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Posture and Communication Development of the Children with Disabilities Supported through Clinical Dousa-hou: A Cross Cultural Study

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Abstract:

Psycho-rehabilitation's Dousa-hou method found useful to improve body movements and posture as well as to provide social support to patients and their first-degree relatives to the children with mental retardation, cerebral palsy, and autism. Results of Questionnaire for Developmental Changes showed, that the psychological rehabilitation method Dousa-hou could support and promote most the body posture and communication related factors as volunteer body movements, behavior control, health maintenance, emotion expression, initiative & appearance, speech and communication, and social interaction factors by the practice of Dousa-hou training in one-week camps in Indian and Malaysian context.

Introduction:

Over the last thirty years there have been tremendous improvements in psychological interventions working with people with disability and serious mental illness, and psychologists are at the forefront of that. They have contributed to programs that are helping people change their feelings, emotions, and behavior instead of just suppressing symptoms. In particular, a number of treatment programs are drawing on the work of psychologists and their method encourages people to learn about their own body and mind and demonstrate social skills that allow them to function in a community.

Children with cerebral palsy improve control of their behavioral activities, bodily movements, and posture, reduce anxiety and depression caused by their disabilities using Dousa-hou (Ohba, 1992; Ogawa, 1987; Saito, 2002), and socially interact more with others (Naruse, 1985, 1992; Harizuka, 1992; Konno, 1993b; Kumar & Harizuka, 2001, Tokunaga, 1996, 2002; Tsukada, 2001). Dousa-hou is a psychological rehabilitation process for the children and adults with disabilities, to improve their education, health, and psychological care (Naruse, 1973, 1985, 1992). Dousa means a process of motor action which consists of the inner psychic activities and of a bodily movement. When we intend to move some parts of body, we make striving to realize the bodily movement according to our own intention. If the striving is appropriate to the movement, the intended movement can be realized. The striving which has an exact intention to move one's parts of body is called as a 'goal directed striving'. If intended movement coincides with the goal directed

striving, Dousa appears as bodily movement, but it has the inner psychological activities like as an intention and a striving. Thus, the process of Dousa can be divided into mainly two processes; one is a psychological process like as the intention and the striving, another one is a physiological process like as the bodily movement. But we can't divide an actual motor action of human being. Psychologists, teachers and parents treat Dousa process for the improvement of motor action. In other word, Dousa helps in the expression of psychological and physical states of a person. Further, a control of Dousa is self-control of our psychological and physical activities. Thinking about the children with cerebral palsy, their disability of motor action is not due to only the stiffness or muscle hypertension of their body, but their unlearning how to strive to realize the appropriate bodily movement.

Psychotherapy may be able to improve body sensing, alleviate stress, balance the nervous system, and mobilize posture. Psychotherapy works with ascertain a more satisfying experience with trainer and patient. During the therapy, therapists work verbally with their patients and support patient's dynamic bodily experience. These experiences include breathing patterns, sensation, posture, and movement. Therapist also works with body image, symbol, or even through touch when it is required. Psychotherapists work with different life challenges or issues such as, abuse, trauma, anxiety, depression, grief, psychosomatic issues, life transitions and personal and spiritual growth. A psychologist may use body-oriented and/or movement-oriented approach to create a therapeutic environment that attends to the whole being. Motor action oriented psychotherapy is used to make possible exploration and expression, to build up self-awareness, self regulation and a feeling of strength and aliveness and helps to deepen the sense of connection to others.

Mothers and first-degree relatives of the child with disabilities received more social support through Dousa-hou therapy than usual social interactional activities of Dousa-hou during a one-week camp. In one-on-one training process of Dousa-hou, a patient 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 and acquires behavior modifications. Relaxation, movements of body parts, and *Tate* (holding straight body postures during sitting, kneeling, and standing) training are the three main training processes of Dousa-hou (Naruse, 1997a, 1997b). In this, a patient with disabilities performs trainer guided body movement tasks in different postures of *agura zai* (sitting), *hizatachi* (kneeling), *ritsui* (standing) and *houkou* (gait) by himself/herself under supervision of a supervisor. This has been noticed that patient gets relatively better support to improve in social skills interaction with others during Dousa-hou training sessions (Kim & Kumar etc., 2004, 2006, Tokunaga, 2002). The Dousa-hou was 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 to support the intellectual and psycho physiological needs.

