

On-Campus Student Occupational Therapy Clinic's Impact on Client's Participation and Quality  
of Life

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## Abstract

The purpose of this study was to examine the impact of occupational therapy at an on-campus student clinic on clients' activity participation and quality of life, as measured by the Activity Card Sort (ACS) and the World Health Organization Quality of Life-BREF measure (WHOQOL-BREF). Data were collected on 6 participants for the ACS, and 8 participants for the WHOQOL-BREF, at the beginning and end of a 10-week, 20-session treatment program. Pretest and posttest scores for the ACS current activity participation and WHOQOL-BREF Social Relationship Domain and Satisfaction with Life were statistically significant ( $p < .05$ ). Physical Health, Psychological Health, and Environment subtests also increased, but not in a statistically significant way. The Cohen's effect size value ( $d = 1.13$ ) suggested very large practical significance on the WHOQOL-BREF for the Social Relationships Domain, moderate to large for Satisfaction with Life and Psychological Health, and small to moderate for overall Quality of Life (QOL). The Cohen's effect size value ( $d = 0.83$ ) on the ACS suggested a practical significance. The findings from this pilot study are promising and demonstrate that student occupational therapy may benefit activity participation and QOL of clients. Further research in this area is needed to confirm these results.

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Participation in society, social relationships, hobbies and leisure, lead to good health and mobility, which allows people to enjoy life, and maintain control and independence (Gabriel & Bowling, 2004). When a person cannot perform familiar and valued activities, their sense of who they are is threatened (Robinson et al., 2009). Restrictions can result from the disease or trauma itself, the limitation of assistive equipment (e.g., a wheelchair limiting access to locations and making shopping and flying difficult), or prejudice of uninformed individuals believing certain activities cannot or should not be done by individuals with disabilities (Specht, King, Brown, & Foris, 2002).

Patients now spend less time in the hospital after a life altering illness or accident. The length of stay for patients with a spinal cord injury has decreased from 98 days in the seventies, to 37 days thirty years later (Whiteneck et al., 2011). In twenty years, stays for patients who have experienced a stroke decreased from 10.3 to 5.5 days, and from 15.3 to 7.8 days for patients with Alzheimer's (Center for Disease Control and Prevention, 2010). While these shortened hospital stays may be fiscally responsible and sufficient for basic medical needs, the potential for occupational therapy services is limited and therapists frequently do not have time to address participation beyond activities of daily living (ADL) and selected instrumental activities of daily living (IADL). Baum and Law (1997) found that if occupational therapy focused on occupational performance, and patients received more therapy, the patients overall cost to society decreased because they had increased skills and modifications to overcome barriers and were more independent. Similarly, Clark et al. (2011) found that when occupational therapy intervention is used it reduces health decline and promotes life satisfaction in senior citizens, leading to less health related costs.

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### **Background**

Quality of life (QOL) is influenced by many factors. Wolf and Baum (2011) stated that quality of life was not being stronger or having better balance or coordination, but rather it was fulfilling life roles, such as having meaningful relationships, a job, leisure activities or being a good parent. When people no longer believe they are able to participate in pleasurable and/or necessary activities, they have reduced hope (Borell, Lilja, Sviden & Sadlo, 2001) and are more likely to be depressed (Brock et al. 2009). A substantial proportion of persons who have survived a stroke had depression and reported poor QOL (Haacke et al., 2006), even for those who had a mild stroke and minimal physical impairments (Edwards, Hahn, Baum, & Dromerick, 2006). It has been found that many persons who have experienced a stroke had lower health related quality of life scores and were dissatisfied with their inability to perform self-care, have a vocation, and enjoy leisure activities (Hartman-Maeir, Soroker, Ring, Avni, & Katz, 2007; Xie et al., 2006). Asche, Miller, Eng and Noreau (2008) found that all people tend to be less active as they age, and this was especially true for those with disabilities. Hartman-Maeir, Soroker, et al. (2006) found that participation in meaningful activities was a significant predictor of life satisfaction in people who had experienced a stroke.

The International Classification of Functioning, Disability and Health (World Health Organization [WHO], 2001) states that participation is “involvement in a life situation.” A life altering illness or accident that results in a chronic disability may necessitate a major unanticipated shift in the roles of the patient, their family and support system without planning or preparation (Wolf, Baum & Connor, 2009). Albert, Bear-Lehman and Burkhardt (2009) found that adults over 70 years of age who had trouble with their ADL and IADL were only able to do 32% of their

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previous activities, as measured on the ACS. The adjustment to this change was influenced by the person's interests and supported by the "physiological, psychological, cognitive, sensory and motor capacities of the individual" (Wolf, et al., 2009, p. 622). Many people who had experienced a stroke had tried to resume activities but had not been successful due to their physical and cognitive disabilities, environmental factors, non-adaptability or lack of support from others, resulting in a need for their roles to change (Edwards et al., 2006; Mullersdorf, 2002; Robinson et al., 2009; Wolf & Baum, 2011).

