

SCHOOL BASED INTERVENTION FOR CHILDREN WITH AUTISM SPECTRUM DISORDER

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ABSTRACT

School-based intervention can be used to solve the problems of children with autism spectrum disorders who are in the lower-middle economic class. This research aimed to find out the types of intervention in school-based interventions and implementation of school-based interventions for children with autism spectrum disorders. This research used a literature study with a qualitative approach consisting of three stages, data collection, data analysis, and conclusion/drawing. The literature was collected from various sources related to school-based interventions for children with autism spectrum disorders. Eleven out of twelve articles showed that school-based interventions with multiple types of intervention could provide positive benefits for developing social communication and behavior of children with autism spectrum disorders. The implementation of school-based interventions consists of 4 stages, namely: (1) identification and assessment, (2) program planning, (3) program implementation, (4) program evaluation. School-based interventions for children with autism spectrum disorders are strategic solutions to overcome children's social-communication and behavior problems and obstacles without spending more.

Keywords: school-based intervention, autism spectrum disorder

1. Introduction

Autism spectrum disorder is a neurodevelopmental disorder characterized when a deficiency in social communication is accompanied by repetitive, exaggerated, and limited interest behaviors and routine and rigid behavior towards change (American Psychiatric Association, 2013). Communication of students with autism spectrum disorders is very limited or even non-existent by a lack of reciprocity in communication, a lack of understanding of nonverbal communication in social interactions, and a lack of initiating, developing, maintaining, and understanding a relationship (Hart Barnett, 2018). Students with autism spectrum disorder have patterns of behavior, limited activities and interests, and repetitive behavior. Children with autism spectrum disorder also have challenging behaviors, such as tantrums, self-injury, and aggression. (Koegel et al., 2012). The term spectrum is used because of the heterogeneity and severity of symptoms of each child with autism. Every child with autism has different characteristics from other autistic children. The characteristics of sensory processing of children with autism spectrum also differ from child to child. Sensory symptoms are a complex set of behavioral reactions to the sensory environment. Sensory symptoms can be broken down into three patterns: hyperresponsiveness, hyporesponsiveness, and sensory seeking

(Boyd et al., 2010). Hyper-responsiveness involves overreacting to the sensory environment (e.g. covering their ears to hear someone's singing). Hyporesponsive behavior lacks reaction to the sensory environment (for example, not turning to loud sounds). Examples of sensory seeking include prolonged visual inspection of toys or repeated touching objects. The communication characteristics of each child with autism also vary. Therefore, treating students with the autism spectrum requires individual intervention.

Interventions carried out individually support children in developing communication and social interaction. Individual interventions are also used to improve the behavior of children on the autism spectrum. In addition to being carried out individually, the experts must carry out detection and intervention as early as possible to provide more satisfaction to parents of children with autism than children with autism who are detected and given intervention late. (Bejarano-Martín et al., 2020). After an autistic child is intervened early individually and is obedient, the child can take a transition class and be included in a classical class with other friends. Children with autism obtained interventions obtained individually by enrolling them in therapy institutions. Usually, parents feel that their child needs to be brought to a specialist and then handled individually in a therapy institution. Therapy is to improve communication skills and reduce excessive or hyperactive behavior.

Caring for children with autism causes heavier stress for parents than children with special needs of other types (Dabrowska & Pisula, 2010). Based on a study conducted by (Schieve et al., 2007), even parents of autistic children who already know about the condition of autism can experience high stress and irritation with their autistic children's behavior. Therefore, families strive to provide the best services and interventions for their children to improve their communication and behavior. Families face the challenge of adapting to the new and unexpected realities of having an autistic child in the family. They have to rearrange their family roles, find a suitable treatment, and in many cases, pay high fees for specialist or expert advice ((Hock et al., 2012); (Keenan et al., 2010); (Depape & Lindsay, 2015).

