigates the sensory integration dysfunction in autistic children from the perspective of cognitive behavioral theory. It explores the influencing factors and improvement pathways of sensory integration dysfunction in autistic children, providing a research summary of individual cases.

**Keywords:** Cognitive Behavioral Theory, Autistic Children, Sensory Integration Dysfunction, Individual Case Service

## **1. Introduction**

Using a case study related to the cognitive behavioral theory to contemplate its application. Taking Xiao Cong as a case in cognitive behavioral research—Xiao Cong, male, 11 years old, was the first student encountered by the author during the university research project phase. Initially, the author's role was that of a study companion, primarily responsible for guiding Xiao Cong in homework and cultivating cognitive behavioral habits. Since the fifth grade, upon the consent of the child and the parents, the author transitioned to become Xiao Cong's one-on-one study consultant and psychological teacher, directly involved in Xiao Cong's learning life for a duration of three years.

## **2. Background**

### **2.1. Introduction of the Case Subject**

The case subject, Lin Xiao Cong, male, 11 years old, was a fifth-grade primary school student studying at Fuli Huanshi West Primary School in Liwan District, Guangzhou. He suffers from sensory integration dysfunction. Xiao Cong was born into an ordinary working-class family. His parents have relatively low educational backgrounds and work in day and night shifts, making them quite busy. The father has a history of violence and has a rather impatient personality, while the mother tends to

be more indulgent toward the child. Due to their busy work schedules, the parents lack spare time to manage the child's daily life and studies.

## **2.2. Engagement and Parental Contact**

The client was referred from another center and did not actively seek assistance, categorizing them as a non-voluntary service user. Thus, the initial step involves establishing a solid communication foundation with the parents. Information about the client was gathered and organized through discussions and observational methods to lay the groundwork for subsequent individualized services for Xiao Cong.

According to Xiao Cong's parents, their child displays hyperactivity, lack of concentration, susceptibility to environmental influences, poor self-discipline, self-criticism, a tendency toward solitude, emotional volatility, and difficulties in social interactions. While the child behaves reasonably well at home due to a stern father and a more lenient mother, issues arise prominently in external environments, particularly at school. Teachers have reported Xiao Cong's distraction in class, lack of discipline, occasional disruptive behavior, impulsivity, and aggression. Academic performance is low with frequent complaints and incomplete assignments.

## **2.3. Initial Interaction with the Client**

Xiao Cong is characterized as spirited, restless, preferring to work on the floor, rarely asking questions, showing carelessness, and exhibiting low efficiency. Homework completion is sluggish, attention span limited, and focus lacking. Initially, multiple interactive sessions were conducted after school to engage with Xiao Cong, identify common interests, and assist with homework, laying the groundwork for an initial rapport with the client.

## **2.4. Previous Attempts at Adjustment**

Xiao Cong's family dedicated significant effort to seek treatment at reputable hospitals regularly. However, due to delayed identification, beyond the optimal intervention age, the treatment's effectiveness was limited. Given the child's unique circumstances, they switched between several training centers and had three different Chinese language teachers, causing distress to Xiao Cong's parents. Hence, they seek assistance from the Social Service Center.

## **3. Case Assessment**

Based on Cognitive Behavioral Theory, inappropriate behavior is an individual's response to the current environment. Analyzing Xiao Cong's reactions to the environment is pivotal in addressing their challenges. Cognitive behavioral models can be employed to address Xiao Cong's issues, demonstrating the practical application of cognitive behavioral theory in social work practice.

### **3.1. Individual Level**

Xiao Cong lacks motivation for learning, exhibiting poor Chinese language scores (ranging from 50 to 70) and lacks academic goals. Due to social pressure, seeking help from peers is infrequent. Examination of school papers revealed extremely untidy handwriting, an uncommon trait among peers.

Issues with study habits and distractions from the environment hinder focus and behavior. Xiao Cong requires strict supervision to complete tasks, lacks pre-class preparation, and seldom reviews or summarizes lessons. Furthermore, time management skills are lacking.

Xiao Cong experiences interpersonal difficulties due to a stubborn temperament, feeling misunderstood by peers, reluctance to communicate, a tendency to be reserved, and a preference for solitude.

