

The effect of choice-making on behavioral problems of children with autism spectrum disorder

(overview essay)

Nan Zhang, Sheng Xu

Abstract: *Affected by biological and environmental factors, the problem of children with autism spectrum disorder (ASD) have become more serious and received more attention. The reversal design of the single-subject research was used to study the effects of choice-making strategy on the behavior problem in the classroom situation of the children with ASD whether has influence or not and the effectiveness of intervention. The results show that the intervention of choice-making strategy has positive effects on the behavior problems of the study subject, and choice-making strategy intervene the avoidance and attention behaviors of the study subject effectively; and choice-making strategy had a good maintenance effect on the behavior problems of the study subject.*

Keywords: *children with ASD, choice-making, behavioral problems, intervention effectiveness*

1 Introduction

Behavioral problem is one of main negative influencing factors on development of children with ASD, which may be caused by their own social disabilities, special sensory stimulation needs (Jingquan Wei, 2011). Behavioral problems are seen as negative behaviors, but may be an effective way for individuals to meet needs, avoid tasks, and draw attention (Zhentang Hou, 1999). Now the concept of dealing with behavioral problems advocate using Functional Behavior Assessment to understand the antecedent, the consequences and the function of the behavioral problems of the ASD, and then giving prevention strategies, instead of dealing with the behavior after it happened.

Choice-making is an essential component of self-determination, and mastery of the skills of choice-making will lead to greater motivation in learning, play an important role in the development of self-determination in the future, and improve the quality of life with ASD. In 1984, the scholar Mayer Shevin & Nancy K. Klein (1984) wrote about the importance of choices for severely disabled students. In 1998, Lee Kern et Al. demonstrated that severely disabled people could improve their expressive abilities by learning the skills of choice-making. Kathleen Dyer et al. studied the effects of choice on behavior problems in severely disabled children in 1990 (Kathleen Dyer, 1990). Through a reversal design, the study showed that students were given the opportunity to choose between courses and enhancements. It reduced aggression and self-injury behavior problems. From the above research, we can see that choice-making is a strategy to intervene the behavior problems by changing the antecedent, so it can solve the behavior problems effectively.

Foreign countries began to carry out selection-related researches in succession from the 1980s. The research objects were mainly focused on severely disabled children (Marie Van Tubbergen, 2007). At present, there are few researches on behavior problems of autistic children using choice-making in China. This study will analyze the impact of “choice-making” strategy on the behavior problems of ASD through Functional Behavior Assessment and development of the content of choice-making to provide theoretical basis and practical experience for the effective intervention measures of their behavior problems.

2 Participants

Sen, an 11-year-old male, was diagnosed with mild autism by a hospital in Chongqing when he was 6. His uncle is mainly in charge of his studies and he is studying in an autism institution in Chongqing. Through the observation records of the subject, it found that he had serious behavior problems in class, which showed as follows: 1. Clap the desk with the palm frequently and with high loudness; 2. Say something unrelated to the Teacher's question in Class; 3. Do something unrelated to study: Play with erasers, exercise books, pencils, etc. It also happens when he communicates with his parents at home. Observation records show that the high frequency and loudness of the act of slapping the desk with the palm of the hand has seriously affected the learning process and social communication with his family smoothly. Therefore, the target behavior is that the palm of the hand hits the desktop during instructional sessions.

3 Experiment Design

In this study, the reversal design of the single-subject research was used. This experiment design includes two cycles of baseline-intervention, and confirmed the intrinsic validity of intervention strategy (Zhengzhi Du, 2012). It mainly included four stages: Baseline phase, intervention phase 1, reversal phase and intervention phase 2.

The independent variables provide choices, including: 1. preference scale, which is used by the individual to choose reinforcement; 2. presentation task is used to choose which task to complete first; 3. choice is done with the teacher or independently. After the independent completion, may obtain the reinforcement. The dependent variables are the number of times that the act of slapping the surface of the desk with the palm of the hand occurs.

Regarding the instructional sessions as the observational situation, and using the method of the whole-interval recording within a minute, the target behavior was recorded as [$\sqrt{}$], and did not appear as [-], using the data as the indicator of the immediate effect of the “choice” strategy.

The content of the “choice-making” strategy

The intervention effect of “choice-making” strategy on behavioral problems of children with ASD was explored. The strategy of “choice-making” develops the content for individual choice by evaluating the target behavior’s Functional Behavior Assessment.

The simple functional analysis method was used to implement the test situation and controlled situation separately. If behavioral problems are observed to increase in one of the test situations, a postvalidation exchange is implemented to confirm the hypothesis.

The results indicate that the highest frequency of the target behaviors was found in the post-effect avoidance situation, which occurred 19 times and made the post-effect exchange, and let the study subject express the avoidance correctly (I don’t want to do it), the behavior was reduced to 1 time. When they returned to the original avoidance situation, their behavior problems increased to 15. The result shows that the target behavior of the study subject is to avoid the task or request, and the behavior problem occurs 5 times in the contingent attention situation, which indicates that the behavior will attract the teachers’ attention. In conclusion, the main function of behavioral problems in study subject is to avoid task demands and arouse attention.

