



Original Articles/นิพนธ์ต้นฉบับ

# Development of Social Communication Skills in Children with Multiple Disabilities in Nonthaphum Home: Experiences from a One-Year Therapeutic Outreach Program

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## Abstract

**Background and Purpose:** The purpose of this study was to investigate the development of social communication skills in 37 children with multiple disabilities. These children were residents of Pakkret Home (Nonthaphum Home) that provided services for individuals with various disabilities. They were identified as having speech and language disorders through the provision of a one-year therapeutic outreach program.

**Method:** Participants were 37 pediatric residents of Pakkret Home who ranged in age from 7 to 19 years. The clinicians employed a naturalistic approach emphasizing on the non-structured protocol and interaction adjusted to the children's interests for one year. A pre- and post-intervention was evaluated by counting the numbers of communication circles.

**Results:** Participants demonstrated a significant increase in the use of communication circles following the intervention ( $P < 0.05$ ).

**Conclusion:** All participants showed a significant improvement in the communication ability as identified by the pre- and post-intervention evaluation of the numbers of communication circles. Their social and emotional developments also improved.

**Key words:** Communication skill, circle of communication, multiple disabilities, speech therapy

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## Introduction

Pakkret Home (Nonthaphum Home) is a residential facility that serves both children and adults with various disabilities. These individuals have typically been neglected, abandoned, orphaned, or are otherwise without means for family support. The objective of Pakkret Home is to foster the physical and emotional rehabilitation of the residents, including educational opportunity, physical training in term of medical and sports providing and vocational training. Presently, there are approximately 400 residents with disabilities in Nonthaphum Home and many children are identified as needing speech therapy. Currently, the Home does not have onsite speech therapy services and the residents are therefore require to obtain such services at various clinics or hospitals. The costs associated with speech therapy services including transportation to the outside facilities, and the Nonthaphum staffs have to accompany the resident(s) create a financial strain for Pak Kret Home. The Department of Communication Science and Disorders at Ramathibodi Hospital Mahidol University and Pakkret Home established the joint venture program to these children. Pakkret Home children obtained the speech intervention services while the student clinicians from Ramathibodi Hospital Mahidol University get valuable clinical experiences. The present study was conducted to evaluate the effectiveness of an outreach program working with 37 children with multiple disabilities for the development of their social communication skills.

Multiple disabilities is a term that refers to the presence of concomitant impairments<sup>(1)</sup>. The impairments include limited use of functional communication skills, dependence on others for most or all daily living activities, minimal social interaction skills, pronounced delays in motor development, and/or fragile medical condition<sup>(1)</sup>. A limitation of communication

skills is one of the problem in multiple disabilities. Children use different behaviors to communicate including facial expressions, body movements, eye gaze, and vocalizations<sup>(2)</sup>. Many children with multiple disabilities also have communication skill deficits. Evidence from a number of studies has suggested that all children with communication skill deficits may benefit from appropriate speech therapy to improve their communication effectively<sup>(3-6)</sup>.

Dattilo and Camarata (1991) studied initiated social interaction and communication skills in 2 adult males with cerebral palsy exhibiting severe motor and speech disabilities. The authors taught the participants to communicate through the use of an augmentative and alternative communication (AAC) device. The study noted that both individuals increased the number of conversational initiations, however, the authors noted that treatment must be directed toward conversational interaction and not merely device instruction in order to be effective<sup>(3)</sup>. Dyches et al<sup>(4)</sup> studied the effectiveness of using two different augmentative and alternative communication (AAC) devices in a female child with severe physical disabilities. The authors found that both devices were effective helping the child to develop efficient ability to communicate. The result suggested the child's ability for skill generalization<sup>(4)</sup>. Eckert<sup>(5)</sup> examined the efficacy of a training program that aimed to teach the social skill of accepting criticism to 8 adult females with moderate developmental delay. The authors employed role-playing and evaluated the participants using a rating scale. It was concluded that the training was effective for each participant<sup>(5)</sup>. Hunt et al<sup>(6)</sup> worked with 3 high-school students with severe disabilities. The authors included typically-developing peers to serve as communication partners for the participants and found that the use of modeling to develop initiation of conversation and conversational



“turn-taking” was effective in increasing the communication skills of the participants<sup>(6)</sup>.

