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The Impact of Occupational Engagement on Depression Levels in Stroke Survivors

Claire Furlotte
Pacific University

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The Impact of Occupational Engagement on Depression Levels in Stroke Survivors

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The Impact of Occupational Engagement on Depression Levels in Stroke Survivors

Prepared by: Claire Furlotte, OTS (email address: furl9858@pacificu.edu)

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Review date: October 2013

CLINICAL SCENARIO:

Engagement in meaningful occupations is an important focus of occupational therapy intervention. Clients often are unable to engage in their chosen occupations as a result of injury or illness, especially in the instance of a dramatic change in cognitive or motor abilities following a cerebrovascular accident, which can lead to an increase in psychological health concerns. Occupational therapy clinicians have a responsibility to understand the connection between meaningful occupations and psychological health when planning and executing intervention with stroke survivors.

FOCUSED CLINICAL QUESTION:

How does occupational engagement affect depression in stroke survivors?

SUMMARY of Search, ‘Best’ Evidence’ appraised, and Key Findings:

- 5 articles were reviewed to select the best evidence to support focused clinical question
- None of the articles reviewed provided a concrete answer to the clinical question, suggesting that this question has not been investigated thoroughly in current clinical research
- The cohort study by Hartman-Maeir, Soroker, Ring, Avni and Katz (2007) was selected as the best evidence to support clinical question
- The cohort examined was a group of 56 patients in Raanana, Israel who had experienced a first event hemispheric stroke and had no history of neurological or psychiatric conditions. 5 outcome measures were used to evaluate participation in leisure activities, basic activities of daily living (BADLs) and instrumental activities of daily living (IADLs), life satisfaction and depression levels. Analysis of the data revealed that participation in leisure activities was a fair predictor of life satisfaction, and that there is a high correlation between participation in activities and life satisfaction. Data analysis also revealed a decline in activity levels and participation that is more notable in the stroke survivor population than in a normal aging population.
- O’Sullivan and Chard (2010) also examined the process of re-engaging in leisure occupations in stroke survivors. Research indicated that stroke
survivors experience significant restrictions when returning to leisure occupations.

- Baseman, Fisher, Ward and Bhattacharaya (2010) conducted a correlational survey to examine the relationship between social integration, functional status and depression levels in stroke survivors and found that depression was positively correlated with decreased social integration.
- Gustafsson and McKenna (2010) researched the effectiveness of an occupation-based group program in an inpatient rehabilitation unit and found that the increased focus on occupational independence may overshadow the need for focus on psychosocial issues.
- Bergersen, Frosie, Sunnerhagen and Schanke (2010) examined more long-term effects of stroke on psychological well-being after discharge from a rehabilitation program. This follow-up study concluded that health professionals should be paying more attention to psychological conditions during inpatient and outpatient treatment and screening for depression, as many stroke survivors do not actively seek out the treatment they need.

**CLINICAL BOTTOM LINE:** There is sufficient evidence to suggest that depression rates in stroke survivors change, depending on the stroke survivors’ levels of engagement and participation in activities. However, there is a limited amount of research that directly link levels of depression and occupational engagement. As an important contributor to the post-CVA health care team, occupational therapists should continue to use a variety of activities in clinical intervention to target activities that are both therapeutic and meaningful to each unique stroke survivor’s occupational profile.

**Limitation of this CAT:** The search is not exhaustive and has been conducted by a 2nd year MOT student as part of a class assignment.

