

Shaping techniques to increase independence in children with intellectual disabilities

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Abstract

Intellectual disability disorder that appears during development and includes deficits in intellectual, adaptive, and social functions. These deficits can cause problems for children, including a lack of independence. This research aims to increase the ability to wear button-down t-shirts in children with intellectual disabilities. The subject in this study was an eight-year-old boy. The assessment methods used are interview, observation, psychological tests, Stanford-Binet test, Color Progressive Matrices (CPM), and Vineland Maturity Social Scale (VSMS). The shaping technique, carried out over nine sessions, can consistently increase children's independence in wearing button-up t-shirts. Parental support that gives children opportunities to do things independently also influences the success of this intervention.

Keywords

Clinical intervention, independence, intellectual disability, parental support, shaping technique

Introduction

Intellectual disability is a developmental disorder that appears during a developmental period characterized by deficits in intellectual, adaptive and social areas. The period when the disorder begins during the developmental period from infancy to childhood. Referring to the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-V), the criteria for intellectual disability are characterized by the emergence of obstacles to verbal, memory, perceptual and quantitative reasoning, abstract thinking, and other cognitive functions (APA, 2013; Patel et al., 2020). Children with intellectual disabilities will have widespread and varied limitations in their adaptive functions, such as language abilities, reading, writing, reasoning, self-care abilities, communication and memory (Setiawati, 2019).

DSM-V classifies four categories of intellectual disability: mild, moderate, severe, and profound (APA, 2013). This category is based on children's abilities, which are compared to the basic abilities of normal-aged children in general. This can be seen by direct observation of eating, drinking, bathing, brushing teeth, dressing, and other self-development activities (Nida et al., 2018).

Children with intellectual disabilities have limitations in adaptive functions, including self-development activities for dressing (Dewi et al., 2017). This limitation concerns a lack of motor skills (Loosova et al., 2020). Children with intellectual disabilities carry out self-development activities but need help from parents, teachers, or other close people (Jaleha et al., 2023).

Caring for oneself is a basic human ability, including dressing, eating, drinking, bathing, and doing activities in the bathroom (Dewi et al., 2017). The ability to care for oneself can indicate an individual's functioning and mental health status (Delgado-Lobete et al., 2021). This can be measured by looking at the child's ability to carry out self-care

independently without help and direction from other people (Rajani, 2023).

Children with intellectual disabilities, there are internal and external factors that influence their ability to care for themselves. Internal factors relate to motor and health conditions. External factors include the role of parents to guide, provide direction, and train children's abilities (Pesau et al., 2020). Parenting styles are also included as external factors that play an essential role in children's independence, especially in self-care (Wayanshakty et al., 2020). Many parents are used to helping their children in almost all their activities. For children with intellectual disabilities, this habituation can cause other problems for parents (Bellaputri et al., 2022).

Independence is a particular focus for children with intellectual disabilities, especially in dressing, so they need continuous assistance from parents or people around them. In this case, the problem with this subject was the inability to dress independently. Observation showed that subjects wanted to get dressed if they were given directions and assisted by their parents. On the other hand, the subject's inability to dress independently makes it difficult for the parents to divide their time and household tasks, especially in the morning.

In general, independence in dressing is an ability in children from the age of five. However, in children with intellectual disabilities, this skill cannot necessarily be exceeded by age five (Hayton et al., 2019). The problem of independence in clothing for children with intellectual disabilities who

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are already at school is one of the problems that needs to be addressed using psychological intervention. Apart from impacting children's behavioral abilities, this problem also impacts children's accuracy in school, where the time needed to get dressed takes a long time and can cause children to be almost too late for school (Khairunnisa et al., 2022).

Problems of independence in children require psychological intervention to train them to be more independent, especially in terms of dressing. Children with intellectual disabilities who need parental assistance will certainly need the role of parents in the intervention provided. Thus, parental involvement in providing intervention to children is certainly an important role (Astriani et al., 2022).

