

Experimental Effects of Dohsa-Hou Therapy on Adaptive Behavior of Children's Autism

Anh Thi Tram Nguyen¹, Dung My Le^{1,*}, Hoang Van Ha¹, Hoai Thi Nhu Phan²
and Phuong Thi Hang Nguyen¹

¹*Faculty of Psychology and Education, The University of Danang - University of Science and Education, Danang City, Vietnam*

²*Hoa Xuong Rong Early Intervention and Inclusive Education Support Center, Danang, Vietnam*

KEYWORDS Adaptive Behaviour. Autism Spectrum Disorder. Dohsa-Hou Therapy. Psychological Intervention. Psychological Experimentation

ABSTRACT This paper examines the effects of Dohsa-hou therapy on adaptive behaviors in autistic children using a case study of a child with poor adaptive behavior. The Vineland II test was chosen to evaluate the results of the six-month study program. The child's handicap patterns determine specific Dohsa-hou exercises. The results of the experiments show a statistically significant change in the condition. Based on the previous data, the researchers concluded that Dohsa-hou therapy influences adaptive behavior in children with ASD. The study found that ratings for general adaptive behavior and most sub-domains improved from 1 to 5 points, indicating an overall improvement. Language and communication (receiving) sub-domains and everyday life skills have seen the most substantial gains in recent years.

INTRODUCTION

The group of children with special needs includes the group of children with autism spectrum disorder, attention deficit hyperactivity, intellectual retardation, language delay. This group of children needs exceptional help in education, health, psychology, therapy... in which, children with autism spectrum disorder are a disorder that is of great concern to society. In 2015, information from the Department of Child Protection and Care - Ministry of Labor, Invalids and Social Affairs in Vietnam, about 5-7 percent of disabled children under the age of 15, in which children themselves period and cerebral palsy accounts for over 40 percent. However, there are no official surveys and statistics on children with autism spectrum disorders in Vietnam; according to the Vietnam Autism Network (VAN) network, in 2016, it was 200,000 people.

Autism Spectrum Disorder (ASD) in English refers to a group of children with lifelong devel-

opmental disabilities with three main characteristics: communication impairment, social interaction impairment, and have profiled stereotyping behaviours. According to the Autism Society (n.d.), Autism is a life-long developmental disability, usually occurring in the first three years of life. Autism is caused by a neurological disorder that affects the functioning of the brain. Autism can occur in any individual regardless of gender, race, or socio-economic conditions. Autism is characterized by defects in social interaction, linguistic and non-verbal communication, and limited, repetitive behaviours, hobbies, and activities (Vu-Thi 2007).

Children with autism spectrum disorder have many difficulties in language and communication, social interactions, and emotions. It shows in the daily activities, in the classroom, and the child's community. To improve complex problems in children with autism spectrum disorders, the researchers have chosen to study adaptive behaviour in children. Adaptive behaviour of children with autism spectrum disorder is a set of communication language skills, daily life skills, socialization skills, and motor skills that each child learns to perform in everyday life day. Adaptive behaviour is the quality of the daily manifestations when the child must respond to the requirements of the living environment. The limitation of children's

Address for correspondence:

Dung My Le
Faculty of Psychology and Education,
The University of Danang –
University of Science and Education,
Danang City, Vietnam
E-mail: lmdung@ued.udn.vn

adaptive behaviour with autism spectrum disorder will make it difficult for children in daily life (Nguyen 2012; Tran-Thi 2006; Tran and Tran-Thi 2016).

The adaptive behaviour structure of children with autism spectrum disorder includes Communication behaviour, social interaction behaviour, Daily living behaviour, and Movement behaviour. Psychodynamic therapies can be considered suitable options to influence the child's adaptive behaviour, including Dosa-hou therapy.

Dohsa-hou therapy is a psychoactive method, a rehabilitation therapy with motor manipulation studied by Professor Naruse - Japan. In many studies and clinical trials, Professor Naruse and his colleagues tried to describe the "human motor system" - called "Dohsa-hou" in Japanese and succeeded in the development of a hypnotic-free rehabilitation program for patients with cerebral palsy and cerebral artery obstruction. This program is called the "Dohsa-hou practice method". The remarkable effectiveness of the Dohsa-hou training method has been proven in many cases. Furthermore, the Dohsa-hou therapy is effective in physical rehabilitation programs and mental health and psychotherapy programs. The term "Dohsa-hou" in Japanese means "movement" and the movement is often only part of the body's physical movement.

Nevertheless, it is worth noting that the term "Dosa-hou" implies the physical movement of the body and only psychological phenomena produced by human efforts to adapt to everyday life. Strictly speaking, Dohsa-hou is defined as an overall process that includes one's intentions, attempts to realize bodily movement, and the visible outcome of body physical activity. In particular, the practitioner's feedback (feedback) is the keyword of this therapy. Through feedback, the practitioner affirms and acknowledges the practitioner's efforts with his or her movement effort (Yoshikawa 2018).

The purpose of this study is to examine the efficacy of Dohsa-hou as a psychoactive therapy on social and motor abilities in three typical cases of autistic spectrum disorder. Naruse introduced a novel perspective on motor action difficulties in children with cerebral palsy in 1967 (Dadkhah 1997); Naruse proposed that, while the disabilities in cerebral palsy are the outcome of a physiological dysfunction, they may be modified by their psychological activities. Naruse developed a psycho-rehabilitative therapy called

Dohsa-hou for these people. Thus, Dohsa-hou's goal was to alleviate the motor difficulties of cerebral palsied children (Naruse 1967). Later, it was extended to children who were autistic or hyperactive (Harizuka 1986). It regulated their emotions, altered their daily routines, and improved their postures. Patients suffering from schizophrenia can benefit from Dohsa-hou; their behaviors become more vitalized, resulting in walking and continual movement (Tsuru 1982).