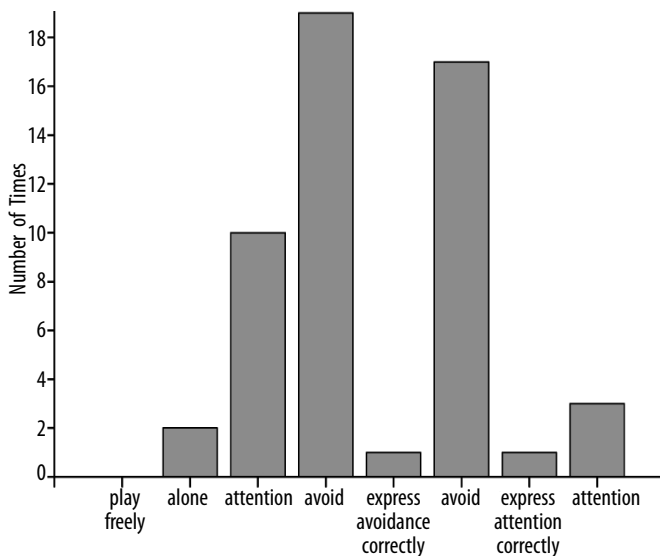


Figure 1: *Functional Analysis of Target Behaviors*

Through the functional analysis, we can see that the function of the individual behavior problem is evading the task requirements and drawing attention, so how to ensure that two completely opposite interventions are provided at the same time: giving task prompts and removing attention from the study subject. According to the results of functional analysis, the choice should be offered before the presentation of the task, which includes: completing the task with the teacher; getting the reinforcement after completing the task independently. The first option gets attention while avoiding the demands of the task; the second gets preference. Assuming that the individual prefers objects, the choice not only reduces the individual's behavioral problems, but also increases the completion of the task.

4 Research Tools

Reinforcement Questionnaire

It divides into two items: like and dislike, mainly by parents, teachers or primary caregivers to fill in used to understand the preferences of the case, as a preliminary survey data.

Stimulus preference rating scale

In this paper, we use two pairs of stimulus preference scale, which is designed by the Development Research Center for Applied Behavior Analysis of National Changhua University of Education (Zhengzhi Du, 2012). We need to prepare the following

items: 1. 5–12 kinds of stimulus preference including food, non-food items, picture cards to show the activities, etc.; 2. record form.

Functional Behavioral Assessment Interview Form

Adopt the form of Taiwan scholar Wenying Niu, mainly interview with family members, teachers and primary caregivers and observe the situation under the teaching routine, record the detailed content of the interview and observational information.

ABC Behavior Record Form

The main purpose of the study was to record all the observed antecedents, behaviors, and consequences of the behavior problem at the baseline stage, and to record the antecedents, behaviors, and consequences of the target behavior in detail after identifying the target behavior.

Behavior Problem Frequency Record Form

The table is a self-made scale, which records the number of behavior problems per day in each phase of the experiment. The table can record the number of behavior problems per minute.

Results

Based on the design of the experiment, we can get the percentage of the goal behavior in the different intervention, which is shown in figure 2.

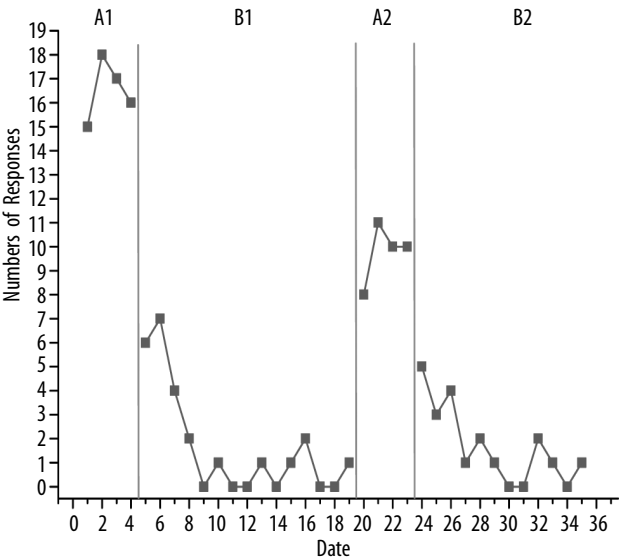


Figure 2: Sen's performance at baseline, intervention 1, reversal and intervention 2

At baseline, the time of the palm of the hand hits the desktop ranged from 15 to 18, with a stage mean of 16.5. Stable trends and stable levels were observed. After the choice-making intervention the stage mean was 1.2 times, and the trend stability was 93%. Compared with the baseline, the trend was down and stable. From this, we know that the level range of intervention phase 1 is lower than that of baseline phase 1. We know that through intervention of choice-making strategy, it does affect the performance of the target behavior of the case, making the performance of intervention phase 1 significantly different from that of baseline phase 1. It also resulted in a lower incidence of target behavior at the treatment phase 1 than at the baseline phase 1. The overlap percentage between baseline phase I and treatment phase I was 0%. From the C Statistics, Z Value was 3.93, which was very significant. It showed that choice-making strategy was significantly helpful in the case of target behavior.

