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The Impact of Burn Size on Community Participation: A Life Impact Burn Recovery Evaluation (LIBRE) Study

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Abstract

Objective: To assess the association of burn size and community participation as measured by the LIBRE Profile.

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Our manuscript includes ten authors. Each of the ten authors contributed substantially to the production of this manuscript. CMR, JJ, WH, MM, JG, LK, and JS made significant contributions to the acquisition of data and the study conception and design. GS, LK, and JS performed and/or guided the data analysis. GS, LK, JS, CAR, CG, and CMR assisted with the data interpretation and writing the results section of the manuscript. CMR, CG, MM, and GS wrote the first draft of the manuscript. CAR, LK, JS, JJ, WH and JG made significant contributions to the working manuscript, preparing the first draft for final submission. CMR, GS, CAR, CG, JJ, WH, MM, JG, LK, and JS all reviewed the final manuscript in depth and provided input as well as approved the manuscript for submission.

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Summary Background Data: Burn size is an established clinical predictor of survival following burn injury. It is often a factor in guiding decisions surrounding early medical interventions, however, literature is inconclusive on its relationship to quality of life outcomes.

Methods: This is a secondary data analysis of a cross-sectional survey of adult burn survivors. Self-reported data were collected between October 2014 and December 2015 from 601 burn survivors aged 18 years with 5% total body surface area (TBSA) or burns to critical areas. Sociodemographic characteristics were compared between participants with small burns (<40% TBSA burned) and large burns (>40% TBSA burned). Ordinary least squares regression models examined associations between burn size and LIBRE Profile scale scores with adjustments for gender, current work status, burns to critical areas, and time since burn injury.

Results: The analytic sample comprised 562 participants with data available for burn size. 42% of respondents had large burns (>40% TBSA burned) and 58% reported smaller burns (TBSA <40%). In adjusted regression models, patients with large burns tended to score lower on the Social Activities and Work & Employment scales ($p<0.05$) and higher on the Family & Friends scale ($p<0.05$). Participants with burns >40% TBSA scored lower for several individual items in the Social Activities scale and one item in the Work & Employment scale ($p<0.05$).

Conclusions: Increasing burn size was found to be negatively associated with selected items of Work & Employment, and Social Activities, but positively associated with aspects of Family & Friend Relationships. Future longitudinal studies are necessary to assess and understand the long-term social impact of burn injuries on adult populations.

Mini-Abstract

The Life Impact Burn Recovery Evaluation-Profile (LIBRE-Profile) was used to assess the association of burn size with long-term outcomes in 562 survivors. Most community participation scales were not associated with worse outcomes related to larger burns. However, Work & Employment, and Social Activities scales had negative associations with size of burn.

Keywords

LIBRE; Community Participation; Burn Size; Burns; Burn Injury

Introduction

Burn size is an established clinical predictor of survival and an essential factor in guiding decisions surrounding early medical interventions. However, less is known about its association with long-term outcomes of burn survivors. In severe cases with large burn size, an older patient¹, or with crisis standards of care in place², burn size can predict how and when certain therapies are initiated and affect decisions to initiate life-saving treatment.³⁻⁸ Before recent medical advancements, patients with burn injuries covering much of their body surface area were deemed rarely survivable. Due to therapeutic developments in the late 20th century including modern surgical critical care, nutritional care, and the advent of burn centers, the chance of survival after a severe burn has increased substantially.⁹ The result is a growing population of burn survivors whose long-term medical needs have not been well defined,^{1,10,11} making evident the need to assess patient reported outcomes

focused on function, adjustment, and community participation.^{13–15} Stakeholders making triage and resuscitation decisions, allocating resources, and advocating for patients need long-term patient-centered data in addition to clinical information on which to base their decisions, identify risk factors for poor outcomes, and guide interventions.

