

NIDRR Model Systems for Burn Injury Rehabilitation

Adult Facts, Figures and Selected Outcomes

University of Washington, University of Texas Southwestern, Johns Hopkins University, Galveston Shriners Burns Hospital
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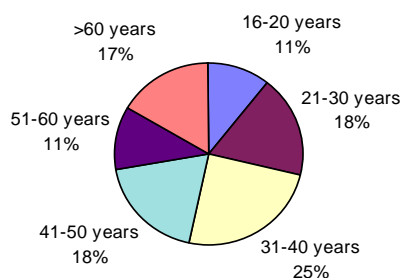
Since May of 1994, five burn centers have participated as Model Systems for Burn Injury Rehabilitation funded by the National Institute of Disability and Rehabilitation Research (NIDRR) in the Department of Education. Four Model Systems are currently collecting data, and the University of Colorado Health Sciences Center contributed data from 1994 to 1997. Each center collects data on both adults and children, although the largest contributor of subjects under 16 is the Galveston Shriners Burn Hospital. Data presented here were collected through **January 2005** and **include 3046 adult patients** who visited one of the four current Burn Model Systems clinical centers. To be eligible for the study, Model Systems patients must consent to follow-up for at least two years, and must meet the American Burn Association criteria for treatment at a Burn Center.

Demographics

Age

Of the total combined burn population, 66% are adults (16 and older), and 34% are children (under 16). The mean age at injury for adult subjects (16 and older) is 43 years.

Figure 1: Age at Injury



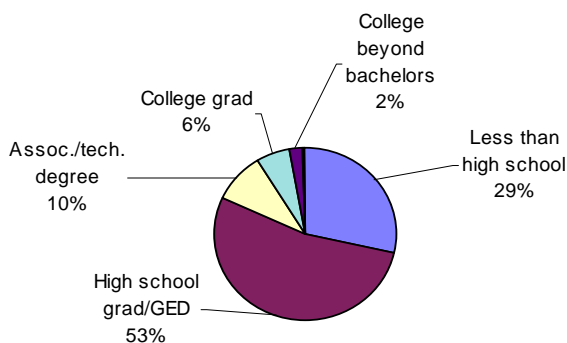
Gender

Seventy-five percent of all adult subjects in the Model Systems are male.

Education Level

The distribution of highest level of education attained is shown in Figure 2 below.

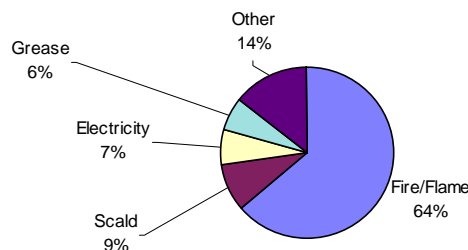
Figure 2: Education Level



Primary Etiology of Injury

A chart displaying the most common burn etiologies is shown in Figure 3. The 'Other' category in the figure consists of flash burns (4.5%), contact burns (3.6%), tar burns (1.6%), chemical burns (2.3%), skin disease (1.7%), and other causes (<1%).

Figure 3: Primary Etiology of Burn Injury



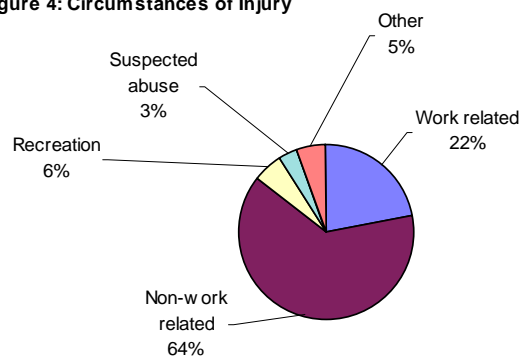
Alcohol or Drug Use at Time of Injury

Some burn injuries are associated with substance abuse. For 55% of the adult Model Systems patients, alcohol and/or drug tests were conducted upon admission. Thirty-two percent of those tested were positive for either drugs, alcohol or both. Of those tested for alcohol, 21% were positive and of those tested for drugs, 19% were positive.

Circumstances

Patients whose injuries were classified as 'non-work related' made up the majority of the adult subjects. Percentages are shown below in Figure 4.