Occupational therapy is the health profession that is best suited to support participation in occupation. The goal of therapy is to use occupation to support health and participation in activities of daily living, instrumental activities of daily living, work, leisure, play and social participation (American Occupational Therapy Association, 2008). Clark (2010) calls on occupational therapists to help clients engage in activities that make life worth living. A mixture of training and activities designed to develop skills or learn adaptive strategies enable clients' to fulfill their occupational roles (Baum & Law, 1997; Richards et al., 2005). Occupational therapy has benefited people with a wide variety of disabling conditions by increasing their skills, functions, activities and participation in a variety of settings (Doig, Fleming, Kuipers, & Cornwell, 2010; Macedo, Oakley, Panayi, & Kirkham, 2009; Maitra et al., 2010; Malcus-Johnson, Carlqvist, Stureson, & Eberhardt, 2005; Murphy & Tickle-Degnen, 2001). Involvement in leisure activities provided participants mental and physical benefits by decreasing stress and increasing relaxation and enjoyment in life (Pressman et al., 2009). Participants had greater satisfaction than others with less severe impairments, after participating in a program that improved leisure activities (Hartman-Maeir, Eliad, et al., 2007). People with mobility impairments who engaged in leisure, social activities and community participation, have reported better health and life satisfaction (Crawford,

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Hollingsworth, Morgan & Gray, 2008). Many case studies indicated that reconnecting to a previous important leisure activity through occupational therapy had improved quality of life for the clients (Blacker, Broadhurst, & Teixeira, 2008; Reynolds, Vivat & Prior, 2007). For example, one occupational therapist helped a patient with neurological injuries with skilled interventions, modifications and adaptations that allowed him to reconnect to friends through the Internet and the patient ceased to be combative and agreed to leave his bed and engage in therapy (Blacker et al., 2008). An increase in skills and function has also led to an increase in quality of life for many patients (Dooley & Himojosa, 2004; Eyers & Unsworth, 2005; Hartman-Maeir, Eliad, et al., 2007; Henshaw, Polatajiko, McEwen, Ryan, & Baum, 2011; Trombly & Ma, 2002). Occupational therapists can facilitate clients in regaining or learning new skills, adapting to their current life and different abilities, and helping them find ways to perform valued and necessary tasks (Mullersdorf, 2002).

Occupational therapists should go beyond clients' immediate impairments to focus on their long-term health needs and life satisfaction (Baum & Law, 1997). The patients in a study by Wolf et al. (2009) reported that patients having the ability to do basic body care, get in and out of bed, and go to and from the toilet were discharged with few, if any, services, yet these patients lacked adequate preparation and skills to live a fulfilled life. Robinson et al. (2009) stated that patients who reported improved function in ADL, but still lacking sufficient skills to return to their pre-stroke life, perceived they had been discharged prematurely. Occupational therapists in rehabilitation units address basic ADL/IADL so the clients can care for themselves, and think that continued care will be available after the client leaves in patient rehabilitation (Richards et al., 2005), yet patients don't always get more therapy.

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Patients rarely have third party payment for occupational therapy beyond basic self-care training (Howard, 1991). University occupational therapy clinics, when available, can provide intervention for people with chronic diseases who are adapting to resulting disabilities in their home and community settings. Under the supervision of licensed occupational therapists, students in university-based clinics may provide low or no-cost occupational therapy to individuals in the community with unmet needs. Lavelle and Tomlin (2001) found improvement could be made during the post-acute phase for people who had experienced a stroke with occupational therapy student treatment. The improvement was not dependent on the participant's age, site of stroke or time since the incident. This extended access to therapy also provides an opportunity to study the impact of occupational therapy, specifically on participation and QOL related to needs beyond ADL.

Therefore, the purpose of the current study was to examine the impact of occupational therapy on activity participation and satisfaction for clients with chronic disabilities receiving occupational therapy at an on-campus clinic.

### **Method**

#### **Research Design**

A quasi-experimental, single group pretest-posttest design was selected to observe the effects of occupational therapy on participation and quality of life in clients who attend a university-based clinic. This design allowed the researcher to explore the impact of student administered occupational therapy (independent variable) on client activity level and quality of life as measured by the Activity Card Sort (ACS) and the World Health Organization Quality of Life-BREF (WHOQOL-BREF) (dependent variables), given pre and post-therapy (Nelson, 2006).