The Life Impact Burn Recovery Evaluation (LIBRE) Profile is a computer-based questionnaire that measures the impact of burn injuries on the social participation of survivors age 18 and above.^{16,17} This assessment tool was created based on the World Health Organization's International Classification of Functioning, Disability, and Health Framework¹⁸ with input from clinical experts and burn survivors.¹⁷ The conceptual framework was operationalized to create a 192-item survey, which was administered to 601 adult burn survivors for calibration and psychometric testing.¹⁶ The LIBRE Profile evaluates six scales of community participation, each representing important areas of social participation for this population.¹⁶

Although burn size is one of the most common characteristics assessed in the literature examining long-term outcomes¹⁹, findings remain inconclusive.^{19–26} In a prospective longitudinal study, Fauerbach et al.²⁷ found that at six and twelve months post-burn, increasing burn size was associated with more physical impairment but not with psychological distress. Another longitudinal study found that larger burn size was related to lower recovery levels of physical function and some psychosocial domains such as family in young adults followed for three years after their burn.²⁸ However, the authors did not find significant differences in the recovery trajectories of other areas such as romantic functioning. Other studies have found an association between burn size and reduction in physical function, but findings on the relationship between burn size and psychosocial domains remain uncertain.^{14,20–26} Given this gap in the literature and the importance of burn size in early burn care interventions, the following study aims to evaluate the association of burn size and community integration using the LIBRE Profile.

Methods

Study Design and Participants

This is a secondary analysis of a cross-sectional survey of adult burn survivors. The data were self-reported and collected as part of the field testing of the LIBRE Profile. Community-dwelling burn survivors were recruited between October 2014 and December 2015 through peer support groups, social media, burn clinics, the Phoenix Society for Burn Survivors, and the 2014 and 2015 Phoenix World Burn Congresses. Survivors aged 18 years and with injuries to \geq 5% total body surface area (TBSA) or burns to critical areas (hands, feet, face, or genitals) were included. Subjects were able to complete the LIBRE Survey without assistance by a proxy. If eligible to complete the survey, participants were asked further questions regarding work and employment, romantic relationships, and sexual relationships to determine which items in the LIBRE Profile questionnaire were applicable to that individual. Demographic variables included age at time of survey, gender, race/ethnicity, education level, and marital status. Clinical variables included TBSA burned, presence of burns to critical areas, and time since burn injury. When a TBSA burned range

was reported, the median value for that individual of the range was used for analysis. If a median was not attainable, the participant was assigned the nearest quintile.

Outcome Measures

After successful completion of a screening module, participants were administered the LIBRE-192, which contains 192 items used for field testing of the LIBRE Profile examining several areas of community participation after burn injury.^{16,17,29} The development of the 126-item LIBRE Profile from the LIBRE-192 has been described previously.¹⁶ Participants completed the LIBRE-192 in person, over the phone, or online. Individual items within each scale were on a 5-point Likert scale (1–5), with higher scores coded to denote better outcomes, 5 being the highest score. Specific items were reverse-coded as necessary. The final 126-item LIBRE Profile was previously validated using exploratory and confirmatory factor analyses and with IRT-based graded response models that derived 6 scales examining the following scales of community participation: Family & Friend, Social Interactions, Social Activities, Work & Employment, Romantic Relationships, and Sexual Relationships.¹⁶ Scale scores were standardized to a mean of 50 and a standard deviation of 10 based upon the entire sample of burn survivors.

Statistical Analysis

Sociodemographic and clinical characteristics were compared between participants with small (TBSA burned <40%) and large burns (TBSA burned >40%) using simple chi-square tests for categorical variables. Multivariable ordinary least squares regression models were run to estimate associations between TBSA burned by quintiles and LIBRE Profile scale scores with adjustments for gender, current work status, burns to critical areas, and time since burn injury. Scores on individual LIBRE Profile items were then compared between participants with burns <40% vs. >40% TBSA using t-tests in two ways: first, mean scores on each item were compared between the two groups; second, the percentage of participants scoring 1 or 2 vs. 3 or above on the 1–5 scale was compared for each item. Finally, adjusted multivariate regression models were run to estimate associations between TBSA burned by quintile and individual item scores on all items for which significant differences by burn size were observed using either of the two comparisons described above. A sensitivity analysis was conducted to determine differences between the included and excluded participants. Variance inflation factors were examined to assess collinearity between independent variables, and robustness of the parameter estimates was tested using bootstrap techniques. We assessed whether the point estimates and 95% confidence intervals of the regression coefficients remained stable across 200 bootstrap subsamples.

Ethical Approval

Human Studies Approval from the Boston University Medical Campus Institutional Review Board (Protocol H-32928) was obtained and all human subjects provided informed consent (oral for phone participants, written for self-administered participants) prior to participating in any research study activities.