Language communication is critical in the development of young children. Speech and language deficiencies and delay were common among individuals with mental retardation. Such kinds of delay and impairments have been evident for years (Tredgold and Soddy, 1956). A person may be capable of producing

speech but still have difficulty in generating, transmitting, and understanding linguistic communications. Much of our early learning is dependent on verbal mediation by caregivers (Baroff, 1999). Children need a rich and responsive language environment and important is to have adults provide a predictable and comprehensive comprehensible communication environment, in which language is used to convey information with new material and skills. Children's development depends on exposure to common and day-to-day experience and general stimulation (Ramey and Ramey, 1992). Family background, living environment, family size, religion, gender, ethnicity, and socio-economic status are some cultural factors those also effect the development of a child (Blacher, 2001). Psychological Rehabilitation is the helping methods dedicated to assisting people-individuals, family members, and caregivers, who are struggling with the effects of a disability, and are seeking to restore hope and meaning to their lives. Disability refers to a limitation in physical, sensory, cognitive, or emotional functioning. A disability can affect a person's capacity to work, to learn, to manage personal or family responsibilities, to maintain relationships, or to participate in recreational activities. Psychological rehabilitation is the application of psychological knowledge and understanding on behalf of individuals with disabilities and society through such activities as research, clinical practice, teaching, public education, development of social policy and advocacy. Although the process of rehabilitation has traditionally been viewed as 'physical' in nature, it is now considered a multi-faceted process involving not only the services of surgeons, occupational therapists, physiotherapists, and speech therapists but also exercise scientists, dieticians, and psychologists.

The effectiveness of psychological rehabilitation technique, in terms of posture and communication development, for the children with disabilities at cross-cultural level was examined in this study. Improvements of developmental changes occurred in body control, volunteer body movements, health maintenance, initiative and appearance, speech and communication, social interaction, emotion expressional factors, were measured by the Questionnaire for Developmental Changes (QDC).

METHOD

Participants

Thirty one children with autism, down syndrome, mental retardation, behavior disorder, cerebral palsy disabilities ($N = 31$, M age = 15.4 yr. M education = 9.3 yr.) studying in integrated Balvantray Mehta schools, and Seri Mengasih Center, their mothers, 31 special educators as trainers, 5 supervisors and some volunteers as sub-trainers participated in the psychological rehabilitation camp for one-week. Subjects were specified as to their disabilities only. Disabilities ranged from mild to severe; none were profoundly disabled.

Materials

English version of 24-item Questionnaire for Developmental Changes (*see Appendix- I*) to measure the developmental changes of children occurred by Dousa-hou training method was developed by the researchers and was administered among the trainers and mothers along with Social Interaction Questionnaire.

The items selected in the questionnaire were from seven areas of development as: I. Behavior Control (*item 1, 2*), II. Speech & Communication (*item 3, 4*), III. Emotion Expression (*item 5, 6, 7, 8, 9*), IV. Volunteer Body Movements (*item 10, 11, 12, 13*), V. Initiation and Appearance (*item 14, 15, 16, 17, 18*), VI. Social Interaction, (*item 19, 20, 21*), and VII. Health Maintenance (*item 22, 23, 24*).

Procedure

Children with autism, down syndrome, mental retardation, behavior disorder, cerebral palsy disabilities, special educators as trainers from Balvantray Mehta School and Seri Mengasih Center, parents (mostly mothers), supervisors, and sub-trainers participated in a 1-week psychological rehabilitation camp of Dousa-hou organized in New Delhi, India, and Kota Kinabalu, Malaysia. Dousa-hou training activities were organized in small groups of five to six trainer-trainee pairs under a supervisor, three times a day and for one hour each time. Recreational activities were organized involving active interplay of trainers, trainees, mothers, siblings, supervisors, and sub-trainers. English, Hindi, and Malay languages were the medium of instruction during Dousa-hou training.

Main Dousa-hou tasks for children with disabilities were practiced depending upon the type and level of disability as follows.