#### **Participants**

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Nine adults who attended the onsite occupational therapy campus clinic at the University of Puget Sound were the convenience sample for the current study. To participate in the clinic a client must have a doctor referral and not be receiving occupational therapy elsewhere. Eligibility criteria for the current study included: 1) participation in the adult onsite student clinic at University of Puget Sound, 2) over the age of 18 years, 3) sufficient English language and cognitive skills to understand and complete the ACS and WHOQOL-BREF as determined by the student therapist and clinical instructor's professional opinion, 4) use of the ACS and/or WHOQOL-BREF assessments as part of the client's occupational therapy evaluation, selected by the student therapist and approved by his/her clinical instructor.

### **Instrumentation**

A brief information sheet relating to the diagnosis, time of diagnosis, age and gender was filled out at the beginning of the study. At the conclusion of therapy, participants were asked if any major events had occurred that might have impacted their lives during this period of student occupational therapy.

**Activity Card Sort (ACS).** The ACS is a valid and reliable instrument to measure participation in IADL, leisure and social activities (Baum & Edwards, 2008). The format is straightforward and should be within the capability of most clients. The information obtained was useful for the student therapist to complete the occupational profile and for directing therapy activities. The Recovering Version (Form B) was used because it detects changes in activity patterns of the clients with acquired disabilities. The client sorts 89 cards into five categories 1) "Not done prior to current illness/injury" 2) "Continue to do since illness/injury" 3) "Do less since illness/injury" 4) "Given up due to illness/injury" 5) "New activity since illness/injury" (Baum & Edwards, 2008, p. 5). The ACS has demonstrated internal consistency in several studies

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performed in multiple settings, including Hong Kong, Israel, and Australia (Baum & Edwards, 2008). Test-retest reliability coefficients have ranged from .79 (Carpenter et al., 2007) to .90 (Katz, Karpin, Lak, Furman, & Hartman-Maeir, 2003). Baum and Edwards established content validity using older adults (2008) and construct validity by examining caregiver burden (1995). Sachs and Josman (2003) performed a factor analysis of the card sort in Israel and felt that it was accurate in “measuring adult human occupation and level of activity” (p. 167) and was of “importance in identifying categories of human occupation among various client populations” (p. 174). According to Albert et al. (2009) the ACS was an effective way to identify activities that patients still do, used to do, and eliminates activities they had never done. Carpenter et al. (2007) found significant correlations between the ACS and the Medical Outcomes Study short form (MOS SF-12) and Older American Resource (OARS) basic and instrumental function scores and OARS Social Resources Scale. Predictive validity is evident in that the ACS looks at the patterns of a persons’ activity and can identify possible risk factors that can be changed to enhance successful aging. Baum and Edwards (2008) later revised the cards based on research of current older adults and removed some and added others to keep the activities up to date.

**World Health Organization Quality of Life -BREF (WHOQOL-BREF).** The WHOQOL-BREF instrument has 26 items that measure physical and psychological health as well as social relationships and how the client’s environment impacts their quality of life (WHO, 2004). The reliability and validity were established on the original WHOQOL-100 measure (WHO, 1996). Internal consistency was found to be acceptable using Cronbach’s alpha, which ranged from .71 to .86 (WHO, 1996). To test for discriminate validity, test scores between well and ill participants were compared using t-tests. Significant group differences were found, with  $p < .001$ . A Pearson  $r$  correlation co-efficient was used to evaluate test-retest reliability, with coefficients

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ranging from .68 to .95 (WHO, 1996). Confirmatory factor analysis of the various facets was also done to confirm that the data matched the hypothetical model (Bentler & Wu, 1995).

The WHOQOL-BREF was developed to provide a shorter, yet complete measure by including an item from each of the 24 areas in the original WHOQOL-100 (WHO, 2004). Two additional items were added to measure the participants' overall quality of life and their general health. Correlations between the original 100-question measure and the WHOQOL-BREF were .89 to .95 (WHO, 1996), indicating that the WHOQOL-BREF has high reliability and validity compared to the WHOQOL-100 (Skevington, Lofty, & O'Connell, 2004; Trompenaars, Mastoff, VanHeck, Hodiament, & DeVries, 2005).

### **Procedures**

**Participant recruitment and screening.** The research protocol for this study was reviewed and approved by the university Institutional Review Board (IRB). Clients were informed of the study and invited to participate by the researcher, if the student therapist felt it was appropriate. The student therapists in collaboration with their clinical instructors, who are licensed occupational therapists, were responsible for the evaluation plan and inclusion of the study instruments into that plan. Written informed consent was obtained from the adult clients interested in participating in the study. Participants who attended 70% of the possible treatment sessions prior to discharge data were included in the study.

**Practice session with instruments.** Student therapists were offered a 30-minute orientation on the ACS and WHOQOL-BREF measures including administration, scoring and study guidelines. Individual time with the researcher for practice was also available. Students who chose not to receive training from the researcher read the ACS manual and reviewed the WHOQOL-BREF, as would be typical preparation for competent evaluation practice.