Results

Of the 601 burn survivors who completed the LIBRE-192 assessment, 483 reported an exact TBSA burned, 76 reported a range from which the median value was used, and 3 reported a range from which a TBSA percentage quintile could be determined (e.g., <10%). This yielded an analytic sample of 562 participants (Figure 1). Included participants were less likely to have burns to critical areas compared to those who did not report TBSA (79.9% vs. 94.9%, $p=0.02$) but did not differ significantly on any other measured characteristics or mean LIBRE scale scores (data not shown in tables). The majority of included participants were white (79%) followed by African American (8%), Hispanic/Latino (7%), and other races/ethnicities (6%) (Table 1). The mean age of study participants was 44.5 years (standard deviation 16.0 years); slightly more than half of participants were women (55%), and slightly less than half were married (46%). Approximately 40% had a bachelor's degree or higher (42%), and over one half were currently employed (55%). A large majority reported burns to critical areas (80%). The time since burn injury was greater than 10 years for approximately half of the patients (46.8%) (Table 1).

In this study, 42% of patients had large burns (>40% TBSA). Of the patients with large burns, 89% had burns to critical areas, compared to 73% of patients with smaller burns ($p<0.05$; Table 1). Just under half (49%) of patients with large burns were currently working at the time of the survey, whereas 59% of patients with smaller burns were actively employed ($p<0.05$; Table 1). Approximately two-thirds of patients were sexually active (65% all participants) and in romantic relationships (65%). Education levels were also comparable between participants with large vs. small burns (Table 1).

In adjusted regression models, patients with large burns tended to score lower on the Social Activities and Work & Employment scales and higher on the Family & Friends scale (Table 2). In the comparison of individual item scores, participants with burns >40% TBSA tended to score lower for several items in the Social Activities scale regarding ability to be active or participate in family events (Tables 3 and 4), and for one item in the Work & Employment scale regarding employer satisfaction (Table 4). Participants with large burns tended to score higher for several items from the other four scales (Tables 3 and 4). Differences in individual item scores retained statistical significance in adjusted regression analyses for items in the Family & Friends, Social Activities, and Work & Employment scales, and for two items in the Sexual Relationships scale (“My partner is very sensitive to my needs,” and “I feel comfortable having my burns touched during sex”) (Table 5). All variance inflation factors were below 1.5, suggesting that collinearity was not a problem. The point estimates and 95% confidence intervals from bootstrap inferences assessing the relationship between burn size and outcomes remained stable throughout, supporting the robustness of the coefficients reported (data not shown).

Discussion

While prior literature has focused on factors that contribute to survival in patients with large burns, there is a paucity of quantitative data regarding social and community integration in association with burn severity. This study examined the relationship between burn size

and social outcomes in 562 burn survivors. Utilizing the LIBRE Profile,¹⁶ patients with large burns (defined as TBSA burned >40%) were directly compared to those with small burns (defined as TBSA burned ≤40%). The cross-sectional data showed that patients with large burns experienced worse recovery in specific outcomes within Work & Employment and Social Activities scale, but performed better than those with smaller burns in other scales including Family & Friends and Sexual Relationships. It is well established that burn size has severe implications for physical rehabilitation;²⁷ however, results of the present study suggest that in relation to community integration the effects may be multidirectional. Previous research has shown that individuals with burn injuries are able to make significant progress in recovery, but often do not reach pre-morbid levels.²¹ In patients with extensive injuries, burn-related health impairments can persist and impact all areas of life.²² For that reason, one publication suggests that burn injury evolves from an acute illness to a chronic condition.³⁰ Furthermore, it is estimated that approximately one-third of burn survivors experience moderate to severe difficulties with social integration.^{13,15} Burn size has widely been used as a guiding point for clinical interventions, yet a systematic review from 2018 found that only 29% of the identified studies reported a statistically significant inverse relationship between TBSA and health-related quality of life.¹⁹ In line with this finding, prior studies have indicated that burn size may be more strongly associated with physical outcomes than with community participation.^{27,28} In contrast, a recent study conducted by Kishawi et al.,³¹ using a total score from the Burn Specific Health Scale (BSHS), concluded that burn size was negatively associated with quality of life. However, Amtmann et al.³² studied the psychometric properties of the BSHS and found that a total score does not have a meaningful interpretation. Rather, the BSHS should be analyzed by individual domain scores. Therefore, it is problematic to draw conclusions based on a cumulative score. The present study builds on the literature to date by assessing burn size in relation to the specific domains of the LIBRE Profile.

