THE EFFECTIVENESS OF A LIFE SKILLS TRAINING BASED ON THE RESPONSE TO INTERVENTION MODEL ON IMPROVING FUNCTIONAL COMMUNICATION SKILLS IN CHILDREN WITH AUTISM

Abstract: The purpose of this study was the effectiveness of a life skills training based on the response to intervention model on improving functional communication skills in children with autism. Participants were ten children between the ages of seven and nine who attended a school for children with developmental disabilities (Tarbya Fekrya). Each child also had the following characteristics: (a) meet the full criteria for autism according to The Scale for Screening Autism Disorder (Eissa Saad 2008) (b) functional verbal communication, (c) able to read and comprehend words, and (d) ability to follow directions. A pre-post design was used to examine the effectiveness of a life skills training based on the response to intervention model on improving functional communication skills in children with autism. Z Value result for the differences in post- test mean rank scores between experimental and control groups in functional communication. The table shows that (Z) value was (-2.121). This value is significant at the level (0.01) in the favour of experimental group. The (Z) value in table 2 was (-2.003) which is significant at the level (0.01). This indicates that use of life skills training based on the response to intervention model had a positive effect on verbal communication in children with autism.

Keywords: Life skills training, response to intervention model, functional communication skills, children with autism.

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INTRODUCTION

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM)5 (American Psychiatric Association 2013), Autism spectrum disorder is characterized by persistent deficits in social communication and social interaction across multiple contexts, including deficits in social reciprocity, nonverbal communicative behaviours used for social interaction, and skills in developing, maintaining, and understanding relationships. In addition to the social communication deficits, the diagnosis of autism spectrum disorder requires the presence of restricted, repetitive patterns of behaviour, interests, or activities. Because symptoms change with development and may be masked by compensatory mechanisms, the diagnostic criteria may be met based on historical information, although the current presentation must cause significant impairment.

Within the diagnosis of autism spectrum disorder, individual clinical characteristics are noted through the use of specifiers (with or without accompanying intellectual impairment; with or without accompanying structural language impairment; associated with a known medical/genetic or environmental/acquired condition; associated with another neurodevelopmental, mental, or behavioural disorder), as well as specifiers that describe the autistic symptoms (age at first concern; with or without loss of established skills; severity). These specifiers provide clinicians with an opportunity to individualize the diagnosis and communicate a richer clinical description of the affected individuals. For example, many individuals previously diagnosed with Asperger's disorder would now receive a diagnosis of autism spectrum disorder without language or intellectual impairment (Eissa Saad 2017).

The impairments in communication and social interaction specified in Criterion A are pervasive and sustained. Diagnoses are most valid and reliable when based on multiple sources of information, including clinician's observations, caregiver history, and, when possible, self-report. Verbal and nonverbal deficits in social communication have varying manifestations, depending on the individual's age, intellectual level, and language ability, as well as other factors such as treatment history and current support. Many individuals have language deficits, ranging from complete lack of speech through language delays, poor comprehension of speech, echoed speech, or stilted and overly literal language. Even when formal language skills (e.g., vocabulary, grammar) are intact, the use of language for reciprocal social communication is impaired in autism spectrum disorder (Eissa Saad 2017).

Early intervention services are the key to help children have a successful future, both in and out of school. When children receive educational interventions at an early age, they gain the skills necessary to successfully enter school (Abdulla and Eissa 2014). Early educational opportunities are important for all children, but especially important for children with special needs, such as autism (Eissa Saad 2015).

Current research indicates that the skills that teachers and early education experts identify as positive indicators for school readiness have shifted from academically oriented skills to skills that are social in nature (Lin, Lawrence and Gorell, 2003).

