The Injury Resilience Index: Development and Psychometric Characteristics

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Introduction

- Approximately three million Americans sustain traumatic physical injuries each year that require inpatient hospitalization, while nearly 28 million Americans are treated in emergency departments due to traumatic physical injuries.1
- While a subset of those injured will develop acute and chronic psychological distress symptomatology, others are more resilient to the negative emotional sequelae that can accompany traumatic events.3

Resilience Defined

- Psychological resilience is a multidimensional concept characterized by one’s ability to “bounce back” or recover from negative or traumatic life experiences, avoid the impact of trauma, and/or reconfigure one’s self to become stronger in the face of future adversity.5
- Emerging from the physiological stress and psychological coping literatures, the concept of resilience has been characterized as a cluster of traits, states, a process or even an outcome.6 Most research to date has focused on the dispositional aspects of resilience.4

Measuring Resilience

- Often challenging to measure, resilience has traditionally been operationalized through associated concepts such as optimism, cognitive flexibility, hardiness, social support/resources and mastery (e.g., coping self-efficacy).5
- Our review revealed five different self-report instruments that have been developed to measure resilience with adults:
  - Barlow Protective Factors Inventory7
  - Connor-Davidson Resilience Scale8
  - Resilience Scale for Adults9
  - Brief Resilient Coping Scale10
  - Resilience Scale11

- Limitations of these measures have been reported in a recent systematic review12 to include: the need for additional psychometric investigations, lack of administration/scoring procedures,13 questionable reliability and generalizability13 and gender biased item development.12
- To date, no self report measure of resilience has been developed and tested specifically for adults who have sustained a traumatic physical injury. In order to fill this gap, we developed and tested the Injury Resilience Index—a brief factor-analytically derived, retrospective, self-report instrument.

Purpose of Study

In a sample of hospitalized, physically injured patients:
1. Examine the factor structure and internal consistency of the Injury Resilience Index;
2. Examine the convergent validity of the Injury Resilience Index with outside instruments measuring constructs expected to converge in (either a positive or inverse) manner.

Methods

Item Development: The IRI was post developed through qualitative analysis of patient comments derived from clinical field notes, expert input/review and comprehensive literature search. IR items were measured on a 5-point Likert-type scale: Response options ranged from “not at all” to “very much.”

Participants: A total of 168 participants were consecutively recruited on an ongoing basis from the hand, multiple trauma and burn services at a large Southeastern level-1 trauma center to complete the experimental version of the Injury Resilience Index (IRI) and external measures used to examine IRI validity. Within the first few days of admission or when a patient was cognitively capable as determined by their attending physician (average of eight days), a trained graduate level research assistant approached eligible participants (18 years, English speaking and admitted to the hand, multiple trauma or burn service for a traumatic injury, cognitively intact). Study approved by university IRB.

*Note: n = 168 (86 females; 82 males)

• Age: 16-65 years (28 = 35.1 years)
• Ethnicity: Caucasian = 55%, African American = 33%, Hispanic =
• Education: High School = 18%; High School = 32%; High School = 46%

Validity Measures

- In a sample of 168 physically injured patients, the IRI demonstrated potential to be used as a brief screening and identification tool for treatment and resource planning following traumatic physical injury, as well as an outcome measure following resilience-promoting psychosocial interventions.

Results

- Statistically significant positive correlations between IRI scales and validity instruments measuring some of resilience constructs (see Table 3).
- Unlike its original tripartite conceptual definition, hardiness was comprised of control and commitment items, while challenge items (e.g., anticipated growth) extracted into a distinct factor.
- Statistically significant inverse correlations between IRI scales and measures of injury related distress (see Table 3).

Conclusions

- Strong preliminary support for the internal consistency and construct validity of the Injury Resilience Index.
- IRI demonstrates potential to be used as a brief screening and identification tool for treatment and resource planning following traumatic physical injury, as well as an outcome measure following resilience-promoting psychosocial interventions.