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**Data Collection and Intervention.** The student therapists administered the ACS and/or WHOQOL-BREF to their clients during the first two weeks of clinic and recorded the results on the data collection forms. The researcher re-scored the ACS and/or WHOQOL-BREF to ensure accuracy of scoring. The participants received 9 weeks of occupational therapy, twice a week for 45 minutes at the university clinic. The intervention was developed and provided by the student therapist under the supervision of a licensed occupational therapist. The student therapists re-administered the ACS and/or WHOQOL-BREF to the participants during the last three weeks of therapy. The participants also completed a brief exit measure to record any possible intervening variables that could have impacted their participation or QOL. The researcher again re-scored the ACS and WHOQOL-BREF to ensure accuracy. Data were recorded on a spreadsheet and entered into IBM SPSS for analysis.

### **Data Analysis**

Descriptive statistics were calculated to portray central tendencies and variability of the participants' demographics, ACS scores, and WHOQOL-BREF scores. Score distributions were examined using the mean, range, and standard deviations. A dependent *t*-test was performed to compare mean scores on the pretests and posttests of the ACS current activity level and WHOQOL-BREF four domain subtests, physical health, psychological health, social relationships and environment, and two overall health questions. Cohen's *d* was also calculated to determine the effect size of the pretest and posttest means.

## **Results**

### **Participant Demographics**

Nine adults ranging in age from 25 to 67 years were enrolled in this study. Most of the participants were male. Disabilities included 8 clients who had strokes, and 1 with a traumatic

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brain injury. The time since the disability was from 2 to 40 years. All attended at least 70% of the sessions. Participant's demographic descriptive data is in Table 1. There were no major life events for any of the clients that would impact their progress during clinic.

### **Activity Card Sort**

Scores and analysis of the total ACS scores are reported in Table 2. Six participants completed the ACS pre- and post-therapy. Of the 6 clients in this study, none showed a decrease in activities, 1 showed no change, and 5 showed an increase in activities. The greatest increase was in the low demand leisure subset, followed by the high demand leisure activities and instrumental activities. The social subset showed a slight decrease. A statistical analysis of subtests could not be done because of the small sample size. A paired *t*-test was conducted to compare overall activity participation pre- and post- therapy. Activity participation increased between pre- and post-testing. The Cohen's effect size value on the ACS was large and suggests a practical significance.

### **WHOQOL-BREF**

Scores and analysis of the WHOQOL-BREF are reported in Table 2. Eight participants completed the WHOQOL-BREF pre- and post-therapy. Of the 8 clients in this study, 6 clients showed an increase in overall scores, 2 showed a decrease in overall scores and 1 showed no change. The social domain, with questions about satisfaction with personal relationships and support from others, and the psychological domain, with questions pertaining to enjoyment of life, acceptance of appearance, and satisfaction with self, had the greatest gain, and environment domain, with questions about finances, safety and transportation, had the least. A paired *t*-test was conducted to compare WHOQOL-BREF pre- and post-therapy. The difference between the means

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did indicate a statistically significant increase in QOL, for the social domain and for the overall satisfaction with health.

The results show statistically significant gains were made in activity participation and the overall satisfaction with health and social domain of the QOL measure. All other areas showed some gain, but were not statistically significant. These data demonstrate that University clinics could provide effective intervention for people with chronic diseases. This extended access to therapy provided gains in activity participation and QOL related to needs beyond basic ADL for the clients. The effect size was very large for Social Relationships Domain, moderate to large for Satisfaction with Life and Psychological Health, and small to medium for overall Quality of Life.

### **Discussion**

The literature indicates that many persons, post stroke, are dissatisfied with their reduced abilities to fulfill their previous roles (Hartman-Maeir, Soroker et al., 2007; Xie et al., 2006). Research also supports that occupational therapists are able to assist them in many areas and have a positive impact on their participation and QOL (Dooley & Himojosa, 2004; Eysers & Unsworth, 2005; Hartman-Maeir, Eliad, et al., 2007; Henshaw et al., 2011; Trombly, & Ma, 2002). But, occupational therapy is often underutilized and client's needs are not fully met (Robinson et al., 2009; Wolf et al., 2009). This study evaluated the effect of student-administered occupational therapy on activity participation and QOL of clinic participants. The ACS was chosen to document activity participation, and the WHOQOL-BREF for QOL.

Findings showed significant improvement in current activities on the ACS and in Social Relationships and Satisfaction with Life on the WHOQOL-BREF. Scores increased for most participants and the large effect sizes are encouraging. The results from this study are consistent with the Lavelle and Tomlin (2001) study that showed goal achievement and an increase in

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function for persons in the post acute stroke rehabilitation phase. Improved QOL results when people are better able to participate in valued activities and perform important roles (Wolf & Baum, 2011).