Hanley, Heal, Tiger and Ingvarsson (2007) defined Preschool Life Skills as “desirable responses to commonly occurring and evocative classroom situations”. Much of the current research has attempted to evaluate procedures for teaching preschool life skills (PLS) in preschool classes with typically developing children. For instance, Hanley, Heal, Tiger, and Ingvarsson (2007) implemented a class-wide teaching program with 16 typically developing pre-schoolers to teach instruction following, functional communicative responses, delay tolerance, and friendship skills in response to data suggesting that non familial centre-based childcare in the first 4.5 years of life was a risk factor for developing problem behaviour (National Institute of Child Health and Human Development, Early Child Care Research Network 2003). Children were exposed to contrived situations that targeted a specific skill (e.g., following instructions, tolerating delays imposed by teachers). A multiple-probe design across units showed acquisition of the skills and reduction of problem behaviour for most children.

PLS was initially evaluated as a class-wide program and characterized in Hanley et al. (2007) as a Tier 1 application in a response-to-intervention (RTI) framework (National Center on Response to

Intervention, 2010). The universal interventions (Tier 1) are implemented with all students to help prevent the development of social or behavioural problems and increase pro-social behaviour. Hanley et al. (2007) used Tier 1 interventions, teaching skills at a class-wide level to all students in a natural setting and using teacher praise to differentially reinforce pro-social behaviour. Subsequent studies evaluated PLS in a small-group (Tier 2 application; see Luczynski, Hanley and Rodriguez, 2014). Selected interventions (Tier 2) focus on individuals who are not responsive to universal interventions and require more targeted interventions that are delivered in a small-group setting. Miltenberger et al. (2004) used BST during a Tier 2 intervention by using instructions, modelling, rehearsal, and feedback to teach firearm safety to a small group of young children. Targeted interventions (Tier 3) focus on students who do not respond adequately to Tier 1 or Tier 2 interventions and require individualized instruction for skill deficits or interventions for severe problem behaviour (Campbell and Anderson 2011). Tier 3 interventions often consist of antecedent strategies to prevent problem behaviour, instructional strategies to teach desired behaviour, and individualized consequences to decrease problem behaviour and increase appropriate behaviour (Campbell and Anderson 2011).

PURPOSE OF STUDY

The purpose of this study was the effectiveness of a life skills training based on the response to intervention model on improving functional communication skills in children with autism.

RESEARCH QUESTIONS

The following two research questions were posed and investigated in the study:

- would a life skills training based on the response to intervention model be more effective for improving functional communication skills of the treatment group compared to the control group?
- would a life skills training based on the response to intervention model be more effective for improving functional communication skills of children with autism in post-test compared to pre-test ?

MATERIALS AND METHODS

The study employed the semi experimental design to examine the effectiveness of a life skills training based on the response to intervention model on improving functional communication skills of children with autism.

SAMPLE

Participants were 10 children between the ages of seven and nine who attended a school for children with developmental disabilities (Tarbya Fekrya). All children attended the same classroom within the school. Parental informed consent forms were sent home by the school director and school psychologist to parents of potential participants telling them about the study and requesting them to give permission for their children to participate. Through a previous comprehensive psychological evaluation each targeted child had received a primary diagnosis of Autistic Disorder. All children were also capable of communication using speech assessed through a combination of teacher report and observation.

Each child also had the following characteristics: (a) meet the full criteria for autism according to The Scale for Screening Autism Disorder (Mourad Ali, 2008) (b) functional verbal communication, (c) able to read and comprehend words, and (d) ability to follow directions.

MEASURES

Functional communication questionnaire. a 20-item teacher-report questionnaire. Respondents are asked to rate their level of agreement using a five-point Likert response scale (3 = Always, 2 = Sometimes, 1 = Never). The Cronbach alpha value was high (0.81) indicating excellent internal consistency.

PROCEDURE

Permission to conduct this study was obtained from both schools' principals and students' parents.

The training program consisted of 10 sessions, each lasted for 20 minutes, three sessions weekly. The PLS program was implemented using the response-to-intervention (RTI) model. Universal interventions (Tier 1) are implemented with all children to help. In Tier 1, behavioural expectations and social skills were taught. It also includes consequences for appropriate (e.g., tokens for appropriate behaviour that are exchanged for a small item) and inappropriate behaviour (e.g., timeout for inappropriate behaviour. Tier 2 focuses on individuals who are not responsive to universal interventions and require more targeted interventions that are delivered in a small-group setting. Tier 2 interventions include explicit instruction of skills, structured prompts for appropriate behaviour, opportunities for the children to practice the skills, and frequent feedback to the student. Tier 3 focuses on children who do not respond adequately to Tier 1 or Tier 2 interventions and require individualized instruction. Tier 3 interventions often consist of antecedent strategies to prevent problem behaviour, instructional strategies to teach desired behaviour, and individualized consequences to decrease problem behaviour and increase appropriate behaviour. Each session consisted of instructions, modelling, and role play and feedback.

