Utilization of Occupational Therapy in the Treatment of Patients Suffering from Chronic Pain

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Disciplines
Occupational Therapy

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Utilization of Occupational Therapy in the Treatment of Patients Suffering from Chronic Pain

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Date: 10/26/2011
Review date: October, 2013

CLINICAL SCENARIO:
Chronic pain is a debilitating and frustrating condition that impacts all elements of a person’s life. When considering treatment for chronic pain, the common practice is to treat the underlying conditions for example, arthritis, fibromyalgia, or musculoskeletal pain. However, it is important to remember that pain impedes function. Current research attempts to provide information for possible effective treatment options for patients suffering from chronic pain, unfortunately many of the current studies do not present consistent efficacy for effectiveness. Even more discouraging is the rarity that those interventions are occupation-based. Occupational therapy scope of practice aims at increasing an individual’s ability to function within their lives. It seems necessary that occupational therapists should be able to provide services to this client population and address the impact of chronic pain on daily activities of living.

The field of occupational therapy has a potential to not only provide adequate treatment to this client population, but also to increase research on effective treatment options available using many of the occupational therapy approaches. The aim of this research was to seek out information on current effective interventions for treating chronic pain and justify the need for occupational therapy services.

FOCUSED CLINICAL QUESTION:
What effective interventions can Occupational Therapists utilize to treat patients suffering from chronic pain?

SUMMARY of Search, ‘Best’ Evidence’ appraised, and Key Findings:
- A total of five research articles were selected regarding the topic of interventions that occupational therapists can utilize for treatment of patients with chronic pain.
  - The ‘best evidence’ article selected was an exploratory, focus group study by Skjutar et al. (2010) designed to obtain information from practicing occupational therapists regarding their position on treating patients suffering from chronic pain.
  - The study questioned 25 occupational therapy practitioners in 6 different focus group discussions on the topic of, “experiences working with treatment of patients with chronic pain,” (Skjutar, 2009).
  - A questioning route was developed and utilized to identify themes, using open-ended questions and content analysis. The overarching theme of ‘limitations of occupational performance’ was identified as the main focus for why patients with chronic pain could benefit from occupational therapy.
  - 5 subthemes: ‘pain behaviour’, ‘lack of knowledge’, ‘occupational imbalance’, ‘emotional stress’, and ‘physical or environmental strain’ were the supporting indicators for areas in which chronic pain impacts individuals (Skjutar, 2010).
  - The results of this study not only identified 4 new indicators for the need of OT, but also identified previously presented themes.
  - The new indicators were: ‘body language signalling pain’, ‘passive behaviour waiting for pain relief’, ‘depressed feelings’, and ‘physical injury’ and each of these categories...
fell into the subtheme of ‘Pain behaviour’, (Skjutar et al., 2010). The OT’s identified that each of these were common behaviours that clients exhibit and have an impact on function. (Skjutar et al., 2010).

- Although this study did not indicate direct intervention techniques, it did emphasize the OT perspective and the need for occupational therapy interventions for this client population.
- The four supporting articles collected quantitative data on current interventions being utilized to treat patients with chronic pain.
- A study done by Macedo et al, (2009) explored outcomes for improving function and work performance for patients with Rheumatoid Arthritis. This study utilized occupation-based interventions and also demonstrated that occupational therapy interventions can significantly improve functional outcomes for patients with Rheumatoid Arthritis.
- Rosenzweig et al., (2010) conducted a prospective cohort study to evaluate the effectiveness of mindfulness-based stress reduction on patients suffering from varying conditions that exhibit chronic pain. The results of this study were limited to showing some improvements for patients with chronic back/neck pain, but not other conditions identified.
- Meeus et al., (2010) performed a RCT comparing pain physiology education with self-management education for patients diagnosed with chronic fatigue syndrome. There was some improvement for the experimental group, but the results were limited to short-term effects.
- Wong et al., (2011) conducted a RCT comparing mindfulness-based stress reduction (experiment) and a multidisciplinary pain intervention (control), results yielded no statistical difference between the experiment and control.