- ① Relaxation tasks in twisting trunk activities and by active horizontal relaxation.
- ② Sitting crossed legs (Zai) tasks for relaxation, bending forward, and return straight at straightening the curvy back portions.
- ③ Kneeling tasks for balancing and body images.
- ④ *Shisei* (posture making) for attainment of straight and stable sitting, kneeling, and walking with coinciding images of the patient himself and in others' perception.
- ⑤ Arm uplifting Dousa-hou exercises in lying down and sitting posture.

Therapist (trainer) kept in mind the patient's needs, with concrete planning to support the patient's needs. The Dousa-hou activities were selected accordingly. All the activities were performed with slow pace because by speedy movements the patient feels difficulty to judge and cope up with the information of body movements, how his body parts are moving, and how he is striving to create a desired movement. Relaxation tasks performance in lying down positions through twisting trunk, active horizontal relaxation, and uplifting the arms upward, downward and in directions.

English version of 24-item Questionnaire for Developmental Changes (QDC) to measure the developmental improvements of children facilitated by Dousa-hou training method were administered on the last camp day of Dousa-hou training among the trainers and mothers with Social Interaction Questionnaire. To measure the posture and communication training effects on trainee and the training effects noticing skills of trainers, the data was collected from the trainers and mothers. This time we could analyzed the Indian and Malaysian set-up data of trainers only in the study.

RESULTS AND DISCUSSION

Total scores of QDC on seven factors (see Table 1) of trainers were analyzed using one-way analysis of variance using SSPS for windows (Kinnear & Gray, 2000) for the prediction of Dousa-hou effectiveness on posture and communication development of the children with disabilities. It showed that QDC's total scores of seven factors (*between-groups*) as group effect of trainers, differed significantly ($F_{1,6} = 31.21, p < .001$). The country effect was not significant. Table 1 showed that the subjects could rate the health maintenance factor at the most with mean rating of 4.8 ($M = 14.32, SD = 1.83$) and emotion expression factor at least with mean rating of 2.7 ($M = 13.7, SD = 5.35$) by trainers in Dousa-hou training sessions. It revealed that the most of the trainers found their trainees to maintain normal health in certain body postures during training activities; and less on clear understanding of the exhibited emotion expressions of their trainees in the sessions as their respective SDs showed.

The Table 1 also showed that the participants did notice the improvements on seven factors above average (more than 2.5; ranging from 1 to 5 scores). The developmental changes in the trainees through the Dousa-hou activities were observed by trainers most in health maintenance (*mean rating* 4.8) followed by volunteer body movements (*mean rating* 4.0), motor action for behavior control (*mean rating* 3.5), initiation and appearance (*mean rating* 3.3), speech and communication (*mean rating* 3.2), social interaction (*mean rating* 3.1), and least on emotion expression (*mean rating* 2.7).

Table 1. MEAN SCORES AND STANDARD DEVIATIONS OF QUESTIONNAIRE FOR DEVELOPMENTAL CHANGES ON SEVEN FACTORS ($N = 31$)

Factors	Behavior Control (I)	Speech and Communication (II)	Emotion Expression (III)	Volunteer Body Movements (IV)	Initiative & Appearance (V)	Social Interaction (VI)	Health Maintenance (VII)	Total	$F(1,6)$
<i>Mean</i>	6.9	6.8	13.7	15.15	17.95	8.8	14.32	12	—
<i>SD</i>	2.12	2.46	5.35	3.72	2.84	2.63	1.83	5.4	—
<i>Mean Rating</i>	3.5	3.2	2.7	4.0	3.3	3.1	4.8	3.5	—
Total	139	137	283	291	347	201	287	1685	31.21**

Note:- ** = $p < .001$; Total no. of items in QDC were 24. Total QDC scores ranged from 24 to 120.

The above data analyzed results clearly gave a direction to know the posture and communication developmental changes of the children with disabilities that children got benefit by the psychological rehabilitation method Dousa-hou. The trainers who participated in training camps get skilled to notice the small developmental changes and outcomes as a result of practiced training activities with selection and emphasis on a particular Dousa-hou activity to produce a desired change of posture and communication development.

