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Developmental Support to the Kindergarten and Nursery School Children with Disabilities through Japanese Psycho Therapeutic Method (*Dousa-hou*)

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Summary

A 12-item Social Interaction Questionnaire was developed to measure the social interactions among trainers and mothers of children with disabilities in Dousa-hou camps. Dousa-hou is a Japanese psychological rehabilitation method which is widely used for children with mental retardation, cerebral palsy, and autism in Japan and other Asian countries. The primary focus of the rehabilitation method is to improve bodily movements and posture as well as to introduce social support to patients and their first-degree relatives and to promote social interaction among participants. Two factors of interaction as (1) educational and daily life matters, and (2) health and care matters emerged through factor analysis. Cronbach coefficient alpha for internal consistency of the questionnaire was .91. It was found that mothers got more social support interacting with their child's trainer during Dousa-hou. Trainers and mothers reported significant changes of child's behavior, emotions, physical aspects, psychological aspects, social development, and physiological aspects.

Introduction

Dousa-hou is a psychological rehabilitation process developed in Japan 35 years ago for actively working with children and adults having different disabilities, to improve their education, health, and psychological care (Naruse, 1973, 1985, 1992). Through Dousa-hou, children with cerebral palsy improve control of their bodily movements and postures and reduce anxiety and depression caused by their disabilities and socially interact more with others (Harizuka, 1992; Konno, 1993b; Kumar & Harizuka, 2001; Ogawa, 1987). Mothers and first-degree relatives to the child with disabilities got more social support by social interactions during Dousa-hou activities in a one-week camp (Kim & Kumar, 2004).

Social Interactions

The social mode of interaction is comprised of the physical and verbal strategies parents use to express their feelings and to engage their young in primarily interpersonal exchanges. Rocking, kissing, physical comforting, smiling, nonverbal vocalizing, and maintaining playful face-to-face contact

illustrate commonly observed types of social interactions (Rutter, 1979).

Didactic Interactions

Social overtures constitute a common and important class of caretaker child interactions; the focus of social interactions is on the dyad. A second significant mode of caretaking locates its focus outside caretaker and infant per se, in extra dyadic loci. Such interactions include caretakers' strategies in stimulating and arousing their offspring to the world outside the pair, in encouraging attention to properties, objects, or events in the environment, in introducing, mediating, and interpreting the external world, and in provoking or providing opportunities to observe, imitate, speak, and learn. Didactics may be physical (pointing, placing, guiding, or demonstrating) or verbal (describing, questioning, instructing, or labeling); they may elaborate on something already under the child's purview, or they may introduce something new.

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 et al., 2005). In other rehabilitation therapies, such performances are more mechanical than by self-intention and self-awareness and extinguish faster than Dousa-hou training (Naruse, 1997a). The therapeutic interventions involve raising the individuals' consciousness of the impact of their conduct and attitudes on themselves and the social environment, and conversely the impact 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 one-week Dousa-hou training sessions. Also, the trainers' perception of child's social interactions about health, care, educational aspects, and daily life matters may differ from the mothers' perception. The social interaction questionnaire would be helpful to measure the child's social interaction skills objectively.

STUDY 1: FACTOR ANALYSIS OF SOCIAL INTERACTION QUESTIONNAIRE

Method

Procedure.- To construct the social interaction questionnaire, 12-items of social interaction during the Dousa-hou therapeutic exercises were framed. These interaction items were usually observed related to support a child in respect of health, care, social development, educational support, and therapeutic support among trainers, mothers, supervisors, and other trainers in the pre experiment Dousa-hou therapeutic sessions. The items were answered on a 5-point scale regarding social interaction with

anchors of 1 = never and 5 = almost always by trainers and mothers of children with disabilities participated in one-week Dousa-hou camps. Factor analysis was applied in Study I to examine the structure of relations among the items in the original sample with the purpose of bringing them into a concrete set of variables. After that, the internal consistency of the questionnaire was examined, and Cronbach alpha coefficient for reliability of the questionnaire was also examined. The trainers and mothers were asked to rate the behavioral, emotional, physical, psychological, social, physiological changes in the child after participating one week Dousa-hou camp. They rated the above items on the back of the questionnaire as instructed.