**SEARCH STRATEGY:**

**Terms used to guide Search Strategy:**

- **Patient/Client Group:** Stroke survivors, post-CVA patients
- **Intervention (or Assessment):** Occupational engagement, engagement in meaningful occupations
- **Comparison:** N/A
- **Outcome(s):** Decrease in depression levels, change in depression rates
<table>
<thead>
<tr>
<th><strong>Source</strong> (database, library catalog, etc)</th>
<th><strong>Search terms/Search strategies</strong></th>
<th><strong>Inclusion/Exclusion Criteria</strong></th>
<th><strong>Notes</strong></th>
</tr>
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<tbody>
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<td>CINAHL (EbscoHost)</td>
<td>“Depression”, “stroke survivors”, “occupational engagement”</td>
<td>Linked full text, English language, human, research article, peer reviewed</td>
<td>None found</td>
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<td></td>
<td>“Depression”, “post-stroke”, “occupational engagement”</td>
<td></td>
<td>None found</td>
</tr>
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<td></td>
<td>“Depression”, “stroke survivors”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hartman-Maeir, Soroker, Ring, Avni &amp; Katz (2007) Disability and Rehabilitation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>21 results: Gustafsson and McKenna (2010) Topics in Stroke Rehabilitation</td>
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<td>OT Search</td>
<td>MEDLINE</td>
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<td></td>
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<td>“Depression”, “stroke survivors”</td>
<td>“Activities”, “depression”, “stroke survivors”</td>
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<td></td>
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<td>“Post-stroke”, “depression”</td>
<td></td>
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<td>“Depression”, “stroke”, “survivors”</td>
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<td></td>
<td>“Depression”, “stroke”</td>
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<tr>
<td></td>
<td>5 results; 1 repeat</td>
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<tr>
<td></td>
<td>5 results; none applicable</td>
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<td></td>
<td>19 results; none applicable</td>
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<tr>
<td></td>
<td>180 results; 1 applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hackett &amp; Anderson (2005) Stroke</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INCLUSION and EXCLUSION CRITERIA**

- **Inclusion:**
  - Peer reviewed articles
  - Research articles
  - English
  - Linked full text
  - Participants identified as stroke survivors
  - Research targets depression or psychological symptoms
  - Research explores engagement in occupations

- **Exclusion:**
  - Participants not identified as stroke survivors
  - Psychological symptoms not addressed
  - Research not addressing occupational engagement

**RESULTS OF SEARCH**
Table 1: Summary of Study Designs of Articles retrieved- Classified by UK National Health Service levels of evidence

<table>
<thead>
<tr>
<th>Study Design/ Methodology of Articles Retrieved</th>
<th>Level</th>
<th>Number Located</th>
<th>Author (Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenomenology</td>
<td>N/A</td>
<td>1</td>
<td>O’Sullivan &amp; Chard (2010)</td>
</tr>
<tr>
<td>Cohort Study</td>
<td>A</td>
<td>3</td>
<td>Gustafsson &amp; McKenna (2010), Bergersen, Froslie, Sunnerhagen &amp; Schanke (2010), Hartman-Meier, Soroker, Ring, Avni &amp; Katz (2007)</td>
</tr>
</tbody>
</table>

BEST EVIDENCE

The following study/paper was identified as the ‘best’ evidence and selected for critical appraisal. Reasons for selecting this study were:

- Cohort study focused on stroke survivors
- Valid and reliable outcome measures
- Five outcome measures used
- Wide variety of outcome areas measured
- Statistically significant correlations between outcome measures
- Best encompasses the variety of components of the original clinical question

SUMMARY OF BEST EVIDENCE

Table 2: Description and appraisal of Activities, participation and satisfaction one-year post stroke by Hartman-Maeir, Soroker, Ring, Avni & Katz (2007).

Aim/Objective of the Study: The aim of this study was to examine the relationship between limited activity, restricted participation in activities and dissatisfaction in life in the stroke survivor population.

Study Design: Cohort study

Setting: Loewenstein Rehabilitation Hospital in Raanana, Israel.

Participants: 56 participants with a mean age of 57.7 years were selected from the hospital. 42 participants were male, and 14 were female. Both types of stroke were
included (45 participants were ischemic stroke survivors and 11 were haemorrhagic stroke survivors). Inclusion criteria included right dominance, 6+ years of formal education, independent living status prior to having a stroke, no history of psychological or neurological symptoms, and sufficient communication in order to respond to the interview questions.

