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Developmental Support through Dousa-hou to the Children with Autism, Mental Retardation, and Cerebral Palsy for self-help in daily life

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Summary

The primary focus of the Dousa hou rehabilitation method is to improve bodily movements, posture, and social support to patients and their first degree relatives as well as promoting social interaction among participants. Two factors of interaction and social support for children's self dependency, (1) educational and daily life matters and (2) health and care matters, were measured by Social Interaction Questionnaire (Kumar, Kim, & O, 2006). Parents of the patients reported more social interaction on the above two factors for self dependency of their children at interacting with their child's trainer, supervisor, other trainers, and other mothers during Dousa hou weekly training workshops and in camps.

Introduction

Dousa hou is a psychological rehabilitation process to promote education, health, and psychological care of the children with disabilities (Naruse, 1973, 1985, 1992). Through Dousa hou, children with cerebral palsy improve control of their bodily movements and postures, reduce anxiety and depression caused by their disabilities, and socially interact more with others (Ogawa, 1987; Harizuka, 1992; Konno, 1993; Kumar & Harizuka, 2001). Mothers and first degree relatives of the child with disabilities received more social support through Dousa hou therapy than usual social interactions during Dousa hou activities during a one week camp (Kim & Kumar, 2004).

The social mode of interaction comprises physical and verbal strategies and usually is observed as physical comforting, smiling, nonverbal vocalizing, and face to face verbal communication (Snow, 1984). Psychological health improvement factors include feeling better, being more comfortable, taking more interest in life, and the like, and awareness of health tending decisions and interpersonal relationships (Barron, 1963). In the one on one training process of Dousa hou, a trainee experiences objective judgment of body movements and develops communication skills for responding to a trainer in attempting a desired body movement task with self awareness (Tokunaga, 2002; Kumar, Harizuka, Imura, Furukawa, Kim, & Kumar, 2005). In other rehabilitation therapies, such performances are more mechanical, do not include self intention and self awareness, and extinguish

faster than Dousa hou training (Naruse, 1997a). The therapeutic interventions involve raising the individuals' consciousness of the affect of their conduct and attitudes on themselves and the social environment, and conversely the affect of the behaviors and attitudes of others on themselves and the social environment (Leon, 1997). This way, Dousa hou training sessions in awareness during a bodily movement task create a mutual social interaction between a trainee and a trainer, affecting the patient's psychological health (Naruse, 1997b). This may provide relatively better support for a patient to improve in social interactions with others in the one week Dousa hou training sessions. Interactions of the mothers or first degree relatives of the patient with the child's trainer, supervisor, other trainers, and other mothers in similar situations provide recognition of the patient's improvements related to health, self care, educational aspects, and daily life matters to those responsible for the child's care and self dependency. The trainers' perception of the child's social interaction improvements related to health, self care, educational aspects, and daily life matters may differ from the mothers' perception. The Social Interaction Questionnaire was helpful in measuring the child's social interactions skills objectively.

Self help and Self dependency of the Children with Disabilities:

Disability is usually defined as the difficulty or inability to independently perform basic activities of daily living or other tasks essential for independent living without assistance. Disability has no clear limits, and defining different levels in different patients is very difficult, particularly when referring to functional disability and has to be intended as the result of the interaction of different individual components of compromised functions: physical, emotional, and cognitive aspects usually interact to produce a comprehensive disability, which is more than the simple addition of the single impairments, affecting the patient's global function and his or her self dependency. From a rehabilitation perspective, patients' functioning and health are associated with, but not merely a consequence of, a condition or disease. Rehabilitation interventions are targeted toward a person's functioning and health. Multidisciplinary rehabilitation programs have proven effective, and the positive interaction of mental and physical training (Annicchiarico, Gibert, Cortes, Campana, & Caltagirone, 2004).

