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Evaluation of Occupational Performance Imitation Intervention on Three Imitation Learnings among Autism: Case series

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Abstract

This study determined the effect of Occupational Performance Imitation Intervention (OPII) on three imitation learning among autism using a case series design. Six children with autism participated in this study with aged between four to six and half years. These children randomly divided into three groups. In each group received different types of stimulation, which included visual imitation, auditory imitation and visuoauditory imitation. Total 15 weeks of a programme conducted with one week of a pre-test, ten weeks of intervention and follow-up conducted after three weeks of post intervention. The finding indicates all three groups showed improvements in after received OPII. In future need to examine the well-designed study with larger sample size.

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Keywords: Autism; imitation; occupational performance; quality of life

1. Introduction

Autism has deficits in communication, social relationship and reciprocity, and controlled interests and activities (American Psychiatric Association, 1994). Autism has problems in coping skill (imitation), reciprocal attention (joint attention) and play behavior (Kasari, Freeman, & Paparella, 2006; Meltzoff, 1990). The imitation skills linked with play, social and communication (Meltzoff, 2002). Based on this, previous researchers developed the imitation treatment for a social relationship, play and language among autism. The interventions were joint attention training, behavioral training, visually cued imitation training (Hadjikhani et al., 2006), Reciprocal Imitation Training (Ingersoll, 2008; Ingersoll, 2010) and Discrete Trial Training (Hadjikhani et al., 2006). Discrete Trial Training is a

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frequently used imitation treatment for young children with autism (Jennifer et al., 2008). Other interventions are environmental modelling (Nipattha&Nopadon, 2012), sensory garden (Hazreena, 2012) and social skill training. All the previous intervention studies have not focused on the underlining process of imitation components.

In literature reviews the imitation process starts from visual perception (Milne et al., 2010); Visual perception needs visual spatial (Wainwright & Bryson, 1996), visual attention (Boraston& Blakemore, 2007), visual recognition (Hurley &Chater, 2005b), visual constancy (Meltzoff, 2002a), visual memory (Blair et al., 2000), visual-motor processing (Hick et al., 2005), visual motor coordination (Gausier et al., 1997), and visual-motor integration (Gepner&Mestre, 2002). Next, a cognitive component; (Ciesielski et al., 1990; Hoffman et al., 2006; Im-Bolter et al., 2006) is started from planning, sequencing (Nadel, et al., 2004), attention (Ingersoll &Schreibman, 2006), working memory (Williams, 2005), short-term memory (Decety, 2006) and procedural memory (Ullman & Pierpont, 2002). After the cognitive component then comes the sensory motor component (Marton, 2009). This process starts from the gross motor (Marton, 2009) motor coordination (Marton, 2009), motor execution (Goldenberg, 2001) and fine motor (Newmeyer et al., 2007). Finally, imitation skills occurred (Nadel, 2004).

Based on limitation of early studies, this study purposed to create a new treatment approach that focuses to treat the underlining process such as visual perception, cognition, gross and fine motor skill to improve imitation in children with autism. This intervention based on three imitation learnings such as visual, auditory and visuoauditory. Firstly, visual-imitation learning contributed to motor imitation, object imitation, symbolic imitation, facial imitation and body imitation. Secondly, auditory-imitation learning contributed to vocal imitation. Finally, visuoauditory contributed to spontaneous imitation and social imitation. Normally, to describe the outcomes of novel intervention the case series design often used.

Therefore, the current study aimed to develop a bottom-up approach of Occupational Performance Imitation Intervention (OPII) on three imitation learnings among autism. This study examined the effect of OPII programme for children with autism using a case series design. Occupational performance defined as the performing towards the specific activity (American Occupational Therapy Association, 2008). The OPII consists of the three types of learning includes observed/visual imitation, listening/auditory imitation and both visual auditory imitation.

2. Methodology

2.1. Participants

Six children diagnosed with autism with the age range from four years to six and half years old participated in this study. All the participants selected for Department of Occupational Therapy at Hospital Selayang. The inclusion criteria for this study required that participant diagnosed with autism that meet the Diagnostic and Statistical Model of Mental Disorder-IV-TR (DSM-IV) criteria (American Psychiatric Association, 2000) and child psychiatrist made the diagnosis. The Participant must mild to moderate autism as assessed by Childhood Autism Rating Scale (CARS) (Schopler, 1980). Participant must score in the mild and above the mild level of Stanford-Binet Intelligence Scale (Mc Nemar& Quinn, 1942; Terman et al., 1960). The participant required having adequate motor (sufficient score in Peabody Developmental Motor Scale) (Fewell& Folio, 2000), visual and auditory function. The participant has probably or typical score for Short Sensory Profile (Dunn, 1999) and no other diagnosis or medical complications.

Ten potential participants screened; four were ineligible (unable to attend the program once in a week). Accordingly six children (1 girl; 5 boys) were involved. The Participant included a 5 year 3 month old girl (CL), 5 year 2 month old boy (UE), 6 year 3 month old boy (IU), 6 year 1 month old boy (YS), 5 year 6 month old boy (GD), and 6 year 4 months old boy (HY). Specifically, IU and HY in visual imitation group, YS and CL in auditory imitation group and UE and GD in visuoauditory imitation group.

2.2. Instruments

The demographic questionnaire is intended to collect the family history and the participant's history. This questionnaire was used to gather descriptive information about the family. This questionnaire gave during first meeting and prior to the implementation of OPII. There were two outcome measures used in this study. Firstly the "Motor Imitation Scale (MIS) was used to assess a motor, object, symbolic, facial and body context imitation. The

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