Independence in dressing is an activity involving independent behavior, so the psychological intervention given is behavioral intervention. Behavioral interventions can be used for independence problems in children with intellectual disabilities, such as life skills training, modeling, and positive reinforcement (Dereje et al., 2023; Khairunnisa et al., 2022). However, other interventions, such as shaping techniques, are considered adequate for increasing independence in dressing because shaping techniques involve children practicing directly (Dahlan et al., 2022). Based on the explanation above, this research aims to determine the effectiveness of shaping techniques in increasing independence in children with intellectual disabilities.

Method

Assessment

The assessment method, in this case, consisted of clinical interviews, observations, and psychological tests. Clinical interviews were conducted with parents with the aim of obtaining a history of problem formation, the subject's daily activities, interactions with the environment, and the impact of the problems experienced by the subject. Observations aim to determine specific behavior related to independence issues. The psychological tests used were the Stanford-Binet Test, Colors Progressive Matrices (CPM), and the Vineland Social Maturity Scale (VSMS).

Case Presentation

The subject is an 8-year-old boy, the second of two siblings. Currently, the subject lives with his father, who works as a lecturer, and his mother, who is a housewife. Currently, the subject attends an Extraordinary Kindergarten (TK-LB). Based on interviews with the father, it was discovered that the mother's pregnancy was going well, and the birth process was carried out by cesarean section because the baby was in a breech position and did not allow the mother to give birth typically. Since birth, he has shown no abnormal signs. When he was nine months old, the subject received measles immunization, which caused high fever and convulsions. This condition receives special treatment in the emergency unit. The doctor said this condition could cause nervous system disorders, which could cause developmental delays.

When he was three years old, the parents began to notice he had a speech delay compared to his older brother and other children his age. He can only call father and mother and use several demonstrative words, but the pronunciation of

words such as "yah," "ma'am," "tu," and "ni" is unclear. The parents also realized that he had crossed eyes, which should not happen to normal children. The parents saw from the development chart in the Maternal Child Health (MCH) book that their child had overall developmental delays since the age of nine months.

The parents do not remember what stage of development was hampered, but they understood from the start (when he had a high fever and convulsions) that he was a special child. This condition makes the father believe he has abilities that are not the same as other children. The subject attended speech therapy in 2017 and stopped in 2020 due to the Covid-19 pandemic. Until 2021, he can enter kindergarten at one of the special schools offline.

His academic abilities do not match his age, and he entered TK-LB at 7.5 years old. Currently, he cannot read, write, and count. He also needs a better understanding of the concept of objects: all objects are round, all colors are blue, and all numbers are two (2). Apart from academic problems, he is also unable to carry out self-care tasks independently. Every day, he bathes and gets dressed with the help of his mother. He is not able yet to wear his own clothes, either shirts/t-shirts or trousers. Father realized that he had look like of a two year old child.

Every day, he wears a type of t-shirt combined with buttons (polo shirt) to school. This is because he cannot wear a shirt and the buttons on the shirt he wears are often detached when he is playing. According to his father, wearing a button-up t-shirt made from material that stretches easily is more durable than a shirt made from stiff material because he has a high appetite, which causes him to gain significant weight.

Parents feel their children should be able to do basic things independently as they age. In the morning, Mother is busy enough to prepare his stuff and do some household chores. The parents need a household assistant or exceptional caregiver; if the mother continues to help him, several other household chores will be neglected. If the mother has free time in the afternoon, the mother sometimes gives him the opportunity to wear his own clothes after bathing. However, his abilities were still limited, so his mother always immediately helped.

Parents realize they never scold and punish if their child makes a mistake. The major mistake he made ever was pulling the cupboard drawer off, breaking the living room table, and climbing on the dressing table until the broken mirror pierced his leg, so he had to be rushed to the hospital to retrieve the mirror fragments that were in the soles of his feet. Parents feel that mistakes are understandable, so there is no need to be scolded or punished. If he makes a mistake, the parent warns him that his behavior is wrong.