Ono (1983) and Konno (1993a) administered Dohsa-hou to youngsters who were autistic or hyperactive. Their interaction and eye contact with others enhanced as a result of the strategy. Kamohara (1980) and Tsuru (1985) utilized Dohsa-hou to schizophrenia patients and observed improvements in their consciousness and body posture. Konno et al. (1990) discovered that Dohsa-hou posture training increased self- and other-perception. Harizuka (1992) tested the approach on children with cerebral palsy. The treatment was successful. It was critical for those who were unable to maintain their sitting posture due to the procedure. Others revealed that when one's sense of muscular relaxation and stability improved in standing position, favorable changes in external perception occurred (Hatakeyama et al. 1994).

There have been several studies on the effectiveness of using Dohsa-hou to rehabilitate autistic people. Research by Konno et al. (1990) showed that Dohsa-hou helps autistic children calm down and communicate more easily. Several other studies showed that Dohsa-hou could help children behave more friendly and dynamic (Oda and Tani 1994; Sasagawa et al. 2000). For children with language disabilities, Dohsa-hou can help them to start talking and communicating using simple words (Koga and Nakata 2003; Morisaki 2002; Yamashita 1986).

In Mohammadkhani (2012) study on the effectiveness of Dohsa-hou therapy in improving social ability and shaping behaviour in autistic children, the results showed that eight exercises of Dohsa-hou can enhance children's social skills and reduce repetitive body movements in them. A case study of Yoshitaka Konno on the process of attention-making and communication in a 3-and-a-half-year-old autistic girl through a Dohsa-hou method called *toke'au taiken* consists of 6 sessions taking place in 18 weeks. Each 50-minute session included practising *toke'au taiken* and providing consultation for her parents. As the

child's emotional stability improved and the mother's depression became slighter, the exchange of attention between the child and the mother has increased.

A verbal tool is used only for supplementary help (Naruse 1992). Ono (1983) and Konno (1993b) applied Dohsa-hou to autistic and hyperactive children, inducing personal interaction and eye contact with others. Kamohara (1980) and Tsuru (1982) applied Dohsa-hou to schizophrenic patients and found that their consciousness improved, and their body posture changed. Harizuka (1988, 1992) applied the method to cerebral palsy children, effectively teaching the importance of subjects keeping their sitting-posture by themselves. Dadkhah (1996) applied Dohsa-hou to disabled sportspeople, which sharpened public aspects of their body-consciousness, so they improved their sports performances. The application of this method was reported in older people with psychotic problems (Nakajima 1987). Application of the method to the aged people leads to a happy mood and social integration, and as a result, they can control their body co-relation better. Dohsa adjusts the body consciousness of a person and increases the awareness of person to her/himself and others by relaxation of body and mind (Dadkhah 1997).

By applying Dohsa-training to some aged people, the depression level was examined with changes affected by Dohsa-hou. If Dohsa can decrease the depression level in aged people, their life expectancy, problem-solving, social interaction, and self-confidence will increase. Morisaki (2005) used Dohsa-hou for treating children with hyperactivity disorder and found perception of self and others, emotional stability, and change in the behavioural plan of life. Rigikouteh et al. (2013) used Dohsa-hou to decrease depression, fatigue, anxiety, and stress and increase the quality of life. They found that Dohsa-hou effectively decreases depression, fatigue, anxiety, and stress and increases the quality of life. The primary purpose of this study is to examine the effect of Dohsa-hou on the movement performance and self-efficiency of patients with ADHD.

Mohammadkhani (2012), in his study "the effect of Dohsa-hou on the improvement of social skills and stereotype behaviours", found that eight sessions of Dohsa-hou can be practical on

increasing social skills of children and decreasing stereotype behaviours in them. Yazdkhasti and Shahbazi (2012) used Dohsa-hou for treating patients with ADHD. They found that the use of Dohsa-hou is effective in decreasing ADHD. As a result, children's social skills were improved, and its symptoms were decreased considerably.

The effect of Dohsa-hou therapy on autistic children has also been verified by the research of Naderi et al. (2014). In this study, the team performed on six high-functioning autistic children randomly selected. The children were assessed input and output using two questionnaires, "Autism screening questionnaire" and "Questionnaire on mental theory". Areas of study include social interaction, language and speech problems, and behavioural issues. After four weeks of therapy (one hour/week), the results showed a significant difference in the subjects before and after the treatment. Thus, Dohsa-hou therapy in highly functional autistic children is effective.

Tamandani et al. (2015) studied the Psychological Rehabilitation impact through Dohsa-hou Method on Motional Performance and Peers Relationship Self-Efficacy of Children suffering from attention deficit hyperactivity disorder (ADHD). The results of analysis MANCOVA showed that psychological rehabilitation through the Dohsa-hou method had caused increased emotional performance and self-efficiency promotion of children suffering from (ADHD) in relationship with their peers ($p \leq .01$).

