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◆RESEARCH ARTICLES

**Occupational therapy and support for brain injuries:  
Occupational therapists' interviews on employment support**

Ryoko Sato\*1, \*2 Naomi Fujinaga\*3 Mariko Yoshino\*4

\*1 Non-Profit Organization Ikiiki Welfare Network Center  
(Former affiliation: Teikyo Heisei University)

\*2 Doctor Course, Health Sciences Discipline, Kobe University Life and Medical  
Sciences Area

\*3 Speech-Psychological Therapy, Department of Rehabilitation, Tokyo Metropolitan  
Rehabilitation Hospital

\*4 Faculty of Human Sciences, University of Tsukuba

The purpose of this study is to clarify the role of the occupational therapy in vocational rehabilitation for people with brain injuries. We carried out a qualitative study based on the Modified Grounded Theory Approach with ten occupational therapists who had provided more than one year of employment support. Seventeen concepts were generated, and three categories with five subcategories were extracted from 13 of the 17 concepts. The three categories were, “awareness of the necessity and the effectiveness of support at work” , “support in work readiness” and “support in continuous employment” . Finally, we made a framework outlining the overall process. We clarified that occupational therapists seek factors necessary for continuous employment when supporting work readiness, and then support continuous employment in cooperation with others in the profession of vocational rehabilitation.

Key words: Occupational therapists, Brain injured, Vocational rehabilitation

**The relationship between behavioral and psychological symptoms of dementia (BPSD)  
and the autonomic nervous system in dementia patients**

Daisuke Kimura\*1 Masako Notoya\*2 Aiko Imai\*3 Taro Ohtoshi\*1

\*1 Department of Occupational Therapy, Faculty of Health Sciences, Kansai University  
of Health Sciences

(Former affiliation: Kansai University of Welfare Sciences)

\*2 Department of Speech and Hearing Sciences and Disorders, Faculty of Health and Medical Sciences, Kyoto Gakuen University

\*3 Faculty of Care and Rehabilitation, Seijoh University

This study aimed to examine the feasibility of predicting behavioral and psychological symptoms of dementia (BPSD) using heart rate variability analysis to measure autonomic nerve activity. This paper also examines BPSDs that are related to autonomic balance. Thirty-five elderly individuals with confirmed dementia were assessed, and BPSD was measured using the Neuropsychiatric Inventory (NPI). Autonomic nerve activity was measured with TAS9VIEW. For analysis, the subjects were separated into two groups: those split both above and those below the median value of the NPI data. A receiver operating characteristic curve was prepared by measuring the area under the curve in order to assess the usefulness of measuring autonomic nerve activity. Next, low to high frequency ratios (LF/HF) were used to classify the subjects into two additional groups: a sympathetic dominant group and a parasympathetic dominant group. The NPI scores between these two groups were compared, and BPSD was found to be associated with Total power (TP), HF, and LF. When parasympathetic nerve activity was dominant, the NPI total score was found to be significantly higher than average.

Key words: Autonomic nervous system, Dementia, BPSD

## **The error range of measurement due to different evaluation methods of the Trail Making Test**

Tatsuya Kaneno \*1 Akihiro Sato \*1 Kazunori Akizuki \*2

\*1 Department of Occupational Therapy, Mejiro University

\*2 Department of Physical Therapy, Kobe International University

In Japan, two Trail Making Test (TMT) evaluation methods are used, and measurements are taken in either a vertical or a horizontal position. The purpose of this study was to identify types of measurement errors and the range of the two TMT methods.

We measured 36 elderly participants using two TMT methods (part A and part B). The measurement interval between the two TMT methods was 90 min. Bland–Altman analysis was used to evaluate the data. TMT part A showed a fixed and proportional bias, and TMT part B showed a fixed bias only. This study identified systematic errors between two TMT methods and highlighted the need to confirm which evaluation method was used.