Therapy institutions provide individual intervention services for children with autism to improve their social communication and improve children's behavior for the better. However, the cost of similar intervention services in therapy institutions is relatively expensive. Rahayu (2020) states that around Jabodetabek, the cost of therapy for children with autism is around Rp. 200,000 per session. UPT Autism Service Center (PLA) Solo provides therapy for children with autism disorders for Rp. 35 million, which is run for eight months. (Ryantie, 2017). Meanwhile, Sulistiyo (2019) stated that the cost of therapy for children with autism is around Rp. 250,000 to 3,000,000 per month and can reach IDR 8,000,000 for the middle to upper-class economy. This fact is certainly burdensome for families of autistic children who come from middle to lower economic circles or are less fortunate. The high cost makes parents think twice about including their children in therapy institutions. Besides, parents tend to choose their children to go to school without special services. In the end, not all children with autism participate in therapy services outside of school, so that communication, social interactions, and behavior are not handled optimally. Therefore, special intervention services for children with autism would be better if implemented at schools. So, parents do not need to spend a lot of money to provide special intervention services or treatment to their children outside the school. These are also known as school-based intervention.

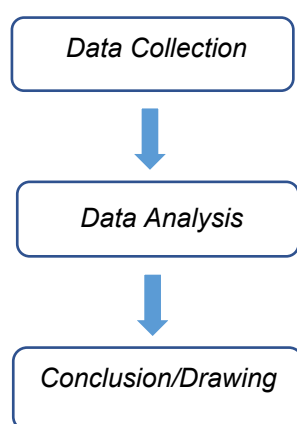
School-based intervention is effective in helping children with autism adjust to friends, especially in improving communication and socialization (Dykstra Steinbrenner et al., 2015; Einfeld et al., 2018; Hart Barnett, 2018; Whalon et al., 2015). Besides that, school-based intervention has a positive effect on improving good behavior. School-based intervention also significantly affects language and learning skills with ABA implemented at school (Grindle et al., 2012). Therefore, this research aims to determine the types of intervention in school-based interventions and the implementation of school-based interventions for children with autism spectrum disorders. Solutions and initiatives for developing a special school-based

intervention for children with autism spectrum disorder need to be implemented in an integrated manner to support activities of children with autism in the classroom. Parents will be optimistic in raising their child with school-based intervention.

2. Method

The literature study method is used in solving the problems in this study. Twelve papers related to school-based interventions and school-based therapy were selected through several kinds of literature such as articles, journals, official reports, and books. The articles of this research found by searching some of the keywords. Some of the keywords used are school-based intervention for autism spectrum disorder, school-based intervention for children with autism, school-based therapy for children with autism, autism spectrum disorders. The process in this research consists of data collection, data analysis, and Conclusion/Drawing. The research process can be seen in Figure 1 as follows:

Figure 1. Research Procedure



Data collection was carried out by selecting and collecting data related to school-based interventions and school-based therapy. After the data is collected, the data is analyzed to find information and facts that answer the research questions. The process of the data analysis used the meta-analysis technique by employing the inductive descriptive technique. Then the final process of this literature review is to draw conclusions based on data analysis. It can find the answer to the research questions and objectives.

3. Results and Discussion

School-based interventions for autism are devoted to providing interventions for children with autism and are implemented in an integrated manner. This service eases parents of autistic children with the low economic ability to enrol their children for free intervention or therapy at school. School-based interventions for children with autism support parents of autistic children to be optimistic that their autistic children receive intervention or therapy services. Even though they are economically disadvantaged and are not included in the intervention service program (therapy institute) outside of school. The objectives of this school-based autism intervention are (1) overcoming socialization and communication problems and adapting to society, (2) training language functions, (3) fix and reduce behavioral issues, (4) train independence, (5) increase competence, explore talents and interests. (Bektiningsih, 2009). Collaboration between school principals, therapy teachers, counselling teachers, parents, psychologists, and all school members is needed to achieve this goal. Intensive and comprehensive interventions that can be provided focus on improving communication and socialization and developing talents and interests so that it is necessary to pay attention to the readiness of teachers and school members in implementing interventions. (Koegel et al., 2012).

This article analyzes 12 studies on school-based interventions that have been compiled from various sources. There are multiple forms of interventions used to provide school-based interventions for children with autism spectrum disorders. Almost all of them deliver positive results in developing communication, social skills and improving children with autism spectrum disorders behavior.

