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Occupational Therapy's Role in The Holistic Management of Chronic Pain



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BACKGROUND & PURPOSE

Background

- Chronic pain is a major public health problem, affecting an estimated 20.4% of adults in the United States (Dahlhamer et al., 2018)
- The current attitude towards chronic pain in healthcare has left many clients feeling misunderstood and vulnerable (Douglas et al., 2008)
- Occupational therapists are well versed to serve clients with chronic pain due to their holistic approach. For clients with chronic pain, they work to evaluate how pain impacts their everyday life. Through this understanding, they can help clients to develop the skills and strategies necessary to effectively manage their pain and achieve as much occupational participation as possible (Hofmann, n.d.).

Purpose

- Three objectives were developed to guide the capstone experience in the areas of clinical practice and education:
 - Clinical Practice
 - Develop advanced clinical practice skills in a chronic pain management & gain understanding of OT's role
 - Explore & assess the effectiveness of chronic pain management interventions
 - Education
 - Develop educational material for students to improve chronic pain knowledge & skills

THEORETICAL FOUNDATION

To guide both clinical practice and resource development, both the Canadian Model of Occupational Performance and Engagement (CMOP-E) and the Biopsychosocial Chronic Pain Cycle were used.

Canadian Model of Occupational Performance and Engagement (CMOP-E)

- Most used theory for chronic pain management
- Integrates clients' valued occupations into treatment
 - This is essential as pain interrupts many occupations such as activities of daily living (ADLs) and leisure
- Incorporates social and environmental contexts, allowing for the facilitation of school and work accommodation education

Biopsychosocial Chronic Pain Cycle Model

- Social Changes
 - Pain disrupts time spent with family and friends
- Psychological changes
 - Clients experienced helplessness, sadness, worry, anger, and irritability
- Physiological changes
 - Clients commonly presented with muscle deterioration and weakness
- Functional implications

METHODS

Clinical Practice

Within clinical practice, the following activities and deliverables were created to demonstrate achievement of both objectives:

- Continuing Education Courses
 - World of Hurt and Graded Motor Imagery
- Educational Case Series
 - Developed client examples including diagnoses, assessments, interventions, and results
- Modified COPM: Data Collection and Analysis
 - Collected data from client population and analyzed to find trends
- Two-Point Discrimination: Data Collection and Analysis
 - Collected data from client population and analyzed to find trends
- OT Toolkit

Education

Within education, the following activities and deliverables were created to demonstrate achievement of the objective:

- Pain Management Technique Info Sheets
 - Listed common interventions as a tool for future fieldworks
- PowerPoint Presentation and Lecture
 - Created and presented a lecture to inform OT students on chronic pain treatments
- Student Surveys: Data Collection and Analysis
 - Created and collected student survey to gauge the effectiveness of the student presentation

OUTCOMES & MAJOR FINDINGS

Modified COPM

- Overall client disability decreased by 22%
- Largest improvement in clients' self-care

Two-point Discrimination

- Overall client improvement of 1.75 mm
- Most client improvement in left hand
- Confirmed that tactile acuity corresponds with pain reduction for clients

Continuing Education

- Developed understanding and clinical application of GMI
- Better able to describe clinical characteristics of pain
- Used to improve clinical practice and other deliverables

OT Toolkit

- Created toolkit with 16+ different resources
- Contained resources for conditions, symptoms, and interventions
- Developed for holistic implementation of interventions for OTs to use

Educational Case Series

- Created three cases with background, assessments, treatments, and results
- Each described the selection and implementation of interventions
- These serve as examples for future client treatment

Pain Management Sheets

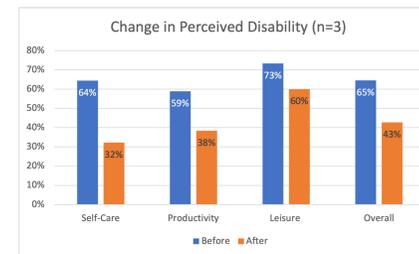
- 30+ intervention ideas for student use
- This became a valuable tool for fieldwork experiences

Student Lunch & Learn

- Lectured to students about conditions, trauma-informed care, assessments and interventions
- Discussed how to prepare for fieldwork experiences

Student Survey

- Tested students on common chronic pain knowledge, treatments, and interventions
- Pre- and post-survey given during 'Lunch & Learn'
- Knowledge scores increased from 48% to 88% after the presentation



Graded Motor Imagery
A multi-step rehabilitation process used to treat pain and movement problems. GMI exercises the brain and facilitates the redevelopment of sensory-motor pathways.