Participants.- A total of 192 trainers, working as special educators and master's course students, and mothers (M age: 36.3 yrs. SD: 11.6) in Dousa-hou camps for the children with disabilities (autism, cerebral palsy, ADHD, mental retardation, dawn syndromes etc.) mean age 4.2 years answered the social interaction items on the last day of a one-week Dousa-hou camp. All the mothers and trainers gave their informed consent before the questionnaire administration. They filled out the original sample of 12 questions individually. The trainers and mothers had no specific disability.

Statistical analysis: Principal component analysis of the 12-items sample for all trainers and mothers, with two factor fixed, followed by varimax rotation of Kaiser Normalization, yielded a structure which accounted for 50% of the response variance. The number of two fixed factors was based on the transition point in the scree plot where successive eigenvalues are plotted against component number. Items that met the criterion of loading at greater than or equal to .52 with a factor were selected to make interpretation of the questionnaire possible (Kinnear & Gray, 2000; Kline, 1994).

Results.- All twelve items met the criterion and are indicated in *Table 1*. Factor I consists of 6, 7, 8, 9, 10, 11 and 12, and is labeled Educational and Daily Life matters. Factor II consists of Items 1, 2, 3, 4 and 5, based on their content, labeled Health and Care matters. These two factors make up the two subscales in the 12-item Social Interaction Questionnaire.

Trainers ($n = 39$) and Mothers ($n = 33$) of the kindergarten and nursery school children of mean age 4.2 years rated the children's outcomes. Trainers (69.2%) and Mothers (72.7%) reported the reduction in hyperactive behaviors and increase in attention. Trainers (64.1%) and Mothers (57.6%) reported the emotional changes like the child got bright after the camp. Trainers (76.9%) and Mothers (72.7%) reported the physical changes in the children as child could move the body parts with ease. Trainers (61.5%) and Mothers (45.4%) informed the psychological changes as the child could intermix with other children without hesitation. Trainers (61.53%) and Mothers (75.7%) told

that the child became more social in the camp. Trainers (56.41%) and Mothers (48.51%) rated the physiological change in the children that the child reporting of body pain and muscle tension decreased. In the total sample, mothers rated less on psychological and physiological changes of the children than trainers. The cause may be the lack of clear evaluation methodology or instructions for mothers and insufficient awareness to recognize the small changes in the child in terms of physiological changes.

Table 1

Factor Loading of Original Social Interaction Questionnaire (For Trainers/ Mothers)

Demographic data:

Trainer/ Mother Name: _____ Age: _____

Trainee's Education: _____ Sex of Trainee: _____

Date: _____

Did you talk with the child's mother/trainer for child's Dousa-hou activities in this camp about —

	Factor I	Factor II
1. Child's body pain or tiredness complaints*	.164	.717
2. Effective Dousa-hou activities for the child before the training*	.231	.629
3. Improvements in child's condition after the training*	.249	.604
4. Child's involvement in recreational activities of that day*	.512	.527
5. Daily health condition, sleep and caution in morning assembly*	.077	.749
6. Food habits and child's improvements when taking food*	.671	.389
7. Whole day activities and child's condition during free time*	.741	.324
8. Child's likes and dislikes*	.645	.362
9. Child's usual life-style activities and school activities*	.742	.168
10. Child's education and future education plans*	.754	.291
11. Dousa-hou tasks after the camp and their organization for the child*	.665	.214
12. Child's friendship or circle of friends during and after the camp*	.811	-.035

Note.- Items were rated on a 5-point scale using anchors of 1 = never and 5 = almost always. Total scores ranged from 12 to 60. Factor I = Items 6, 7, 8, 9, 10, 11, 12: Educational and Daily Life matters; Factor II = Items, 1, 2, 3, 4, 5: Health and Care matters. *Items meeting the criteria of a > .52 factor loading.