DATA ANALYSIS

The effects of implementing a life skills training based on the response to intervention model on improving functional communication skills of children with autism were assessed using a pre-post- testing.

RESULTS

The first objective of the study was to determine if a life skills training based on the response to intervention model would be more effective for improving functional communication skills of the treatment group compared to the control group. For this purpose, the post intervention scores of both treatment and control groups were analysed. Table 1. shows Z Value result for the differences in post-test mean rank scores between experimental and control groups in functional communication. The table shows that (Z) value was (-2.121). This value is significant at the level (0.01) in the favour of experimental group.

Table 1. Z Values results for the differences in post- test mean rank scores between experimental and control groups in functional communication skills

Variables	Groups	N	Mean Ranks	Sum Ranks	Mann-whiteny	Z Value	Sig
Functional communication	Ex Cont.	5 5	8 3	40 15	Zero	-2.121	0.01

The second objective of the study was to determine the effect a life skills training based on the response to intervention model for improving functional communication skills of children with autism in post-test compared to pre-test. The treatment consisted of functional communication training through use of life skills training based on the response to intervention model.

The children's performance on verbal communication was measured pre and post intervention. Table 2 shows Z Value result for the differences in pre and post-test mean rank scores for the experimental group in functional communication questionnaire.

The table shows that (Z) value was (-2.003). This value is significant at the level (0.01). This indicates that use of life skills training based on the response to intervention model had a positive effect on functional communication skills in children with autism.

Table 2. Z Values results for the comparison of mean rank scores of experimental groups at pre- and post-intervention in functional communication skills

Variables	Negative Ranks		Positive Ranks		Z Value	Sig.
	Mean	Sum	Mean	Sum		
functional communication	3	15	Zero	Zero	-2.003	0.01

DISCUSSION

The purpose of this study was the effectiveness of a life skills training based on the response to intervention model on improving functional communication skills in children with autism. Z Value result for the differences in post- test mean rank scores between experimental and control groups in functional communication skills. The table shows that (Z) value was (-2.121). This value is significant at the level (0.01) in the favour of experimental group. The (Z) value in table 2 was (-2.003) which is significant at the level (0.01). This indicates that use of life skills training based on the response to intervention model had a positive effect on functional communication skills in children with autism.

The implementation of life skills training based on the response to intervention model seemed to be successful across functional communication skills and with all participants. These findings concerning change in behaviours and generalization support the results of a previous study (Eissa Saad 2018). Luczynski and Hanley (2013) delivered the training using small-group instruction. This modified small-group PLS program was effective in teaching and maintaining social skills, and to prevent problem behaviour in the classroom.

Furthermore, the children in this study did not receive any type of reinforcement or behavior modification strategies while participating in the sessions. Removing strategies such as prompting techniques, token systems, and other reinforcement systems reduced the potential for confounds within the study. Therefore, one can conclude that the life skills training based on the response to intervention model was primarily responsible for the change in the social skills of children participated in the study.

IMPLICATION OF FINDINGS

Findings from the current work also suggest that children with autism may have highly developed functional communication skills. Results from this study have provided support for the notion that some children with autism benefit, often quickly, from life skills training based on the response to intervention model. A number of implications have emerged from the results of the present study. Universal interventions (Tier 1) helps increase pro-social behaviour. Selected interventions (Tier 2) can be valuable as it was delivered in a small-group setting, includes explicit instruction of skills, structured prompts for appropriate behaviour, opportunities for the children to practice the skills, and frequent feedback to the children. Targeted interventions (Tier 3) includes instructional strategies to teach desired behaviour, and individualized consequences to decrease problem behaviour and increase appropriate behaviour.

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