Chervenkova (2017) wrote that "Life is movement, Movement is life", so his research Dohsa-hou Therapy - Where Body Meets Soul, makes the movement where body and mind intersect. Kamali et al. (2018) had studied the Comparison of Effectiveness of Dohsa hou and the Alexander Technique on Happiness, Social Adjustment, Hope, Mental Health, and Quality of Life in Patients with Parkinson's Disease. The results show that the findings showed that between the experimental and control groups, there was no significant difference in terms of gender, age, education, and marriage ($p > .05$). However, the rehabilitation program of Dohsa-hou led to decreased perceived stress and meta-worry and significantly increased health-related quality of life in hemodialysis patients ($p < .05$). Kaneko et al. (2019) found that after this present author started implementing Dohsa Therapy, body psychotherapy

initially developed in Japan, the total number of therapy sessions increased remarkably. There are several types of Japanese psychotherapy accessible, including Dohsa-hou Therapy, Naiken Therapy, Shoma Morita Therapy, Zazen (Sitting Meditation), and Hakomi's Body-Centric Psychotherapy. Each of them has a theoretical foundation, importance, subtypes, methods, or postures, practice instructions, and applications, as well as varying degrees of research data supporting their efficacy. While the majority of evidence supporting these methods is anecdotal, expert opinion, or single case descriptive narratives, some have a slightly higher level of support. There are no studies that compare the rigor of multicenter randomized control trials to the rigor of systematic reviews of well-designed evidence-based cohort studies.

Objectives of the Study

The effects of Dohsa-hou therapy on adaptive behaviors in autistic children are investigated in this paper through the use of a case study of a child who had poor adaptive behavior.

METHODOLOGY

Measure

The researchers have selected the Vineland II Adaptive Behavior Scale - the parent survey version (Sparrow et al. 2005) to assess communication, daily living skills, social skills, and the motor domain. The primary method in research implementation is the experimental method of the therapeutic effect of Dohsa-hou. The experimental method is conducted based on the evaluation report of the Vineland II scale, from which the adjustment plan is proposed. The experimental

process was held at Hoa Xuong Rong Center (Da Nang City) for six months (4 sessions/week). The general plan is shown as follows:

1. Evaluate and plan an experiment
2. Develop experimental programs
3. Conduct the first experiment (6 sessions)
4. Evaluate the first experimental results, adjust the experimental plan and program
5. Experimenting 2 times (4 sessions)
6. Evaluate experimental results
7. Experiment 3 times (4 sessions)
8. Evaluation of experimental results
9. Write a report on the experimental program

Experimental Sample

Experimental samples are selected based on the actual analysis of adaptive behaviours and provide typical cases with low adaptive behaviour scores, as shown in Table 1.

Experimental Procedure for Study Subjects

Case 1: TNMH

Date of birth: June 30, 2012 (6 years, 6 months, 22 days). Children with a history of epilepsy and seizures. Observed manifestations: Children have good eye contact and explore all kinds of objects. Children express their needs with gestures.

Time to practice Dohsa-hou: average 3 times/week, 15 p.m./time. From March 2019 to December 2019.

Dohsa-hou Impact Exercises

- ◆ Exercises for the face: Let the child lie loose on the practice mat; the practitioner uses his hands to perform 5 movements on the face (forehead, eyes, cheeks, chin). Children cooperate in practicing after 4 sessions.

Table 1: Adaptive behaviour results in 3 children with an autism spectrum disorder

Experimental subjects	Age*	Vineland II Adaptive Behavior Scale					Level
		Communication	Daily living skills	Social skills	Motor domain	Total score	
TNMH	6 years 6 months 22 days	34	58	53	59	48	Low
NNGB	3 years 9 months 3 days	69	66	68	75	66	Low
VBAT	4 years 8 months 9 days	67	64	66	72	64	Low

*The age at which the experiment began

- ◆ Exercise No. 2,10 (shoulder): Let them sit and relax, hold their shoulders with their hands, encourage them to lift their shoulders, praise (yes, come on). Let your child relax and keep his shoulders relaxed, ending the gentle pull in order: right shoulder, left shoulder, praise, and encourage them as they slowly relax (yes, continue). Repeat this movement 3 times. Children have difficulty practising in the early days, and almost all children are very uncomfortable when touching the shoulder. After more than 10 sessions of implementation, the child cooperated.
- ◆ Exercises No. 10, 11, 12, 13 (hands):
- ◆ Let them lie down to relax, gently stroking the child's arm from positions 10 to 13 (from shoulder to finger), encouraging children to relax each part when the practitioner touches. When they feel the child has relaxed, praise and encourage children (yes, come on again).
- ◆ Children accept this exercise more efficiently; right from the first session, they are ready for the therapist to do.

Case 2: NNGB

Date of birth: April 8, 2015 (3 years old 9 months 3 days). Children with congenital heart surgery need surgery from more than 1 year old. Expression in the evaluation session: children are interested in toys; children play and answer some questions about toys they are holding, such as name, colour, shape. However, the child has little eye contact with the therapist.

Time to practice Dohsa-hou: average 3 times/week, 15 p.m./time. From March 2019 to December 2019.

Dohsa-hou Impact Exercises

Exercise No. 2, 10 (shoulder): Let them sit and relax, hold their shoulders with their hands, encourage them to lift their shoulders, praise (yes, come on). Let your child relax and keep his shoulders relaxed, ending the gentle pull in order: right shoulder, left shoulder, praise, and encourage them as they slowly relax (yes, continue). Repeat this movement 3 times. Children have difficulty practising in the early days, and almost all children are very uncomfortable when touching the

shoulder. After more than 2 months, children accept the practitioner touching the shoulder but are still limited.