**CLINICAL BOTTOM LINE:**
Chronic pain significantly impacts an individual’s ability to function and participate in their daily occupations. Research is limited to pain reduction techniques, self-management, pacing, cognitive and educational strategies and rarely addresses the consequences of diminished function.

The research reviewed for this critical appraisal further emphasises the lack of adequate evidence for current interventions that occupational therapists can utilize. Robinson et al, (2011) addressed not only the lack of evidence for occupation-based interventions, but also the need for occupational therapists to provide treatment to this client population. Occupational therapy has the potential to fill the gaps of research for effective interventions and further provide functional and client-centered treatment options for this growing client population.

**Limitation of this CAT:** This critically appraised topic has been peer-reviewed by one other independent person/a lecturer.

**SEARCH STRATEGY:**

**Terms used to guide Search Strategy:**

- **Patient/Client Group:** Adults with Chronic Pain
- **Intervention (or Assessment):** Occupational Therapy
• **Comparison:** N/A

• **Outcome(s):** Positive effects of interventions including: decreased pain levels, decreased perception of pain, increased pain management, increased quality of life.

<table>
<thead>
<tr>
<th>Source</th>
<th>Search Terms</th>
<th>Limits Used</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Control</td>
<td>“CBT and Chronic Pain”</td>
<td>55 Studies were found</td>
<td>19 studies were found directly related to OT</td>
</tr>
<tr>
<td>(September, 2011)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medline- Ovid</td>
<td>“Occupational therapy and chronic pain”</td>
<td>46 results: “Evidence-based clinical practice guidelines…”</td>
<td>“Indicators of need for occupational therapy in patients with chronic pain…”</td>
</tr>
<tr>
<td>(September, 2011)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Article Mining</td>
<td>“Chronic pain”</td>
<td>661,867 results</td>
<td>771,867 results</td>
</tr>
<tr>
<td>(Medline)</td>
<td></td>
<td></td>
<td>771,867 results</td>
</tr>
<tr>
<td>CINAHL</td>
<td>“Occupational therapy and chronic pain”</td>
<td>235 Results</td>
<td>Author published in multiple pain related studies and articles</td>
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<tr>
<td>(September, 2011)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CINAHL</td>
<td>“Treatment and chronic pain”</td>
<td>74 results: lacking in qual and quantitative studies</td>
<td>“Review of Occupational therapy for people with chronic pain”</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>“Treatment and pain”</td>
<td>1583 results</td>
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<tr>
<td></td>
<td>“Treatment and pain”</td>
<td>7275 results</td>
<td>Found alternative tx interventions</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>MSRB, CBT, etc.</td>
</tr>
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</tr>
<tr>
<td></td>
<td>“Treatment and pain” + “occupational therapy”</td>
<td>399 results</td>
<td>OT is showing up as solely</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
“occupation”
- Research is not linked directly to OT interventions

- “MS and Pain”
  - Linked Full text
  - 58 results
  - Mostly info on pharmacological management

- “MS and Occupational Therapy”
  - Linked full text
  - 22 results- none for pain interventions

**INCLUSION and EXCLUSION CRITERIA**

- **Inclusion:**
  - Peer-reviewed
  - Linked full text
  - Adults
  - Pain related conditions

- **Exclusion:**
  - Children
  - Pain less than 6 months
  - Pharmaceutical related treatments

**RESULTS OF SEARCH**

- Five relevant studies were located and categorised as shown in Table 1 (based on Levels of Evidence, Centre for Evidence Based Medicine, 1998). Additionally 1 Evidenced-Based Practice Guideline document was located and referenced in this table.