Based on the observation, in self-care ability shows he is unable to wear clothes independently. This observation was carried out for three consecutive days in the afternoon when he had finished showering and was about to get dressed. His mother put a t-shirt on his head, but he remained silent. When he was asked by the mother to wear a t-shirt, he only tugged at the t-shirt and couldn't put the t-shirt on until finished so the mother helped him.

The psychological test results showed an IQ score of 38 (mentally defective) on the Binet scale with a mental age of 3 years and 4 months. The CPM test results show a percentile

score of 4, which is included in grade V (defective). The VSMS results show a Social Quotient (SQ) score of 76, which is in the very low category compared to children of the same age. The low aspects are self-help eating, self-help dressing, and communication.

Diagnosis

Based on assessment, a diagnosis can be made according to DSM V 319.0 (F71: Intellectual Disability Disorder) in the moderate category. Subjects showed symptoms characterized by: 1) Deficits in intellectual function as indicated by an IQ score of 38; 2) Deficits in adaptive functioning, lacking in academics and independence; 3) Deficits in intellectual and adaptive function appear during the developmental period, namely at three, which begins with speech delays. The problem that is the focus of the intervention is the subject's independence in self-care, such as wearing button-up t-shirts (polo shirts).

Prognosis

The prognosis or prediction of successful recovery for the problem is good. This can be seen from his response; he is happy if given a simple command to do something that can support the intervention process, which is accepted. The existence of external factors in the form of support from parents to familiarize with practicing independence in daily activities.

Intervention

The target of the intervention is to increase independence in wearing button-up t-shirts by providing behavioral modification with shaping techniques. Shaping techniques aim to form new behavior by dividing activity from easy to more complicated stages. Providing shaping for children's independence is considered appropriate because the condition of children with intellectual disabilities is less able to receive commands simultaneously. In the shaping technique, examples are provided with the help of puppet media, which is the principle of learning for children with intellectual disabilities, emphasizing the visual learning process (Sulilowati et al., 2018).

The shaping technique is effective for children with intellectual disabilities because, in implementation, there is cooperation between the child and the companion so that the child can follow and show changes in behavior in accordance with the intervention target. Providing shaping techniques is also practical because the intervention is carried out continuously and consistently. Shaping technique interventions also focus on attention to children's needs (Singarimbun et al., 2018). In line, the intervention in this case was accompanied directly by his mother, who consistently prepared necessities in the form of polo shirts and provided intervention to the child on an ongoing basis.

Shaping must be followed by providing reinforcers for any behavior changes (Anggraini et al., 2018). Providing reinforcers is considered appropriate because children's cognitive functions cannot develop according to their current age, so creating new behavior requires a learning process followed by positive reinforcement (Setiawati, 2019). When the expected target behavior appears, the child must receive

reinforcement such as, "You are great!", "Very clever." "Good! You can do it". Apart from praise, reinforcers can be followed by positive ones such as thumbs up, caressing, and applause (Hendarko et al., 2018).

Burn et al. (2022) explained that interventions for independence in children with intellectual disabilities can be carried out at home with the help of family support. Positive reinforcement techniques for independence in children with intellectual disabilities require a more extended period with successful gradual behavior changes. Hardianti et al. (2017) stated that the shaping technique is a behavior change technique that divides into small steps slowly until the desired behavior emerges. This is followed by providing reinforcers. The interventions carried out are:

Session I: Building rapport, explaining contracts, and determining behavioral targets. This session contains activities regarding explaining the intervention contract conveyed to parents and determining the child's behavior target, with independence in wearing polo shirts.

Session II: Determining pre-intervention behavioral conditions. This session aims to determine the condition of the child's behavior by first determining the child's understanding of body parts related to clothing, such as the head, right hand and left hand. Next, children are asked to wear t-shirts independently to see the extent of their ability to dress.