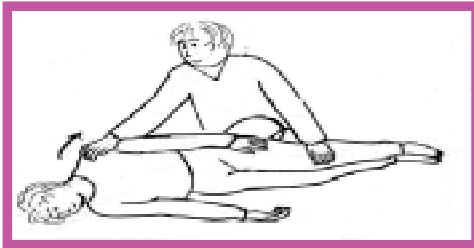
Dousa hou for Children with Autism:

It is an infantile developmental disorder characterized by apparent pensive self absorption and failure to develop normal relationships, obsessive insistence on sameness, which leads to distress if the physical environment or routine is disrupted, and language abnormalities such as monotonous repetition of what others say. About 80% show some mental retardation, but high abilities in arithmetic, memory, music, and arts are quite common. The ability may be high in one aspect or in two

but not in all the fields. Prognosis is relative to degree or retardation and language ability. The cause is unknown (Paperback encyclopedia, Oxford university press, 1998). General characteristics of a child with autism are: (1) Abnormality of interpersonal relationship, (2) language disorder: (i) repetition of what others say, i.e., echolalia, (ii) use of nonlinguistic words, and (iii) inappropriate use of linguistic or nonlinguistic words to a situation; and (3) is abnormality of behaviors which includes the limited use of interests and activities. It is quite difficult to diagnose the autism before age of 2 years. It can be clearly detected in the age of 3 to 6 years. The abnormalities seen in the lower age are hyperactive behavior problems, disorders in sensation and sensory motor actions, extreme selection of food items in each diet, and lack of sleep. The abnormalities usually perceived in adolescent stage are self hurting behaviors and obstruction or coerce behaviors. Most of the children (80%) have mental retardation (in mild to moderate range) and few have standard mental abilities. Autism falls in the category of pervasive developmental disorders.

Main Dousa hou activities are suggested as below.

- (1) Lifting the arms up with touching and without touching therapist's hand, twisting the trunk in a lying down position slowly, and active horizontal relaxation to make a straight horizontal posture.



- (2) *Zai* (sitting crossed legs) for relaxation, upward and downward movements of shoulders. Movement of shoulders in backward direction to the sides, and sitting straight using left hip and right hip are suggested as main Dousa hou tasks to support the development of a child with autism.
- (3) Sometime a task called 'gikkon battan' is also practiced between therapist and patient. It is performed at pushing and pulling alternatively the therapist and patient's hands in sitting with opened or closed legs, like seesaw play, to develop awareness and judgments of strength needed for pulling and pushing as shown at previous page. For walking balanced, kneeling, and standing activities with posture correction are also suggested.

Dousa hou for Children with Mental Retardation:

Mental retardation means imperfect mental development, characterized by limited intelligence and a restricted capacity to learn the social and intellectual skills for independent living. According to the American Association on Mental Retardation (1992) and DSM IV, a child with mental retardation has three characteristics; (1): IQ below average and this result should be similar as measured by more than one intellectual tests. (2): Lack of adaptive ability and need support in more than 2 areas of communication, motor function, family life, social abilities, use of social system, self maintenance or self decision, health & safety, practical text, leisure, and work. (3): The mental retardation should occur before the age of 18 years. It has four levels, (1) Mild mental retardation; IQ between 50 ~ 55 to 70, Moderate mental retardation; IQ between 35 ~ 40 to 50 ~ 55, Severe mental retardation; IQ between 20 ~ 25 to 35 ~ 40, and Profound mental retardation, IQ below 20 or 25. According to the modern definition and for proper support, it should be classified whether the child with mental retardation needs support, (i) timely, (ii) limited and timely, (iii) long term, or (iv) a maximum support.

The Dousa hou is found useful for the children with mental retardation to provide awareness of body images, control of bodily movements or motor functions, social awareness, maintenance of self and self decision, and health care. The aims differ according to the needs depending upon level of retardation. Dousa hou was found effective to support the intellectual and psycho physiological needs.

Main Dousa hou tasks for children with mental retardation are practiced as follows.

Relaxation tasks in twisting trunk activities and by active horizontal relaxation.

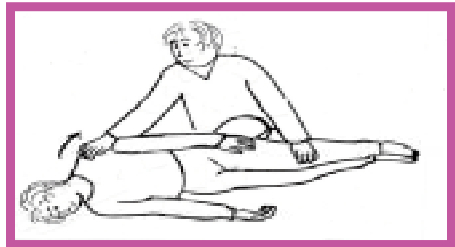
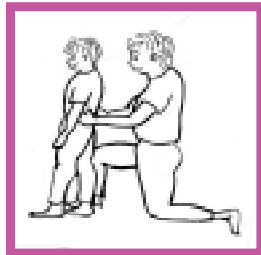
Sitting crossed legs (*Zai*) tasks for relaxation, bending forward, and return straight at straightening the curvy back portions.