This study was a pilot study to collect and explore data related to activity participation, leisure activities and QOL. The sample size was small and caution is suggested when examining the results. Some of the areas did demonstrate statistical significance, even with the small sample size. Almost all other areas increased for the majority of the patients.

Participants' scores on the WHOQOL-BREF environment domain were high on the pre-test, so there was very little room for improvement in that domain. Also many of the environmental questions related to income and safety, which may be outside the influence of the student occupational therapy clinic.

The WHOQOL-BREF social interactions increased significantly, yet the ACS social activities decreased (although this change was not analyzed statistically). This apparent difference may resolve if the sample size were large enough to do a statistical analysis or it may reflect differences in the way social participation is conceptualized on the two instruments. There are 3 questions on the WHOQOL-BREF for social interactions relating to satisfaction with personal relationships, sex life and support from friends. Many participants have been attending clinic for years and come early and socialize with each other, which may have increased their personal relationships and support from friends on the WHOQOL-BREF. On the ACS there are 16 cards for social activities such as, visiting, family gatherings, children's activities, entertaining etc. The ACS focuses on the participants' engagement in specific types of events rather than satisfaction with relationships and support.

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Although this study focused on participant outcomes, the student occupational therapists who utilized the ACS and WHOQOL-BREF reported that these instruments were very useful in completing the occupational profile and getting to know more about their clients so they could better serve them. One challenge of the ACS, however, was that it called attention to the impact of the participants' disability on their activity participation. Three of the student therapists felt this was too emotional for their clients and they chose not to repeat the ACS at the end of treatment. The student therapists who utilized the ACS pre and post-treatment stated that it was gratifying to have a measure that indicated client improvement.

### **Implications for Occupational Therapy**

Student university occupational therapy clinics can impact activity participation and QOL of participants and offer a potential option for clients who have unmet therapy needs, but no longer have third party payer coverage.

Occupational therapists are limited in the amount of time they have with their clients, this necessitates decisions as to which areas are addressed. The ACS and WHOQOL-BREF are reliable and valid instruments that can be used by students and registered occupational therapists to gain information for the occupational profile, direct treatment and to document progress. The information can also help identify and focus treatment on participation beyond ADL that are important for QOL. Realization of the impact of activity and leisure participation on satisfaction and quality of life may cause occupational therapists to consider these areas more.

### **Limitations**

This study was a quasi-experimental design with a pre- and post-intervention measure but no control group. This type of design does not take into account any pre-existing factors, or recognize outside influences on the experiment. Without randomization or a control group, it is

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difficult to judge the influence of such factors, thus making it difficult to determine causality. Also multiple *t*-tests were performed on related variables of the data of a small sample so results should be viewed with this in mind. As a pilot study, however, the analysis of related subtests is useful in guiding future research.

The sample size of this study was small, and participants were drawn from a convenience sample of community-dwelling adults attending the student occupational therapy clinic in Tacoma, Washington. This limited the study's generalizability. The ACS was developed for older adults and can be time consuming to administer, limiting the number of student therapists choosing to include it in their evaluation. Also some of the clinical instructors did not encourage the use of these measures, which limited the number of participants. Time for treatment was limited to the semester and clients could have made more gains in their activity participation and QOL with more occupational therapy.

### **Future Research**

The results of this pilot study are sufficiently encouraging to warrant replication at this clinic or at other universities, thereby increasing the sample size. The research might also be expanded to include other measures that may take less time and be appropriate for a broader range of ages and activities. There are also QOL measures specific to certain diagnoses. This would provide information to further assess the effectiveness of student clinics and also to identify where student administered occupational therapy might offer the greatest client benefit. This is especially relevant given that priority for previous occupational therapy may have been influenced by financial support and time constraints, possibly prioritizing functional needs over needs such as QOL.

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### **Conclusion**

The purpose of this study was to examine the impact of occupational therapy on clients at an on-campus student occupational therapy clinic. The results, though limited, indicated that clients may increase activity participation and experience increased quality of life as a result of therapy at a campus clinic, performed by students and supervised by licensed occupational therapist. An assumption of this study was that individuals might exhaust their opportunities for receiving therapy before experiencing the potential benefit that such therapy could provide. This assumption is supported by the study results as well.

Student administered occupational therapy at on-campus clinics may benefit those who would not otherwise have access to therapy while providing learning opportunities for students. On-campus clinics also provide a venue for research, such as the current study, and it is recommended that additional work be considered.