Patients in the present study with large burns did better in the Family & Friends scale and for several items within the Sexual Relationships scale. Patients with large burns had better outcomes when asked about spending time alone versus with the family, keeping friends, having friends help them get out of the house, and feeling that family members are comfortable in their presence. Returning to a pre-burn social life can be challenging for burn survivors.¹⁵ Post-traumatic growth (PTG), resiliency, and coping adaptation skills may contribute to the study findings in which patients with large burns scored better than those with small burns. Post-traumatic growth, or experiencing positive psychological change as a result of trauma,³³ has been reported in survivors of large burn injuries.^{33,34} One study identified a positive association between burn size and PTG.³⁴ Additionally, Martin et al. found that a key component of PTG for burn survivors is personal growth due to the ‘sink or swim’ nature of the challenging rehabilitation process.³³ For PTG to occur, the burn must be severe enough to disturb everyday life, which may explain why individuals with large burns scored better on certain scales.³⁴ One study assessing the long-term impact of facial burn injuries on recovery found that in both the group with facial burns and the group without facial burns, differences in psychosocial recovery gradually diminished over time and simultaneously improved.³⁵ Those results speak to the presence and importance of resiliency within the burn survivor community. Although patients with large burns are

likely to experience more significant physical impairment, this may explain why patients with large burns scored better on a number of social recovery items in comparison to those with smaller burns.

Within the Sexual Relationships scale, patients with large burns scored better on several items. The results of the present study suggest an association, albeit weak, between burn size and sexual relationships post-burn. The importance of engaging in sexual relationships during recovery has been studied previously^{36,37} and has been established as an important aspect of community participation and psychological rehabilitation.³⁸ Ohrtman et al. found that concerning sexual activity, the burn survivor population does not differ significantly in comparison to a non-burn adult population.³⁸ These results may be explained by a reported increased closeness and connectedness with their partners post-burn³⁸, in addition to the centrality of relationships in PTG and resiliency.³⁴

This study also identified items in which patients with large burns had worse scores when compared to those with small burns. Within the Work & Employment scale, those with large burns were less likely to be employed and reported concerns about their employer's confidence in their ability to do their work ($p < 0.01$). Barriers impacting employment after burn injury have been studied previously. The most common barriers are pain,^{39,40} neurologic problems,⁴¹ impaired mobility,⁴¹ severity of the burn,^{28,42} psychiatric issues,⁴¹ psychosocial factors,⁴³ and working conditions.^{39,43} Schneider et al. found that pain was the most frequent barrier to returning to work at all time periods among burn survivors.⁴¹ Dyster-Aas et al.⁴⁰ found that unemployment was associated with poorer outcomes in both psychosocial and physical domains of the Burn Specific Health Scale, including body image and interpersonal relationships. In addition, patients experiencing social stigma⁴⁴ from employers or colleagues may face additional barriers in returning to work. A systematic review found that only 37% of burn survivors return to work with the same employer without accommodations.⁴⁵ Because the primary goal of rehabilitation after burn injury is integration into society, employment status is an important surrogate outcome measure of functional recovery. As prior literature has primarily examined barriers to returning to work, the present study fills a gap by providing insight into functioning at work. Findings show that patients with large burns have worse outcomes in the scale of Work & Employment, pointing to the need for dedicated employment counseling and advocacy for this patient population throughout their recovery.

Patients with large burns also reported worse outcomes in the Social Activities scale. These patients felt restricted in what they could do for their families, were limited in attending community events, and reported disappointment because their burns limited activities with friends. These findings are important as social interactions and activities are essential components of social recovery.¹³⁻¹⁵ Although physical limitations may contribute to lower social participation scores,²⁸ psychological challenges have also been found to interfere with social participation.¹⁵ For example, Ryan et al. found that poor perceived appearance was a contributing factor in social functioning among young adult burn survivors.²⁸ For this reason, the identification of specific social barriers should be a priority for clinicians and patients in the rehabilitation process.

As the focus of burn care begins to shift beyond mortality and towards quality of life, considerations for long-term patient recovery must be comprehensively understood. Measurement tools such as the LIBRE Profile have the potential to support both clinicians and patients of all ages during recovery. Individual burn survivor scale scores on the LIBRE Profile are valuable to ensure the patient that they are recovering as expected and provide opportunities for the clinician to offer additional support in specific areas, such as psychiatric care,²⁷ peer support,⁴⁶ and psychosocial²⁸ interventions to assist patients with the social integration process.

