Pain Neuroscience Education for Veterans with Chronic Pain: An Intervention Project

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SETTINGS AND BACKGROUND

Setting

- Location: Central Alabama Veteran's Health Care System (CAVHCS) – East Campus - Tuskegee, Alabama; Outpatient Clinic
- Time: During Scheduled Outpatient Visits; Lasting approximately 45 mins to (1) hour

Background

Chronic pain is a multifaceted diagnosis that involves unique pain experiences that last over three months. In many cases, chronic pain has an adverse effect on occupational participation or performance. In 2016, the Center for Disease Control reported that approximately 20.4% of adults within the United States experienced chronic pain and approximately 8% of adults within the United States experienced high impact pain (Dahlhamer et al., 2019). "More than 50% of veterans receiving care through Veterans Health Administration (VHA) facilities across the country are affected by this condition" (Monaghan, 2018). Pain Neuroscience Education (PNE) is an educational tool that can assist veterans in understanding the complexities of their unique pain experiences. With knowledge acquired from PNE sessions in conjunction with traditional OT practices, veterans are better able to self-monitor and mange during daily tasks. Louw et al. (2019) submits that PNE significantly yields improvements in pain knowledge, attitudes about pain, or fear of physical activity in comparison to traditional strategies. This intervention project aims to curate evidence that will assist occupational therapists (OTs) in determining if the use of (PNE) improves occupational participation among veterans with chronic pain.

PIO QUESTION

Does the use of pain neuroscience education (PNE) as an occupational therapy intervention improve occupational participation among veterans with chronic pain?

SIGNIFICANCE

The use of PNE is significant because it can:

- support AOTA's position on the role of occupational therapy in pain rehabilitation by promoting a self management approach for helping individuals to participate in daily activities using acclimating strategies (AOTA, 2014).
- support the OT profession in showing that OTs are equipped and able to independently address and treat individuals with chronic pain.
- increase awareness to strategies that may contribute to improved participation in valued daily tasks while having a chronic diagnosis .

This project will contribute to a shift in the paradigm of the OT profession. It challenges comfortable intervention approaches and enriches current OT theories and frameworks like the MOHO and the Biopsychosocial model.

LITERATURE REVIEW

PNE and Chronic Pain

- PNE is a viable intervention for addressing patients with chronic pain syndrome and other chronic musculoskeletal conditions. Louw et al. (2016) performed a systematic review which review revealed that research promotes using PNE strategies to decrease pain, improve understanding of personal pain experiences, improve functional abilities, decrease disability, promote movement/functional mobility, reduce negative stigmas associated with pain, and decrease high healthcare utilization rates. PNE may have an impact on occupational performance, performance patterns, performance skills and may even affect personal costs associated with healthcare.

PNE and OT

- Within the OT profession, the implementation of PNE via educational sessions and interventions have yielded positive outcomes on participation in various occupational roles. Louw et al. (2019) supports that PNE significantly increased knowledge of pain, decreased the fear of physical activity, and improved a variety of beliefs regarding pain compared to traditional education strategies.

METHODS

Participants

- Participant A: 46-year-old African American female who is a veteran with active diagnoses of chronic pain syndrome and fibromyalgia, among other chronic diagnoses
- Participant B: 49-year-old Caucasian female who is a veteran with an active diagnosis of chronic pain syndrome amongst other chronic diagnoses (i.e., cervicalgia, chronic low back and knee pain)

Design

- Client-centered, occupation focused intervention project
- Implemented by OT during scheduled OT sessions

Outcome Measure

- Moseley's Pain Neurophysiology Questionnaire (PNQ)
- Role Checklist (RCv3)
- Assessed as pre and post test measures

Implementation

- Initial assessment performed. Pre-test measures administered during initial assessment
- Established Individual Plan(s) of cares
- Implemented for approximately three weeks (total of 3 sessions per week; (2) face-to-face and (1) virtual via Video Virtual Connect)
  - Why You Hurt? Card box was used to guide PNE
- Re-assessment/discharge assessment. Post-test data collected.
- Results analyzed using a mixed method approach

RESULTS

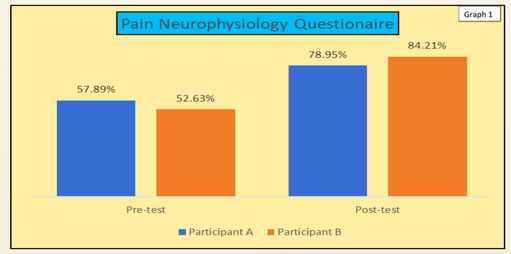
Understanding of Neurophysiology of Pain/Pain Factors

Participant A

- Pre-test: PNQ: 11/19 = 57.9%
- Post-test: PNQ: 15/19 = 78.9%

Participant B

- Pre-test: PNQ: 10/19 = 52.6%
- Pre-test: PNQ: 16/19 = 84.2%

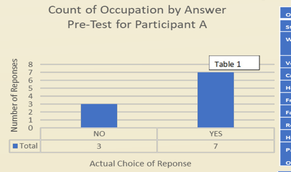


Participant Comments

"I am able to actually understand what's going on with me. Thank you for incorporating this portion into my treatments. No one ever explained it like this before."