### **3.2. Family Environment Level**

Parental disciplinary methods impact Xiao Cong's behavior. Occasional instances of paternal physical punishment result in a distant relationship with the father and instill fear in the child. Contrasting this, the mother tends to be more indulgent, creating a notable disparity in parenting styles. Improvements in parental education techniques are necessary.

### **3.3. School Environment Level**

School teachers exhibit minimal concern and care toward Xiao Cong. The increasing academic pressure in later primary years adds to the stress. Teachers prioritize grades over individual attention, leading to minimal support for underperforming students. Public criticism from teachers has created dislike and discomfort toward the class teacher and the subject, impacting Xiao Cong's social relationships at school.

## **4. Theoretical Foundations**

### **4.1. Cognitive Behavioral Theory**

Cognition generally refers to cognitive activities or processes, encompassing beliefs, belief systems, thinking, and imagination. Negative beliefs or thoughts often lead to emotional barriers and maladaptive behaviors. Cognitive Behavioral Theory integrates cognitive and behavioral theories to change thought patterns, belief systems, and behavior, addressing flawed cognitions. It critiques and evolves cognitive and behavioral theories, not as mere additions or patchwork [1].

Key Points: Cognitive Behavioral Theory applies cognitive theory to behavioral modification, encompassing critical elements such as symbol information processing, thinking, beliefs, cognitive interpretations of environmental events, and their application in behavior modification. This strategy aims to address shortcomings in behavior therapy that overlook internal cognitive operations and their influence while bridging gaps between cognition, environment, and behavioral change effects. Cognitive behavioral intervention not only focuses on correcting maladaptive behaviors but also emphasizes altering cognitive processes to achieve harmony among cognition, emotions, and behavior. It combines behavioral and cognitive therapies, standing on a robust theoretical foundation in psychological therapy and holds a significant place in social work theory and practice [2].

Treatment Techniques of Cognitive Behavioral Therapy:

#### **4.1.1. Relaxation Training**

Effective in managing stress and anxiety, aiding fatigue elimination, uplifting spirits, and achieving emotional equilibrium. This method focuses on relaxing muscles and mindset, is easily learnable for daily stress management.

#### **4.1.2. Systematic Desensitization**

Initially introduced and applied by Wolpe, primarily used to address anxiety and withdrawal behaviors. This therapy assumes anxiety responses are learned and can be eliminated through opposite activities. The first step involves analyzing stimuli causing anxiety behaviors, constructing levels of anxiety scenarios, teaching relaxation methods, and accompanying imaginative imagery.

#### **4.1.3. Imitative Learning**

Observers adopt behavioral stimuli to induce similar thoughts, attitudes, and actions. Through observational learning, individuals can learn expected behaviors directly without trial and error. It includes three types: actual behavior, symbolic models (e.g., movies, recordings of real behavior), and covert models (imagined behaviors).

#### **4.1.4. Role-Playing**

Primarily used to modify visitors' negative behaviors and conduct social skill training. Visitors participating in role-playing have the opportunity to change their existing behavior patterns or learn new behaviors, thus altering perspectives on certain matters.

#### **4.1.5. Decision-Making Training**

A common social skill training method in behavioral therapy. It assists in appropriate interpersonal interactions and the expression of emotions and feelings. Effective decision-making training challenges visitors' lack of decisive beliefs, teaches constructive self-statements, and accepts new beliefs about decisive behavior.

#### **4.1.6. Reinforcement Methods**

Built upon the principles of operant conditioning, where behavior receiving rewards tends to repeat, while unrewarded behavior diminishes. Three reinforcement methods include shaping, token economy and graduated extinction. Shaping gradually aligns behavior toward adaptive patterns. The token economy involves tangible rewards exchangeable for items visitors require. Graduated extinction involves disregarding maladaptive behavior to weaken and eventually eliminate it [3].

### **4.2. Sensory Integration Concepts**

The terminology concerning sensory integration was initially proposed by prominent scholars in behavioral and neuroscientific research, Sherrington C.S. and Lashley K.S. Ayres A.J. systematically introduced the theory of sensory integration, founded on research in brain function, occupational therapy, and experimental results [4]. According to Ayres, sensory integration refers to the combination of sensory information from various parts of the human body, which, upon brain integration, facilitates responses to internal and external stimuli. She posited that only through sensory integration could the disparate components of the nervous system collaborate effectively, enabling seamless interaction between individuals and their environment. This theory encompasses three dimensions: brain function and development, learning and learning disabilities, and therapeutic interventions.

As per the sensory integration theory, the primary stages of learning involve sensory input and the organization of sensory information. When various sensory stimuli fail to form efficient combinations within the central nervous system, resulting in a deficiency, it is termed sensory integration dysfunction. This dysfunction significantly impacts an individual's learning activities [5].

## **5. Objectives**

### **5.1. Overall Objectives**

The comprehensive understanding of the child aims to assist Xiao Cong in identifying learning deficiencies, altering cognition, and fostering positive Chinese language learning habits. The strategy

involves devising appropriate learning methods, enhancing concentration, improving communication with family, teachers, and peers, relinquishing negative evaluations, and promoting normal interpersonal interactions.

## 5.2. Specific Objectives

Collaboratively establishing medium to long-term learning objectives with Xiao Cong. Focusing on personal qualities, cultivating Xiao Cong's positive Chinese language learning habits, specifically enhancing concentration. Furthermore, guiding Xiao Cong in acquiring interpersonal communication skills. Lastly, strengthening communication between the family and school.

## 6. Case Implementation Process

### 6.1. Phase One

Intervention Objective: Collaborate with Xiao Cong to set learning goals and cultivate good study habits.

Intervention Content: Xiao Cong's homework was often poorly written with a dismissive attitude, indicating a lack of clear learning objectives and a perception of studying as a burden. To rectify this, fostering accurate cognitive understanding was crucial for Xiao Cong to establish short-term and long-term learning objectives. Short-term objectives involved completing daily homework within specified time frames through cognitive behavioral changes. Initially, the author primarily guided Xiao Cong in completing daily assignments to build confidence. Given Xiao Cong's initial wariness toward teachers due to limited contact, relaxation training was implemented during breaks after studying to enhance communication efficiency. Moreover, the token economy method was applied, assigning specific completion times for each subject, rewarding corresponding points, accumulatively redeemable for attractive prizes. Additionally, the social service center held quarterly academic achievement awards to motivate continuous effort among children, serving as exemplary models. Lastly, approaching the end of each term involved guiding Xiao Cong in devising end-of-term review plans and time schedules to enhance autonomy. Despite occasional setbacks, the overall effectiveness was satisfactory, adhering to the plans developed.

The long-term goal was to establish independent and proficient habits in listening, speaking, reading, and writing in Chinese, fostering a fondness for the language. Cultivating this habit required comprehensive efforts, emphasizing guidance as the essence of education. Accumulation of Chinese language knowledge often entailed various homework tasks like dictations, handwriting practice, newspaper reading, note-taking from readings, and essay writing. Throughout the tutoring process, Xiao Cong was encouraged to experience the richness of Chinese culture and language, emphasizing that language originates from life experiences. The aim was to foster Xiao Cong's fondness for Chinese language and life itself, comprehending that Chinese language forms the foundation of other subject learning. Guiding Xiao Cong to read renowned literary works aimed to instill an interest in reading and writing.

### 6.2. Second Phase

Intervention Objective: Cultivate focus in class tailored to the child's characteristics.

Intervention Content: Recognizing individual differences, the one-on-one teaching mode highlighted Xiao Cong's aversion to traditional teaching methods and his restlessness, making it challenging for him to concentrate, resulting in poor outcomes. Post taking over the case, instructional strategies were altered, employing multimedia teaching methods extensively, incorporating numerous engaging stories and visuals from the outset to capture Xiao Cong's attention. In-class activities

integrated games related to Chinese language knowledge such as "Guess the Drawing," role-playing based on course texts, and reimagined fairy tales. These activities stimulated Xiao Cong's senses, sparked imagination, and nurtured innovative skills. Engaging Xiao Cong in observational experiential writing, such as film reviews, holiday travel diaries, animal observation essays, or football match experiences, was facilitated post reviewing teaching case studies. Praise and encouragement, either verbal or through earned points, were provided whenever Xiao Cong performed well. Addressing Xiao Cong's irrational beliefs about Chinese language classes aimed to enhance his interest in learning. Emphasizing Xiao Cong's strengths, particularly his neat handwriting when attentive, led to the incorporation of at least one extra-curricular reading session during each class. These sessions aimed to expand Xiao Cong's knowledge, foster independent thinking, and writing practice while contributing to the cultivation of focus.