Table 1: School-Based Intervention for Children with Autism Spectrum Disorder

Research	Intervention	Target Behavior	Result
Apriyani et al., 2012	Established a Learning Support Center (LSC) with a curriculum modification by creating a Social Communication and Individual Educational Program (IEP)	Social communication and learning abilities	Not explained
Bektiningsih, 2009	Creating autism therapy programs with behavior modification or the ABA (Applied Behavior Analysis) method, Occupational, Sensory Integration, Physical, Intervention with peers in Special Schools Social communication, Behavior, Sensorimotor	Social communication, Behavior, Sensorimotor	Positive
Einfeld et al., 2018	The Secret Agent Society (SAS) Program in autism special classes by Social Aspect (Autism Spectrum Australia)	Social Communication	Positive
Anderson et al., 2018	Peer social interactions and backward chaining procedures combined with different reinforcement	Social communication and behavior	Positive
Spaniol et al., 2018	(Computerized Progressive Attentional Training; CPAT)	Attention (Communication)	Positive
Eldevik et al., 2012	Early Intensive Behavioral Intervention (EIBI) in mainstream preschools	Behavior	Positive
Sutton et al., 2019	behavioral interventions (direct verbal or visual instruction, feedback, encouragement, and reinforcement), cognitive-behavioral interventions, peer and participant training on social or academic skills, or social clubs' formation in the same particular interest.	Social communication and behavior	20 of the 22 articles reviewed showed positive results
Whalon et al., 2015	Social competence interventions associated with Peer	Social Communication	Positive
Dykstra Steinbrenner et al., 2015	Advancing Social-Communication and Play (ASAP) intervention (additional intervention targeting joint attention and symbolic playing skills)	Social Communication	Positive
Martinez et al., 2016	Social stories (63% of all research on instructional interventions)	Challenging Behavior	Positive
Hart Barnett, 2018	Play with peers	Social Communication	Positive
Grindle et al., 2012	Applied Behavior Analysis (ABA) class in public schools	Adaptive behavior and learning abilities	Positive

All studies show that children with spectrum disorders have problems with social communication and behavior. Those need to be developed and improved—communication of children with autism experiences barriers. For example, children with autism spectrum disorder often have difficulty forming and maintaining peer relationships, understanding the intricacies of social communication (for example, interpreting nonverbal cues such as facial expressions and gestures), and participating in symbolic/dramatic play (Hart Barnett, 2018). Also, children have the character of challenging behavior such as tantrums, injuring themselves, and being aggressive. Those are why schools must provide an ideal mechanism for interventions for autism when children are in school for hours every day. (Koegel et al., 2012)

Handling children with the autism spectrum requires professional teacher competence. School-based interventions carried out with the support of teacher professional competence can reduce stereotypical behavior of children with autism spectrum disorder (Edwards et al., 2018). In addition to professional competence, handling children with autism spectrum disorder also requires high dedication and loyalty. (Giles et al., 2018) train novice teaching assistants in a classroom to implement interventions developed in specialized care centres, response disorders, and distraction. They found that all three teaching assistants learned to intervene with high fidelity and loyalty reduced repetitive behavior for two out of three students with autism spectrum disorders. School-based interventions provide positive development for children with autism.

Several forms of school-based intervention services for children with autism spectrum disorders have been implemented in Indonesia. Apriyani et al. (2012) describe in their research SDIF Al-Fikri is an inclusive school that provides special intervention services for children with special needs, including children with autism spectrum disorders. The school forms a Learning Support Center (LSC) that offers individual intervention services, monitors children's development, develops individual learning programs, and works with psychologists and special companion teachers in supporting service programs. Also, SLB Negeri Semarang has established an individual education program for children with autism at SLB Negeri Semarang from 2004-2005. Most children with autism who register at SLB Negeri Semarang have transferred from autism schools or foundations because they have difficulty paying for school fees and expensive therapy. At the same time, the cost of education at SLB Negeri Semarang with individual intervention services is relatively cheap. (Bektiningsih, 2009)

From the 12 studies above, school-based intervention for children with autism spectrum disorder can provide positive benefits for developing social communication and behavior of children with autism. It is done through various forms of intervention. School-based interventions for children with autism spectrum disorders can be used as solutions to overcome social problems and barriers to communication and children's behavior without having to spend more.

