Psychosocial Factors as Predictors for Patient Outcomes in Rehabilitation of Upper Extremity Injury Caused by Trauma: A Systematic Review

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**Objectives of presentation:** At the conclusion of this presentation, attendees will be able to:

1. Explain three ways in which psychosocial factors have the ability to alter rehabilitation outcomes in individuals who have sustained a traumatic upper extremity injury.
2. Discuss two gaps in the literature regarding the impact of psychosocial factors on rehabilitation outcomes in individuals recovering from traumatic upper extremity injuries.
3. Identify two methods, strategies, or assessments to be implemented in practice in order to evaluate and address psychosocial factors as a component affecting functional outcomes of clients with traumatic UE injuries.

**Methods**

**Eligibility Criteria:**
- Published within the past 10 years, adult population (19+ years), provided in English.
- Inclusion: UE traumatic injuries (“shoulder, upper arm, elbow, lower arm, wrist, hand, or finger caused by burns, amputation, avulsion, crushing, dislocation, fracture, laceration, nerve damage, puncture, strain, or sprain” [Consumer Product Safety Commission, 2019]); presence of psychosocial factors (stress, hostility, depression, hopelessness, and job control,” or “any exposure that may influence a physical health outcome through a psychological mechanism” [Maclead & Davey, 2003, p. 565]); and functional outcomes (“ROM, muscle strength, limb length, swelling, response to special tests, bony alignments... self-report on functional limitations, task performance, activity, disability, roles, participation,” as well as “pain, function, and patient satisfaction… [and] quality of life” [Snyder, Valovich-McLeod, & Sauers, 2007, p. 32]).
- Exclusion: veterans, combat, military, blast-related injuries, and war-related injuries.

**Information Sources Utilized:**
- PubMed, PsychInfo, CINAHL

**Screening Process Utilized:**
- Two stage screening process was utilized, with a primary and secondary reviewer for each stage and whole-group discussion for any discrepancies within the screening process and decision making.
- 1,465 articles were screened within the first-stage of the screening process through title and abstract review.
- During the first stage of the screening process, 1,307 were excluded based on exclusion criteria and 158 were included based on inclusion criteria.
- 158 articles were screened within the second-stage of the screening process through a full-text screen.
- During the second stage of the screening process, 142 articles were excluded based on exclusion criteria, and 16 articles were included based on inclusion criteria. Reasons for exclusions are depicted in Figure Y.

**Risk of Bias for Individual Studies:**
- Overall risk of bias assessment completed on these 16 included studies and demonstrated that out of the total 68 points, most included articles scored less than 28, indicating a high risk of bias, as evidenced by scoring for individual articles based on the Effectiveness Study Checklist (Table 1).

**Data Extraction for Individual Studies:**
- APA citation, country of publication, sample size
- Method of information obtainment (e.g. survey, standardized assessment, participant report, etc.)
- Individual who provided the information (e.g. participant, practitioner, family member or caregiver, etc.)
- Type of rehabilitation the participants engaged in (e.g. general rehabilitation, occupational therapy, etc.)
- Type of UE traumatic injury, as specified in eligibility criteria
- Area of traumatic injury (e.g. general UE, shoulder, arm, wrist, hand/ digits, etc.)
- Psychosocial factors discussed or addressed (e.g. anxiety, depression, pain, demographics, PTSD, etc.)
- Functional outcome assessment tools, as specified in eligibility criteria
- Functional outcomes study intervention resulted in, as specified in eligibility criteria
Results
16 Studies Included: 1 level I, 2 level II, 6 level III, 5 level IV, and 2 qualitative studies.

Psychosocial Outcomes Studied:
- Anxiety, Pain, Kinesophobia, Depression, Post Traumatic Stress Disorder, Coping Skills, Self-Efficacy, Bipolar Disorder, Risk Perception

UE Injury- Specific Findings
- Burns: fear was found to negatively affect performance, participation, and incited anxiety
- Coping Strategies: found to have a positive relationship to outcomes
- Self-Efficacy: mixed evidence was found
- Pain Catastrophizing: largest impact on fractures; defined as an exaggerated negative mental state during an actual or anticipated painful experience that can result in a heightened intensity of pain experienced
- Patients with depression, anxiety, pain, neuroticism, pain, and/or catastrophization were found to have negative impacts on functional outcome measurements
- Overall: demonstrates variety of psychosocial factors that have been reported to influence functional outcomes in a multitude of traumatic upper extremity injuries

Overall Systematic Review Findings
- All injuries discussed identified psychosocial factors affecting the rehabilitative process and functional outcomes.
- All studies found depression to have a negative relationship with functional outcomes.
- Most frequently present psychosocial factors-- depression, anxiety, pain, and low self-efficacy
- Frequently used assessments-- Beck Depression Inventory, Visual Analogue Scale for Pain, Pain Catastrophizing Scale, Brief Cope Scale, Informal Interviewing and Observation
- Most commonly affected functional outcomes-- decreased likelihood to return to work, decreased participation in meaningful activities and self-care tasks, decreased independence in meaningful occupations and self-care tasks, increased experience of disability long-term.

Implications
Implications on Professional Practice:
- Address psychosocial factors throughout the entire process of OT service delivery
- Relationship of addressing psychosocial factors to value-based care
- Identify potential assessments to be utilized to evaluate psychosocial factors
- Psychosocial factors have the ability to negatively impact patient outcomes

Implications for Future Research:
- Studies of higher levels of evidence, such as randomized controlled trials.
- Studies including further statistical analyses for significance and effect size.
- Study designs involving a control and comparison group.
- Study designs that discuss and evaluate potential interventions.

Selected References


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