Figure 4: Circumstances of Injury



Severity of Injury

When measuring the severity of a burn injury, one needs to consider factors such as total body surface area burned (TBSA), whether or not skin grafting was required, and whether the patient suffered an inhalation injury. The mean TBSA for all adult patients is 22%, and of all burn etiologies, skin disease had the highest mean TBSA (43%). Table 1 lists the mean and standard deviation for TBSA by burn etiology. Seventy-four percent of adult patients required grafting on some area of their body (this calculation excludes patients surviving fewer than 3 days). Burn patients sustaining inhalation injuries have a significantly reduced chance of survival than those without inhalation injury. Fifteen percent

of the adult Model Systems patients suffered an inhalation injury.

Table 1: Total Body Surface Area Burned (TBSA)

	Mean	Standard Dev.
All burns	22%	20
Skin Disease	43%	33
Fire/Flame	27%	20
Flash	23%	15
Scald	16%	16
Chemical	16%	15
Abrasion	13%	13
Electricity	12%	13
Grease	10%	9
Tar	9%	8
Contact with Hot Object	6%	8
Frostbite/Cold	6%	2
Other	10%	14

Health Status (as measured by the SF-36)

The SF-36 measures quality of life/health status and includes composite scores reflecting physical and psychosocial health and function. Higher scores indicate greater health and functioning. The SF-36 is a widely used generic measure of health-related quality of life in medical settings and has excellent psychometric properties. The SF-36 is administered to Model System patients at discharge (includes a form to measure their health status pre-injury), 6, 12, and 24 months post burn injury. Figures 5 and 6 show summary scores for the mental and physical components by TBSA for each collection point.

Following is an abstract published in the Journal of Burn Care and Rehabilitation (2005; 26:21-32):

This prospective, longitudinal study examined the influence of baseline physical and psychological burden on serial assessments of health-related quality of life among adults with major burns from three regional burn centers (n=162). Physical burden groups were defined by %TBSA burned: <10%, 10% to 30%, or >30%. Psychological burden groups were defined by in-hospital distress using the Brief Symptom Inventory Global Severity Index T-score with scores of <63 or =63. Analyses compared groups across level of burden and during the month before burn, at discharge, and at 6 and 12 months after burn. Physical functioning was significantly more impaired and the rate of physical recovery slower among those with either large physical burden or large psychosocial burden. Notable, psychosocial functioning also was more impaired and the rate of psychosocial recovery slower among those with greater psychological burden. These results suggest that, in addition to aggressive wound closure, interventions that reduce in-hospital distress may accelerate both physical and psychosocial recovery.

Figure 5: SF36 Mental Component by TBSA

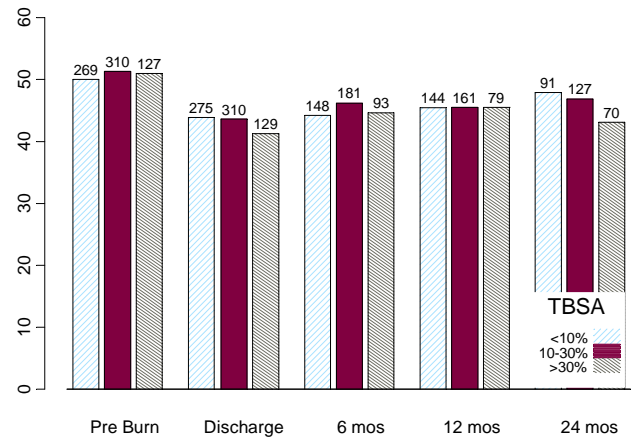
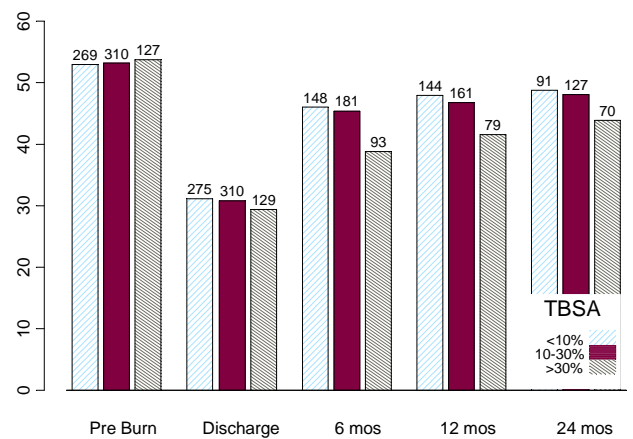


Figure 6: SF36 Physical Component by TBSA



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