



ORIGINAL RESEARCH

Using a Biopsychosocial Model to Understand Long-Term Outcomes in Persons With Burn Injuries

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Abstract

Objective: To determine the importance of preburn adjustment, injury-related variables, and selection of coping style in various outcome measures using a biopsychosocial model.

Design: Longitudinal study.

Setting: Outpatient burn clinics.

Participants: Burn survivors (N=231) who participated in this study as part of a larger burn model system study of 645 patients with major burn injuries.

Interventions: Not applicable.

Main Outcome Measures: The 36-Item Short-Form Health Survey was used to assess preburn adjustment. Other outcome measures entered into the model included the Ways of Coping Checklist Revised, the Brief Symptom Inventory, the Beck Depression Inventory-II, and the Davidson Trauma Scale.

Results: Correlational and mediational analyses revealed that preburn emotional health predicted better adjustment at year 1 and more posttraumatic stress disorder symptoms at year 2. Better preburn emotional health was also related to less use of avoidance coping strategies, which was found to be a mediator of the effect of preburn emotional health and posttraumatic stress disorder symptoms. Burn injury characteristics were not significantly associated with psychological adjustment at either year 1 or year 2.

Conclusions: The results indicate that there is a complex relation between premorbid mental health and the selection of coping strategies that affect long-term adjustment in persons recovering from a burn injury. This relation seems to have greater effect on long-term outcomes than does preburn emotional or physical health alone or the severity of the burn.

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Each year >486,000 people receive medical treatment and 40,000 are hospitalized for burn injury in the United States.¹ Recovery from a major burn includes painful wound care and months of intense physical therapy to regain strength and function. The intense acute recovery period has a lasting effect on adjustment.² Most patients report symptoms of depression and anxiety, including posttraumatic stress disorder (PTSD), even 2 years postdischarge.³⁻⁶ Survivors of large burns also experience a change in vocational and family roles.^{7,8} Given the relative infancy of the relevant knowledge base, we need to look to models

of stress, coping, and adjustment from other areas of medicine (eg, chronic illness) to predict recovery and to identify effective and appropriate targets of interventions.

Researchers have⁹⁻¹¹ identified preburn affective disorders, injury characteristics (eg, burn size and location, inpatient pain), dispositional variables, and avoidance coping as risk factors for the poor adjustment and postinjury onset of psychological disorders. On the basis of the current literature, we have proposed a conceptual model (fig 1) to better understand the complex interplay of factors that can potentially affect burn recovery.

Preinjury variables are among the strongest determinants of quality of life after burn injuries.^{4,9,12} For example, patients with diabetes, chronic obstructive pulmonary disease, and other

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medical comorbidities have lower survival rates, longer initial hospital stays, and poorer overall clinical outcomes.¹³⁻¹⁵ Moreover, persons with burn injuries have higher rates of mental illness before their burn.⁹

The course of hospitalization may have a long-term effect on adjustment.¹⁶⁻¹⁸ Total burn surface area (TBSA), length of hospitalization, and days spent in the intensive care unit (ICU) or on a ventilator have been used as indicators of the severity of a burn injury. However, research¹⁶⁻¹⁸ on the relation between these variables and outcomes has been equivocal.

Coping behaviors can be broadly defined as the extent to which one actively *approaches* the demands of a particular stressor vs *avoidance* of that stressor.^{19,20} For instance, active strategies such as problem solving, information seeking, and social support seeking can be construed as approach-oriented coping whereas disengagement, denial, or distraction are avoidance-oriented efforts. Neither approach nor avoidance coping behaviors are inherently adaptive or maladaptive; coping effectiveness is better determined by the characteristics of the individual and the situation.²¹⁻²⁴ Little research has attempted to characterize the adaptiveness of approach and avoidance coping in patients with burn injuries over time.

