

■ INFORMATION

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◆RESEARCH ARTICLES

**Effects of self-selected task content and extrinsic rewards on P300 component and reaction time**

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In this study, we examined the effects of self-selected and extrinsic rewards, which are considered important for enhancing motivation, on the P300 component of event-related-potential (ERP) and the reaction time (RT) in healthy adults. The RT task was executed under four conditions (non reward-self-select, non reward-forced-select, reward-self-select, and reward-forced-select), during which ERP was measured. P300 amplitude tended to increase in the self-select condition, while RT was significantly shortened in the reward condition. In other words, self-selected and extrinsic rewards reflected a possible increase in attention resource allocation for tasks by increasing motivation, which led to improved task results. Our findings suggest that in occupational therapy, it is important to increase motivation by supporting clients' self-selected activity and using extrinsic rewards.

Key words: Self-select, Extrinsic reward, P300, Reaction time, Brain waves

## **Current situation and challenges regarding Community-Based Rehabilitation for persons with disabilities in Jordan**

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**Introduction:** Community-Based Rehabilitation (CBR) is currently implemented in over 90 countries. However, support programs for Persons With Disabilities (PWDs) have many challenges in developing countries. The present study attempts to clarify the current situation and challenges of the provision of support for PWDs by CBR workers in Jordan. **Subjects and Methods:** Nine CBR workers in Jordan underwent semi-structured interviews between December 2011 and August 2013, and qualitative content analyses were performed to assess the situations and challenges of the subjects. The results were analyzed using a Community-Based Rehabilitation matrix on the themes of the subjects' current CBR programs. **Results:** The current situations of CBR programs by the CBR workers in Jordan were categorized under four main themes and 24 sub-themes: "Interpretation of Community-Based Rehabilitation", "Situation of Community-Based Rehabilitation in his/her programs", "Difficulty in his/her Community-Based Rehabilitation programs" and "Prospects for the future in his/her Community-Based Rehabilitation program". **Conclusion:** There is insufficient recognition of CBR of participants for the empowerment of PWDs. Therefore, it is essential that health professionals provide concrete methods to empower persons with disabilities.

**Key words:** International cooperation, Empowerment, Community-Based Rehabilitation (CBR)

## **Factors related to Evidence-Based Practice (EBP):**

### **Stages of readiness for occupational therapists at convalescent rehabilitation wards**

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The purpose of the study was to clarify the factors related to the Evidence-Based Practice (EBP) of occupational therapists at convalescent rehabilitation wards, and to discuss the strategies to utilize EBP. A postal survey was sent to 1,000 occupational therapists, using the EBP Scale for Japanese occupational therapists, and a total of 265 responded. A multiple regression analysis yielded 4 factors: (1) perceived self-efficacy of EBP, (2) workplace readiness of EBP usage, (3) frequency of using search engines, and (4) perceived barriers of EBP.

Key words: Evidence-Based Occupational Therapy (EBOT), Evidence, Convalescent rehabilitation wards, Occupational therapists, Survey

### **Psychometric properties of the Classification and Assessment of Occupational Dysfunction (CAOD) for clinical settings**

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The purpose of this study was to examine the psychometric properties of the Classification and Assessment of Occupational Dysfunction (CAOD) in clinical setting including both physical and mental disability fields. A sample of 145 clients with disabilities completed the CAOD and the MOS 36-Item Short-Form Health Survey (SF-36). We performed Kolmogorov-Smirnov test, confirmatory factor analysis (CFA), latent class based multiple group analysis (LCBMGA), correlation analysis, polyserial correlation analysis, factor contribution ratio, Cronbach's alpha and McDonald's omega coefficient, item response theory (IRT), and latent rank analysis (LRA). As a result, the Kolmogorov-Smirnov test indicated a normal distribution; CFA was generally positive. In a multiple group structural equation modeling, the LCBMGA showed a measurement invariance in a CAOD and SF-36 showed some correlation. The results of the polyserial correlation analysis, factor contribution ratio, Cronbach's

s alpha and McDonald' s omega coefficient were one-dimensional. IRT exhibited good item characteristics. However, when targeting average or below average occupational dysfunction, the measurement accuracy of CAOD decreased. LRA showed occupational dysfunction of a factor of 5 which is in line with previous studies. This study found that CAOD can be used for clients with disabilities. However, future research should modify the CAOD to prevent deterioration of measurement precision when targeting persons with mild occupational dysfunctions.