Key words: Attentional function, Measurement, Reliability

### **Issues associated with the procedure for grounded–theory approaches in Japanese qualitative occupational therapy research**

Shin Kitamura\*1 Reiko Miyamoto\*2

\*1 Tokyo Bay Rehabilitation Hospital

\*2 Graduate School of Human Health Sciences, Tokyo Metropolitan University

In this study, we examined a selection of grounded theory analyses (GTAs) related to occupational therapy in Japan to investigate the use of GTA and to suggest ways to improve the quality of GTA studies. We investigated the type of GTA used and classified the research themes through content analysis. In addition, we analyzed the content of each study using Consolidated Criteria for Reporting Qualitative Research (COREQ). A total of 33 articles were included from 2001 to 2016 in the study. M-GTA was the most frequently used type of GTA (21 of 33 studies). Research themes were divided into eight categories that focused on client thoughts and experiences, as well as social interactions with family and other occupations. Analysis of content revealed a lack of descriptions concerning the credibility and accuracy of the research results, which we consider to be a problem in improving the quality of research. Our results suggest the following: the use of GTA is increasing in the field of occupational therapy in Japan, these studies use a variety of types of GTA, and the quality of studies using GTA can be improved through discussion of the reliability of research results.

Key words: Qualitative research, Literature research, Occupational therapy

## **Neurocognitive dysfunction of long-term hospitalization of patients with schizophrenia:**

### **A comparison with outpatients**

Kenzo Iwano \*1 Masayoshi Kobayashi \*2

\*1 National Hospital Organization Komoro Kogen Hospital

\*2 Graduate School of Medicine, Shinshu University

The purpose of this study was to clarify neurocognitive dysfunction of long-term inpatients with schizophrenia by comparing with outpatient (daycare) patients. Long-term hospitalized patients (n=33; hospital group) and outpatients (n=30; foreign group) participated in the study. Patient age, cumulative duration of hospitalization, amount of medication, and occurrence of “delusions” assessed by the Brief Positive and Negative Syndrome Scale (Brief PANSS) were significantly higher in the hospital group than in the foreign group, whereas the Global Assessment of Functioning (GAF), verbal memory, working memory, motor function, attention and processing speed, executive function, and composite score of Brief Assessment of Cognition in Schizophrenia (BACS) were significantly lower. Cognitive dysfunction in hospitalized groups may be associated with long-term hospitalization, or/and a declining psychosocial function caused by the chronic course of schizophrenia, or/and the dose of their antipsychotics.

Key words: Schizophrenia, Long-term hospitalization, Cognitive function

## **Development of a social participation questionnaire for families of children with developmental disorders**

Eri Yokoyama \*1 Chieko Karashima \*2

\*1 Toyota Municipal Child Development Center

(Former affiliation: Doctoral Program, Department of Physical and Occupational Therapy, Graduate School of Medicine, Nagoya University)

\*2 Department of Physical and Occupational Therapy, Graduate School of Medicine, Nagoya University

Going out from the house is essential for social participation. However, for the families of children with developmental disorders, such opportunities are limited. This study examined the question items used to develop a social participation questionnaire for the families of children with developmental disorders. Nine parents of children with developmental disorders took part in semi-structured interviews as study I. Interview voice data were transcribed and analyzed by KJ-method, and 107 tentative question items were extracted. For study II, these question items were examined by 3-round Delphi-method, using 108 parents of children with developmental disorders. The parents answered how important these question items were in order to evaluate their difficulties and needs for outside home activities. Finally, 95 question items were selected as “Social participation questionnaire for the families of children with developmental disorders” question items. Further studies to examine the practical application of the scoring system will be carried out.

Key words: Developmental disorder, Family, Outside home activities, Social participation

## **Randomized controlled trial on occupational therapy related to an intensive care unit:**

### **A systematic review**

Yudai Fujimoto \*1, \*2 Tetsuya Matsumoto \*3

\*1 Master Course, Graduate School of Education, Osaka Kyoiku University

\*2 Department of Rehabilitation, Osaka International Cancer Institute

(Former affiliation; Department of Rehabilitation, Saiseikai Senri Hospital, Senri Critical Care Medical Center)

\*3 Graduate School of Education, Osaka Kyoiku University

Background: This systematic review studied the effectiveness of occupational therapy intervention by patients in an adult intensive care unit (ICU). Methods: Two Japanese and four major English databases were used in a select randomized controlled trial (RCT) for this review. Results: From 26 screened abstracts, 3 RCTs were found.