<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>Exploratory- Focus Group</td>
<td>N/A</td>
<td>1</td>
<td>Skjutur, et al. (2010)</td>
</tr>
<tr>
<td>Cohort</td>
<td>IV</td>
<td>1</td>
<td>Rosenzweig, et al. (2010)</td>
</tr>
<tr>
<td>Evidence-Based Clinical practice Guidelines for Interdisciplinary Rehabilitation of Chronic Non-malignant Pain Syndrome Patients</td>
<td>1</td>
<td>Sanders, et al. (2005) (This article was not used as a CAP, but was identified during research)</td>
<td></td>
</tr>
</tbody>
</table>

**BEST EVIDENCE**

- This article was identified as the ‘best’ evidence for demonstrating the relevance and need of occupational therapy interventions in clients with chronic pain and was selected for critical appraisal.

**Reasons for selecting this study were:**
• Recent data collection in 2010
• Comprehensive content analysis that identified one overarching theme and 5 subthemes
• Identifies the need for occupational therapy with this client population
• Identifies the perspective OT’s have regarding treatment of chronic pain
• Comprehensive study that reviewed all areas occupation (ADL’s and IADL’s)

**SUMMARY OF BEST EVIDENCE**

**Table 2:** Description and appraisal of (Indicators of Need for Occupational Therapy in Patients with Chronic pain: Occupational Therapists’ Focus Groups) by (Skjutar, A., Schult, M., Christensson, K., & Mullersdorf, M. 2010).

| Aim/Objective of the Study/Systematic Review: | The purpose of this study was to discover indicators that point towards the need of occupational therapy for patients with chronic pain. The study’s goal was to interview current occupational therapists and gather information regarding their perspective on working with patients with chronic pain. |
| Study Design: | This was a qualitative, exploratory study that utilized focus group discussions and content analysis to bring forth themes and subthemes regarding the topic of ‘need for OT interventions for patients with chronic pain’. The focus groups were designed using a questioning route with open-ended questions, which were provided to the practitioner prior to the group meetings. The information from group sessions were gathered by an assistant moderator who observed and collected field notes of what was being discussed. Additionally, all group sessions were recorded with a digital pocket recorder. After sessions were complete, the notes and recordings were transcribed. Once the information was compiled content analysis was performed. |
| Setting: | All of the focus groups were conducted at a local university, a conference room, or hospital meeting room, in Sweden. |
| Participants: | N=25. All participants were occupational therapists who have experience working with the client population, patients with chronic pain. Participants were recruited from both rural and urban areas and local regional health care facilities were contacted to obtain permission to recruit the occupational therapists at their sites, purposive sampling was utilized. The demographics of the participants were as follows: years of experience ranged from 3 years to 21.1 years. The participant’s work places were: primary health care rural area or pain rehabilitation unit urban area. Other participant demographics were not listed (age/gender). (See Table 1. Description of Participants on p. 95 (Skjutar et al., 2010). |
| Intervention Investigated: | A moderator and an assistant moderator using a question-route that engaged participants to comment on their experiences working with patients with chronic pain led six focus groups with 2-7 participants in each session. The main questions focused on asking the therapists to identify reasons for why occupational therapy is needed for this client population. The discussions focused on not only the answering of the questions, but also facilitated a natural discussion between the group members to retrieve further data. |
**Outcome Measures:** Qualitative Content analysis was utilized to develop meaning units, codes and categories, which then developed into subthemes and themes. This was performed in a step-by-step process; first all data was collected and transcribed. Then the data was checked over by both the author and the moderator to confirm accuracy and then investigator triangulation was used to increase the credibility by having the both moderators re-check that data separately.

**Main Findings:** The main findings of this study identified 1 theme and 5 subthemes

1 Theme: Limitations of Occupational Performance


The 5 subthemes were derived from 13 specific categories, which directly indicated the need for occupational therapy.