Limitations

There are several limitations to this study. First, while the study reports associations between burn size and perceived gains in integration, causal relationships cannot be asserted. Because many study participants were recruited from the Phoenix Society SOARS program (Survivors Offering Assistance in Recovery)⁴⁸ and the World Burn Congress,⁴⁹ the study sample may represent a self-selected group of individuals with attributes contributing to better adjustment and positive social supports, and thus may be subject to selection bias. Second, there is a higher percentage of females in this study sample than in the National Burn Registry¹¹, which may result in limiting the generalizability of results. Third, the participants with significantly large TBSA burn injuries tended to be farther out in time from their injuries. These individuals may thus represent a group that has had a longer time to try different support and coping styles that may improve overall adjustment. However, the study sample does represent a diverse population of burn survivors across all ages, races, and education levels. Fourth, the magnitude of the observed associations was small (less than 1.5 points or 15% of a standard deviation for scale scores, and less than .25 points on a 1–5 scale for individual items). However, while the associations are small yet significant, they do suggest that small differences may be important and require further study. Lastly, the data in this study was collected five years ago. However, the results of this study continue to be clinically relevant as they were when the data was first collected.

Conclusion

This cross-sectional study, utilizing the LIBRE Profile, aimed to characterize the relationship between burn size and social and community participation in a cohort of 562 adult burn patients. Larger burn size was found to be negatively associated with aspects of Work & Employment and Social Activities, but positively associated with items within Family & Friend relationships and sexual relationships. Notably, patients experienced impairment with community participation regardless of burn size. This suggests that the relationship between burn size and psychosocial functioning may be more complex than that for physical functioning. Measuring and understanding the impact of burn injuries on social recovery and outcomes expanding beyond survival has important implications to assist clinicians in making critical medical decisions. Future longitudinal and qualitative studies are needed to assess and understand the social impact of burn injuries on adult populations.

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Conflicts of Interest and Sources of Funding:

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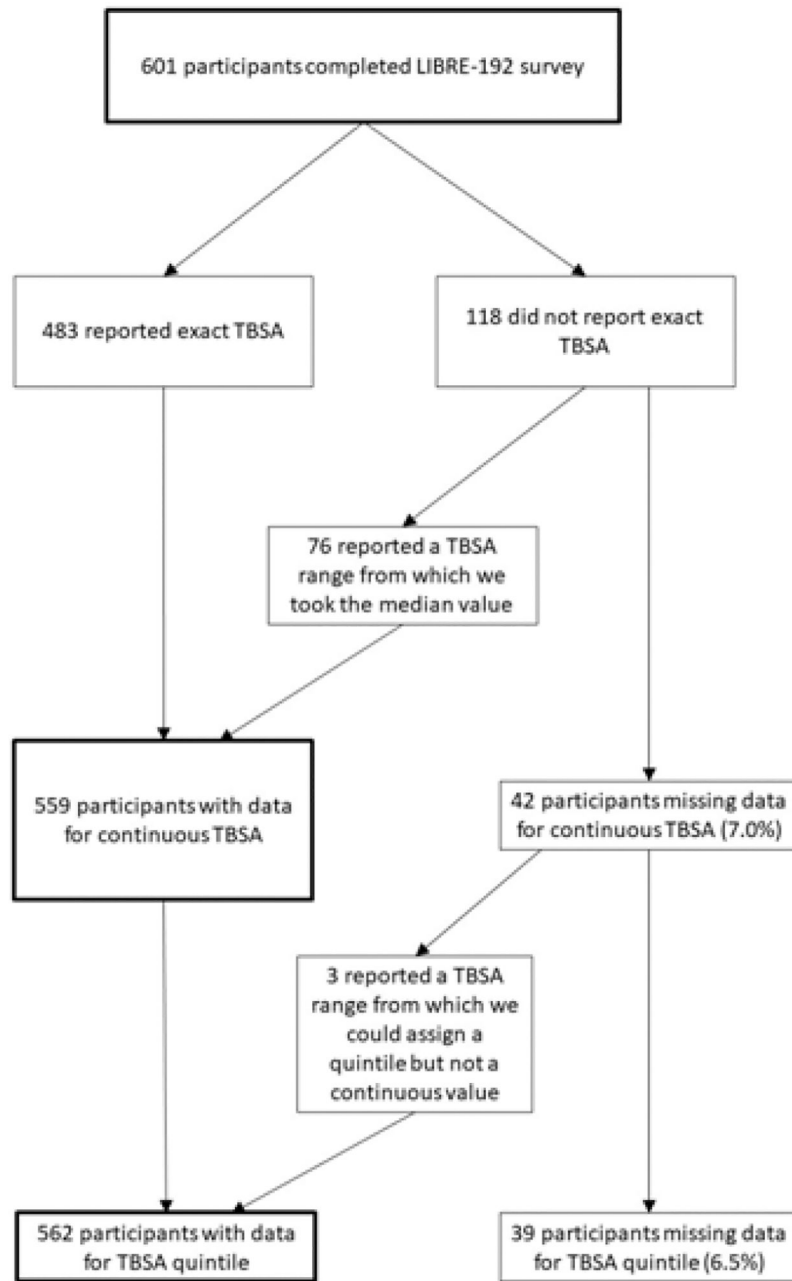


