

# Evaluation of Kinesiophobia in Survivors of Major Burn Injury

## Background

- Significant metabolic stress with loss of aerobic capacity and muscle mass is a frequent finding in patients with a major burn injury
- Studies show that burn survivors can benefit tremendously from physical activities
- Many patients report reluctance to engage in unsupervised exercise because of concerns of pain, physical incapacity, and intolerance to extreme temperatures.

## Objective

- To investigate the level of *kinesiophobia*, the fear of movement and re-injury, among survivors of burn injury, and observe any significant differences based on demographic and injury characteristics.

## Method

### Study Design

- Single site, cross-sectional descriptive study (n=36).

### Participants

- Major burn injuries defined by American Burn Association Guideline
- 18 years or older and at least 3 months post burn injury at time of study
- Without major physical incapacities to exercise

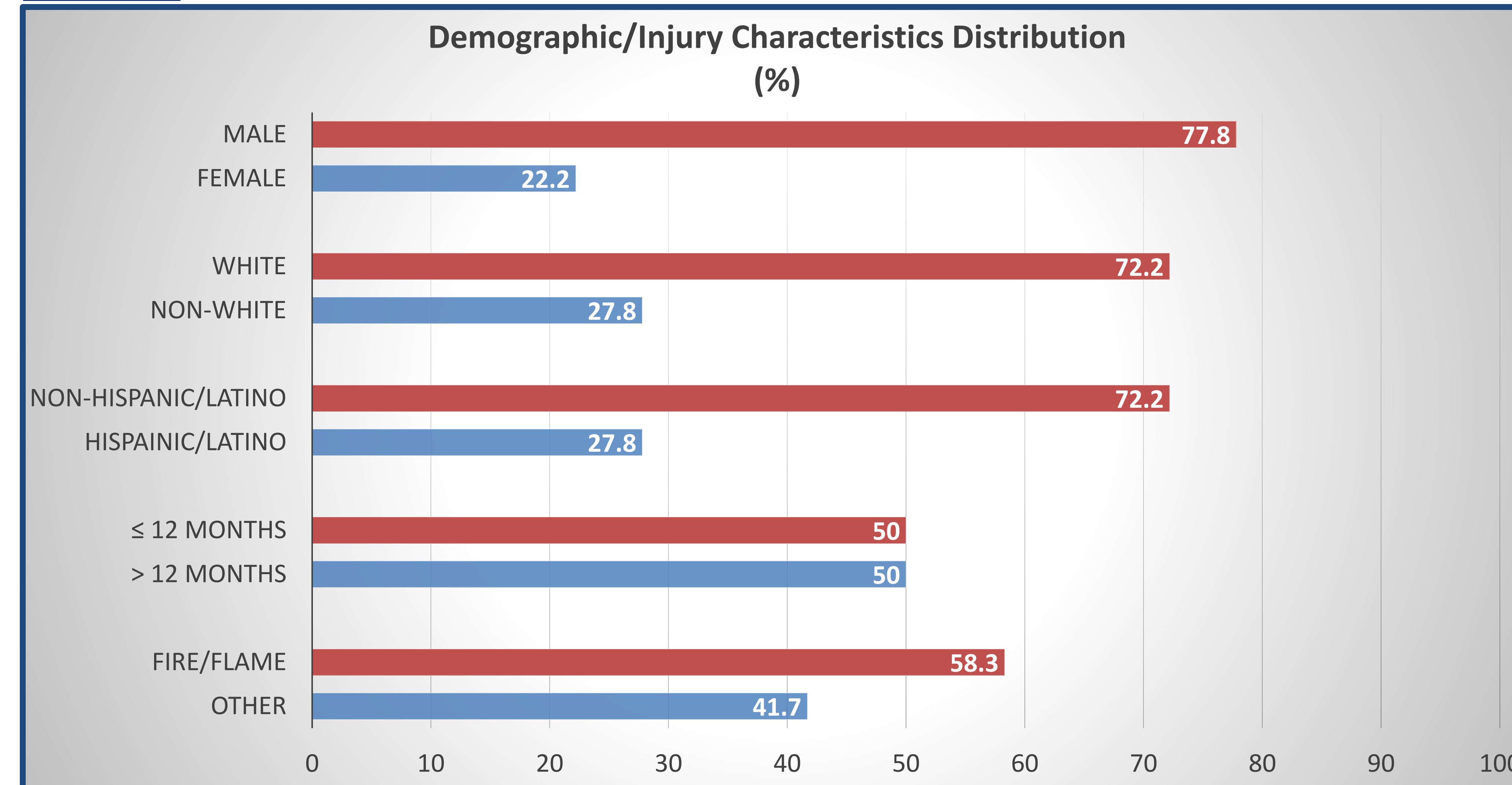
### Measures of Kinesiophobia

- The Tampa Scale of Kinesiophobia (TSK) is a 17-item self-report survey in which the total score ranges between 17 and 68.
- A score of 37 or greater was used as a cut-off value, indicating a high level of fear

### Statistical Analysis

- Independent sample t-tests were conducted to evaluate the differences in mean TSK score between:
  - 1) males and females; 2) White and non-white ethnicities; 3) Hispanic/Latino and non-Hispanic/Latino; 4) TBSA burn  $\leq$  15% vs  $>$  15% ; 5) time post-burn injury  $\leq$  12 month vs  $>$  12 months

## Results



The study participants (n=36) were predominantly White (72.2%), non-Hispanic (72.2%) males (77.8%) with the mean age of  $45.7 \pm 13.3$ . The mean % TBSA burn sustained was  $16.4 \pm 12.4$  with fire/flame injury as the most common (58.3%) etiology, and mean age at time of injury was  $40.2 \pm 14.0$ .