For example: The subtheme ‘Occupational imbalance’, was derived from the categories, ‘disproportionate activity patterns’, ‘lack of coping skills’ and ‘lack of enjoyable activities’, (Skjutar et al., 2010 p. 98)

**Table 2A- Examples of meaning units, condensed meaning units, codes, categories, subthemes and theme.**

<table>
<thead>
<tr>
<th>Meaning Unit</th>
<th>Condensed meaning unit</th>
<th>Code</th>
<th>Category</th>
<th>Subtheme</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does he/she do in daily life, what does he/she avoid?</td>
<td>Does he/she avoid any occupations?</td>
<td>Fear-avoidance</td>
<td>Fear-avoidance bx.</td>
<td>Pain Behaviour</td>
<td>Limitations of occupational performance</td>
</tr>
</tbody>
</table>

*Table adapted from: Skjutar, A., Schult, M., Christensson, K., & Mullersdorf, M. 2010)*

**Original Authors’ Conclusions:** The qualitative data collected during this study emphasizes the need for occupational therapy services for patients with chronic pain, through an occupational therapists perspective. The results of this study identified that occupational therapists perceive chronic pain has creating, ‘limitations of occupational performance’. OT’s in this study pointed out that ‘limitations of performance’ can be seen in the form of decreased activity participation, as well as impairments to physical, emotional and/or environmental components of function (Skjutar et al., 2010 p.96-97).

The authors also drew conclusions upon the need to find additional support for research and effective interventions for this client population. The authors noted adding information to the current body of knowledge and also identified the need to, “increase generalizability in other cultural contexts”, (Skjutar et al., 2010 p.101).

**Critical Appraisal:**

**Validity:**

When evaluating the validity of this qualitative study the following techniques were used:

- Data Collection- Focus group discussions
- An assistant moderator collected: field notes and used a digital pocket recorder
- Content Analysis & Coding was used to create categories and themes based off the field notes and recorded data.
- Investigator Triangulation was used by having the facilitating moderator and the assistant moderator double-check the data, individually. This was also used to reduce author bias.
- Semi-Structured Questioning Route, which was given to participants prior to the sessions
- Triangulation was also implemented into the spaces and persons, by having each session meet at a different place with a new group of participants.
- Member checking was not done.

**Interpretation of Results:**
The results indicated that the use of content analysis adequately provided logical information in the development of subthemes and themes. For example, terms such as ‘lack of enjoyable activities’, and ‘disproportionate activity patterns’, were categories that were coded as a subtheme for, ‘occupational imbalance’.
The researchers did a favourable job in demonstrating appropriate content analysis, however additional methods, such as, member checking, identifying authors credentials, identification of bracketing, and direct identification of procedural rigor would have better supported the overall validity of the study.
Additionally, the study noted having a small sample of participants, with several participants having known each other prior to participating in the study.

**Summary/Conclusion:**
Overall the study aimed at identifying indicators for a need of occupational therapy for patients with chronic pain and was able to accomplish this goal by demonstrating that occupational therapists perceive chronic pain as creating overall ‘limitations to occupational performance’.

### Table 3: Characteristics of Included Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Characteristics</th>
</tr>
</thead>
</table>
| Macedo, A.M., Oakley, S.P., Panayi, G.S., & Kirkham, B.W. (2009) | **Intervention Investigated:** Occupational therapy intervention provided to employed patients with RA. 6-month RCT providing Pre and Post-tests. Intervention consisted of patient’s assessment, 6-8 individualized treatment sessions with an Occupational Therapist, each session lasting 30 minutes- 2 hours. OT intervention included: education, self-advocacy, ergonomics reviews, posture advice, compensatory and modification strategies, stress management and assertiveness training.  
**Comparison Intervention:** Usual care of RA: routine visits to physician, focus on early treatment and symptom management, and medications  
**Outcomes Used:**  
- **Measures of Function:** COPM & Heath Assessment Questionnaire  
- **Measures of Work Productivity:** RA Work Instability Scale (10) & Modified Health Economics Questionnaire  
- **Measures of Coping:** Arthritis Impact Measurement Scales II, Arthritis Helplessness Index & EuroQol Index.  
- **Measures of RA disease Activity:** 100-mm Visual Analog Scale, fatigue measure (ordinal scale), Disease Activity Score in 28 joints.  
**Findings:** The intervention group showed significantly better outcomes than those in the control group of all assessments of function. However,
there was no significant outcome difference between the OT group and usual care on the RA WIS measure.