Figure 1:
Sample Derivation for Total Body Surface Area (TBSA) Burned

Table 1:

Demographic and clinical characteristics by Total Body Surface Area (TBSA) burned

Variable	Value	All participants	TBSA Burned 40%	TBSA Burned >40%
All participants		562 (100.0)	328 (100.0)	234 (100.0)
Age at time of survey	30	148 (26.4)	90 (27.5)	58 (24.8)
	31–50	194 (34.6)	115 (35.2)	79 (33.8)
	51–65	170 (30.3)	91 (27.8)	79 (33.8)
	>65	49 (8.7)	31 (9.5)	18 (7.7)
Gender *	Female	309 (55.1)	189 (57.6)	120 (51.5)
	Male	252 (44.9)	139 (42.4)	113 (48.5)
Race/ethnicity	White non-Hispanic	442 (79.4)	267 (82.2)	175 (75.4)
	Black or African-American	46 (8.3)	24 (7.4)	22 (9.5)
	Hispanic/Latino	38 (6.8)	18 (5.5)	20 (8.6)
	Other ^a	31 (5.6)	16 (4.9)	15 (6.5)
Education level	High school or less	228 (40.9)	123 (38.0)	105 (44.9)
	Technical/trade training or associate's degree	96 (17.2)	56 (17.3)	40 (17.1)
	Bachelor's degree	156 (28.0)	100 (30.9)	56 (23.9)
	Graduate/professional/advanced degree	78 (14.0)	45 (13.9)	33 (14.1)
Marital status	Married/live with significant other	257 (46.0)	142 (43.7)	115 (49.2)
	Single/divorced/widowed/separated	302 (54.0)	183 (56.3)	119 (50.9)
Current work status *	Working	306 (54.8)	191 (59.0)	115 (49.2)
	Not working	176 (31.5)	89 (27.5)	87 (37.2)
	Other	76 (13.6)	44 (13.6)	32 (13.7)
In a romantic relationship	Yes	364 (64.8)	210 (64.0)	154 (65.8)
	No	198 (35.2)	118 (36.0)	80 (34.2)
Sexually active	Yes	365 (65.0)	215 (65.6)	150 (64.1)
	No	197 (35.1)	113 (34.5)	84 (35.9)
Burns to critical areas *	Yes	449 (79.9)	240 (73.2)	209 (89.3)
	No	113 (20.1)	88 (26.8)	25 (10.7)
Time since burn injury *	<3 Years	143 (25.4)	108 (32.9)	35 (15.0)
	3–10 Years	156 (27.8)	98 (29.9)	58 (24.8)
	>10 Years	263 (46.8)	122 (37.2)	141 (60.3)

^aOther race/ethnicity includes Asian (N = 6), American Indian or Alaskan Native (4), Native Hawaiian or Pacific Islander (2), Multiracial (16), and other reported race/ethnicity (3).

* indicates variables for which mean burn size differed significantly by stratum (p<.05)

Table 2:

Adjusted regression analyses between Total Body Surface Area (TBSA) burned quintile and LIBRE Profile scale scores

Scale	N	B	95% CI	p-value
Sexual Relationships	387	0.29	-0.74, 1.32	0.58
Family & Friends	551	0.90	0.12, 1.67	0.02
Social Interactions	550	0.04	-0.68, 0.75	0.92
Social Activities	550	-1.09	-1.82, -0.37	0.01
Work & Employment	297	-1.30	-2.26, -0.34	0.01
Romantic Relationships	359	0.41	-0.54, 1.37	0.39

Models are adjusted for gender, current work status, burns to critical areas, and time since burn injury. Highlighting indicates scales for which participants with large burns did worse than those with small burns.