To consider the training effects on posture and communication development, the trainees who participated could improve very well on volunteer movement of body, and behavior control factors. Such as

how to involve in play with others, volunteer movement of hands, legs, fingers, neck and other body parts, could gain on how to initiate a talk with others or to act on his role in recreational activities or when playing with others; and taking care of his own appearance. It means that the trainee could take care of himself with awareness as a social manner not to be looked awkward or dull. The trainee was found to produce body movements better and correct than earlier in different situations while involving in different social activities of daily living. The trainee could communicate his feelings better to their trainer using words in the training context. It was also emerged that a trainee could control the own behavioral activities with awareness by this method. It can also be concluded that the trainee got more chance to get social interaction with other persons including his trainer and was found involved from *sometimes* to *usual* states. In the last, it reflected from the results that trainee was not significantly able to produce facial emotion expressions in training activities. There may be chances that the trainer could not catch the produced emotional expressions at right time due to paying much attention to support the body movement tasks. The above results did not differ across country and culture.

Overall, it can be concluded by the QDC results, that the psychological rehabilitation method Dousa-hou could supports and promotes most the posture and body movements, behavior control, speech and communication skills, initiative & appearance, social interaction, and *least* the emotion expression through Dousa-hou training method of psychological rehabilitation.

For further study, it is our aim to compile the trainers' and mothers' data of three countries of Japan, Malaysia, and India in next publication to generalize the posture and communication development effectiveness of the psychological rehabilitation method Dousa-hou for the benefit of the children with disabilities in respective and other countries.

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Appendix- I

Questionnaire for Developmental Changes (ODC)

(For Trainers/ Mothers)

Demographic data:

Trainer/ Mother Name: _____ Age: _____

Trainee's Education: _____ Sex of Trainee: _____

Date: _____

*Please mark 1 if your answer is **never**, 2 for **occasionally**, 3 for **sometimes**, 4 for **usually** and 5 for **almost always***

Did you notice any change in the child on the following aspects:

1. Child could concentrate on a given body movement task	1	2	3	4	5
2. Child was found controlling the temper during training activities	1	2	3	4	5
3. Child talked with the therapist in training	1	2	3	4	5
4. Child was actively and frequently responded to the therapist	1	2	3	4	5
5. Did you notice <i>joy</i> on the child's face	1	2	3	4	5
6. Did you notice <i>sadness</i> on the face of child	1	2	3	4	5
7. Did you notice <i>anger</i> on child's face	1	2	3	4	5
8. Did you notice <i>rejection</i> of the activities by the child	1	2	3	4	5
9. Did you notice <i>fear</i> on the child's face	1	2	3	4	5
10. Child was able to produce desired movement of hands	1	2	3	4	5
11. Child was able to produce desired movement of legs	1	2	3	4	5
12. Child was able to produce desired movement of fingers	1	2	3	4	5
13. Child was able to produce desired moments of neck	1	2	3	4	5
14. Child was having the feelings of happiness	1	2	3	4	5
15. Child was participating in play with other children and parents	1	2	3	4	5
16. Child took initiative to talk with others	1	2	3	4	5
17. Child was looking fresh in the camp	1	2	3	4	5
18. Child was looking dull in the camp	1	2	3	4	5
19. Child voluntarily participated in recreational activities	1	2	3	4	5
20. Child tried to act on his role in a play with others	1	2	3	4	5
21. Child was found to play with others using a ball or toy	1	2	3	4	5
22. Child's body temperature was normal	1	2	3	4	5
23. Child's heart rate was normal	1	2	3	4	5
24. Child's breathing was normal	1	2	3	4	5

Is it your first or second or () times to participate in Dousa-hou camp? Mark the suitable one.

Thanks for your cooperation.

Note.- Items were rated on a 5-point scale using anchors of 1 = never and 5 = almost always. Items for Factor I = 1, 2: Behavior Control; Factor II = 3, 4: Speech and Communication; Factor III = 5, 6, 7, 8, 9: Emotion Expression; Factor IV = 10, 11, 12, 13: Volunteer body movements; Factor V = 14, 15, 16, 17, 18: Initiative and Appearance; Factor XI = 19, 20, 21: Social Interaction; and Factor VII = 22, 23, 24: Health Maintenance.

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