

**Development of a Trauma Resiliency Scale (TRS-18)**

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**Purpose:** Resiliency consists of 3 core components, which include the presence of adversity, protective factors to overcome adversity, and positive outcomes or growth. Therefore, resiliency closely aligns with the trauma recovery process. Within this study, we aim to develop the Trauma Resiliency Scale (TRS) to quantify the resiliency of trauma patients upon presentation and during recovery. We assess construct validity, face validity, and reliability of the new scale.

**Methods:** Scale items were proposed by a panel of orthopaedic surgeons, trauma recovery counselors, researchers, and a biostatistician also participated. Group construct validity testing utilized individual and focus group feedback with trauma patient survivors and with trauma care providers. Item analysis was performed, guiding revisions as necessary. Reliability was measured with test-retest assessment administered 14 days apart using intraclass correlation coefficient (ICC).

**Results:** 123 items were proposed and categorized. The development team then grouped the questions into common themes, eliminating redundancy, and creating a preliminary 17-item questionnaire. The questionnaire was administered to 40 individual participants and a trauma survivor focus group to evaluate construct validity. Based on participant feedback, 8 items were re-worded, and 1 item was added. Following group construct testing, an 18-item Trauma Resiliency Scale (TRS-18) was proposed. 24 participants were given the TRS-18 twice, 14 days apart to establish test-retest reliability. 16 of the 18 questions had an ICC >0.7 (0.793-0.949). The remaining 2 questions underperformed based on ICC (0.592 and 0.493) and were manually evaluated for inclusion. For those 2 questions, responses did not deviate more than 1 point value and were random in direction; thus, these were elected to remain within the scale.

**Conclusion:** The TRS-18 has the ability to quantify resiliency with potential to be predictive of clinical outcomes and progress during the recovery process. Future studies will continue to assess the statistical rigor of the scale among a large cohort of trauma patients both acutely and at follow-up. Currently the scale is being validated against previously used instruments. In conclusion, the TRS-18 is a brief, self-administered measure of resiliency designed specifically for trauma patients with sound psychometric properties including face validity, construct validity, and reliability of the instrument.