After the intervention was removed, the percentage of target behavior in the reversal phase was between 0–6, and the average value of this phase was 9.8, which was obviously higher than that in intervention phase 1. So this phase shows an increase in target behavior. The overlap percentage between baseline phase II and treatment phase I was 0%, and from the C Statistics, Z Value was 3.71, reaching significant level.

During the treatment phase II, the percentage of the subject smacking the desktop decreased, the average value of the stage was 1.58, and tended to be stable. The level range of intervention phase II was lower than the baseline 2. Therefore, the intervention of choice-making strategy did affect the performance of smacking the desktop, and made the frequency of smacking the desktop at treatment phase 2 lower than that at baseline. The percentage of overlap was 0% between baseline phase II and treatment phase II, and from the C Statistics, Z Value was 3.67, reaching significant level. The frequency of target behavior was stable and decreased.

During the whole experimental phase, the number of behavioral problems the treatment phase II decreased, the baseline II increased slowly, and the treatment phase II decreased to 1.58 times, showing better effects of intervention. The level variances of intervention phase II and intervention phase II were positive value, which indicated that the intervention was effective and well maintained. The results showed that the frequency of behavior problems of ASD was significantly reduced by making choice strategies.

5 Conclusion

The behavior problem of children with ASD has seriously affected their healthy growth and other children's education. In order to seek effective intervention measures to reduce the bad behavior of children with ASD, this study was based on the single-subject research ABAB reversal experiment design. Through simple functional

analysis, the effect of “choice-making” on behavioral problems of ASD was analyzed, and the main conclusions were as follows:

1. The intervention of choice-making strategy has positive effects on the behavior problems of the study subject.

From the experimental data and analysis results, we can see that the behavior problem of the study subject smacking the desktop, decreased from 16.5 times in the baseline phase to 1.58 times in the treatment phase II. It indicated that the target behaviors have improved significantly. The design of this experiment is the cycle of the baseline phase and the treatment phase, that is to show the copy of the intervention effect, more sure for the internal validity of the choice-making strategy. Reports from parents and teachers found that the behavior of smacking the desktop was significantly reduced in both home and school settings, the intervention has a certain maintenance validity and learning efficiency was improved.

2. Choice-making strategy can intervene the avoidance and attention behaviors of the study subject effectively.

Through the functional analysis, we found that the main functions of the behavior problems were avoidance behavior and attention behavior. Through the intervention of choice-making strategy, the behavior of the study subject was improved obviously. The results of data analysis show that the results of the study have a good maintenance effect and effectiveness.

3. Intervention strategies based on functional behavioral assessment can effectively solve behavioral problems.

In this study, the function of behavior was obtained by the functional behavior assessment, and the choice was considered by the function. In 2001, Ervin et al. were pointed out that the intervention strategy based on the functional behavior assessment may be more effective than the arbitrary intervention strategy in finding out the function of behavior occurrence and intervening behavior problems from the behavioral function. We understand the function of what happens, and what it means to change behavior for the better. Through this research, we can also see that the choice-making strategy based on the functional behavior assessment has a better effect.

Recommendations

In this study, a child with mild ASD was used to assess the causes of behavioral problems and to develop a “choice-making” strategy. The research indicated that the study subject had a 90 percent reduction in behavioral problems, and the effect of intervention was significant. Here are some suggestions for future research.

1. It should be good at using Functional Behavior Assessment, analysis of the root causes of behavioral problems in study subject.

Ervin & Iwata et al have proved the validity and necessity of Functional Behavioral Assessment, and the results of this study have proved its importance. Therefore, the future research should first find the function of the target behavior, the root cause of the behavior, and then develop intervention strategies. It can get more effective solutions.

2. Increasing the number of research subjects so as to make the research more convincing.

Because of the time and other factors, there is only one research subject in this study, in the future research increasing the number of research subjects, using cross-subject experimental research, will make the paper more convincing. Different types of barriers can also be selected as the study subject to verify the effectiveness of the choice-making strategy.

3. How to apply choice-making to one-day activities in Special education to improve behavior problems.

This research is conducted in a single classroom situation, we can see that making choice is a simple and effective method, the content of choice is also relatively simple, and easy to operate, not limited by time and place, easy to promote, and more effective. How to apply making choice to Special education activities, what choices to make, and when to make choices during the day to improve behavior problems in children with ASD.

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(reviewed twice)

1st Nan Zhang, 2nd Sheng Xu

Leshan Normal University

No. 778 Binhe Road, Central District

Leshan City, Sichuan Province

ZIP Code, City: 614000

China

1st Author's e-mail: 245020769@qq.com

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