

Review Question & Objective

- **The quantitative objective is to examine the effects of co-existing mental health conditions on treatment outcomes in patients with complex regional pain syndrome (CRPS).**
- **More specifically, the objectives are to identify the effect of depression, anger, suicidal ideation, anxiety, posttraumatic stress disorder (PTSD) on pain relief in patients with complex regional pain.**

Background

- **Complex regional pain syndrome (CRPS) is a chronic pain condition caused by the damage or malfunction of the peripheral and/or central nervous systems.**
- Characterized by prolonged or excessive pain and changes in skin color, temperature, and/or swelling in the affected area.
- Pain is described as “burning,” “pins and needles,” or constant squeezing of the limb, which is often accompanied by *allodynia*, an increased sensitivity in which contact with the skin is experienced as excessively painful.
- Loss of ability to function in their daily life ultimately affects the patient’s ability to work and support themselves financially.
- Total cumulative healthcare cost 8-years after CRPS diagnosis: **\$43,026** and **\$12,037** for **pain prescription costs.**
- Concurrent financial hardship and mental health conditions are significant contributors to suicidality.
- **Evidence Gap:** No protocol exists to screen for and manage depression or PTSD when treating CRPS in a pain clinic.

Method Systematic Review

Inclusion Criteria

Types of Studies

- Quasi-experimental studies, prospective and retrospective cohort studies, and analytical cross-sectional studies.

Types of Participants

- Inclusion: Must have a diagnosis of complex regional pain syndrome, including both Type I, or reflex sympathetic dystrophy, and Type II, or causalgia.
- Adults over the age of 18, any gender, race, ethnicity or educational level, all with a diagnosis of CRPS. Studies written in English only.

- Settings: pain clinics, acute care hospital, community mental health centers and ambulatory surgery.

Types of Interventions of Interest

- Studies that evaluate the efficacy of mental health treatment interventions, including suicide screening, evaluation for depression and posttraumatic stress disorder.
- All studies describing mental health conditions: pre-existing and co-occurring, as long as there is a diagnosis of complex regional pain syndrome.

Types of Outcomes

- Effective or ineffective pain management and quality of life affected by levels of pain.

Search Strategy

- **Databases:** PUBMED, PSYCINFO (Ovid), CINAHL, Scopus, Web of Science, GreyNet, Virginia Henderson International Nursing Library of Sigma Theta Tau International, and ProQuest Dissertations & Theses Database.

Methodological Quality

- Two reviewers to ensure methodological validity using standardized critical appraisal instruments from the Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI).

Data Extraction

- Standardized data extraction tool accessed via JBI-MAStARI.

Data Synthesis

- Statistical meta-analysis using JBI-MAStARI.
- Narrative summary.

Results

- Initial search: 1431 articles. After title screening, removing duplicates, applying and further defining inclusion criteria, 27 articles were appraised. 13 articles went through data extraction and were selected for this study.
- Quality of the studies was low to moderate.
- 1736 participants. 26% of all participants were male; 72% female.
- Sample size: ranged from 10 to 698.
- Levels of Evidence were determined using the Joanna Briggs Institute Levels of Evidence and Grades of Recommendation guidelines.
 - Three of the studies are level of evidence 2, three other studies are level of evidence 3, and the remaining seven studies are level of evidence 4.
- Studies were conducted in New Zealand, Finland, Germany, Iran, Israel, United States, Canada, The Netherlands.



- Ages ranged from adults over 18 to 89 years of age.
- All were diagnosed with CRPS and were screened for the mental health conditions – depression and PTSD.
- **Screening tools for Depression:**
 - Hospital Anxiety and Depression Scale (HADS) (n=4)
 - Beck’s Depression Inventory (BDI) (n=4)
 - Hamilton Depression Rating Scale (HAM-D) (n=1)
 - Center for Epidemiological Studies Depression Scale (CES-D)26 (n=1)
 - Depression Anxiety Stress Scale 21 (DASS-21) (n=1)
 - PHQ-9 (n=1)
- **Screening tools for PTSD:**
 - DSM 5 diagnostic criteria for PTSD (n=1)

Findings

- Full text articles (n=14) were excluded:
 - Case reports or case studies, screening tool development articles, did not focus on the mental health conditions - depression and post-traumatic stress disorder, and did not have CRPS as the main diagnosis of the chronic pain spectrum.
- Total: 13 quantitative studies showing a correlation between depression and post-traumatic stress disorder and treatment efficacy and pain levels experienced by patients diagnosed with CRPS.
- There is support for psychiatric screening in the diagnostic process for people with symptoms of CRPS.

Data Analysis

- Comparative data analyzed using odds ratio formula, as data between articles was inconsistent.
- The varied tools used for screening and lack of sufficient information (M, SD) precluded a meta-analysis. Data are presented in a narrative based on tool used.

Discussion

- Findings support the impact PTSD and depression have on pain and quality of life in patients with CRPS.
- Narrative article findings were grouped into types of studies via screening tools.
- Unanticipated outcome: the data results were more descriptive than quantitative for depression and PTSD in each study.
- Despite this outcome, the data continued to support the need for concurrent screening of mental health conditions while a person is being treated for CRPS.



Implications

- **Positive correlation** between mental health conditions and CRPS indicates there is a **need for evidence-based education modules for pain providers.**
- It is imperative to **create a reliable and valid screening tool that will assess mental health conditions for people living with CRPS and chronic pain.**
- Literature also supports **updating CRPS treatment guidelines to include the assessment of mental health conditions** multiple times throughout the duration of treatment.

Sustainability

Evidence Transfer Projects

- **The findings in this study can be used to develop an evidence-based teaching module to educate providers about the importance of screening for depression and PTSD while diagnosing or treating CRPS.**
 - The focus is on primary care providers and pain management specialists.
 - The module will include education about psychiatric screening tools, as well as the assessment questions for suicidal thinking.
 - Treatment guidelines should include basic medications and therapeutic modalities, as well as how to make psychiatric referrals, should the provider encounter more complex cases.
- **In the future, developing a pilot study to evaluate the effects of integrating psychiatric screening into CRPS and chronic pain management.**
 - The study should determine if it is possible for the primary care/pain management provider to offer basic mental health care,
 - Or is the patient better served to have a referral process to psychiatric services, therefore, more comprehensive care.
 - Monitoring this pilot program will ensure patients receive the most up-to-date evidence-based care for the treatment of concurrent CRPS and mental health conditions.



References: upon request

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