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## References

- Albert, S. M., Bear-Lehman, J., & Burkhardt, A. (2009). Lifestyle-adjusted function: Variation beyond BADL and IADL competencies. *Gerontologist, 49*, 767-777.  
doi:10.1093/geront/gnp064
- Asche, M. C., Miller, W. C., Eng, J. J., & Noreau, L. (2008). Older adults, chronic disease and leisure-time physical activities. *Gerontology, 55*, 64-72. doi:10.59/0000141518
- American Occupational Therapy Association. (2008). Occupational therapy practice framework: Domain and practice (2<sup>nd</sup> ed.). *American Journal of Occupational Therapy, 62*, 625-683.
- Baum, C. M. (1995). The contribution of occupation to function in persons with Alzheimer s disease. *Journal of Occupational Science: Australia, 2*, 59-67.  
doi:10.1080/14427591.1995.9686396
- Baum, C. M., & Edwards, D. (2008). *Activity Card Sort* (2<sup>nd</sup> ed). Bethesda, MD: American Occupational Therapy Association.
- Baum, C. M., & Law, M. (1997). Occupational therapy practice: Focusing on occupational performance. *American Journal of Occupational Therapy, 51*, 277-288.  
doi:10.5014/ajot.51.4.277
- Bentler, P. M., & Wu, E. J. C. (1995). *EQS for Windows user's guide*. Encino, CA: Multivariate Software.
- Blacker, D., Broadhurst, L., & Teixeira, L. (2008). The role of occupational therapy in leisure adaptation with complex neurological disability: A discussion using two case study examples. *NeuroRehabilitaion, 23*, 313-319. doi:10538135

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- Borell, L., Lilja, M., Sviden, G. A., & Sadlo, G. (2001). Occupations and signs of reduced hope: An explorative study of older adults with functional impairments. *American Journal of Occupational Therapy, 55*, 311-316. doi:10.5914/ajot.55.3.311
- Brock, K., Black, S., Cotton, S., Kennedy, G., Wilson, S., & Sutton, E. (2009). Goal achievement in the six months after inpatient rehabilitation for stroke. *Disability Rehabilitation, 31*, 880-886. doi:10.1080/09638280802356179
- Carpenter, B. D., Edwards, D. F., Pickard, J. G., Palmer, J. L., Morrow-Howell, N., Neufeld, P. S., et al. (2007). Anticipating relocation: Concerns about moving among NORC residents. *Journal of Gerontological Social Work, 49*, 165-184. doi:10.1300/J083v49n01\_10
- Centers for Disease Control and Prevention. (2010). Physical activity and health: Persons with disabilities. Retrieved from: <http://www.cdc.gov/nccdphp/sgr/disab.htm>
- Clark, F. (2010). High-definition occupational therapy: HD OT. *American Journal of Occupational Therapy, 64*, 848-854. doi:10.5014/ajot.2010.64602
- Clark, F., Jackson, J., Carlson, M., Chou, C-P, Cherry, B. J., Jordan-Marsh, M...Azen, S. P. (2011). Effectiveness of a lifestyle intervention in promoting the well-being of independently living older people: Results of the Well Elderly 2 Randomized Controlled Trial. *Journal of Epidemiology & Community Health*. Retrieved from: <http://jech.bmj.com/content/early/2011/06/01/jech.2009.099754.full>
- Crawford, A., Hollingsworth, H. H., Morgan, K., & Gray, D. B. (2008). People with mobility impairments: Physical activity and quality of participation. *Disability and Health Journal, 1*, 7-13. doi:10.1016/j.dhjo.2007.11.004

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- Doig, E., Fleming, J., Kuipers, P., & Cornwell, P. L. (2010). Clinical utility of the combined use of the Canadian Occupational Performance Measure and Goal Attainment Scaling. *American Journal of Occupational Therapy, 64*, 904-914. doi:10.5014/ajot.2010.08156
- Dooley, N. R., & Hinojosa, J. (2004). Improving quality of life for persons with Alzheimer's disease and their family caregivers: Brief occupational therapy intervention. *American Journal of Occupational Therapy, 58*, 561-569. doi:10.5014/ajot.58.5.561
- Edwards, D. F., Hahn, M., Baum, C., & Dromerick, W. (2006). The impact of mild stroke on meaningful activity and life satisfaction. *Journal of Stroke and Cerebrovascular Diseases, 15*, 151-157.
- Eyers, L., & Unsworth, C. A., (2005). Occupational therapy in acute hospitals: The effectiveness of a pilot program to maintain occupational performance in older clients. *Australian Occupational Therapy Journal, 52*, 218-224.
- Gabriel, Z., & Bowling, A. (2004). Quality of life from the perspectives of older people. *Aging and Society, 24*, 675-691. doi:10.1017/S0144686X03001582
- Haacke, C., Althaus, A., Spottke, A., Siebert, U., Back, t., & Dodel, R. (2006). Long-tern outcome after stroke: Evaluation health-related quality of life using utility measurements. *Stroke, 37*, 193-198.
- Hartman-Maeir, A., Eliad, Y., Kizoni, R., Nahaloni, I., Kelberman, H., & Katz, N. (2007). Evaluation of a long-term community based rehabilitation program for adult stroke survivors. *Neurological Rehabilitation, 22*, 295-301.
- Hartman-Maeir, A., Stroker, N., Ring, H., Avni, N., & Katz, N. (2007). Activities, participation and satisfaction one-year post-stroke. *Disability Rehabilitation, 29*, 559-566.  
doi:10.1080/09638280600924996