- ◆ Exercise No. 4.5 (back and chest compressions): Let the child sit upright, the practitioner uses their hands to assess the straightness of the back (spine), touches each position and encourages them to sit up straight, to praise and encourage them when they try to do the right thing (yes, come on again).
- ◆ Exercises No. 10, 11, 12, 13 (hands):
- ◆ Let them lie down to relax, gently stroking the child's arm from positions 10 to 13 (from shoulder to finger), encouraging children to relax each part when the practitioner touches. When they feel the child has relaxed, praise and encourage children (yes, come on again).
- ◆ After 1 month of practice, the child lies still in cooperation with the practitioner.

Case 3: VBAT

Date of birth: May 6, 2014. (4 years old 8 months 9 days). Stable health, the child has no history of serious illness. Observational manifestation: Children have little verbal interaction with the evaluator. Children make eye contact and non-verbal gestures when expressing a need.

Time to practice Dohsa-hou: average 3 times/week, 15 p.m./time. From March 2019 to December 2019.

Dohsa-hou Impact Exercises

- ◆ Exercises for the face: Let the child lie loose on the practice mat; the practitioner uses his hands to perform 5 movements on the face (forehead, eyes, cheeks, chin). Children cooperate in practising after 8 sessions.
- ◆ Exercise No. 1, 2, 10 (shoulder): Let them sit and relax, hold their shoulders with their hands, encourage them to lift their shoulders, praise (yes, come on). Let your child relax and keep his shoulders relaxed, ending the gentle pull in order: right shoulder, left shoulder, praise, and encourage them as they slowly relax (yes, continue). Repeat this movement 3 times. Children have difficulty practising in the early days, and almost all children are very uncomfortable when touching the shoulder. After more

than 10 sessions of implementation, the child cooperated.

- ◆ Exercises No. 10, 11, 12, 13 (hands):
- ◆ Let them lie down to relax, gently stroking the child's arm from positions 10 to 13 (from shoulder to finger) encouraging children to relax each part when the practitioner touches, when they feel the child has relaxed, praise and encourage children (yes, come on again)
- ◆ Children accept this exercise more efficiently; right from the first session, they are ready for the therapist to do.

RESULTS AND DISCUSSION

Evaluate Before Intervention

Case 1: TNMH

Results of Adaptive Behavior Assessment and Intervention Direction

The experiment scored 48 points on the Composite Adaptive Behavior Scale at a low classification level. A 90 percent confidence interval between 44 and 56 points indicates that the child's true competency falls within this range. Thus, the capacity of the general adaptive behaviour of children was just over .1 percent of the same age group in the standard sample group. Specifically, the sub-scores are as follows: The child's communicative ability score is 34 points, with the actual score ranging from 27 to 43 - belongs to the Low classification of the same age group. With this score, the child's communication ability is generally less than 0.1 percent of the children of the same age in the standard sample group. The child's Daily Life Skills score reached 58, with actual scores ranging from 51 to 65 in the Low category for the same age group. Daily life skills were about .3 percent higher than children of the same age in the standard sample group with this score. The child's Social Skills score of 53 points with actual scores ranging from 47 to 59 in the Low category for the same age group. With this score, the child's social skills were generally about 0.1 percent higher than children of the same age in the standard sample group. The child's mobility score was 59, with actual scores ranging from 50 to 68 in the Low category compared to the

same age group. With this score, the overall motor capacity of the child was also about .3 percent higher than that of children in the same age group in the standard sample group.

Dohsa-hou Review

TNMH has an abnormal movement posture, in a state of young motor, showing spasticity and tension in the limbs, feet and faces. It is difficult to touch and try to direct the child to do any physical movement. The researchers decided to focus exercises on the back, shoulders, and arms through the input evaluation, which are relatively easier to touch than the other parts. Corresponding to the back, the researchers perform the exercise at positions 4,5. The shoulders and arms are at 2, 10,11,12,13.

Case 2: NNGB

Results of Adaptive Behavior Assessment and Intervention Direction

The experiment scored 66 points on the synthetic adaptive behaviour coefficient scale at the Low classification level. A 90 percent confidence interval of 61 - 71 points indicates that the child's true competency falls within this range. Thus, the capacity of the general adaptive behaviour of children is just over 1 percent of the same age group in the standard sample group. Specifically: The child's communication capacity reached 69 points, with actual scores ranging from 62-76 in the Low category compared to the same age group. With this score, the child's Communication competency was generally about 2 percent higher than the children of the same age in the standard sample group; The child's daily life skills scored 66 points with actual scores ranging from 58 to 74 in the Low category compared to the same age group. With this score, the NNGB's capacity is about 1 percent higher than that of children in the same age group in the standard sample group; The child's social skills score is 68, with actual scores ranging from 62 to 74 in the lower category for the same age group. With this score, the Social Skills competency of the child is generally about 2 percent higher than that of the children of the same age in the standard sample group; The child's motor capacity reached 75

points with actual scores ranging from 67 to 83 in the Low category compared to the same age group. With this score, the child's motor capacity was generally about 5 percent higher than that of the same age in the standard sample group.

Dohsa-hou Review

Children with limited language but communication, especially with minimal eye contact, always seem afraid when the therapist actively looks into the child's eyes. The researchers decided to choose Dohsa-hou exercises: facial massage, arm, and shoulder exercises at positions 2, 10, 11, 12, 13 for children to improve their current condition.