Key words: Occupational dysfunction, Physical disability, Mental disability, Classification and Assessment of Occupational Dysfunction (CAOD)

### **Development of the Sensory Modulation Questionnaire for Adolescents/Adults: A study of reliability and validity**

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The purpose of this study was to examine the constructive validity, discriminant validity (clinical usefulness) and reliability the Sensory Modulation Questionnaire for Adolescents/Adults. In this study, 91 items of the tentative version of Sensory Modulation Questionnaire for Adolescents/Adults were used. Factor analysis examined 681 typically developed people between 17 and 59 years old using factor loading and Cronbach' s alpha coefficient, resulting in this questionnaire being composed of 55 items including vestibular sensation (2 factors, 9 items), tactile sensation (3 factors, 11 items), proprioceptive sensation (2 factors, 8 items), auditory sensation (3 factors, 11 items), visual sensation (2 factors, 8 items), and taste or olfactory sensation (3 factors, 8 items). In addition, the clinical usefulness of this questionnaire was determined by comparing 58 people with Autism Spectrum Disorder with 58 typically developed people matched for age and sex.

Key words: Sensory integration, Autism Spectrum Disorder, Typically developed people, Scale, Adolescents/Adults

### **Reliability applicability of single-trial grip and key pinch strength measurements**

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This study attempts to verify the reliability of single-trial measurements of grip and key pinch strength and show how resulting data should be used to infer when meaningful changes have occurred in a subject. Data for the study were collected from 40 male and 40 female, healthy university students over 20 years old and were divided according to both the subjects' gender and each of the hands. Results were favorable for both measurements, with no significant difference between the first day of measurement and the second. There was a range of reliability Intraclass correlation coefficients (ICC) (1, 1) of 0.80–0.93, and no system errors. When considered from the standpoint of time and burden placed on the subjects and testers, the merits of a single-trial method compared to a three-trial method are even greater. The Minimal Detectable Change 95 (MDC 95) ranged from 13.5–18.9%. Therefore, when inferring the change (improvement or worsening) in a subject, 20% should be a statistically useful rough value to bear in mind.

Key words: Grip strength, Pinch strength, Strength measurement, Reliability

### **Is IADL a preventive factor in cognitive decline?:**

### **The interrelationships among medial temporal lobe atrophy, cognitive function and IADL**

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The purpose of this study was to assess the value of the Instrumental Activities of Daily Living (IADL) scale in preventing cognitive decline. The subjects were 107 patients. We developed a model in which the effects of medial temporal lobe atrophy on cognitive function are reflected indirectly through IADL. The model was evaluated using Structural Equation Modeling (SEM) analysis. The results indicated that age was not directly associated with cognitive function but rather indirectly based on medial temporal lobe atrophy. Moreover, medial temporal lobe atrophy was directly associated with both cognitive function and IADL, and influenced cognitive function indirectly through IADL. On the other hand, IADL was directly associated with cognitive function. This study illustrated the value of IADL as a measurement of cognitive dysfunction.

Key words: Alzheimer's disease, Cognitive function, Instrumental Activity of Daily Living (IADL)

### **A follow-up survey on the social participation of persons with developmental disabilities**

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This is a follow-up study exploring the subsequent social participation of children with developmental disabilities who underwent occupational therapy in medical institution A. A questionnaire was conducted twice on 254 pairs of people with developmental disabilities and researchers in charge over 10 years. Then, the



characteristics and progress on social participation of people with developmental disabilities were extracted and discussed. The participants' participation in society was 87.7% in the good group and 12.3% in the defective group during both periods. However, when we confirmed the results of the 1st and 2nd terms of each subject, the data from both the good group subjects and the defective group subjects fluctuated. Thus, there is vulnerability of social adaptation of people with developmental disabilities. Furthermore, social maladjustment may result from changes in daily tasks and the environment even in the limited life stage of the two periods.