## CLIENT PARTICIPATION AND QUALITY OF LIFE

- Henshaw, E., Polatajiko, H., McEwen, S., Ryan, J. D., & Baum, C. M. (2011). Cognitive approach to improving participation after stroke: Two case studies. *American Journal of Occupational Therapy, 65*, 55-63. doi:10.5014/ajot.2011.09010
- Howard, B. S. (1991). How high do we jump? The effect of reimbursement on occupational therapy. *American Journal of Occupational Therapy, 45*, 875-88. doi:10.5014/ajot.45.10.875
- Katz, N., Karpin, H., Lak, A., Furman, T., & Hartman-Maeir, A. (2003). Participation in occupational performance: Reliability and validity of the Activity Card Sort. *OTJR: Occupation, Participation and Health, 23*, 10-17.
- Lavelle, P., & Tomlin, G. S. (2001). Occupational therapy goal achievement for persons with postacute cerebrovascular accident in an on-campus student clinic. *American Journal of Occupational Therapy, 55*, 36-42. doi:10.5014/ajot.55.1.36
- Macedo, A. M., Oakley, S. P., Panayi, G. S., & Kirkham, B. W. (2009). Functional and work outcomes improve in patients with rheumatoid arthritis who receive targeted, comprehensive occupational therapy. *Arthritis & Rheumatism: Arthritis Care & Research, 61*, 1522-1530. doi:10.1002/art.24563
- Maitra, K., Hall, C., Kalish, T., Anderson, M., Dugan, E., Rehak, J., . . . Zeitlin, D. (2010). Research Scholars Initiative—Five-year retrospective study of inpatient occupational therapy outcomes for patients with multiple sclerosis. *American Journal of Occupational Therapy, 64*, 689–694. doi:10.5014/ajot.2010.090204
- Malcus-Johnson, P., Carlqvist, C., Struresson, A., & Eberhardt, K. (2005). Occupational therapy during the first 10 years of rheumatoid arthritis. *Scandinavian Journal of Occupational Therapy, 12*, 128-135. doi:10.1080/110381205510031716

## CLIENT PARTICIPATION AND QUALITY OF LIFE

- Murphy, S., & Tickle-Degnen, L. (2001). The effectiveness of occupational therapy- related treatments for persons with Parkinson's disease: A meta-analytic review. *American Journal of Occupational Therapy, 55*, 385-392. doi:10.5014/ajot.55.4.385
- Mullersdorf, M. (2002). Needs and problems related to occupational therapy as perceived by adult Swedes with long-term pain. *Scandinavian Journal of Occupational Therapy, 9*, 79-90.
- Nelson, D. L. (2006). Group Comparison studies. In G. Kielhofner (Ed.), *Research in occupational therapy: Methods of inquiry for enhancing practice* (pp. 65-90). Philadelphia, PA: F. A. Davis.
- Pressman, S. D., Matthews, K. A., Cohen, S., Martire, L. M., Scheler, M., Baum, A., ... Schulz, R. (2009). Association of enjoyable leisure activities with psychological and physical well-being. *Psychosomatic Medicine, 71*, 725-732. doi:10.1097/PSY.0b013e3181ad7978
- Reynolds, F., Vivat, B., & Prior, S. (2008). Women's experiences of increasing subjective well-being in CFS/ME through leisure-based arts and crafts activities: A qualitative study. *Disability and Rehabilitation, 30*, 1279-1288.
- Richards, L. G., Latham, N. K., Jette, D. U., Rosenberg, L., Smout, R. J., & DeJong, G. (2005). Characterizing occupational therapy practice in stroke rehabilitation. *Archives of Physical Medicine and Rehabilitation, 86*, 51-60. doi:10.1016/j.apmr.2005.08.127
- Robinson, J., Wiles, R., Ellis-Hill, C., McPherson, K., Hyndman, D., & Ashburn, A. (2009). Resuming previously valued activities post-stroke: Who or what helps? *Disability and Rehabilitation, 31*, 1555-1566.
- Sachs, D., & Josman, N. (2003). The Activity Card Sort: A factor analysis. *OTJR: Occupation, Participation, and Health, 23*, 165-174.
- Skevington, S. M., Lofty, M., & O'Connell, K. A. (2004). The World Health Organization's

