

### 73 Associations Between Pre-burn Occupation Type and Employment Outcomes at One Year

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**Introduction:** Reintegration into the workforce after burn injury is an important issue for survivors. In a 2012 systematic review, 28% of burn survivors never returned to any form of employment. Although pre-burn employment status is strongly associated with post-burn employment, there are little data on the role of pre-injury occupation type on workplace reintegration. The aim of this project was to assess the impact of occupation type on employment outcomes after burn injury.

**Methods:** Data from the National Institute on Disability, Independent Living, and Rehabilitation Research Burn Model System National Longitudinal Database from 2015 to 2021 were used to investigate the association between occupation type and employment outcomes. Occupation type was classified into two groups, Labor and Non-labor, using the U.S. Bureau of Labor Statistics Standard Occupational Classification System. Demographic and clinical data were compared between groups. Mixed regression analyses examined associations between pre-burn occupation type and post-burn employment outcomes (employment at 1 year, days to return to work), controlling for age, gender, race, ethnicity, pre-injury employment, and burn size.

**Results:** Of the 600 patients who were employed pre-injury, 247 (41%) identified with a non-labor occupation and 353 (59%) with labor occupations. The Labor group was more male (82% vs. 61%) and Hispanic (23% vs. 6%), younger (mean age 42.1 vs. 48.3 years), less educated (high school or less, 25% vs. 11%) and more likely to have been injured at work (28% vs. 14%) compared to the Non-labor group ( $p < 0.001$  for all comparisons). Changes in occupation were seen from pre-injury to post-injury; 16% of working survivors changed from Non-labor to Labor and 13% from Labor to Non-labor occupation types. For those who did return to work after injury, the average time to return to work was greater for Labor compared to the Non-labor group (150 vs 100 days;  $p = 0.003$ ). Additionally, those in the pre-injury Labor group were less likely to be employed at 12 months compared to the Non-labor group (odds ratio = 0.41;  $p = 0.009$ ).

**Conclusions:** Pre-injury occupation type is associated with employment outcomes after injury. Therefore, occupation type can be used to inform vocational reintegration resources, such as vocational rehabilitation programs, to optimize survivor outcomes.

### 74 The Association Between Burn Injury and Peer Relations: A preschool-libre1-5 Study

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**Introduction:** Children ages one to five years old are naturally curious and build their personality and social skills through interactions with others. Positive peer relations are especially important after a burn injury as bullying and peer rejection can delay development of social skills. This study assessed the association between burn injuries and burn survivors' ability to connect with and maintain peer relations in this age group using the Preschool-LIBRE<sub>1-5</sub> (Life Impact Burn Recovery Evaluation).

**Methods:** The Preschool-LIBRE<sub>1-5</sub> was field-tested with 426 parents of burn survivors. Each item was scored on a 5-point Likert scale ranging from 0 (never) to 4 (always). Data was recoded for selected items such that higher scores denote better functioning. Classic test theory methods were used to assess the peer relation items from a social functioning domain. Individual items and mean scores in the domain were examined. Multiple linear regression analyses (controlling for gender, race and ethnicity, pain severity, burn injury to critical area, burn size, and age at survey completion) measured the association between demographic and clinical characteristics and calculated a peer relation score based on multiple imputation samples.

**Results:** The mean age was  $3.06 \pm 1.41$  years, mean time since injury of  $1.16 \pm 1.34$  years, mean total body surface area (TBSA%) of  $4.21 \pm 7.92$ , and 55.16% male and 74.18% white. Items from peer relations item pool ( $n = 15$ ) were identified as a unidimensional scale ( $\alpha = 0.92$ , item-total correlations for all 15 items  $> 0.4$ , ratio of the 1st and 2nd eigenvalues  $(8.729/1.287 = 6.78) = > 4$ ). The mean peer relation score was  $2.86 \pm 0.76$ . The two items with the lowest and highest score were "My child would ask for things nicely when playing with other children" ( $\bar{x} = 2.09$ ) and "My child liked to play near and be with family members and friends

( $\bar{x} = 3.59$ ) respectively. Results indicated that age was a significant predictor, such that older age at survey completion was significantly associated with higher peer relation score ( $\beta = 0.16$ ,  $p < 0.0001$ ). With each year of age increase, peer relationship score increased by  $0.16 + 0.21$  points.

**Conclusions:** Preschool-aged burn survivors, as reported by parents, often had the ability to connect with peers through imitation and participating in play activities, and maintained peer relationships well. These findings emphasize the importance of promoting early interventions that build social skills, allowing for positive interactions with peers and improving social functioning in the long-term.

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## 75 Patient Reported Outcome Measures Associated with Burn Severity

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**Introduction:** Burns continue to be a leading cause of unintentional injury sustained by children. The lasting effects of burn treatment on pediatric patients' quality of life are still poorly understood. Patient-Reported Outcomes Measurement Information System (PROMIS) is a reliable tool that evaluates a patient's physical, mental, and social health. To measure the impact of burn injuries on quality of life, we integrated the use of PROMIS into our outpatient clinic. Our aim for this study is to determine the effects of patient demographics, burn treatment, and burn characteristics on PROMIS scores.

**Methods:** A retrospective review of patient and PROMIS data collected at our institution from June 2016 to August 2019 was conducted. Patient demographics, burn injury characteristics, PROMIS Pediatric Mobility, Upper Extremity, Pain Interference, and Peer Relationships scores were collected. Statistical analysis was conducted using Wilcoxon Two-Sample Test, Chi-Square, and Pearson's Correlation Coefficient.

**Results:** 163 pediatric burn patients completed PROMIS questionnaires. The median injury age was 5.94 years (interquartile range (IQR)= 6.9) and had a median total body surface area of 15% (IQR = 25.5). Individual burn characteristics did not impact Peer Relationships scores; however, they did have a significant effect on Upper Extremity, Mobility, and to a lesser extent, Pain Interference scores. Older injury age ( $-0.24$ ,  $p = 0.02$ ), longer length of stay ( $-0.25$ ,  $p = 0.02$ ), larger total body surface area ( $-0.27$ ,  $p = 0.009$ ), and more operating room visits ( $-0.28$ ,  $p = 0.006$ ), were associated with worse Upper Extremity scores. Similarly, older injury age ( $-0.2$ ,  $p = 0.04$ ), longer length of stay ( $-0.25$ ,  $p = 0.01$ ), more days in the intensive care unit ( $-0.24$ ,  $p = 0.01$ ), and more operating room visits ( $-0.26$ ,  $p = 0.01$ ) impacted Mobility scores. Worse Pain Interference scores were correlated with longer length of stay ( $0.24$ ,  $p=0.01$ ), and larger total body surface area ( $0.19$ ,  $p=0.05$ ). Upper Extremity scores correlated with Mobility scores ( $0.60$ ,  $p < 0.0001$ ); Pain Interference ( $-0.23$ ,  $p < 0.02$ ) and Upper Extremity ( $0.3$ ,  $p < 0.003$ ) scores correlated with Peer Relationships scores; and Upper Extremity ( $-0.48$ ,  $p < 0.0001$ ) and Mobility ( $-0.42$ ,  $p < 0.0001$ ) scores correlated with Pain Interference scores.

**Conclusions:** Peer Relationships scores are not influenced by patient demographics or burn characteristics. This is in contrast with Upper Extremity, Mobility, and Pain Interference scores which are all directly affected by burn characteristics. The patients' impression of their upper extremity function has the greatest impact on their perceived pain, peer relationships, and mobility.