- With 66% of the participants scoring score 37 or above, the result showed that a majority of the participants has a high level of kinesiophobia
- No statistical difference of the mean TSK score was observed between our study groups, *except* in the Time Post-Burn groups
- Equal-variance t-test showed that the difference in mean TSK scores (7.35) between the time post-burn injury  $\leq$  12 months groups (TSK score: 36.41) and for  $>$  12 months (TSK score: 43.76) differed significantly ( $p=.01$ ).

## Conclusions

- Our finding indicates that a majority of burn survivors report kinesiophobia.
- Also, the burn survivors with time post-burn greater than 12 months report higher levels of kinesiophobia compared to those who were injured more recently.
- The findings underscore the importance of continued, long-term follow up that allows practitioners to reiterate the importance of physical exercise and activities among survivors of major burn injury to overcome kinesiophobia.

### Other Demographic/Injury Characteristics

	Mean	SD	Median	Range
Age	45.7	13.3	47.00	21 ~ 86
Age at Burn Injury	40.2	14	40.00	7 ~ 73
% TBSA	16.4	12.4	15.00	1 ~ 44
Time Post-Burn, month	27.6	35.2	13.00	3 ~ 170

### Statistics of total TSK score

	Mean	SD	Median	Range	% $\geq$ score 37
TSK Score	39.8	8.6	41.00	20 ~ 59	66%

### Comparison of mean TSK scores based on subject demographics and injury characteristics

		TSK Score				t-test
		n	Mean	SD	% score $\geq$ 37	
Sex	Male	27	40.70	8.7	74.10%	N.S
	Female	8	36.90	8.3	37.50%	
Race	White	25	38.5	9.2	60.00%	N.S
	Non-White	10	43	6.1	80.00%	
Ethnicity	Hispanic/Latino	10	41.10	8.4	70.00%	N.S
	Non-Hispanic/Latino	25	39.30	8.8	64.00%	
Age	$<$ 50	21	38.1	8.2	57.10%	N.S
	$>$ 50	14	42.3	8.9	78.60%	
TBSA Burn	$<$ 15 %	19	39.4	8.1	63.20%	N.S
	$>$ 15 %	16	40.25	9.4	68.70%	
Time Post-Burn	$<$ 12 months	17	36.40	7.9	58.80%	$p = .01$
	$>$ 12 months	17	43.80	7.8	76.50%	

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