The subjects were 2 studies while entering the ICU, and 1 study after leaving the ICU. All were carried out in conjunction with physical therapy. The outcomes of occupational therapy practice have been evaluated by the number of days free of ventilators, activities of daily living, delirium, cognitive function, and grip strength. Conclusion: It is important to research the increase and effectiveness of occupational therapy reports related to ICU.

Key words: Intensive care unit, Early rehabilitation, Early occupational therapy, Randomized controlled trial, Systematic review

#### ◆PRACTICAL REPORTS

##### **School-based occupational therapy**

Chiho Nakama \*1 Eri Matsumura \*1 Sei Uezu \*2 Kounosuke Tomori \*3

\*1 Non-Profit Organization ADOC Project Child Support Center Yuimawaru

\*2 Japanese Red Cross Ajya Complex Welfare Facility

\*3 Tokyo University of Technology

This report introduces the school-based occupational therapy practice of a 9-year-old girl with psychogenic stress induced by discord with friends and a teacher. After changing schools, she spent all day in a separate classroom with only the school social worker. Occupational therapy involved developing collaborative relationships between parents, the school, the child, and external experts focusing on shared goals toward activities they expected of the child through ADOC for School, rather than setting goals around the disability or impairment. This support intended to enable the teacher, parents and/or child to achieve these goals. In this context, the role of the occupational therapist is to give advice based on occupational performance analyze the goals, and increase and maintain the motivation of teacher. The occupational therapist and teacher created a Goal Attainment Scale by expressing expected outcomes in terms of what the child should be able to do with specific support.

Key words: Special education, School-based occupational therapy, Visiting consultation



**Home-visit occupational therapy for right hemiplegia and ataxia after brainstem hemorrhage:**

**A case study of excretion movement leading to independence through changing the movement method and environmental adjustment**

Taishi Sakiyama \*

\* Kishu Rehabilitation Visiting Care Station

(Former affiliation: Nursing Care Division, Nanroukai Kiwa Hospital)

Visiting occupational therapy for persons with severe disabilities including right hemiplegia, and ataxia at the four limbs and the trunk by brainstem hemorrhage was investigated. Initially, almost 100% ADL was required. However, 10 months post-intervention saw improvements in independent ADL. After 12 months the excretion method was changed from standing to seated positions. Seventeen months later, outpatient rehabilitation was carried out, and 20 months later, portable toilet safety was improved by putting safeguard materials on four points of foot parts. Finally, 22 months later, elimination was performed independently. Results indicate that visiting occupational therapy is useful in evaluating physical function, ADL behavior, and living environments of persons requiring critical care. Also, performing multi-occupational collaboration, and directly supporting living situations improved living behavior.

Key words: Severe to nursing, Visiting occupational therapy, Excretion, Cooperation

**Task-oriented training and transfer package after regenerative medicine for a stroke patient with severe upper-extremity paresis:**

**A case study**

Shouhei Hori \*1 Takashi Takebayashi \*2

\*1 Sapporo Keijinkai Rehabilitation Hospital

(Former affiliation: Hokujukai Hospital)

\*2 Department of Occupational Therapy, School of Health Science and Social

Welfare, Kibi International University

We treated severe arm paresis in a chronic stroke patient who underwent regenerative therapy five months ago, using the task-oriented training combined with orthosis and electrical stimulation therapy for 22 weeks (1 hour a day, 3 times a week). Consequently, the patient's Fugl-Meyer Assessment scores and the Amount of Use scores in the Motor Activity Log improved more than those in previous studies. Previous studies showed that the efficacy of regenerative medicine for paretic arms in a chronic stroke patient lasts for about 3 months post intervention. Therefore, this case study shows that multiple interventions might improve arm function.

Key words: Upper extremity function, Orthosis therapy, Electrical stimulation

### **An effective occupation-centered practice for a client with acute cerebral hemorrhage and cervical spondylotic amyotrophy**

Katsuma Ikeuchi \*1, \*2 Seiji Nishida \*3 Kazuhiro Takeuchi \*1

\*1 Okayama Medical Center

\*2 Graduate School of Comprehensive Scientific Research, Prefectural University of Hiroshima

\*3 Prefectural University of Hiroshima

We experienced an occupation-centered practice which was based on OTIPM for a client with mild acute cerebral hemorrhage. We established a client-centered performance context during the first session, and then made intervention plans which were based on the COPM and AMPS. Restorative occupations were selected and used after the fourth session. As a result, process logit on the final AMPS progressed to 0.7 from 0.4, and additionally, the client became able to walk around his home after discharge; his Likert scale improved to 7. Therefore, clients with mild acute stroke may benefit from occupation-centered practices soon after onset.

