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◆RESEARCH ARTICLES

Positive effects of high cognitive functions on rehabilitation in hemodialysis patients

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Renal rehabilitation is a recently proposed rehabilitation treatment concept, which is not yet fully established. Very few studies have investigated the effects of rehabilitation on activities of daily living (ADL) in hemodialysis patients. Evidence regarding its effects on cognitive function is also limited. In this study, we investigated the effects of rehabilitation on ADL levels in 182 hemodialysis patients. We assessed the levels of ADL using the functional independence measure (FIM), which is one of the major surrogate markers for ADL. Moreover, we investigated cognitive functions in detail using the MMSE (Mini-Mental State Examination) and the HDS-R (Hasegawa Dementia Scale-revised). Physical therapists (PTs) and occupational therapists (OTs) designed rehabilitation programs as per the patients' daily lifestyles. After rehabilitation, the average total FIM score increased from 65.1 to 77.1. The FIM cognitive item was significantly associated with rehabilitation effects. Among patients whose FIM scores did not increase, the number of patients with FIM cognitive scores 25 was half that of the patients with FIM cognitive scores 24. Moreover, the attention functions of MMSE and HDS-R in patients with FIM cognitive scores 25 were 6 and 4 times higher, respectively, than those in patients with FIM cognitive scores 24. The effectiveness of rehabilitation depends on maintaining improved FIM cognitive scores (particularly in the attention function). Our findings suggest the need for comprehensive strategies such as simultaneous intervention by PTs and OTs, which could increase the level of ADL in hemodialysis patients.

Key words: Hemodialysis, Cognitive function, Functional independence measure (FIM), Attention function, Occupational therapy

Structure and characteristics of a workplace stress scale for occupational therapists

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The present study aimed to clarify workplace stressors and the full extent and characteristics of stress caused by them. For that, we developed an appropriate and functional stress scale for occupational therapists. The multi-item stress scale was based on interviews with interested people and previous studies, and was used to conduct a postal survey with occupational therapists in Gifu prefecture (response rate: 72.4%). Factor analysis reduced the data to six subscales. We subsequently studied the proportion and intensity of the scale components and participants' workplace stressors. The results suggested that "the lack of consideration towards occupational therapy" and "the burden of guidance and training" were likely to be stressors specific to the field of occupational therapy. It was also possible to identify stressors showing a high numerical value for both the proportion of participants and intensity.

Key words: Occupational therapist, Stress, Workplace stress scale

Predicting delirium in hospitalized elderly nursing home residents

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This study aimed to determine whether or not behavioral and psychological symptoms of dementia (BPSD), ADL, and cognitive function are useful for predicting delirium during hospitalization in elderly nursing home residents admitted to our hospital. We assessed pre-hospitalization BPSD, N-ADL, and NM scale parameters,

and performed logistic regression analysis based on whether or not delirium was present during hospitalization. Subjects were 487 residents; 74 exhibited delirium (15.2%). Logistic regression analysis revealed the following as significant factors associated with delirium: risk of falls, aggressive behavior, hallucinations, and insomnia for pre-hospitalization BPSD; excretion for N-ADL; and conversation for the NM scale. Our findings highlight the importance of pre-hospitalization BPSD, N-ADL, and NM scale parameters in predicting delirium.

Key words: Delirium, Dementia, Elderly

Occupational participation and “Ikigai” in healthy middle-aged and elderly individuals in Japan: A one-year follow-up survey

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Background and Purpose: Occupational participation is important for health and well-being in preventive care during occupational therapy. However, there are few studies on occupational participation in such settings. The purpose of this study was to substantiate the positive effect of occupational participation on the Japanese spiritual feeling “Ikigai” in community-dwelling healthy middle-aged and elderly individuals. **Methods:** A total of 534 community-dwelling individuals participated in this one-year follow-up survey in Ibaraki Prefecture, Japan. Questionnaires comprised three categories of interest: occupational participation, Ikigai, and sociodemographic characteristics. Multiple regression analysis was performed using the following control variables: age, gender, marital status, education, subjective economic status, hospital care, outing frequency, number of friends, and volunteer activity frequency. **Results:** Of the 534 participants, 456 (85.4%), aged 50 to 85 years and comprising 121 males and 335 females, completed and returned the study questionnaire. Data analyses indicated changes in Self-completed Occupational Performance Index scores during the one-year period had a positive effect on the total Ikigai-9 scores ($\beta=0.35$, $p<0.001$) and three domain scores, leisure ($\beta=0.15$, $p<0.01$), productivity ($\beta=0.18$, $p<0.01$), and self-care ($\beta=0.13$, $p<0.01$), after adjustment for control variables. **Conclusion:** The results of this

study substantiate the positive effect of occupational participation on Ikigai and may contribute to the development of preventive occupational therapy services for community dwellers.

Key words: Ikigai, Self-completed Occupational Performance Index (SOPI), Participation, Longitudinal study, Health promotion

◆PRACTICAL REPORTS

Myoelectric prosthesis training for wrist disarticulation resulting in resuming work:

A case study

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This describes a case study in which wrist disarticulation resulted in resuming work through training in myoelectric prosthesis. A training prosthesis allowed the patient to acclimate to its operation, weight, and use during ADL and work prior to constructing a personal prosthesis. The patient's experience with the training prosthesis determines whether or not to have a prosthesis made. This process is important for the continued use of a myoelectric prosthesis throughout a patient's life.