Case 3: VBAT

Results of Adaptive Behavior Assessment and Intervention Direction

The experiment scored 64 points on the synthetic adaptive behaviour coefficient scale at the low classification level. A 90 percent confidence interval between 60 and 68 points indicates that the child's true competency falls within this range. Thus, the capacity of the general adaptive behaviour of children is just over 1 percent of the same age group in the standard sample group. Specifically: The child's communicative ability score reached 67 points, with the actual score ranging from 60 to 74 in a low category compared to the same age group. Thus, the Child's Communication competency was generally about 1 percent higher than children in the same age group in the standard sample group. The child's daily life skills score was 64, with actual scores ranging from 56 to 72 in the Low category compared to the same age group. With this score, the living skills of the VBAT are about 1 percent higher than children of the same age in the standard sample group. The child's social skills score 66 points, with actual scores ranging from 59 to 73 in the lower category compared to the same age group. With this score, the Social Skills competency of the child is generally about 1 percent higher than the children of the same age in the standard sample group; The child's motor capacity reached 72 points with the actual scores ranging from 64 to 80 under the Low category compared to the same age group. With this score, the

child's motor capacity was generally 3 percent higher than that of the same age in the standard sample group.

Dohsa-hou Review

VBAT has language but rarely uses it to communicate. Children limit eye contact, easily fall into fear and panic. Being physically active in stressful situations, children often bite their hands, bite clothes, or play with saliva. The researchers choose Dohsa-hou exercises on the face and hands area.

Post-experimental Evaluation of Dohsa-hou Effects

Case 1: TNMH

TNMH's communication field increased by 11 points, the field of daily life skills increased by 15 points for the second time, the field of social skills increased by 9 points for the second time. Thus, children have had very positive changes in terms of adaptive behaviour (increased by 11 points) as shown in Figure 1. Especially in daily life skills, this proves that parents actively intervene in TNMH at home. However, the behavioural coefficients of adaptive areas increased unevenly. It is necessary to actively intervene and focus on communication and social skills while improving daily life skills.

After 1 year of experimenting with the integrated program to improve adaptive behaviours for children with autism spectrum disorders, TNMH has changed the adaptive behaviour score, as shown in Table 2.

Benchmarks for expression of language and communication, daily life skills, and social skills increased from 1 to 3 points. Specifically, in the Language and Communication Domain, the perceived language increased by 2 points, the oral language increased by 2 points. In the Daily Life Skills Field, the individual increased 2 points, and the home field increased 3 points, the community increased 1 point. In social skills, social relations increased 2 points, spending time playing and entertainment increased 2 points, behaviour increased by 1 point.

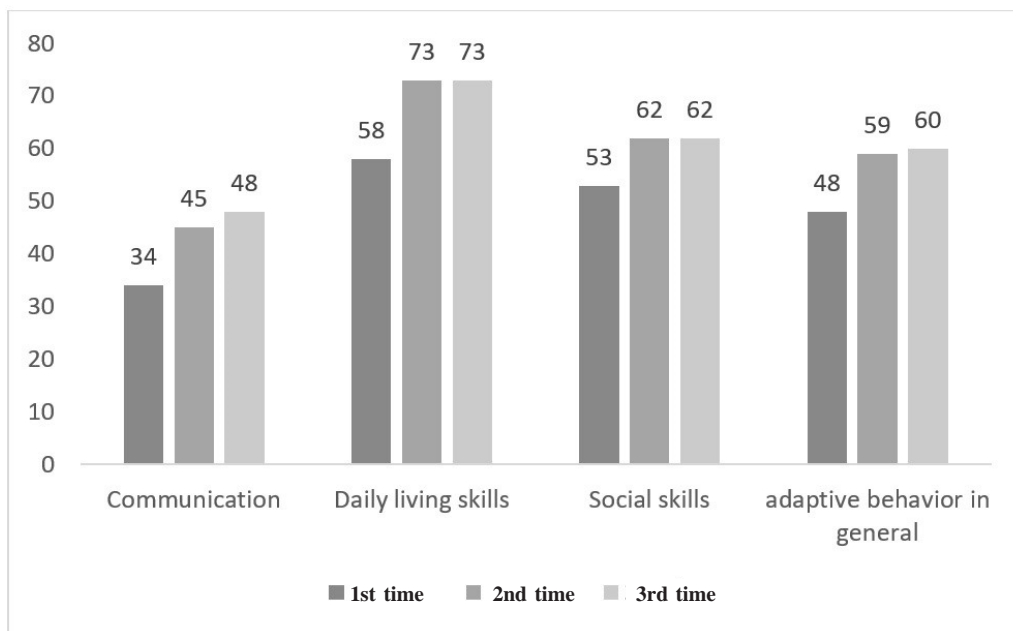


Fig. 1. Results of TNMH adaptive practice after the experiment

Table 2: Compare adaptive behaviour scores before and after the experiment

	Before experimentation	After experimentation
<i>Language and Communication</i>		
Receive	7	9
Expression	5	7
Text	0	0
<i>Daily Life Skills</i>		
Personal	8	10
Family	9	12
Communities	8	9
<i>Social Skills</i>		
Social relations	7	9
Fun and entertainment	6	8
Behaviour	7	8
<i>Motor Skills</i>		
Gross motor skill	9	-
Fine motor skills	7	-

Note from the author: Over seven years old does not consider the field of motion

Case 2: NNGB

As shown in Figure 2, NNGB’s communication field increased by 11 points, the daily life

skills field increased by 4 points, the social skills field increased by 8 points, the field of movement increased 0 points. The coefficient of adaptive behaviour increased by 5 points. By the third time, the child’s adaptive behavior coefficient increased faster when switching to semi-boarding school. In the third time, the coefficient of integrated adaptive behaviour is 81 points, compared with the first time it increases 13 points; field of communication 87 points, compared with the first time increased 18 points; daily life skills fields 85 points, compared with the first increase 18 points; the field of socialization 83 points, increased 15 points compared with the first time; field of movement 81 points, compared with the first time increased 13 points. Children are currently at a lower mean fitness level, about 10 percent more than the same age group in the standard sample. (Compared with the first time is the low adaptation level, 1% more).