| Rosenzweig, S., Greeson, J.M., Reibel, D.K., Green, J.S., Jasser, S.A., & Beasley, D. (2010). | **Intervention Investigated:** 8 week mindfulness-based stress reduction (MBSR) program developed to measure changes in pain, quality of life, and psychological symptoms experienced by patients with chronic pain. Pre and Post-assessments were collected for a set cohort of patients with different chronic pain conditions, to examine the baseline and then record if the intervention showed changes.  
**Comparison Intervention:** None  
**Outcomes Used:**  
- **Health-Related Quality of Life:** Short form 36 health survey (SF-36) & Symptom Check list 90-revised (SCL-90-R)  
**Findings:** The cohort showed that outcome data varied among the specific pain conditions. Patients with arthritis and back/neck pain showed significant improvement. Patients with fibromyalgia showed improvement in only 3/8 measures and chronic headache/migraine showed 2/8, which were the smallest changes recorded. The overall effect size showed a medium range change in chronic pain. |

| Meeus, M., Niji, J., Oosterwijck, J.V., Alsenoy, V.V., & Truijen, S. (2010). | **Intervention Investigated:** Providing pain education to patients with chronic fatigue syndrome, to impact pain threshold, pain cognition and overall chronic pain. A pain physiology education course was provided to the intervention group focusing on teaching patients about pain.  
**Comparison Intervention:** The control group received pacing and self-management information.  
**Outcomes Used:**  
- Neurophysiology of Pain Test (patient version)  
- Pain Coping Inventory  
- The Dutch PCS (Pain Catastrophizing Scale)  
- The Tampa Scale  
- Pressure pain thresholds  
**Findings:** Overall results indicate that the experimental group benefited from the pain education and immediately retained the presented information, having significant differences between intervention group and control. Additionally, there was an immediate affect of significantly decreased rumination about pain, between the experimental group and the control. |

| Wong, S.Y., Chan, F. W., Wong. R. L., Chu, M. Lam. Y.K., Mercer, S.W. & Ma, H. (2011) | **Intervention Investigated:** Mindfulness-Based Stress Reduction program, led by a clinical Psychologist. 8-week sessions (2 ½ hours each), with 1-full-day (7 hour) retreat.  
**Comparison Intervention:** Multidisciplinary Pain Intervention group consisting of: education on pain management, from a self-help text. 8-weekly sessions (2 ½ hours each) in the form of instructional lectures.  
**Outcomes Used:**  
- Self report pain intensity and pain-related distress (11-point NRS)  
- Profile of Mood States  
- Centre for Epidemiological Studies- Depression Scale  
- State-Trait Anxiety Inventory  
- **Health-Related Quality of Life survey**  
**Findings:** The results indicated there were no significant differences
between the control and the experiment except for changes in pain distress measures.

IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH

In conducting research for this critically appraised topic, database searches presented little to no information on occupational-based interventions, or occupational therapy practice being utilized as an intervention technique. Although there is extensive research on interventions for reducing chronic pain symptoms, many do not have consistent proven effectiveness nor do they focus on increasing functional abilities. Current research does identify that multidisciplinary approaches could best benefit this client population, however little information directly focuses on the occupational therapy perspective.

There is a need and a responsibility for the OT profession to not only advocate for treating this client population, but also to conduct further research on treatment outcomes from occupational therapy interventions. Occupational therapy has the potential to develop appropriate and effective evidence-based practices and implement new techniques in treating chronic pain symptoms.

In terms of education, this can occur for both the client and the practitioner. OT’s have the capability to educate clients and their families about pain physiology and the impact pain has on functioning to help patients better manage and cope with symptoms. Furthermore, OT’s could benefit from attending chronic pain seminars or continuing education courses in order to develop new insights into this challenging condition.

Future research is essential for this topic and focus needs to be directed towards developing effective occupational-based interventions for patients with chronic pain.
REFERENCES