Key words: Training myoelectric prosthesis, Myoelectric hand, Upper limb prosthesis

Exercises in gradual visual attention and wheelchair driving skill for patients with unilateral spatial neglect: A case report

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Stroke patients who develop severe hemiplegia and unilateral spatial neglect (USN) due to extensive right hemisphere damage need to be able to safely operate a wheelchair by themselves. However, this can be difficult. In this report, we devised “visual attention exercises (VAE)”, which were composed of leftward search tasks, reading tasks, and right-left alternating tasks, and “wheelchair driving skill exercises (WDSE)”, which were specifically designed for patients with USN. The two sets of exercises were initially performed separately, but were subsequently combined after the subject was able to complete each exercise. As a result, a patient with severe USN was able to safely operate a wheelchair independently. We describe the use of these gradual VAE and WDSE programs and occupational therapy progress in a typical case of severe USN.

Key words: Stroke, Unilateral spatial neglect, Wheelchair, Visual attention

COPM and AMPS in regaining confidence in the solitary life by enabling occupation:

A case study

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A patient with right femoral neck fractures and mild dementia received occupational intervention using the COPM and AMPS. The needs of the client were identified by the COPM, and the state of occupational performance was observed by the AMPS. From there the cause was clarified, and the goals and intervention were thought through with the client. As a result, not only the client’s immediate surroundings, but also

cooking, shopping and related ADL, which have a role in the home were made safe, resulting in discharging the patient to her home. Performing interventions focused and based on occupation may lead to regaining the client's confidence and enabling occupation.

Key words: Canadian Occupational Performance Measure (COPM), Assessment of Motor and Process Skills (AMPS), Occupation

Shared decision-making and offered meaningful occupation using Aid for Decision-making in Occupation Choice (ADOC) of paper edition: A case study

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The case describes language expression disability due to the dysarthria and motion paralysis caused by throat cancer and cerebral hemorrhage. We used the ADOC Paper edition for shared goal setting with the patient, and evaluated the subjective changes in Importance, Satisfaction and Performance level by Numerical Rating Scale (NRS). The evaluation was carried out in four phases (Early, middle, late, and at discharge). "Cooking" and "Exchanging with friends" were shown as meaningful activities regarding passive communication. It has become possible to focus the meaningful occupations associated with identity. Subsequently, the patient voluntarily participated more actively to get cooking ability and exchange information with friends. In addition, evaluation over time indicated process of changing importance, and became possible the intervention to understand the present condition of the case.

Key words: ADOC, Decision-making, Meaningful occupation

Occupational therapy for an infant with Ondine-Hirschsprung disease: Decrease of stress responses and development of postural controls

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We approached an infant with both severe stress responses to health care providers and developmental delay, and the family using toys and plays. Occupational therapy began at 6 months of age through family support and utilizing toys and a play program. The play program included audiovisual stimuli and sensory-motor experiences for his finger because he positively reacted to them. In addition, we provided information in order to facilitate parent-infant interaction and collaboration between parents and the occupational therapist. By 15 months of his age, the infant actively touched in a sitting position without stress responses to physical contacts. We considered that involvement with toys and play without physical contact permitted a physical contact approach such as handling because the intervention guaranteed the infant's safety. Moreover, parental intervention may have important implications in promoting infant development.

Key words: Stress, Toy, Postural control, Infant, Developmental support

The influence of constraint-induced movement therapy combined with neuro-modulation for a chronic stroke patient with non-fluent aphasia

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We used constraint-induced movement therapy after neuro-modulation (NM) to treat a chronic stroke patient with right hemiparesis and non-fluent aphasia. We found that the Fugl-Meyer Assessment for arm showed meaningful clinical improvement. Additionally, the faculty of language including “naming” of the Standard language test of aphasia showed meaningful improvement. The increasing amount of actual affected arm use in “occupation-as-means” and “occupation-as-end” comprised in the constraint-induced movement therapy after NM might improve the faculty of speech in chronic stroke patients. This result showed occupational therapy might be able to complement speech therapy.

Key words: Upper extremity function, Stroke, Non-fluent aphasia

Development of peer-instructed, sustainable community-based exercise groups targeting the fulfillment of integrated community care system in old age

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An “Integrated Community Care System (ICCS)” has been introduced in Japan under the long-term care insurance system to address “ageing in place”. Promoting ‘mutual aid’ is a vital element of ICCS. The aim of the present study was to develop peer-instructed, sustainable community-based exercise groups (PSCEG) by promoting mutual aid to fulfill the target of ICCS in old age. Over the past 11 years, we have instructed 11-week long community-based exercise programs in 18 separate districts of

Tokai city in different periods. The programs then continued until the present by the participants themselves where they took turns as instructors for each exercise session. Hence the training became a peer-instructed one. Later on, three more PSCEG were formed and currently there is a total of twenty-one PSCEG in Tokai city. The number of participants is increasing each year, and currently more than 20 thousand participants are working out under the PSCEG umbrella in Tokai city. These results indicate that enhancing mutual aid based on a peer-instructed mode of training could be useful in organizing a PSCEG.

Key words: Older adults, Preventive care, Group, Integrated community care system