Key words: Acute, Stroke, Occupation, Occupational Therapy Intervention Process Model (OTIPM)

**Comparison of movement patterns and duration for putting arm through sleeve due to differing approaches of hemiplegic patients with cerebral apoplexy accompanied by attention disorders and flaccid upper limb paralysis:**

**A case study**

Yuki Choji \*1 Miyako Kishitani \*2, \*3 Atushi Nishitani \*2

\*1 Toyama Rehabilitation Medical Health and Welfare College

\*2 Saiseikai Kanazawa Hospital

\*3 Ishikawa Prefectural Rehabilitation Center

We evaluated the combined effects of both drop and hauling methods for putting arms through sleeves in patients with attention disorders and flaccid upper limb paralysis. We measured the maximum time to put an arm through a sleeve, and we evaluated the subjects' behaviors using an iPad. As a result, both training methods showed short sleeve times, and the drop method showed an especially shorter average time than the hauling method. This may be due to a difference in cuff search methods. Furthermore, the drop method may be easier to obtain the fixation of the upper limbs when passing through the sleeves of clothes than the hauling method. Occupational therapists need to consider the characteristics and differences of training methods and differences according to the symptoms of the case.

Key words: ADL, Change of clothes, Put arm through sleeve

**Implementation of the modified constraint-induced movement therapy for a stroke patient:**

**A case study**

Yasunori Kaba \*1 Takashi Takebayashi \*2

\*1 Department of Rehabilitation, Tokuyama Rehabilitation Hospital

\*2 Department of Occupational Therapy, School of Health Science and Social Welfare, Kibi International University

We performed a modified CI therapy for a patient with mild hemiplegia of the upper limbs. The patient was unable to improve frequency of usage of the affected arm in real life as much as the function of the affected arm. The case was a man in his 50s with hemiplegia of the right side. Three weeks of occupational therapy intervention saw improvement in upper limb function, but not in frequency of upper limb use. Therefore, target setting was done using upper-limb work selection decision support software, and modified CI therapy was performed. As a result, simplified upper limb function test, Fugl-Meyer Assessment, and Motor Activity Log improved, and many targeted items were achieved using the paralyzed hands. Continuous improvement of upper limb function was confirmed after discharging.

Key words: Stroke, Upper-extremity function, Hemiplegia

◆SHORT REPORT

**The relationship between the Cognitive Behavioral Rating Scale (CBRS) and the Mini-Mental State Examination (MMSE) in different clinical stages**

Takao Kojima\*1 Kunihiro Kanaya\*2 Kyohei Yamada\*3  
Bunta Fumoto\*4 Tsutomu Sasaki\*3

\*1 Department of Rehabilitation, Sapporo Shuyukai Hospital

\*2 Department of Rehabilitation Medicine, Sasson-Sugata Clinic

\*3 Division of Occupational Therapy, Hokkaido Chitose College of Rehabilitation

\*4 Division of Occupational Therapy, Hakodate Neurosurgical Hospital

We analyzed the relationship between the Cognitive Behavioral Rating Scale (CBRS) and the Mini-Mental State Examination (MMSE) in a group of 183 stroke patients in different clinical stages. A single regression analysis using the MMSE as a dependent variable and the CBRS as an independent variable were performed. For all patients, the coefficient of determination  $R^2$  was 0.53 ( $p < 0.001$ ). The coefficient of determination  $R^2$  of patients whose duration after onset was less than 30 days was 0.49 ( $p < 0.001$ ). On the other hand, the coefficient of determination  $R^2$  of patients whose duration after onset was more than 31 days was 0.54 ( $p < 0.001$ ). These results suggest that the CBRS has higher accuracy if applied to the patients whose duration after onset is greater than 31 days than if applied to less than 30 days since their

onset.

Key words: Cognitive function, Behavioral observation, Evaluation