Psychological adjustment is multifaceted and has been construed as including emotional (eg, anxiety, depression symptoms), social (eg, role function, relation maintenance), and behavioral (eg, medical adherence) domains.²⁵ Studies of adjustment after burn injuries have largely focused on the incidence of depression and PTSD. Depression rates after burn injury have varied across studies from 17% to 34% at 1 year postdischarge²⁶ and from 27% to 45% at 2 years postdischarge.^{3,8} PTSD rates at 1 year after burn injury range from 19% to 45%.⁴ However, experiences across varied adjustment domains are largely undocumented. Patient distress and satisfaction with life are best explained by a combination of psychological and physical variables; no single predictor will be sufficient to explain how a person responds to a burn injury.²⁷⁻³¹

Empirically validated biopsychosocial models of long-term (2y postburn) psychological adjustment to burn injury are needed to guide future research efforts and to aid in the development of appropriate interventions. The present study addresses this significant gap in the literature by testing a model to better understand the complex interplay between preburn physical and emotional functioning, injury characteristics, and coping in a large sample of patients with burn injuries.

We hypothesized that (1) lower preburn emotional and physical functioning will predict poorer postburn adjustment beyond burn-specific factors; (2) lower preburn emotional and physical functioning will be associated with greater use of avoidance coping and lesser use of approach coping; (3) the use of avoidance coping will predict poorer adjustment and approach coping will predict better adjustment; and (4) coping will mediate the relation of preburn functioning and adjustment over time.

List of abbreviations:

ICU intensive care unit
PTSD posttraumatic stress disorder
TBSA total burn surface area

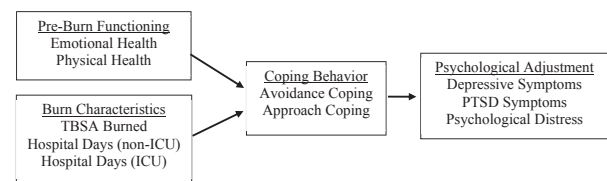


Fig 1 Hypothesized model of psychological adjustment to burn injury.

Methods

Participants

With the University of Washington institutional review board approval, participants were recruited and consented to participate in a larger study of burn patient experiences. Participants were 231 adults who were admitted to a large regional burn center. Questionnaires were sent via mail. Inclusion criteria included able to complete subjective evaluations, absence of delirium or psychosis, and able to communicate verbally. Demographic and injury characteristics are presented in tables 1 and 2. Importantly, as part of the larger study, measures were administered and discontinued at various points throughout the study period, so there are no complete longitudinal data on all 231 patients (see table 3). Participants lost to follow-up were slightly younger and more likely to have a foot or leg burn than do study completers. However, they did not differ on any other demographic or clinical variable, nor did they differ on level of adjustment or preburn health status. Measures were given at 1 and 2 years postdischarge from the hospital.

Measures

Medical outcome study 36-Item Short-Form Health Survey³²

The 36-Item Short-Form Health Survey served as the indicator of premorbid mental and physical functioning. This 36-item inventory assesses health status across 8 health concepts: limitations in physical activities; limitations in social activities; limitations in usual role activities; bodily pain; general mental health; limitations in usual role activities because of emotional problems; vitality (energy and fatigue); perceived overall health. Reliability coefficients across subscales range from .65 to .94 (median, .85) and vary somewhat across patient populations. The 36-Item Short-Form Health Survey³³ is widely used and has been established across diverse patient groups. Patients answered questions according to their perceptions of functioning in the 2 weeks before their injury.

Ways of Coping Checklist Revised

Coping was assessed using the Ways of Coping Checklist Revised.²³ This 42-item scale assessed how frequently they used each particular coping strategy in dealing with their burn injury on a 4-point scale ranging from 0 (never used) to 3 (regularly used). The scale yields 5 subscales including self-blame, wishful thinking, avoidance, social support seeking, and problem-focused coping. Given that coping is hypothesized as a mediator of preburn health and long-term adjustment, coping measures obtained at 6 months postdischarge were used. For this study, composite measures of avoidance- and approach-oriented coping were determined by the use of exploratory

Table 1 Participant demographic characteristics (N = 231)

Characteristic	Value
Age (y)	40.5±13.96
Sex	
Male	168 (72.7)
Female	63 (27.3)
Ethnicity	
White (non-Hispanic)	201 (87.0)
Asian/Pacific Islander	8 (3.5)
Hispanic/Latino	6 (2.6)
African American/black	6 (2.6)
Native American	6 (2.6)
Other	4 (1.7)
Education	
Less than high school	24 (10.4)
High school graduate/General Education Degree	154 (66.7)
Associates/technical degree	20 (8.7)
College degree	23 (10.0)
Unknown	10 (4.2)
Married/significant relation	98 (52.0)
Job status	
Employed	163 (66.2)
Unemployed	62 (26.8)
Retired	11 (4.8)
Other	5 (2.2)

NOTE. Values are mean ± SD, mean (range), or n (%).

factor analysis with Varimax rotation. The self-blame, wishful thinking, and avoidance subscales comprised the avoidance-oriented coping composite. Factor loadings were .54, .85, and .71, respectively. The social support seeking and problem-focused coping subscales comprised the approach-oriented coping composite. Factor loadings were .98 and .61, respectively. No secondary loadings were >.29.

Brief Symptom Inventory

The Brief Symptom Inventory is a 53-item measure that is an abbreviated version of the Symptom Checklist-90.³⁴ Patients rate the occurrence of symptoms on a 0- to 4-point scale. Higher scores indicate the presence of more symptoms. For the analysis of this study, we used the Global Severity Index subscale.

Beck Depression Inventory-II

The Beck Depression Inventory-II is a widely used 21-item measure that assesses depression symptoms. This measure demonstrates strong psychometric properties including correlations with clinical ratings of depression ranging from .65 to .67.^{35,36} This was used as an outcome measure at the 1-year and 2-year time points.

Davidson Trauma Scale

The Davidson Trauma Scale is a 17-item measure that assesses frequency and severity of symptoms of emotional trauma. This scale demonstrates strong psychometric properties including adequate test-retest reliability and internal consistency (Cronbach α >.90³⁷ across scales). This was used as an outcome measure at the 1-year and 2-year time points.

Table 2 Participant clinical information (N = 231)

Injury-related variable	Value
TBSA burned	
0%–15%	131 (56.7)
16%–30%	61 (26.4)
31%–45%	21 (9.1)
46%–60%	14 (6.1)
>60%	4 (1.7)
Number of hospital days	
Non-ICU	19.01 (1–70)
ICU	10.47 (0–78)
Injury location	
Head/neck	119 (51.5)
Trunk	133 (57.6)
Perineum	8 (3.5)
Hand	150 (64.9)
Leg	122 (52.8)
Foot	58 (25.1)
Injury etiology	
Fire/flare	149 (64.8)
Scald	16 (7.0)
Grease/tar	24 (10.4)
Electricity	14 (6.1)
Hot object contact	10 (4.3)
Chemical	6 (2.6)
Other	12 (4.8)

NOTE. Values are mean (range) or n (%).

Medical variables

Burn-specific variables were collected via medical chart review. These included number of ICU days, number of non-ICU hospital days, and TBSA. TBSA is commonly used as an indication of burn severity and is expressed in terms of a percentage. Demographic information including age, sex, ethnicity, education level, and marital status was self-reported.

Table 3 Means and SDs for preburn SF-36 and primary outcome measures

Outcome Measure	Mean	SD	N
Preburn SF-36 physical health score	86.78	19.05	231
Preburn SF-36 emotional health score	90.91	21.81	231
Outcome Measure	Psychological Adjustment 1Y PostDischarge		
	Mean	SD	n
BDI-II	12.03	11.81	78
BSI – GSI	55.71	15.17	69
DTS	37.28	35.52	75
Outcome Measure	Psychological Adjustment 2Y PostDischarge		
	Mean	SD	n
BDI-II	12.70	13.07	54
BSI – GSI	51.35	13.69	20
DTS	29.87	28.08	62

Abbreviations: BSI, Brief Symptom Inventory; DTS, Davidson Trauma Scale; GSI, Global Severity Index; SF-36, 36-Item Short-Form Health Survey.

Table 4 Interscale correlations of study variables

Variable	1	2	3	4	5	6	7	8	9
1. Depression symptoms	.89***	.92***	.85***	-.08	.13	-.06	-.04	.02	-.02
2. Psychological distress	.65**	.65**	.77***	-.05	.30*	-.17	-.15	.18	-.13
3. PTSD symptoms	.82***	.29	.85***	-.17	.23*	-.03	-.06	.05	-.09
Demographic and burn characteristics									
4. Age	-.02	.26	-.12	1.00	.01	.33***	-.07	.17**	.00
5. Sex	-.09	.08	.08	.01	1.00	.01	-.11	.02	-.10
6. Marital status	.10	-.17	-.06	.33***	.01	1.00	-.10	-.08	-.07
7. TBSA burned	.08	-.12	-.05	-.07	-.11	-.10	1.00	.21**	.80***
8. Hospital days (non-ICU)	-.04	.52*	-.05	.17*	.02	-.08	.21**	1.00	.17*
9. ICU days	.08	.17	-.08	.00	-.10	-.07	.80***	.17*	1.00

NOTE. Correlations with year 1 adjustment variables are above the diagonal; year 2 correlations are below the diagonal; and year 1 – year 2 correlations are reported on the diagonal. Sex was coded as 0 = male and 1 = female. Marital status was coded as 0 = single and 1 = married/partnered.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

Data analyses

Descriptive statistics were computed for key study variables including sociodemographic and relevant clinical characteristics, such as indicators of adjustment. Relations of relevant demographic characteristics with adjustment indicators were examined to identify possible covariates. Variables with significant relations with adjustment were included as covariates in all subsequent analyses. Additional clinical covariates were identified a priori including preburn physical health, preburn emotional health, and relevant burn characteristics (ie, TBSA, days of hospitalization).

Multiple linear regressions were conducted to test study hypotheses. Adjustment indicators were separately regressed on preburn physical and preburn emotional health as well as identified covariates. Relevant demographic covariates were entered in step 1 of the model, burn characteristics were entered in step 2, preburn physical health in step 3, and preburn emotional health was entered in the final step (step 4). This approach will allow for examination of ΔR^2 , though only the results of the full simultaneous model are reported. In analyses predicting year 2 adjustment, the corresponding year 1 adjustment scores were entered in step 1 to provide the opportunity to predict change in adjustment over time.

Table 5 Results of regression analyses of indicators of year 1 and year 2 adjustment

Outcome and Predictor Variable	Depression Symptoms				Psychological Distress				PTSD Symptoms			
	B	SE B	β	ΔR^2	B	SE B	β	ΔR^2	B	SE B	β	ΔR^2
1y postdischarge												
Step 1: Sex	−.10	.10	−.12	.006	−.01	.01	−.07	.003	−.53	.30	−.21	.027
Step 2: TBSA burned	−.03	.14	−.03	.007	.00	.01	−.01	.073	−.15	.45	−.07	.025
Days spent in the hospital (non-ICU)	.05	.13	.05		.02	.01	.20		.39	.41	.16	
Days spent in the ICU	−.05	.13	−.07		−.02	.01	−.37		−.23	.39	−.11	
Step 3: Preburn physical health	.09	.11	.16	.082	.01	.01	.33*	.006	.27	.33	.15	.043
Step 4: Preburn emotional health	−.32	.10	−.56**	.106	−.02	.01	−.69***	.224	−.78	.31	−.45*	.076
	$F_{6,77}=2.97; P<.05$				$F_{6,68}=4.57; P<.001$				$F_{6,74}=2.35; P<.05$			
2y postdischarge												
Step 1: Year 1 score	.97	.09	.87***	.795	.31	.10	.53**	.427	.89	.09	.91***	.726
Step 2: Sex	−.01	.08	−.02	.001	−.01	.01	−.13	.052	−.08	.20	−.04	.001
Step 3: TBSA burned	.06	.12	.10	.009	−.01	.01	−.32	.272	.33	.29	.15	.016
Days spent in the hospital (non-ICU)	−.07	.13	−.05		.02	.01	.47		.13	.31	.04	
Days spent in the ICU	.01	.12	.01		.01	.01	.24		−.17	.28	−.08	
Step 4: Preburn physical health	−.07	.01	−.12	.000	−.01	.01	−.17	.021	−.71	.24	−.47**	.018
Step 5: Preburn emotional health	.02	.09	.04	.000	−.01	.01	−.11	.002	.56	.24	.37*	.031
	$F_{7,39}=19.64; P<.001$				$F_{7,18}=5.04; P<.01$				$F_{7,43}=19.57; P<.001$			

NOTE. Discrepancies in degrees of freedom are a result of missing values. Sex was coded as 0 = male and 1 = female.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

Table 6 Mediated Effects

Outcome	Mediated Effect	Significance of the Test Statistic
Preburn physical health		
Psychological distress at year 1	<.01	.25
PTSD symptoms at year 2	-.01	-.01
Preburn emotional health		
Depression symptoms at year 1	-.03	-.66
Psychological distress at year 1	<-.01	-.89
PTSD symptoms at year 1	1.01	2.11*
PTSD symptoms at year 2	1.25	2.45*

Finally, principles outlined by Baron and Kenny³⁸ were used to identify candidates for mediation. Thus, avoidance and approach-oriented coping potentially function as mediators between preburn emotional health and preburn physical health and the related dependent variables of psychological adjustment if (1) variations in levels of preburn emotional health, preburn physical health, or burn characteristics account for significant variations in adjustment outcomes; (2) variations in levels of preburn emotional or physical health account for significant variations in avoidance and approach-oriented coping; and (3) variations in coping behaviors account for significant variations in adjustment outcomes. Multiple linear regressions were conducted to test these relations. Furthermore, mediated effects were tested on the basis of bootstrapped SEs for indirect paths generated in Mplus version 3.0.^a This method makes fewer assumptions about the sampling

distribution, is more accurate, and yields more powerful tests than do other statistical methods for assessing mediated effects (eg, Sobel test).³⁹

Results

Preliminary analyses

Means and SDs for preburn physical and emotional health and of primary outcomes are presented in table 3.

To identify possible demographic covariates of psychological adjustment, correlations among demographic and adjustment variables were examined (table 4). Among these variables, only sex was significantly correlated with measures of adjustment such that being female was associated with greater self-reported psychological distress and PTSD symptoms at year 1. Sex was therefore included as a covariate in all subsequent analyses.

Predictors of adjustment

The results of regression analyses are reported in tables 5 and 6. Better preburn physical health was significantly related to greater psychological distress at year 1 ($P<.05$) and fewer PTSD symptoms at year 2 ($P<.01$). Preburn emotional health significantly predicted better adjustment for all 3 indicators of adjustment at year 1 and more PTSD symptoms at year 2 ($P<.05$). Preburn emotional health accounted for 10.6% of the variance in year 1 depression symptoms, 22.4% of the variance

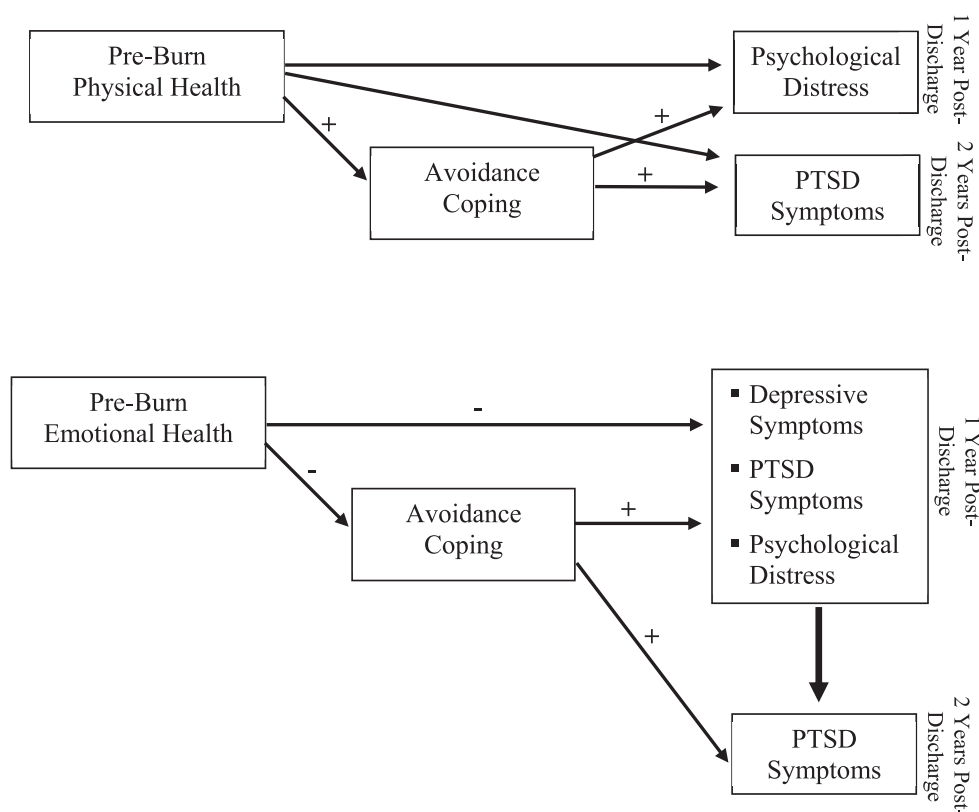


Fig 2 Resulting model of preburn physical health (top) and preburn emotional health (bottom) on long-term adjustment to burn injury.

in year 1 psychological distress, and 7.6% of the variance in year 1 PTSD symptoms; in contrast, preburn physical health accounted for <1% of the variance in year 1 psychological distress and <1.8% of the variance in year 2 PTSD symptoms. Neither burn-related factors nor sex was significantly related to adjustment outcomes.

Mediation analysis

When avoidance-oriented coping was regressed on preburn emotional health and preburn physical health simultaneously, both preburn emotional health ($\beta = -.48$; $P < .05$) and preburn physical health ($\beta = .39$; $P < .05$) were significant predictors. Better preburn emotional health was related to lesser use of avoidance-oriented coping, whereas better preburn physical health was related to greater use of avoidance-oriented coping strategies. However, neither preburn physical health ($\beta = .05$; $P = .84$) nor preburn emotional health ($\beta = -.09$; $P = .67$) predicted approach-oriented coping behavior.

Adjustment outcomes at years 1 and 2 were regressed on avoidance coping, controlling for sex. Greater use of avoidance-oriented coping significantly predicted depression symptoms at year 1 ($\beta = .41$; $P < .05$; $\Delta R^2 = .147$), and year 2 ($\beta = .40$, $P < .001$, $\Delta R^2 = .295$), and greater psychological distress at year 1 ($\beta = .37$; $P < .05$; $\Delta R^2 = .115$), and greater PTSD symptoms at year 1 ($\beta = .40$; $P < .05$; $\Delta R^2 = .174$) and year 2 ($\beta = .56$; $P < .05$; $\Delta R^2 = .255$). The relationship of avoidance-oriented coping with psychological distress at year 2 only approached significance ($\beta = .62$; $P = .09$, $\Delta R^2 = .446$).

Mediated effects were tested on the basis of bootstrapped SEs for indirect paths generated in Mplus version 3.0. This method makes fewer assumptions about the sampling distribution, is more accurate, and yields more powerful tests than do other statistical methods for assessing mediated effects (eg, Sobel test).³⁹ Based on the results of the analyses presented above, mediated effects were examined for avoidance coping for significant relations between preburn physical and emotional health and indicators of psychological adjustment at years 1 and 2. Only the mediated effects from preburn emotional health to PTSD symptoms at years 1 and 2 were significant.

In summary, better preburn physical health was related to greater psychological distress at year 1 and fewer PTSD symptoms at year 2. Furthermore, better preburn physical health was associated with greater use of avoidance-oriented coping strategies. Preburn emotional health showed a somewhat different pattern in that better preburn emotional health predicted better adjustment at year 1 and more PTSD symptoms at year 2. Preburn emotional health was also related to less use of avoidance-oriented coping, which was found to be a mediator of the effect of preburn emotional health on PTSD symptoms at 2 years. These relations are depicted in [figure 2](#). Moreover, burn injury characteristics were not significantly associated with psychological adjustment.

Discussion

This study provides insight into the longer-term psychological adjustment after burn injury and helps elucidate a stress and coping model of adjustment in this patient population. Our

hypotheses in this study were only partially supported. Despite our prediction that better preburn functioning would be associated with better postburn adjustment, the results suggest a more complex pattern. For instance, we found that better preburn physical health was related to greater distress at year 1 but fewer PTSD symptoms at year 2. Such findings support that adjustment is a dynamic process that unfolds over time and one that is bound by context. It might be that those with better preinjury physical health have greater initial adjustment with postburn impairments and are less experienced at coping with health-related adversity. Future studies should better elucidate such possibilities, but our data support this theory because better preburn physical health was also associated with more maladaptive coping (avoidance) at 6 months. At the same time, better initial health might protect over longer periods of time. Associations with fewer PTSD symptoms at the distal time point highlight this possibility.

The case of preburn emotional health also highlights the need to examine adjustment patterns over time. As predicted, better preburn emotional functioning was associated with better adjustment at year 1, as well as less avoidance-oriented coping. Yet, by year 2 better preburn emotional functioning was associated with worse adjustment, as indicated by PTSD symptoms. Certainly, more research is needed to understand this changing relation. Observations in trauma-exposed individuals⁴⁰ and patients with chronic illness¹⁹ suggest that there are patient subgroups with distinct distress trajectories over time. Longitudinal prospective studies that use multiple measurements are critical to identifying these patterns in patients with burn injuries. In this sample, it is possible that PTSD symptoms had not yet manifested at year 1 and better preburn emotional functioning predicts delayed onset of symptoms. It is also possible that life demands change after the first year, such as return to work and enhanced social demands. For instance, clinically, we see patients who had been adjusting well suddenly develop more intense PTSD symptoms around the time that they return to work, particularly if they were burned on the job. Finally, it is also possible that those with better preburn emotional health may not have been subjected to adequate mental health screening early in their hospitalization and prodromal PTSD conditions may not have been identified. In contrast, someone identified as struggling early on may have received more aggressive intervention.

The present study also informs the role of coping in adjustment to burn injury. Consistent with the literature²⁵ on coping and chronic illness, avoidance-oriented coping was generally related to poorer adjustment, at least for year 1. Avoidance likely thwarts efforts of emotional processing, engagement in care, garnering of support, as well as acceptance and growth. The results partially support that avoidance-oriented coping acts as a cognitive or behavioral pathway by which preburn functioning influences adjustment over time. However, coping itself is dynamic. This study relied on a single measurement of coping that may or may not be reflective of coping behavior across recovery. Future studies should examine coping across time.

Contrary to our expectations, approach-oriented coping had seemingly no relation with adjustment. It will be important for researchers to measure adjustment across domains to fully understand the role of approach-oriented coping. Again, calling on

research on chronic illness, approach-oriented coping might be associated with positive and/or biobehavioral domains not measured in the present study.^{19,41}

Study limitations

There are some limitations to our study. First, follow-up rates for each measure varied and affected our *n* at each time point. Second, we were not able to measure all variables that might be of importance, including pain levels, injury severity beyond TBSA (eg, amputations, inhalation injury), and relevant personality factors. Previous studies have indicated that these variables may be important in predicting long-term adjustment and they deserve consideration in future studies. Despite these limitations, the complexity of our findings illustrates the importance of using a biopsychosocial model to guide future research.

The present study provides some direction for clinical utility. Perceptions of preinjury emotional and physical health, as well as coping behaviors, might be included in hospital-based assessments to begin to identify patients at higher risk for poorer long-term adjustment. Also, behavioral interventions that reduce the use of avoidance-oriented coping, particularly those with poorer preburn emotional functioning, might have a salutary effect on adjustment over time.

Conclusions

Finally, as expected, burn-related factors were not significant predictors of adjustment. Researchers and clinicians should be cautious in assuming that those with smaller burn injuries will have more positive adjustment, and vice versa. At the same time, burn survivors need to be active participants in their burn recovery. Range of motion exercises and physical therapy, daily wound debridement, and adherence to other therapy recommendations might be more frequent, demanding, or complex for those with larger or more complicated injuries. Greater engagement in approach-oriented coping and reduced avoidance may be particularly essential when self-care demands are greater.

Supplier

a. Mplus version 3.0; Muthén & Muthén.

Keywords

Burns; Rehabilitation

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