Several forms of intervention can be carried out in school-based interventions as follows:

3.1 Applied Behavioral Analysis (ABA)

Applied behavioral analysis is a form of early intervention for children with autism to modify behavior. In SLB Negeri Semarang, each child gets two full hours of study time handled by one therapy teacher. The handling of children at this stage varies according to the condition of each child. (Bektiningsih, 2009). The entry criteria for an ABA class or intervention room is that the child must receive an official statement of special educational needs, a diagnosis of autism, and be recommended by the local education department to be placed in an appropriately resourced school setting. (Grindle et al., 2012)

3.2 Early Intensive Behavioral Intervention (EIBI)

Early Intensive Behavioral Intervention (EIBI) helps children with autism learn appropriate behaviors, which replace difficult ones. These interventions also help children learn to imitate, focus their attention more, improve their understanding and use of language, develop play and daily living skills (such as brushing their teeth). EIBI provides positive and effective benefits in treating the behavior of children with autism disorders from an early age. (Eldevik et al., 2012)

3.3 Social Stories

Social Stories are instructional interventions that are carried out by teaching socially appropriate behaviors incompatible with their challenging behavior or using visual support to teach socially appropriate behaviors. Social stories effectively reduce the challenging behavior exhibited by children with autism spectrum disorder (Martinez et al., 2016). Besides that, social stories can help children with autism spectrum disorder improve their communication skills because it contains visual support. Social stories also illustrate the steps of activity daily living and understand a situation.

3.4 Social Coaching with Peers

In supporting and overcoming social and communication barriers for children with autism, SLB Negeri Semarang holds group programs for children with autism to train their socialization. Activities carried out by communicating and carrying out activities together with autism peers. (Bektiningsih, 2009). Peer guidance and intervention can improve children's communication and social skills. (Anderson et al., 2018; Sutton et al., 2019; Whalon et al., 2015). Furthermore, play provides an opportunity to improve social skills in all development domains in an integrated manner. Playing with peers can also provide opportunities to develop a sense of belonging and friendship, which are important goals for children with autism.

3.5 The Secret Agent Society (SAS) Program in Autism Classes by Aspect (Autism Spectrum Australia)

In research by (Einfeld et al., 2018), the Secret Agent Society (SAS) Program improved social skills at home and school, emotional regulation and awareness, and social problem-solving skills in children with autism spectrum disorders. SAS Program is a computer-based social/emotional skills training specifically designed for autism level 1 child aged 8-12. Research shows that the SAS program has led to significant improvements in children's social and emotional skills compared to controls.

3.6 Computerized Progressive Attentional Training (CPAT)

Computerized Progressive Attentional Training (CPAT) is an attention training program typically used for children with ADHD. The CPAT consists of four structured task sets that uniquely activate sustained attention, selective attention, attention orientation, and executive attention. (Spaniol et al., 2018) tested the effectiveness of the CPAT in improving the academic achievement of children with autism spectrum disorders. The CPAT showed good cognitive and educational improvement and was better than the active control group. (Spaniol et al., 2018)

3.7 Advancing Social-Communication and Play (ASAP) Intervention

The original idea for developing the ASAP intervention was inspired by Kasari, Freeman, and Paparella's clinical-based efficacy study in 2006. In this research, preschool children with autism spectrum disorder who received 30 hours of weekly behavior analysis therapy (ABA) and additional interventions improved joint attention or symbolic play skills. It compared to a control group where the children received only 30 hours of ABA intervention (Dykstra Steinbrenner et al., 2015). ASAP is intended to complement other, more comprehensive intervention programs for children with autism. ASAP aims to enhance shared attention and symbolic play skills in preschool children with autism to help them reach their potential full age.

3.8 Individualized Education Program (IEP)

Autistic children need individual guidance. It causes teachers to provide individual programs called Individualized Education Program (IEP). IEP is carried out by implementing modifications to the curriculum and conducting assessments based on student abilities (Apriyani et al., 2012). In her research, (Apriyani et al., 2012) found that teacher used a modified curriculum for children with autism disorders in an elementary school. This modified curriculum adapts to the needs and abilities of the student with autism spectrum disorder.