Table 3:

Mean score on individual LIBRE Profile items, stratified by burn size, items with significant differences between participants with Total Body Surface Area (TBSA) Burned 40% vs. >40%

Item	TBSA Burned 40%	TBSA Burned >40%	p-value
Family & Friends			
Q95 I would rather be alone than with my family	3.75	3.96	0.03
Q1017 I have trouble keeping friends	3.97	4.16	0.04
Social Interactions			
Q613 I avoid doing things that might call attention to my burns	3.38	3.62	0.04
Q621 I don't worry about other people's attitudes towards me	3.43	3.68	0.02
Social Activities			
Q57 My burns limit me being active	3.96	3.64	0.01
Q913 I am limited in what I can do for my family	3.86	3.48	0.01
Q1010 I am upset that my burns limit what I can do with friends	4.11	3.83	0.01
Q53 I am able to go to all the community events that are important to me	4.46	4.23	0.01
Q91 I am able to do all of my regular family activities	4.29	4.09	0.02
Romantic Relationships			
Q77 I am afraid to share with my partner what I dislike about myself	3.41	3.70	0.03
Q107 I talk openly with friends	4.08	4.17	0.01
Q72 How often do you and your partner do things together?	4.13	4.21	0.03
Sexual Relationships			
Q734 I do not want sex when my partner does	3.69	3.96	0.02
Q816 I am satisfied with the amount of emotional closeness during sexual activity	3.78	4.02	0.03
Q817 My partner is very sensitive to my sex needs	3.58	3.96	0.01
Q821 I feel comfortable having my burns touched during sex	3.48	3.91	0.01

Highlighting indicates items for which participants with large burns did worse than those with small burns.

Table 4:

Percentage of participants with low scores (1 or 2 on the 1–5 scale) on individual LIBRE Profile items, stratified by burn size, items with significant differences between participants with Total Body Surface Area (TBSA) burned 40% vs. >40%

Item	TBSA Burned 40%	TBSA Burned >40%	p-value
Family & Friends			
Q1017 I have trouble keeping friends	11.7	6.5	0.04
Q920 Most family members are comfortable being with me	7.1	3.0	0.04
Q1030 My friends have helped me get out of the house	13.2	6.8	0.02
Social Interactions			
Q621 I don't worry about other people's attitudes towards me	29.1	19.7	0.01
Social Activities			
Q913 I am limited in what I can do for my family	20.7	31.5	0.01
Romantic Relationships			
Q724 I shy away from being close to my partner	12.4	8.8	0.02
Q107 I talk openly with friends	7.6	5.2	0.01
Sexual Relationships			
Q816 I am satisfied with the amount of emotional closeness during sexual activity	16.7	7.0	0.01
Q821 I feel comfortable having my burns touched during sex	26.2	12.5	0.01
Work & Employment			
Q410 My boss feels I can do my work	2.2	3.8	0.02

Highlighting indicates items for which participants with large burns did worse than those with small burns.

Table 5:

Adjusted regression analyses between Total Body Surface Area (TBSA) burned quintile and individual item scores, items where mean score or percentage of participants with low scores (1 or 2 on the 1–5 scale) differed significantly for those with burns 40% vs. >40% TBSA burned. Adjusted models include gender, current work status, burns to critical areas, and time since burn injury.

Item	B	95% CI	p-value
Family & Friends			
Q95 I would rather be alone than with my family	0.12	0.03, 0.20	0.01
Q920 Most family members are comfortable being with me	0.08	0.01, 0.15	0.02
Q1017 I have trouble keeping friends	0.10	0.02, 0.18	0.01
Q1030 My friends have helped me get out of the house	0.11	0.03, 0.19	0.01
Social Interactions			
Q613 I avoid doing things that might call attention to my burns	0.06	-0.04, 0.16	0.25
Q621 I don't worry about other people's attitudes towards me	0.08	-0.01, 0.17	0.09

Highlighting indicates items for which participants with large burns did worse than those with small burns.