### 6.3. Phase Three

**Intervention Goals:** Establishing a caring relationship with Xiao Cong, fostering harmonious interpersonal relationships.

**Intervention Content:** The Rousseau theory posits that everyone is born equal. Despite being a teacher, the author never viewed the relationship with students solely from a teacher's perspective. Instead, communication and interaction were approached more from an equal standpoint. During free periods, efforts were made to secure additional two-way communication time. On the days Xiao Cong came for self-study, inquiries were made about his recent activities and performance at school. Details about the upcoming tutoring plans were shared, seeking his opinions. This approach notably facilitated an early psychological acceptance process for Xiao Cong and ensured consistency in actions, which proved beneficial for later case assessments. Eventually, the child began to enjoy conversing with the teacher about daily experiences, guiding Xiao Cong to extend this willingness to communicate and share with family and classmates, thereby aiding the case subject in overcoming interpersonal barriers and making behavioral adjustments. Additionally, the resources of the social service center were utilized to provide Xiao Cong with social support. Professional psychological counseling was regularly provided to Xiao Cong by counselors at the social service center, allowing the author to stay informed about the counseling outcomes. The social service center consistently conducted book reading corner activities with active participation from many students, encouraging Xiao Cong's involvement. Lastly, many outstanding students at the social service center were identified as potential role models for Xiao Cong, employing the behavioral therapy of observational learning. This strategy facilitated mutual supervision, learning exchange, and collective progress among the students.

### 6.4. Phase Four

**Enhancing communication between home and school, jointly aiding Xiao Cong's progress.**

It is crucial to raise parental awareness about the significance of communication between parents and the school. What struck the author most profoundly was Xiao Cong's mother becoming emotionally overwhelmed and tearful while discussing her child's situation, revealing her inner struggle and sense of helplessness, yet her profound love and care for Xiao Cong were evident. Consequently, the social service center maintained regular contact with parents via phone calls, WeChat, and parent meetings, recognizing the occasional neglect due to busyness in providing care and attention to Xiao Cong. This process also helped Xiao Cong understand the busy and toiling nature of his parents' lives for sustenance, fostering mutual understanding and fresh expectations. On one hand, the social service center leveraged resources, organizing regular parent-child activities and open days, and disseminating interactive educational concepts to parents, while also setting specific



expectations, collectively aiding Xiao Cong's progress and consolidating prior achievements. On the other hand, fostering close ties between parents and school teachers, focusing on Xiao Cong's performance at school, instilling correct educational perceptions, and working hand in hand. Initially, Xiao Cong was passive and heavily reliant, gradually transitioning to active engagement in learning. His grades improved from an initial score of 50 to around 90 in the sixth grade. Xiao Cong developed confidence in learning and cultivated commendable study habits, a result of the collaborative efforts among parents, school, and the social service center.

## 7. Conclusion and Recommendations

The Cognitive Behavioral Theory constitutes a vast theoretical framework. This study represents a preliminary exploration, amalgamating autism cases from daily life to analyze its application. The findings underscore the profound influence of schools, society, and families on the growth of autistic children, necessitating multifaceted efforts to ameliorate sensory integration issues among children. Consequently, this study may exhibit several limitations. Furthermore, it highlights the pivotal role of the surrounding environment in affecting sensory integration issues in autistic children. It emphasizes the need to leverage various social resources in later stages to solidify children's transformations. Comparatively, there's a scarcity of domestic social work interventions targeting sensory integration issues in children. The prevailing focus remains on physiological or medical sensory training, with fewer instances of direct psychological therapy or behavioral interventions, necessitating increased scholarly attention.

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