## CLIENT PARTICIPATION AND QUALITY OF LIFE

- WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial. A Report from the WHOQOL Group. *Quality of Life Research*, 13, 299-310.
- Specht, J., King, G., Brown, E., & Foris, C. (2002). The importance of leisure in the lives of persons with congenital physical disabilities. *American Journal of Occupational Therapy*, 56, 436-445. doi:10.5014/ajot.56.4.436
- Trombly, C. A., & Ma, H. (2002). A synthesis of the effects of occupational therapy for persons with stroke, Part I: Restoration of roles, tasks and activities. *American Journal of Occupational Therapy*, 56, 250-259. doi:10.5014/ajot.56.3.250
- Trompenaars, F. J., Mastiff, E. D., Van Heck, G. L., Hodiament, P. P., & DeVries, J. (2005). Content validity, construct validity, and reliability of the WHOQOL-BREF in a population of Dutch adult psychiatric outpatients. *Quality of Life Research*, 14, 151-160. doi:10.1007/s11136-004-0787-x
- Whiteneck, G. G., Gassaway, J., Dijker, M. P., Lammertse, D. P., Hammond, F., Heinemann, A., ... Zanca, J. M. (2011). Inpatient and post-discharge rehabilitation services provided in the first year after spinal cord injury: Findings from the SCIREhab study. *Archives of Physical Medicine and Rehabilitation*, 92, 361-368. doi:10.1016/j.apmr.2010.07.241
- Wolf, T. J., & Baum, C. M., (2011). Improving participation and QOL through occupation. In G. Gillen (Ed.), *Stroke Rehabilitation a function-based Approach* (pp. 66-79). St. Louis, MO: Elsevier Mosby.
- Wolf, T. J., Baum, C., & Connor, L. T. (2009). Changing face of stroke: Implications for occupational therapy practice. *American Journal of Occupational Therapy*, 63, 621-625. doi:10.5014/ajot.63.5.621

## CLIENT PARTICIPATION AND QUALITY OF LIFE

World Health Organization. (2001) *The International Classification of Function, Disability and Health*. Retrieved from World Health Organization website:

<http://www.who.int/classifications/icf/en/>

World Health Organization, (2004). The World Health Organization Quality of Life (WHOQOL)-BREF. Retrieved from World Health Organization website:

[http://www.who.int/substance\\_abuse/research\\_tools/en/english\\_whoqol.pdf](http://www.who.int/substance_abuse/research_tools/en/english_whoqol.pdf)

World Health Organization (1996). *WHOQOL-BREF, introduction, administration, scoring and generic version of the assessment*. Retrieved from World Health Organization website:

[http://www.who.int/mental\\_health/media/en/76.pdf](http://www.who.int/mental_health/media/en/76.pdf)

Xie, J., Wu, E. Q., Zheng, Z, J., Croft, J. B., Greenland, K. J., Mensah, G. A., & Labarthe, D. R.

(2006). Impact of stroke on health-related quality of life in the noninstitutionalized population in the United States. *Stroke*, 37, 2567-2572. doi: 10.1161/01.STR.0000240506.34616.10

## CLIENT PARTICIPATION AND QUALITY OF LIFE

Table 1

*Client Demographics*

	Total	Range	Mean (SD)	Male	Female
Number of clients	9			7	2
Age		25-67	57*(12.71)	56	60.5
Years since incident		2-40	10.3 (12.49)	7.29	21
Years attended UPS Clinic		0-8	2.89 (3.10)	2.43	4.5
Diagnosis					
CVA	8			6	2
TBI	1			1	

*Note: \*1 participant was 25 and 8 were over 52.*

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Table 2

*ACS and WHOQOL-BREF Results*

	Pretest mean (SD)	Posttest mean (SD)	<i>t</i> (df)	<i>p</i>	Effect size Cohen's <i>d</i>
ACS total score	34.75 (5.54)	40.17 (7.38)	3.03 (5)	.03	0.83
<b>WHOQOL-BREF</b>					
Question 1	3.63 (0.74)	3.94 (0.78)	1.49(7)	0.18	0.42
Question 2	3.50 (0.76)	3.94 (0.68)	2.50(7)	0.04	0.76
Physical	21.56 (3.02)	22.00 (2.98)	0.46(7)	0.66	0.15
Psychological	19.13 (1.96)	21.13 (3.27)	2.26(7)	0.06	0.74
Environmental	32.88 (3.31)	33.13 (5.77)	0.09(7)	0.93	0.05
Social Relationships	9.00 (2.62)	11.88 (2.47)	2.67(7)	0.03	1.13

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