Session III: Determining shaping and reinforcers. This session explains to parents the shaping stages that will be given to children when dressing, with tucking in the head, right hand, left hand, pulling the shirt down, and buttoning the two buttons on the polo shirt. Next, determine reinforcers through praise and applause when the child completes the shaping stage.

Session IV: Intervention and assignment. This session began by giving the child and his mother an example of how to dress according to the shaping stages in the previous session. This example was given using dolls in front of the child and his parents to help him understand the stages of dressing and which body parts are involved. The parents were then assigned to record the child's progress in dressing according to the shaping stages every day.

Session V: First evaluation. The first evaluation includes eight days of recordings by parents. Overall, in the first evaluation, he was able to carry out two to three behaviors out of the five behaviors at the shaping stage but still needed help and direction from the mother.

Session VI: Second Evaluation. The second evaluation included recording for five days. Overall, the subject carried out four behavioral stages of shaping. He also inserted the buttons on the polo shirt independently, but he still had difficulty matching the button holes and still needed help.

Session VII: Third evaluation. The third evaluation includes an evaluation of recording for seven days. The change from this evaluation session is that he has shown progress by being able to wear a polo shirt independently according to the shaping stages and insert two polo buttons.

Session VIII: Fourth evaluation. This was the fourth evaluation with a recording period of five days. He was able to wear a T-shirt independently but still had difficulty buttoning and tidying the collar. From the first day of practice until today, his mother observed that he was able to wear polo shirts more independently than before. The mother also always rewards him with praise when he successfully completes each stage.

Session IX: Evaluation and termination. The session began by asking about his progress while wearing polo shirts during 25 days of shaping techniques. If there are positive changes, this session is continued with a termination session. The intervention session ended, however, it was hoped that his mother would be able to apply shaping techniques over the next two weeks.

Session X: Follow up. This session began by asking about his progress in wearing polo shirts according to the shaping stages. The subject was allowed to practice wearing a polo shirt in this session. He could put on a polo shirt independently and button it with a record time of 23 minutes to dress and 18 minutes to button. The mother said that by looking at previous records, she could discover the child's development and provide training for independence.

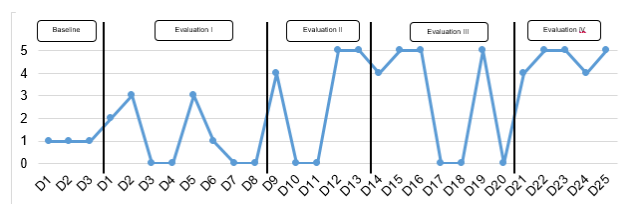
Results and Discussion

Results

The shaping technique intervention provided effectively increased the intervention target, the child's independence in wearing polo shirts. Changes in increasing independence occurred gradually with the stages of the shaping technique in wearing polo shirts. The target at each stage of shaping can be achieved, he can follow the directions of the parents who accompany him daily in dressing. He was able to complete the intervention over 25 days.

The changes that can be seen from the initial intervention session are the child's enthusiasm for paying attention to the puppet media, following directions and being able to wear a polo shirt independently. His condition before the intervention was that he was not yet able to wear a polo shirt independently. During the intervention, there were assignment sessions and evaluations for his parents. The assignment session is given once, and the evaluation session is given four times. The assignment session is given once and is to be carried out continuously until the termination session. The result of the assignment is that the child's development is getting better. He is starting to be able to wear a polo shirt with a small amount of help from the mother and routinely allows wearing a polo shirt independently according to the five predetermined shaping stages (putting the head in, putting in the left hand, putting in right hand, pulling on the shirt, and buttoning the buttons on the polo shirt).

At first, he could wear a t-shirt with help and direction from his mother, with the recorded duration being 15 - 20 minutes for him to wear a t-shirt until the stage of pulling the shirt off. In the first evaluation, he could not insert the button, so he was taught and accompanied by his mother to insert the button. In the second evaluation, wearing a polo shirt without buttoning was around 13 - 20 minutes. He still has difficulty buttoning the polo shirt by himself. He had difficulty inserting



Gambar 1. Changes in Increasing Independence in Wearing Polo Shirts

the button into the right hole, so he needed direction and help from his mother.