Kneeling tasks for balancing and body images.

Shisei (posture making) for attainment of straight and stable sitting, kneeling, and walking

with coinciding images of the patient himself and in others' perception.

Raising hands Dousa hou activities in lying down and sitting posture are effective for such children.



Dousa hou for Children with Cerebral Palsy:

Cerebral palsy is generally defined as a group of disorders present at birth and arising from brain damage, which may be caused by lack of oxygen or nutrition before or during childbirth, birth trauma, jaundice, and brain hemorrhage. Cerebral palsy may also be caused by prolonged convulsions or coma in infancy or severe disease such as meningitis. The effects of cerebral palsy are dependent on the site and extent of brain damage. Spastic paralysis such as hemiplegia, diplegia, paraplegia, or quadriplegia is common; athetosis, ataxia, muscle weakness, increased muscle tone, and contractures may also occur. Other symptoms include involuntary movements of the face, hands, and tongue; auditory and visual impairment; and persistent dribbling with difficulty in speaking and swallowing. The first sign is commonly the failure to achieve normal developmental milestones. Learning difficulties are common. Assessment of the intellectual ability of a child with cerebral palsy is of great importance, but is often rendered difficult by the child's difficulty in expressing itself (*Paperback encyclopedia, Oxford university press, 1998*).

In a simple definition, cerebral palsy is a developmental disorder of body movements, control



Figure S 1. Child with spastic paralysis of monoplegic (right side) type

Figure S 2. Child with spastic paralysis of quadriplegic (in four parts) type



Figure S 3. Child with spastic paralysis of diplegic (in both hands or in both legs) type

of muscle tension, and body postures due to the brain hemorrhage. The severity depends upon the hemorrhage amount and parts in brain. Birthrate of cerebral palsy is 2 children in per 1000 children. In Japan, there was a little decrease in number of children with cerebral palsy between 1970' and 1980' but again the number is slightly increasing.

Cerebral palsy is usually develops before birth, during birth, and after birth. Before birth, it develops because of some fertilization disorders for the development of brain. The child gets birth with abnormal brain causing for cerebral palsy. It is also possible that the brain of a child before birth may get some viruses caused by food poisoning. Insufficient oxygen before birth and during birth, lack of nutrition, radiations, use of alcohol, and nicotine at the excess use of tobacco or

coffee are also some important factors for the brain disorders. Lack of oxygen before and during birth is a main cause. It may cause blood blocking in veins and cells. 40-50% cause of cerebral palsy is low birth weight, and it becomes the cause of insufficient developments of brain cells. Abnormality occurred in the process of birth, e.g., reverse birth, suck in birth, and caesarean birth, are also certain factors during birth, which may also be the cause for the abnormal brain. The factors for abnormality in brain responsible for cerebral palsy after birth occurred in early infantile stage are, brain injuries, food poisoning, radiations, and disorder of digestion systems causing less supply of nutrition and imbalance in blood cells. It may be a cause for mental retardation too. The next factor is the accident in early infant stage that may cause for brain hemorrhage.

Spastic paralysis is a paralysis with increased tendon reflexes and muscle tone. The extent of paralysis depends on the site of damage, and the area normally innervated by the damaged nerve supply. Monoplegia (hemiplegia), double hemiplegia (diplegia), paraplegia, or quadriplegia (see fig. S 2) are common types. Monoplegia (see fig. S 1) is complete paralysis of one side of the body, and may occur following a stroke. Diplegia (see fig. S 3) is paralysis of matching body parts such as, in both hands or in both legs. Upper of the body appears more paralysis. Paraplegia is paralysis of the lower of the body, including the legs, which may occur following spinal cord damage caused by injury, cancer, or other diseases. Quadriplegia is paralysis of the arms and legs. Tetraplegia is paralysis in three parts of body. Patient has stiffness in different portions of body and a patient has less control body tension.