Thus, children have a very positive change after 1 year of experimentation. Having this result is robust participation of parents and teachers at the centre where the child attends. That drastic change comes from the decision time to have chil-

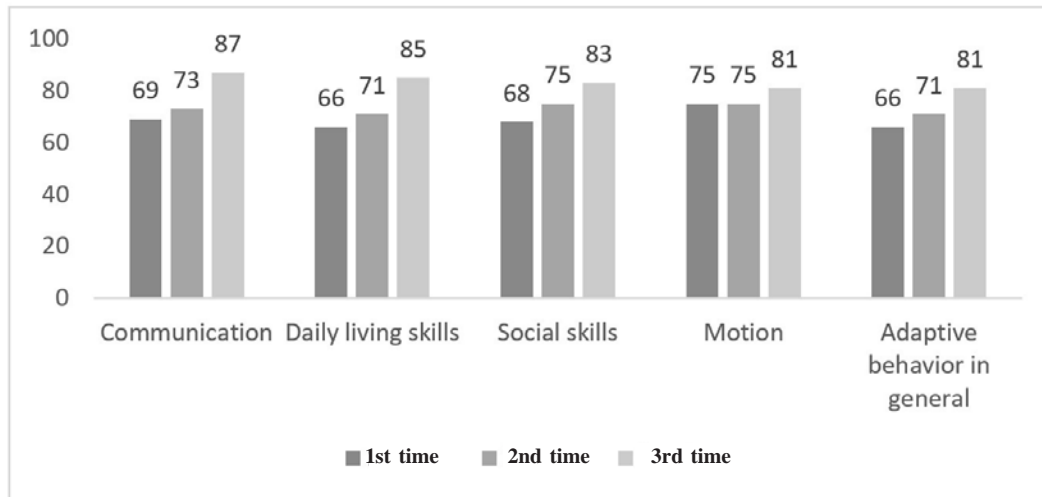


Fig. 2. Results of NNGB adaptive practice after the experiment

dren attend part-boarding all day at the centre. Here, children play and study the full-day preschool program (1 teacher / 3 children) and 1 hour of personal intervention per day with the teacher, 2 hours of playing with parents and brother, as shown in Table 3.

Table 3: Compare adaptive behaviour scores before and after the experiment

	Before experimentation	After experimentation
<i>Language and Communication</i>		
Receive	10	5
Expression	7	10
Text	13	14
<i>Daily Life Skills</i>		
Personal	9	11
Family	10	15
Communities	10	12
<i>Social Skills</i>		
Social relations	9	11
Fun and entertainment	10	14
Behaviour	9	11
<i>Motor Skills</i>		
Gross motor skill	11	13
Fine motor skills	10	11

Benchmarks for language and communication, daily life skills, social skills, and mobility increased from 1 to 5 points. Specifically, in the Language and Communication Domains, the areas of receiv-

ing languages increased by 5 points, inexpressive languages increased by 3 points, and written languages by 1 point. In the Daily Life Skills field, the personal field increased 2 points, the home field increased 5 points, the community field increased 2 points. In social skills, the field of social relations increased 3 points, playtime and entertainment increased 3 points, the field of behaviour increased 2 points. In the field of motion, the field of fine motor increased 2 points, and the fine motor field increased 1 point.

Case 3: VBAT

After participating in an experimental program to enhance adaptive behaviours for children with autism spectrum disorders, VBAT changed adaptive behaviour coefficients, as shown in Figure 3.

NNGB's communication field increased by 2 points, the daily life skills field increased 13 points, the social skills field increased 8 points, the advocacy field increased 6 points. Thus, the child increases 6 points in adaptive behaviour. Children need to actively intervene and focus on communication and social skills and improve daily living skills, as shown in Table 4.

Benchmarks for language and communication, daily life skills, social skills, and mobility increased from 0 to 4 points. Specifically, in the Language and Communication Domain, the re-