STUDY 2: RELIABILITY — INTERNAL CONSISTENCY

Procedure

Participants.- A different sample of Trainers and Mothers ($N = 172$) answered the Social Interaction Questionnaire in another Dousa-hou camps for the children with disabilities (M age = 35.4, $SD = 4.6$ yr.) Like in study I, all the trainers and mothers gave their consents before answering to the questionnaire.

Statistical analyses.- Internal consistency is the method of estimating reliability that involves assessing consistency in performance across test items (Murphy & Davidshofer, 2001). In the data, there was no missing value. Item-total correlations, inter-item correlations, Cronbach coefficient alpha for internal consistency and inter scale correlations were used to assess reliability of the questionnaire.

Results.- Inter scale correlation Cronbach coefficient alpha of Factor I with Factor II was .71 (see Table 2). Item-total correlations were $> .43$. Cronbach coefficient alpha of inter-item correlations among all the items were greater than .41. Cronbach coefficient alpha for internal consistency of the questionnaire was .91 ($M = 32.62$; $SD = 12.26$).

Table 2
Internal consistency (α) of the two subscales of social interaction questionnaire
($N = 172$)

Scale	M	SD	α
1. Educational and Daily Life matters	16.05	5.77	.89
2. Health and Care matters	16.58	7.47	.81
3. Total of subscales	16.05	5.77	.71

Note.- Trainers' and Mothers' mean scores differed on both subscales and the total of subscales ($p < .01$).

Discussion

The aim of the study was to construct a reliable and valid measure of social interactions in Dousa-hou therapeutic sessions for the trainers and mothers about child's social interaction skills for supporting child's health, daily life activities, and educational aspects and to get awareness of child's behavioral, emotional, physical, psychological, social and physiological changes in one-week Dousa-hou camp. The Social Interaction Questionnaire of total 12 items was framed based on the above aspects. Factor analysis of the 12-items' raw scores yielded 2 factors of interactions as: (1) Educational and Daily Life matters, (2) Health and Care matters. All the items loaded well on two subscales using principal component analyses of varimax rotation. No item was excluded in the final questionnaire. Factor I included the items related to the educational and daily living support for the children in trainers' and mothers' perception. 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.

Cronbach coefficients alpha of two subscales in the original questionnaire were greater than .80 and that is a good internal consistency. Further, the inter scale correlations were $< .70$ and suggested that the subscales were of same construct (Rankin & Stokes, 1998).

The mothers of the children with disabilities showed significantly better social interaction support than the trainers for the child's health care, education, and daily life activities. The results are in line of previous study showing that mothers of the children with disabilities rated more social interaction support than trainers in a Dousa-hou camp (Kim & Kumar, 2004). It showed that social interaction items in the questionnaire measured significantly the child's social interaction skills as perceived by trainers and mothers. These findings support the construct validity of the social interaction questionnaire. Therefore, the reliable social interaction questionnaire would be helpful to support the children's mothers and first-degree relatives to care the health, education planning, and daily life activities of the child in a better way. The trainers in Dousa-hou camps would be able to support and concentrate on recognition of child's social interaction skills' development minutely and consciously at the use of social interaction questionnaire. Also, the trainers would be able to report concretely the child's social interaction skill developments to the parents, supervisors in the camp, and to the school teachers. Trainers and Mothers of the kindergarten and nursery school children reported the children's significant outcomes. They reported that the reduction in hyperactive behaviors and increase in attention of the child. Emotional changes like the child got bright after the camp. Physical changes as child could move the body parts with ease. Psychological changes as the child could intermix with other children without hesitation. Social changes as the child became more social in the camp. Physiological change that the child's reporting of body pain and muscle tension decreased. In the total sample, mothers rated less on psychological and physiological changes of the children than trainers. The cause may be the lack of clear evaluation methodology or instructions for mothers and insufficient awareness to recognize the small changes in the child in terms of physiological changes.

Therefore, the study would be helpful for the mothers and trainers and educators to tailor the different need of the children and how the Dousa-hou is helpful to support these needs of the child with disability.

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