'Athetosis' (see fig. A H) the next familiar type of cerebral palsy of muscle weakness, increased muscle tone, and contractures usually occur. It is the involuntary movements of body parts without intention. Even in quite sitting, uncontrolled and involuntary movements are seen, and that hinders the natural body movements for walking or in hand use activities. Other symptoms include involuntary movements of the face, hands, and tongue; auditory and visual impairment; and persistent dribbling with difficulty in speaking and swallowing. 'Rigidity' is also a type of cerebral palsy that has the characteristics to resist the body movements, speech, and have dullness and slow body movements. Most of the patients of this type have mental retardation too. It is quite difficult to maintain their daily life by self. This type is quite similar to spasticity. The other type is 'Ataxia'. In this, a patient has the problem of body balance, and that causes for muscle weakness improper eye movements.

For children with cerebral palsy of spastic paralysis type, it is desirable to use relaxation, straightening, and posture Dousa hou activities. The child will learn control of body movements. In the case of athetosis, a child learns how to control his involuntary movements with awareness. The main Dousa hou asks are motor control of neck, hands, legs and trunk using straight posture making at using the below exercises.

- (1) Zai Dousa hou activities for motor movements and motor control.
- (2) Hizatachi for relaxation at hip joint portion, balance in straight and sideways position with neck control.
- (3) Litsui for straight standing, use of ankle joints for balancing, and use of whole foot for stable standing shifting body weight on all portions of foot.
- (4) Hokou Dousa hou training for correct and stable walking.
- (5) Shisei tasks in Zai, Hizatachi, and Litsui for confirmation of whole body in straight axial form.
- (6) Relaxation in lying down positions through twisting trunk, active horizontal relaxation, and lifting the arms upward, downward and to the sides.



Method

Procedure

Twenty three children with cerebral palsy, autism, and mental retardation have participated in a six day Dosua hou camp. Six children (M age = 12 yrs.) have participated separately in 24

sessions of a weekly Dousa hou training having two hours training each time. 12 item Social Interaction Questionnaire was administered at the end of camp and weekly trainings. The interaction items usually observed related to supporting a child with respect to health, self care, social development, educational support, and therapeutic support among trainers, mothers, supervisors, and other trainers were included in the questionnaire. The items were answered on a 5 point scale regarding social interaction, with anchors of 1 : Never and 5 : Almost always, by the trainers and the mothers of the children with disabilities who participated in the one week Dousa hou camps.

Discussion

The aim of the study was to measure the social interactions and self dependency support for the children with disabilities through social interactions in Dousa hou therapeutic sessions among children, trainers and mothers regarding children's social interaction skills for supporting child's health, daily life activities, and aspects of education. The Social Interaction Questionnaire had two factors of interactions, (1) Educational and Daily Life matters, and (2) Health and care matters. Factor I included the items related to the educational and daily living support for the children in trainers' and mothers' perceptions. Factor II included the items related to the health and every day's integral support through development of social interaction skills in Dousa hou sessions as perceived by trainers and mothers.

The social interaction items in the questionnaire measured the child's social interaction skills as perceived by mothers or first degree relatives and trainers to support the children's mothers or first degree relatives in the health care, educational planning, and daily life activities of the child. The trainers in Dousa hou camps supported and concentrated on recognition of child's social interaction skills development by using the Social Interaction Questionnaire for Dousa hou training outcomes for children's self care.

Mothers acted as trainers for their child with autism in a weekly Dousa hou training sessions reported improvement in: hyperactive and impulsive behavior, waiting time on a situational task conditions, word pronunciations and speaking fluency, interaction with other children supervisors other mothers, movements of body parts with awareness and matching with trainer; and decrease in ecolalia.

Mothers of the children with mental retardation reported improvements of their child in: word knowledge, situational knowledge, interpersonal distance, hyperactive behaviors, independently shifting to a next task necessary for daily living, intermixing with other children to participate in a collaborative work. They also improved in showing interest to engage in a task with prolongation of a task than earlier.

Mothers of children with cerebral palsy also noticed improvement of their children in: stiffness,

more relaxed by training, frequency of happiness and smile on face, correction in their bodily movement tasks, and control stepping for walk and interpersonal behaviors. They also exhibited volunteer engagement of body motor action tasks needed for independent daily living.

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