3.9 Occupational Therapy

Children with autism spectrum disorders usually experience obstacles in fine motor development. Therefore, children's muscles with autism need occupational therapy to train their agility and flexibility to be healthier and develop. Children can do occupational training with many activities, such as holding objects, wearing and taking off shoes, sewing, playing plasticine, etc. The therapeutic tools used are gym balls, button-down shirts, balls and stacking blocks, shoes, and other valuable tools for training fine motor skills, stimulating the senses of touch (tactile), and improving blood circulation. (Bektiningsih, 2009)

3.10 Sensory Integration Therapy

Sensory Integration Therapy aims to train the ability to process and interpret all sensory stimuli from the body and the environment. (Bektiningsih, 2009) The therapeutic tools used include a pool of spiked balls by inserting children into the pool. Children also hoard textured balls so that children are trained to feel stimuli from outside. In addition to the ball pool, the therapy teacher uses a sizeable textured ball by telling the child to hold the ball.

3.11 Physical Therapy

Physical therapy is a therapy that aims to strengthen muscles and train children's body balance. The tools used include a footbridge to train balance, large balls, balance balls. With the help of these tools, therapy teachers in physiotherapy will carry out therapy aimed at training weak muscles of autistic children and exercising balance. (Bektiningsih, 2009)

The implementation of school-based interventions for children with autism spectrum disorder as follows:

Identification and Assessment

The first thing done in implementing school-based interventions for children with autism spectrum disorders is conducting an assessment. Assessment is an effort to collect information about the strengths and weaknesses of children with autism so that the teacher can identify the need for educational services for children with autism. First of all, the teacher seeks information from parents. This information is given to therapy teachers during parent-school meetings and discussing learning agreements and cooperation between schools and parents. (Apriyani et al., 2012). This initial step is a diagnostic stage where teachers or child therapists with autism plan and formulate the following steps to provide appropriate therapeutic and intervention treatment according to each child's needs with autism. For children who a psychologist has not diagnosed, the therapy teacher can identify steps by observing the child and determining the child's service needs. (Bektiningsih, 2009). Before deciding on a curriculum for children with autism disorders, an assessment is carried out first by a psychologist. After that, a meeting will be held with parents to inform the child's condition and learning program. (Apriyani et al., 2012)

Program Planning

After the special intervention teacher assesses the child, the next step is the preparation of individual programs. Program planning is prepared by students' circumstances and needs, arranging service schedules, and coordinating with the class teacher. The program runs according to the goals that have been formulated by the plan and are carried out individually.

Program Implementation

The management of therapy programs for children with autism includes implementing early intervention programs, companion therapy programs, and transition education. The early intervention program is based on the therapy teacher team's observations when the child first enters school. The intervention is then carried out according to the child's needs with interventions tailored to the child's needs.

Program Evaluation

Evaluation is carried out to determine the progress of activities, assess the achievement of goals that have been formulated in program planning, and measure what needs to be done in the future. The assessment was conducted on children with autism at SDIF Al-Fikri using portfolios. (Apriyani et al., 2012). Also, the teacher assesses children with autism by adjusting the students' abilities, such as simple sentences used when answering questions understood by the teacher. (Bektiningsih, 2009) In general, evaluation of this case is held at the end of the month, followed by a team of therapy teachers, principal, and parents of students. (Bektiningsih, 2009). Evaluation of the semester program is carried out every semester or every six months. The evaluation aims to measure or assess the extent to which the programs that the entire therapy team has designed can be mastered by children, both therapy programs and learning programs in classes of autistic children. (Bektiningsih, 2009)

4. Conclusions and Suggestions

School-based interventions for children with autism can be implemented to solve the problems of children with autism spectrum disorders. School-based interventions can improve social and communication and reduce the challenging behavior of children with autism spectrum disorders. The form of intervention that can be used varies depending on the target to be achieved. For example, to change behavior, the teacher can use ABA therapy (Applied Behavior Analysis). School-based interventions positively impact the development of children with autism spectrum disorders without spending a fortune. Therefore, school-based interventions need to be improved to meet educational services for children with autism spectrum disorders with middle to lower economic abilities. School-based intervention can be recommended for principals to supervise the implementation of autistic children in learning and provide solutions for school-based implementation for the better intervention for autism. Teachers should be able to implement school-based intervention for children with autism spectrum disorder. Government make policy that can help the parents give the best intervention for their child with autism spectrum disorder without having to spend more with school-based intervention. And for further research, the researcher can research the same topic with other types of methodology.

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