**Intervention Investigated:** Clinical intervention was not administered in this study.

**Outcome Measures:** Outcome measures were gathered during interview and observation of each stroke survivor. Outcome measure data was collected by an occupational therapist. Primary outcome measures used were:
- Functional Independence Measure score (FIM)
- Instrumental Activities of Daily Living Questionnaire (IADLq)
- Activity Card Sort (ACS)
- Life-Satisfaction Questionnaire (LiSatQ)
- Geriatric Depression Scale (short version) (GDS)

**Table 3:** Hierarchical regression analysis. Adapted from Hartman-Maeir, Soroker, Ring, Avni & Katz (2007).

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Beta</th>
<th>T</th>
<th>F change</th>
<th>Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.283</td>
<td>-1.964</td>
<td>3.20</td>
<td>0.132</td>
</tr>
<tr>
<td>Gender</td>
<td>0.219</td>
<td>1.522</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDS</td>
<td>-0.0568</td>
<td>-4.806</td>
<td>23.09</td>
<td>0.313</td>
</tr>
<tr>
<td>Participation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACS</td>
<td>0.394</td>
<td>2.840</td>
<td></td>
<td>0.093</td>
</tr>
</tbody>
</table>

Researchers attempted to predict the value of participation in activities on stroke survivors’ ratings of life satisfaction by developing a multiple hierarchical regression analysis on data gathered through the Life-Satisfaction Questionnaire. Results (seen above) suggest that the distribution of scores in stroke survivors’ self-rating of life satisfaction could be predicted by their levels of activity retention after their stroke. This is illustrated by the positive correlation between life satisfaction (as measured by the LiSatQ) and activity retention (as measured by the ACS).

**Table 4:** Activity retention in sample of stroke survivors as compared to healthy aging Israeli elders. Adapted from Hartman-Maeir, Soroker, Ring, Avni & Katz (2007).

<table>
<thead>
<tr>
<th>Activity domain</th>
<th>Study Group Mean</th>
<th>Healthy Elderly Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leisure: low physical</td>
<td>59.72 (20.19)</td>
<td>71.72 (16.05)</td>
</tr>
<tr>
<td>Leisure: high physical</td>
<td>25.74 (22.33)</td>
<td>49.46 (20.88)</td>
</tr>
<tr>
<td>Leisure: social</td>
<td>50.67 (21.05)</td>
<td>66.53 (16.82)</td>
</tr>
<tr>
<td>IADL</td>
<td>33.82 (26.60)</td>
<td>85.90 (12.63)</td>
</tr>
<tr>
<td>Total activity level</td>
<td>42.80 (19.33)</td>
<td>70.60 (12.10)</td>
</tr>
</tbody>
</table>
Researchers also compared the participation levels in the sample of stroke survivors to a group of healthy aging Israeli individuals who had not experienced a stroke to illustrate the impact that stroke has on activity and participation levels. As seen in Table 4, the aging population sampled had a higher rate of activity participation than the younger population of stroke survivors (who gave up an average of 57.2% of activities following their CVA), suggesting that the stroke survivors were limited in their activity participation as a result of their stroke.

**Original Authors’ Conclusions:** The authors found that there was a significantly greater decline in activity measured in the stroke survivor population when compared to a sample of typically aging Israeli elders. Data analysis revealed a positive correlation between decrease in activity following stroke and decreased satisfaction with life, which supports the hypothesis that connects involvement in meaningful activities with a high quality of life and minimal psychosocial concerns.

**Critical Appraisal:** Limitations of the study included a small sample size, and a generalization of findings from one specific sample size to the larger stroke population. The study did also not answer the original focused clinical question by directly linking occupation levels and depression levels directly, but did meet the aim of the original author and was useful in support of the underlying research query. Other limitations included the lack of randomization and lack of clinical intervention.

**Validity:** Outcome measures selected to evaluate stroke survivors and gather data have previously been established as valid and reliable measures. No comments were made regarding the study’s procedural rigour.

**Interpretation of Results:**
- **FIM Score:** 25% of the subjects in the study required assistance in one or more ADLs, such as bathing and dressing.
- **IADL:** 52% needed assistance in shopping, 77% needed assistance in housekeeping, and 82% needed assistance in laundry
- **ACS:** Data revealed that stroke survivors gave up an average of 57% of their activities after their stroke
- **Life Satisfaction Scale:** Researchers observed that only 39% of stroke survivors rated their life satisfaction favourably
- **Geriatric Depression Scale:** Revealed that 45% of participants exhibited potential depression symptoms and 31% exhibited probably symptoms.