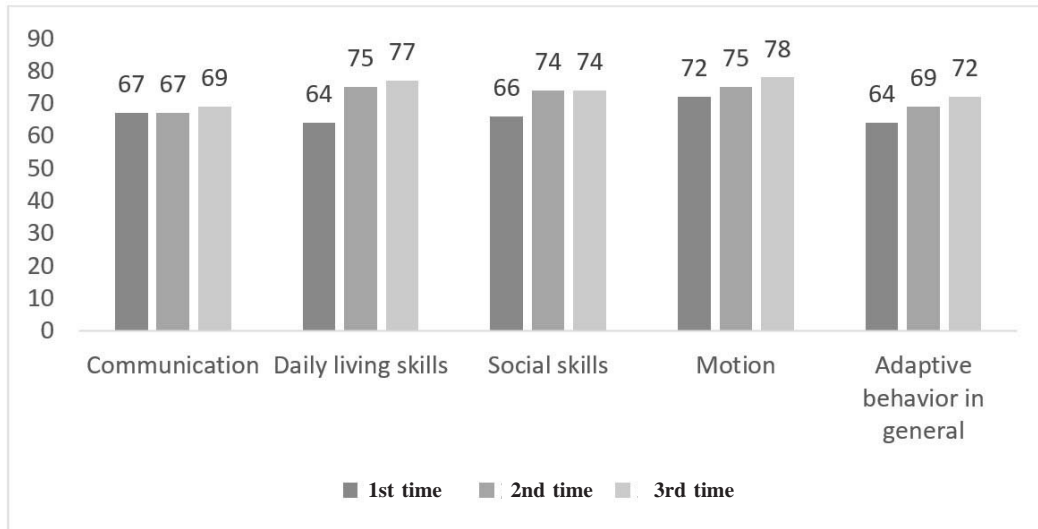


Fig. 3. Results of VBAT adaptive practice after the experiment

Table 4: Compare adaptive behaviour scores before and after the experiment

	Before experimentation	After experimentation
<i>Language and Communication</i>		
Receive	8	11
Expression	7	9
Text	14	14
<i>Daily Life Skills</i>		
Personal	8	12
Family	11	14
Communities	9	11
<i>Social Skills</i>		
Social relations	8	11
Fun and entertainment	9	13
Behaviour	10	11
<i>Motor Skills</i>		
Gross motor skill	12	14
Fine motor skills	9	11

ceiving language increased by 3 points, the oral language increased by 2 points, the written language increased by 0 points. In the Daily life skills field, the personal field increased 4 points, the home field increased 3 points, the community field increased 3 points. In social skills, the field of social relations increased by 3 points, playtime and entertainment increased by 4 points, the field of behaviour increased by 1 point. In the field of

movement, the crude motor field increased 2 points, and the fine motor field increased 2 points.

The researchers conclude from the above results that Dohsa-hou therapy impacts adaptive behaviour for children with autism spectrum disorders. After the experiment, scores for the general adaptive behaviour and the majority sub-areas increased from 1 to 5 points. The most significant increase was in language and communication (reception area) and everyday life skills.

CONCLUSION

After implementing an experimental Dohsa-hou therapy on adaptive behavior components in children with autism spectrum disorders, there were significant improvements. In motor-adaptive behaviour, children with autism spectrum disorders have difficulty sensing and correcting movements involving large muscles (gross motor) or hands and fingers (movement). Therefore, the researchers choose Dohsa-hou psychological rehabilitation therapy when building motor skills for children. This therapy helps children with autism spectrum disorder actively perform body movements based on verbal and non-verbal instructions and the practitioner's active encouragement. Thanks to that, children learn to feel and control appropriate body movements.

RECOMMENDATIONS

As a result, the general adaptive behavior coefficient has shifted; children exhibit very consistent growth across all domains, with the greatest gains in language, communication, and everyday living skills. Children can communicate more effectively with their eyes; their motor abilities are also enhanced as a result of mastering their movements during play activities. Thus, Dohsa-hou therapy may be beneficial when treating youngsters with autism spectrum disorders. However, it is vital to coordinate therapy with other strategies in order to maximize the success of behavioral interventions for children, such as ABA VB, Floortime, and Learning Language and Loving It.