## Methods

### Participants

Participants were 37 Thai children with multiple disabilities who are residents at Nonthaphum Home. Participants comprised 23 males and 14 females and age ranged from 7 to 19 years. Participants were categorized into one of two groups according to the baseline communication skill ability. The first group (non-verbal communication) consisted of those with no verbal language abilities. These individuals communicated primarily through the use of gestures such as pointing, nodding, and various facial expressions. The second group (verbal communication) consisted of individuals with verbal communication ability and communicated primarily through spoken language.

### Procedures

1. The researchers contacted Nonthabumi's social worker to provide procedural guidelines and criteria for identification of residents with delayed speech and language development who may get benefit from intervention.

2. Fifteen fourth 4<sup>th</sup> year students from the Department of Communication Science and Disorders, worked as speech clinicians, under the researcher's supervision. They performed speech therapy lasting approximately 45 minutes session once a month. During the therapy sessions, staffs from Nonthabumi observed the therapy and provided information about the children. Therapy sessions were conducted for 1-year period.

3. The student clinicians developed a plan for speech therapy and summarized the children's progress during each therapy session.

4. Prior to the speech therapy was planned, the children's social communication ability was assessed. The assessment was consisted of counting the number of “communication circles”. The communication circle is defined as the process by which a message is conveyed from one individual to one or more recipients. A communication circle may involve any of a number of behaviors including vocalization or body language (such as eye contact, smiling, nodding, etc.).

5. During the therapy sessions, the progress of the children during each speech therapy session was recorded. The student clinicians employed a naturalistic approach and toys and various props employed by the therapist while they were interacting with the children. The non structured protocol and conversations were used and adjusted to the interests of the children.

6. The social communication skill ability of the subjects was evaluated by counting the numbers of communication circles.

The scores of 37 children were analyzed using two-way ANOVA.

## Results

The results showed that there was no significant difference between genders. (Table I) There was a significant difference between pre- and post- intervention at *P*-value of < 0.05 (Table II)

The result of Post Hoc Tests of communication circles between age levels presented that communication circles of age level of 6-10 was significantly related with age level of 16-20 (*P*-value < 0.05) and age level of 11-15 was significantly related with age level of 16-20 (*P*-value < 0.05) but communication circles of age level of 6-10 was not significantly related to age level of 11-15. (Table III)

**Table I** Summary of two- way ANOVA between communication circles and gender

Sex	Mean (SD)		P-value
	Pre	Post	
Male	13.14 (7.764)	26.07 (15.143)	0.482
Female	11.83 (6.939)	25.57 (12.820)	

\*significant at  $P < .05$

**Table II** Comparing the mean scores of communication circles between pre- and post-intervention using two-way ANOVA

	Mean (SD)	P-value
Pre intervention	12.32 (7.184)	
Post intervention	25.76 (13.539)	0.034*

\*significant at  $P < .05$

**Table III** Summary of Post Hoc tests of communication circles between age levels

Age (years)	6-10	11-15	16-20
6-10	-	0.28	0.02*
11-15	0.28	-	0.04*
16-20	0.02*	0.04*	-

\*  $P < 0.05$

## Discussion

The findings of the present study indicated that children with multiple disabilities got benefit from the implementation of speech therapy to improve their communication skills. These findings are agreed with those of previous research<sup>(3-6)</sup>. There was no significant difference in the communication circles between genders but the communication circles of age level of 6-10 was significantly related with age level of 16-20 and age level of 11-15 was significantly related with age level of 16-20. At the age level of 6-10, there is no significantly related with age level of 11-15. With age level of 16-20, there was significant difference in communication skill with both age of 6-10 and 11-15. This oldest group got the highest mean score of communication circles because they could continuously be attentive enough to perceive and

respond back to clinicians. When they were adequately attentive, they could open and close more of circles of communication. This finding agreed with Intasiri<sup>(8)</sup> who found that older children had significant higher syntactic abilities scores than younger children. With increasing age, children had a lot of experience from environment, school and technology. In the present study, the clinicians tried to find the children mutual pleasure, to joy the children game or favorite activities in order to help the children to have more attention. Moreover, the clinicians used face to face interaction and helped them to increase the number of circle of communication by joining their natural interest and increased the complexity of behavior by using their motivation and playful obstruction. Circle of communication improve language, cognition and emotional development in children<sup>(9)</sup>. For language



development, the child has to use gesture and words to share information. The circle of communication process occurs as a child becomes better at signaling opening and closing more circles of communication and better at learning vocabulary<sup>(9)</sup>. Cognitive and intelligence development also builds on communication. Without communication, a child may learn causality in a limited way. Circle of communication helps the child think logically as they make bridges between what the child feels and what someone else feels, between what they say and what someone else says. Without the experience of communication, the child cannot form the sense of intentionality which means they cannot begin to form true sense of who they are and see the world in a logical way. For emotional developments, an exchange of gestures or words helps the children to feel close to people, to use ideas and language fully, to feel part of a relationship and to negotiate and regulate that relationship. Communication skill is essential for all human interaction. It also helps the child to learn about themselves and the world. The more caregivers or clinicians play and talk with the child, the more they value communication. Communication serves many

different emotional needs such as pleasure, curiosity, assertiveness, exploration and comfort in the face of fear and anxieties that does for most healthy adults<sup>(9)</sup>.

Although the results of the present study do not allow for generalization of the improvement in communication skills observed, one wonders whether such improvements may impact language, cognitive, emotional development and well-being of the children. Future studies may provide insight into the possible relationship of communication skill development and emotional development. The findings of this study suggest that successful outcomes may arise from the implementation of an outreach program providing therapy in the participants' natural setting and with techniques that were conducive to a more personalized interaction. Because the current study examined only the communication skill of conversational interaction, further research is needed to identify the efficacy of such a therapeutic intervention program for the development of linguistic aspects such as syntax, semantics, and pragmatics as well as non-linguistic aspects such as self-esteem and quality of life.

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## พัฒนาการการสื่อสารในเด็กพิการซ้ำซ้อนบ้านนนทภูมิ ภายหลังได้รับการฝึกพูดเป็นเวลา 1 ปี

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### บทคัดย่อ

**ความเป็นมาและวัตถุประสงค์งานวิจัย:** สถานสงเคราะห์เด็กพิการและทุพพลภาพปากเกร็ดหรือบ้านนนทภูมิ เป็นหน่วยงานที่ให้การบริการสงเคราะห์ ฟื้นฟูและพัฒนาเด็กพิการ มีเด็กพิการซ้ำซ้อนจำนวน 37 คนที่ต้องการการฝึกพูด วัตถุประสงค์ของงานวิจัยนี้เพื่อศึกษาพัฒนาการการสื่อสารในเด็กพิการซ้ำซ้อน 37 คนที่ได้รับการฝึกพูดเป็นระยะเวลา 1 ปี

**วิธีวิจัย:** กลุ่มตัวอย่างเป็นเด็กพิการซ้ำซ้อนจำนวน 37 คน อายุ 7-19 ปี ผู้ฝึกพูดโดยใช้แนวทางธรรมชาติที่มีปฏิสัมพันธ์กันและตามความสนใจของเด็ก กลุ่มตัวอย่างทุกคนได้รับการประเมินการสื่อสารทั้งก่อนและหลังการฝึกพูดเป็นระยะเวลา 1 ปี ประเมินการสื่อสารโดยนับวงรอบการสื่อสาร

**ผลการศึกษา:** ผลการศึกษาพบว่าคะแนนการสื่อสารก่อนและหลังการฝึกมีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติที่ระดับ  $P < 0.05$

**สรุป:** เด็กพิการซ้ำซ้อนทั้งหมดมีพัฒนาการการสื่อสารที่เพิ่มขึ้น โดยดูจากคะแนนที่มีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติก่อนและหลังการฝึกพูดเป็นระยะเวลา 1 ปี และพบว่าเด็กทั้งหมดมีพัฒนาการทางปฏิสัมพันธ์ทางสังคมและอารมณ์ดีขึ้น

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