Additionally, Pearson correlations were measured between FIM scores and other outcome measures:
- **FIM and BADL:** rho=0.32 at a p=0.015 significance level
- **FIM and IADL:** rho=0.48 at a p=0.000 significance level
- **FIM and ACS:** rho=0.57 at a p=0.000 significance level

**Summary/Conclusion:** In this study, researchers found that activity levels are drastically affected after a stroke and that stroke survivors experienced a decline in participation in basic activities of daily living as well as instrumental activities of daily living. It was also noted that stroke survivors experience a decline in quality of life as a result of the diminished independence in activities.
<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Intervention investigated</th>
<th>Comparison investigation</th>
<th>Outcomes used</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>O’Sullivan &amp; Chard (2010)</td>
<td>Re-engagement in leisure occupations post-CVA</td>
<td>Informally compared to stroke survivors who did not re-engage in leisure occupations post-CVA</td>
<td>In-home interview with community dwelling stroke survivors</td>
<td>Overall, stroke survivors were satisfied with their levels of re-engagement in leisure activities but expressed regret that they were not more able to engage in social leisure activities.</td>
</tr>
<tr>
<td>Baseman, Fisher, Ward &amp; Bhattacharaya (2010)</td>
<td>Social integration post-CVA</td>
<td>Informally compared to stroke survivors who did not experience social integration post-CVA</td>
<td>Subjective Index of Physical and Social Outcome (SIPSO) and Center for Epidemiologic Studies Depression Scaled (CES-D)</td>
<td>Social integration is significantly correlated with functional status, depression and overall CVA recovery.</td>
</tr>
<tr>
<td>Gustafsson &amp; McKenna (2010)</td>
<td>Occupation-based program in CVA rehabilitation unit</td>
<td>Stroke survivors who received standard care and were not offered the occupation-based program</td>
<td>National Institute of Health Stroke Scale (NIHSS), pilot Behavioral Mapping tool, Stroke Impact Scale (SIS), Self-Efficacy Gauge (SEG) and Modified Barthel Index (MBI)</td>
<td>Stroke survivors who received OT intervention have lower value of self-efficacy compared to stroke survivors who received standard care. Data suggest that focus on functional independence may be at expense of psychosocial issues.</td>
</tr>
<tr>
<td>Bergersen, Froslie, Sunnerhagen &amp; Schanke (2010)</td>
<td>Psychological well-being in stroke survivors who were 2-5 years post-CVA</td>
<td>Informally compared to psychological well-being in non-stroke survivors.</td>
<td>General Health Questionnaire (GHQ), Hospital Anxiety and Depression Scale (HADS) and self-report structured questions</td>
<td>Post-CVA individuals should be screened for mental health issues by health professionals, as stroke survivors often do not seek the care they need for increased psychological concerns that arise post-CVA.</td>
</tr>
</tbody>
</table>
IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH

- Research reviewed suggests a correlation between participation, activity levels, engagement in occupation and depression levels in stroke survivors. However, none of the research reviewed directly links meaningful occupations and levels of depression.
- Occupational therapy educators should continue to emphasize the importance of depression screening and early detection as a comorbid condition, especially in the CVA population.
- Occupational therapists may see more change in psychological concerns in their stroke survivor patients by engaging these clients in activities which are meaningful to the individual, not just functional, in their rehabilitation.
- A limitation in many studies considered for review was the lack of face to face interaction- data was often gathered through self-report questionnaires and surveys.
- Further research could include longitudinal studies examining the changes in participation and activity levels in long-term stroke recovery.
REFERENCES

doi: 10.1097/JNN.Obo13e3181ecafea

doi: 10.1016/j.jstrokecerebrovasdis.2009.06.005

doi: 10.1310/tsr1702-108

doi: 10.1080/096382800924996

doi: 10.1111/j.1440-1630.2009.00833.x