REFERENCES

- Chervenkova V 2017. *Japanese Psychotherapies: Silence and Body-Mind Interconnectedness in Morita, Naikan and Dohsa-hou*. Singapore: Springer.
- Dadkhah A 1996. *The Effect of Dohsa-hou in Changing the Body-consciousness of Disabled Sportsmen*. Master Thesis. Fukuoka, Japan: Kyushu University.
- Dadkhah A 1997. *Dohsa-hou: A Japanese Psycho-rehabilitative Program for Individuals with Motor Disorders and Other Disabilities*. United Kingdom: British Educational Research Association.
- Harizuka S 1986. Application of motor-action-training to autism and hyperactive children. *The Journal of Rehabilitation Psychology*, 14: 41-52.
- Harizuka S 1988. The technique of vertically straightening in Dohsa-hou for sitting posture. *The Journal of Education for Cerebral Palsied Child*, 71: 9-14.
- Harizuka S 1992. Dohsa-hou for making sitting posture with legs crossed. *The Journal of Rehabilitation Psychology*, 19: 27-33.
- Hatakeyama K, Etoh H, Konno Y 1994. The Change of External Perception through the Experience of Body Relaxation. *The 20th Congress of the Japanese Association of Behavior Therapy*, Tokyo, Japan, 20-21 October.
- Kamali TP, Yazdkhasti F, Oreyzi HR, Chitsaz A 2018. A comparison of effectiveness of Dohsa-hou and the Alexander Technique on happiness, social adjustment, hope, mental health, and quality of life in patients with Parkinson's Disease. *Japanese Psychological Research*, 60(2): 87-98.
- Kamohara K 1980. For application of psychological rehabilitation on schizophrenics. *The Journal of Rehabilitation Psychology*, 8: 22-27.
- Kaneko E, Kamiya N, Hatakenaka Y 2019. An application of Dohsa Therapy for student-athletes as part of university counselling services. *Body, Movement and Dance in Psychotherapy*, 14(2): 66-79.
- Koga S, Nakata N 2003. Outcomes of Dohsa-hou for self-injury behavior in children with autistic-like severe intellectual disabilities. *The Journal of Rehabilitation Psychology*, 31(2): 27-40.
- Konno Y 1978. Motor control method by lifting up arm for action change on a hyperactive child. *Bulletin of Clinical and Consulting Psychology*, 24: 187-195.
- Konno Y 1993a. Modification of Self-image through Autogenic Training and Dohsa Training. *The 20th Congress of the Japanese Association of Behavior*, Tokyo, Japan, 20-21 October.
- Konno Y 1993b. The Relation between the Experience of Muscular Tension Relaxation and Perception of Other Person. *57th Annual Convention of Japanese Psychological Association*, Tokyo, Japan, 12-13 May.
- Konno Y, Ohno K, Hoshino K 1990. The process of changes of self-image through relaxation training. *Japanese Journal of Hypnosis*, 34: 17-19.
- Mohammadkhani A 2012. *The Effectiveness of Dohsa Method In Children With High Functioning Autism*. Master Thesis. Tehran, Iran: Alzahra University.
- Morisaki H 2002. Dohsa-hou and developmental changes in communication behavior of children with autism. *The Journal of Rehabilitation Psychology*, 30: 65-74.
- Morisaki H 2005. The application of Dohsa-hou for children with autism. *Disability and Rehabilitation*, 11: 45-52.
- Naderi S, Dadkhah A, Borjali A, Azar ZH, Panaghi L 2014. Dohsa training and theory of mind in high functioning autistic children. *Iranian Rehabilitation Journal*, 12(2): 34-38.
- Nakajima K 1987. Demented Elderly People with Mutism - "Tasting" the Reality of the Body. *Clinical Symposium for Children with Disabilities - Dohsa-hou*. Clinical Center for Children with Disabilities, Kyushu University, pp. 79-86.
- Naruse G 1967. Psychological rehabilitation of cerebral palsy: On relaxation-behavior. *The Japanese Journal of Educational and Social Psychology*, 6(2): 135-148.
- Naruse G 1975. On the application of hypnosis to sports. In: L-E Unestahl (Ed.): *Hypnosis in the Seventies*. Örebro, Sweden: Veje Förlag, pp. 171-175.
- Naruse G 1985. *Theoretical Approach to Dohsa-training*. Tokyo, Japan: Seishin Shobo.
- Naruse G 1992. Recent development of Dohsa-hou in Japan. *The Journal of Rehabilitation Psychology*, 19: 7-11.
- Nguyen DS 2012. Su dung Thang do Vineland II trong Danh gia Muc do Phat trien Tam ly cua tre 3-6 tuoi [Using the Vineland II Scale in assessing the psychological development of 3-6 year old children]. *Journal of Psychology - Vietnam Academy of Social Sciences*, 10(1): 56-64.
- Oda H, Tani S 1994. Using the Dohsa method to establish an attitude toward learning activities in children with mental retardation who have autistic tendencies. *Journal of Special Education Research*, 32(3): 13-21.
- Ono M 1983. *Analysis of Change on a Hyperactive Child through the Motor Action Exercise*. Tokyo: Association of Japanese Clinical Psychology.
- Rigikouteh B, Yazdkhasti F, Etamadifar M 2013. The effectiveness of dohsa-hou psychological rehabilitation program on severity of fatigue, depression, anxiety, stress and improve the quality of life in subjects with Multiple Sclerosis (MS). *Journal of Research in Rehabilitation Sciences*, 9(3): 445-458.

- Sasagawa E, Oda H, Fujita T 2000. Effectiveness of the Dohsa-hou on mother-child interactions: Children with Down Syndrome and Autism. *The Japanese Journal of Special Education*, 38(1): 13-22.
- Sparrow SS, Cicchetti DV, Balla DA 2005. *Vineland Adaptive Behavior Scales: Survey Forms Manual*. Minneapolis, USA: Pearson, Inc.
- Tamandani FK, Kooteh BR, Mehrpoor Z 2015. The psychological rehabilitation impact through Dohsa-hou Method on motional performance and peers relationship self-efficacy of children suffering from Attention Deficit Hyperactivity Disorder (ADHD). *International Journal of Applied Behavioral Sciences*, 2(4): 18-22.
- Tran-Thi LT 2006. Nghiên cứu về Hành vi Thích ứng của Trẻ Chăm phat trien Tri tue trong cac Lop Giao duc Dac biet tai Ha Noi [*Research on Adaptive Behavior of Children with Intellectual Retardation in Special Education Classes in Hanoi*]. PhD Thesis. Vietnam: Institute of Psychology, Vietnam Academy of Social Sciences.
- Tran TN, Tran-Thi TH 2016. So sanh Ket qua Trac nghi-em Hanh vi Thich ung Vineland II - Phien ban Viet tren Nhom tre Tu ky va Cham Phat trien Tam than Khong Dac hieu [Comparing the results of the Vietnamese Version of Vineland II Adaptive Behavior Test on the autistic and nonspecific mental retardation group]. *Journal of Psychology - Vietnam Academy of Social Sciences*, 14(2): 31-42.
- Tsuru M 1982. Improvement of body movements and social behavior in patients with schizophrenia. In: G Naruse (Ed.): *Development of Psychological Rehabilitation*. Fukuoka, Japan: The Institute of Psychological Rehabilitation, pp. 169-182.
- Tsuru M 1985. Dohsa method for schizophrenia. In: G Naruse (Ed.): *Case Study of Clinical Psychology* (Vol. 3). Tokyo, Japan: Seishin Shobo, pp. 2-21.
- Vu-Thi BH 2007. Tu ky: Phat hien Som va Can thiep Som [*Autism: Early Detection and Early Intervention*]. Hanoi, Vietnam: Medical Publishing House.
- Yamashita I 1986. Outcomes of Dohsa-hou application to children with autism and hyperactive disorders. *The Journal of Rehabilitation Psychology*, 14: 27-39.
- Yoshikawa Y 2000. Clinical intervention in the initial session of Dohsa Therapy: An application of Dohsa therapy to a client with Tic Disorder. *Journal of Japanese Clinical Psychology*, 18(4): 325-332.

Paper received for publication in November, 2021
Paper accepted for publication in March, 2022