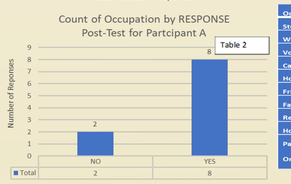
"I feel more comfortable knowing that I am not re-hurting myself when I try do things that I love. I just have to plan and take my time."

Occupational Participation



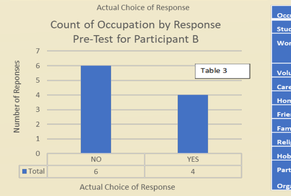
Occupations	RESPONSE	Interests
Student	YES	Somewhat dissatisfied
Worker	NO	I would like to do this IN THE FUTURE
Volunteer	YES	Mostly satisfied
Care Giver	YES	Very dissatisfied
Home Maintainer	YES	Very dissatisfied
Friend	YES	Somewhat dissatisfied
Family Member	YES	Very dissatisfied
Religious Participant	YES	Mostly satisfied
Hobbyist/Amateur	NO	I would like to do this NOW
Participant in Organizations	NO	I would like to do this IN THE FUTURE

Graph 2



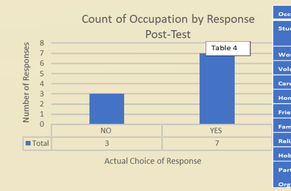
Occupations	RESPONSE	Interests
Student	YES	Mostly satisfied
Worker	NO	I would like to do this NOW
Volunteer	YES	Mostly satisfied
Care Giver	YES	Mostly satisfied
Home Maintainer	YES	Somewhat dissatisfied
Friend	YES	Mostly satisfied
Family Member	YES	Mostly satisfied
Religious Participant	YES	Very satisfied
Hobbyist/Amateur	NO	I would like to do this NOW
Participant in Organizations	YES	Mostly satisfied

Graph 3



Occupations	RESPONSE	Interests
Student	NO	I am NOT interested
Worker	NO	I would like to do this IN THE FUTURE
Volunteer	NO	I would like to do this NOW
Care Giver	YES	Very dissatisfied
Home Maintainer	YES	Very dissatisfied
Friend	NO	I would like to do this NOW
Family Member	YES	Somewhat dissatisfied
Religious Participant	NO	I would like to do this NOW
Hobbyist/Amateur	NO	I would like to do this NOW
Participant in Organizations	YES	Very dissatisfied

Graph 4



Occupations	ANSWER	Interests
Student	NO	I would like to do this IN THE FUTURE
Worker	NO	I would like to do this NOW
Volunteer	YES	Mostly satisfied
Care Giver	YES	Mostly satisfied
Home Maintainer	YES	Somewhat dissatisfied
Friend	YES	Mostly satisfied
Family Member	YES	Mostly satisfied
Religious Participant	YES	Mostly satisfied
Hobbyist/Amateur	NO	I would like to do this NOW
Participant in Organizations	YES	Mostly satisfied

Graph 5

The Role Checklist: Version 3 (Rcv3) demonstrates improvements in occupations and/or attitudes about occupational participation.

- Participant A answered 7-Yes and 3-NO toward participation in valued occupational roles. Graph 2 represents the pre-test measures for the count of occupations by the response, and Table 1 shows the level of interest (attitude) in relation to that response.
- The post-test measures for participant A show improvements in occupational participation and level of interest for each choice. Participant B answered 8-YES and 2-NO with significant improvements in attitudes related to participation in valued occupations. (See Table 2 and Graph 3).
- Participant B answered 4-Yes and 6-NO toward participation in valued occupational roles. Graph 4 represents the pre-test measures for the count of occupations by the response, and Table 3 shows the level of interest (attitude) in relation to that response.
- The post-test measures for participant B show improvements in occupational participation and levels of interest in each choice. Participant B answered 7-YES and 3-NO with significant improvements in attitudes related to participation in valued occupations. (See Table 4 and Graph 5).

SUMMARY

Results supported the use of PNE as an educational tool to increase occupational participation among middle-aged veterans who have chronic pain experiences. The results were consistent with previous findings that PNE in conjunction with other OT strategies improve function, behaviors, and attitudes associated with pain which indicates a high likelihood of increasing participation in valued occupational roles. The results shows a great opportunity for future research on PNE and veterans who with chronic pain.

REFERENCES

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