Key words: Developmental disability, Social participation, Follow-up survey

#### ◆PRACTICAL REPORTS

### **Usefulness of SST programs for children with developmental disorders and their parents:**

#### **A pilot study for a parents-children SST program**

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The purpose of this study was to develop a "Social Skills Training (SST) program for children with developmental disorders and their parents" and examine its feasibility and future issues. The program included playtime after each session to facilitate children's utilization of the learned skills in the sessions, and homework to use the target skills everyday. The parents and children also practiced the skills at home as homework. The pilot study investigated the adaptive behaviors of children with developmental disorders and their parents' stress. Results suggest that this program is feasible and not too burdensome for the participants.

Key words: Developmental disorder, Social Skills Training, Parent

### **Advancing cooking activities for a child with Moebius syndrome using home-based occupational therapy**

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The purpose of this report is to specify the process of support for a child with Moebius syndrome and to deliver occupational therapy that manages daily life performance. The author helped the child to cook independently through the approaches for cooking performance and application of instruments. Thus, cooking became the important role for the child in his family. Moreover, the activity improved performance and satisfaction in the child's activities of daily living. It is meaningful for occupational therapists to support children through appropriate assessment and reasoning.

Key words: Productivity, Cooking, Role, Home-based occupational therapy, Activities of daily living

### **The influence of Hybrid Assistive Neuromuscular Dynamic Stimulation therapy (HANDS therapy) with a simplified transfer package in the subacute phase on the function of the paralyzed hand**

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Previous research has indicated the effectiveness of Hybrid Assistive Neuromuscular Dynamic Stimulation therapy (HANDS therapy) in improving upper limb function, but the frequency of use of the paralyzed hand in daily life has not improved beyond the Minimal Clinically Important Difference (MCID). To solve this problem, we simplified the behavioral approach (Transfer package) in CI therapy with HANDS therapy for subacute stroke patients. As a result, frequency of use of the paralyzed

hands in daily life improved beyond the MCID to great effect. These findings suggest that HANDS therapy using simplified Transfer package might affect the function of paralyzed hand use in daily life.

Key words: Upper limb function, Cerebral vascular disease, Subacute

### **Effects of educational intervention on a non-compliant patient:**

#### **A case report**

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We present the results of lifestyle education on a 50s man with pseudarthrosis caused by non-compliance to his therapy after surgery for radius fracture. The subject's pseudarthrosis may have been caused by misuse of his arms during housekeeping and caring for his wife. Occupational therapy included educational intervention in his daily life, such as "values clarification," "applied analysis of behavior," or "graduated regimen implementation," resulting in improved methods of both his wife's care and housework. These findings suggest that this educational intervention was effective in enhancing the role and performance of activities associated with the daily routine of an originally non-compliant patient.

Key words: Life support, Role, Educational intervention, Behavior modification

### **Effects of a bone conduction headphone to assist eating for a patient with severe dementia and presbycusis in a care facility**

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We investigated the effects of verbal facilitating instructions via a bone conduction headphone on the eating behavior of an elderly client in a care facility. The case was a female in her 80' s with severe dementia and presbycusis, who often stopped eating and required frequent assistance by caregivers during meals due to apathy, one of the symptoms of Behavioral and Psychological Symptoms of Dementia (BPSD). Verbal facilitation for her eating was given through a bone conduction headphone. In spite of the intervention, the required time to eat meals and the amount of assistance in eating didn' t change, but the amount of assistance through encouragement was reduced and the degree of independence in eating improved. Instructions via a bone conduction headphone had the same effect as instruction by caregivers and worked as cues to start eating meals.

Key words: Dementia, Eating, Environmental setting, Degree of independence, BPSD

### **Effects of exercise on patients with depression**

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This study investigated the effects of exercise therapy on a patient with depression. A 70s woman with depression showed no improvement in symptoms despite pharmacotherapy and three months as an inpatient. Exercise therapy intervention was carried out using a treadmill at a moderate intensity for 4 weeks, resulting in improvement in the patient' s SDS (Self-rating Depression Scale) and KWCST (Keio version Wisconsin Card Sorting Test). This suggests that combining exercise therapy with pharmacotherapy may enhance antidepressant effects, and has been demonstrated to be both practical in clinical practice and have greater efficacy than pharmacotherapy or exercise therapy used alone.

Key words: Depression, Old age, Exercise training