In the third evaluation, he could wear a polo shirt independently according to the shaping stages, tuck in the head, right hand, left hand, pull on the shirt, and button it. He could wear a polo shirt independently in approximately 12 - 15 minutes. Apart from that, he could insert two polo buttons correctly, but he still had difficulty inserting the buttons into the wrong holes on several occasions. In the four evaluations, he showed good changes. He was able to wear a button-up t-shirt independently. In the fourth evaluation, the mother could assist by directing verbally, and his mother provided a little direct contact assistance. The recorded duration was 15 - 20 minutes to insert the head to pull the shirt and 20 - 30 minutes to insert the buttons correct.

After the evaluation and termination sessions, He shows gradual changes in behavior. He maintained their ability to dress independently until the follow-up session. In the follow-up session, he showed changes by practicing wearing a polo shirt directly, starting from tucking in the head to inserting two buttons with directions from the mother. The increase in subject independence in wearing polo shirts can be seen in graph 1.

Information: D1, D2, D3: Basic D1 - D25 (horizontal): Number of intervention days 0: Cannot wear a polo shirt 1: Inserting the head 2: Insert right hand 3: Insert left hand 4: Interesting clothes 5: Buttoning the shirt (2 buttons)

The shaping technique intervention given to the child effectively increases independence in polo shirts. The behavior change was that previously, he could not wear a polo shirt; after the intervention, he could wear a polo shirt and button it himself. This technique is appropriate for overcoming the problem of independent clothing in children with intellectual disabilities. The results of research by Raj et al. (2020) show that the adaptive functioning abilities of children with intellectual disabilities, such as self-care activities such as dressing, can be improved through changing behavior with shaping techniques.

Practical training in improving the skills of moderately mentally retarded children involves providing techniques in stages. Providing shaping techniques that emphasize gradual behavioral improvement has proven effective in children's self care problems. Providing techniques gradually, slowly and repeatedly can make children practice until they understand through getting used to self-care (Akhmetzyanova, 2014; Pesau et al., 2020).

This is in line with the development shown; the child can carry out the stages of dressing according to the shaping techniques taught, inserting the head, right hand, and left hand, pulling the clothes, and inserting the buttons correctly.

Dressing with several steps makes it easier for children with moderate intellectual disabilities to understand it naturally (Nida et al., 2018). In line, he begins to understand each step or stage of shaping in dressing so that he can dress well independently.

Providing shaping techniques with several stages followed by reinforcement can improve the child's behavior to maintain his ability to dress. His mother always praises him when he succeeds in carrying out each stage of dressing. Self-care activity skills such as dressing also increase due to the provision of positive reinforcers, such as praise, when children can complete the stages of dressing (Biruny, 2022)

The role of parents during the intervention process also influences the intervention's success level for children. For children with intellectual disabilities, the child's independence in self-care still depends on the parents. The existence of support from parents and family can certainly be an essential factor in the intervention process (Pursitasari et al., 2019). Support from parents for children can be in the form of social and material support. Consistent support can help children achieve the desired behavioral targets (Guralnick, 2016). He can realize changes due to the consistent stimulation taught by his parents.

Patel et al. (2020) stated that children with intellectual disabilities in the disability category (moderate) need assistance with ongoing supervision and guidance in daily activities involving simple housework and personal care, including getting dressed. In this case, this child showed a change in clothing and was accompanied by his mother when he was dressed.

Conclusion

The shaping technique intervention provided was effective in increasing independence. He can gradually wear polo shirts and button them independently. This process occurs because the formation techniques given are based on his abilities and reinforcement from his parents when he is successful at each stage of formation. Parents also allow children to dress independently to practice their abilities and become accustomed to dressing without help.

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