Step 1: Laterality
Individuals with chronic pain often lose the ability to distinguish between right and left body parts (an important skill for pain recovery)
- Through consistent practice, this skill can be retrained

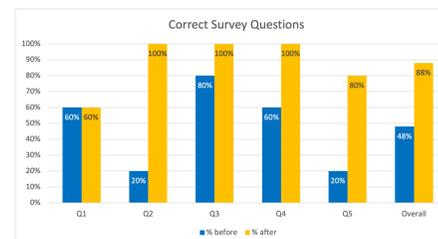
Try It: Download the *Orienteer* app on your smart device.
Goal = Greater than 80% accuracy & less than 2 seconds/card

Step 2: Visualization/Sensory Retraining
Visualizing (imagining) movements & sensations can be difficult for the brain during a pain state
- "Mirror neurons" are exercised simply by thinking about moving or by watching someone else move
- Start safe → transition to more challenging contexts/sensations

Try It: The next time you put on lotion, describe how it feels and smells to apply.

Step 3: Mirror Therapy
The brain is impacted by both visual and tissue-based information (what we see and what we feel)
- Mirrored movements, images, and drawings can be used to build endurance in preparation for real movement

Try It: Watch yourself as you use whole arm movements to draw shapes and letters in rice or sand.



DISCUSSION & CONCLUSION

Clinical Practice and OTs Role

- Through the completion of CE courses, increased background knowledge on chronic pain and related interventions was gained. The knowledge gained from these courses facilitated improved client care and education. Similar benefits were noted in a study by Forsetlund et al. (2009)
- While the case series was beneficial during the project, it may also prove useful for clinicians in the future treatment of chronic pain. It has been shown that a case study approach is useful because it allows for interventions and services to be studied in a real-life context (Crowe et al., 2011).

Chronic Pain Management

- Many clients reported dissatisfaction with their ability to perform activities of daily living (ADLs) such as showering, dressing, and walking. This is consistent with previous research as it has been shown that clients with chronic pain consistently have difficulty completing ADLs (Amris et al., 2011; Von Bulow et al., 2015).
- Upon initial measurement, most clients demonstrated 'poor' two-point discrimination. At the end of treatment, many clients were able to distinguish at a 'fair' level of tactile acuity on their hands. This finding is in direct contrast with some studies that report occupational therapy treatment has no significant effect on pain levels (Simon & Collins, 2017).

Student Education

- It was discovered that students gained knowledge in chronic pain conditions and OT treatment methods. However, students did not demonstrate as much learning in common chronic pain misconceptions.

Theory Critique

- While all elements of the Chronic Pain Cycle Model were touched on during the project, it was not frequently referenced.
- In addition to the models selected, a model related to trauma-informed care could have also been useful due to the number of clients that presented with medical trauma.

IMPLICATIONS FOR OCCUPATIONAL THERAPY

Implications & Recommendations

- Clients with chronic pain experience a wide range of deficits in areas such as ADLs, IADLs, and health management
 - Important to use individualized treatment plans to maximize clinical improvements
- Solidified use of Modified COPM and two-point discrimination as valuable tools for measuring subjective and objective improvement throughout chronic pain treatment
 - Illustrated need for OT intervention in less commonly addressed areas such as leisure
 - Demonstrated importance of using client-generated goals to decrease disability and improve personal satisfaction with treatment
- OT toolkit will be a valuable tool for clinicians and support the use of holistic intervention approaches such as sleep hygiene, energy conservation, meal preparation, and gentle strengthening
 - Emphasized the importance of making client resources easily comprehensible to improve client-provider communication and satisfaction with treatment

REFERENCES

See references at the QR code to the right:

