Assessment of the relationship between mental illness and inpatient length of stay

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Introduction

Mental illness and burn injury requiring hospitalization are uniquely intertwined. While literature has shown that burn patients are more likely to experience acute stress disorder, post-traumatic stress disorder, and depression, the impact of pre-existing mental illness on the duration of inpatient hospitalization for burn patients is unclear. We aim to assess the impact of acute mental illness requiring treatment by a psychiatrist during admission to a burn unit on patient length of stay(LOS).

Methods

A retrospective analysis was conducted using burn registry data to evaluate patients age 18 to 65 admitted between January 1, 2017 and December 31, 2018. Patients admitted with burns, inhalation injury, frostbite and Steven Johnsons Syndrome were included. Patient age, total body surface area (TBSA), LOS, and psychiatry consult (PC) incidences were collected. Patients were separated into psychiatric (P) and non-psychiatric (NP) groups to compare the impact of PC on LOS. Linear regression analysis was conducted in both groups to evaluate the impact of TBSA and age on LOS. Two-sample assuming unequal variances t-test was conducted to compare age, TBSA, and LOS in both groups.

Results

- No significant difference between age and TBSA in both groups. (Table 1)
- Statistically significant difference in LOS between both NP and P groups. (Table 1)
- Multiple regression in the P group indicated age and TBSA predicted 48.4% of the LOS variance ($R^2=.48$, $F(2,68)=31.96$, $p<.0005$). It was found that TBSA significantly predicted LOS ($p<.005$). Age was insignificant ($p= 0.4$).
- Multiple regression in the NP group indicated age and TBSA predicted 11% of the variance ($R^2=.11$, $F(2,613)=39.9$, $p<.0005$). It was found that TBSA significantly predicted LOS ($p<.005$). Age was insignificant ($p< 0.05$).
- Psychiatric consultation was most frequently for assistance with treatment of acute mental illness, and capacity to participate in medical choices was second most common (Figure 1).
  - Psychiatric diagnoses of acute illness (Figure 2) and reasons for capacity evaluation (Figure 3) were evaluated.

Table 1: Demographics

	NP (n=617)	P (n=71)	
Age	41.73 ± 1.66	43.77 ± 1.61	*p*=0.11
TBSA	0.05 ± 0.01	0.05 ± 0.01	*p*=0.94
LOS	9.5 ± 0.70	26.2 ± 3.91	*p<0.001*

Results (con't)

FIGURE 1

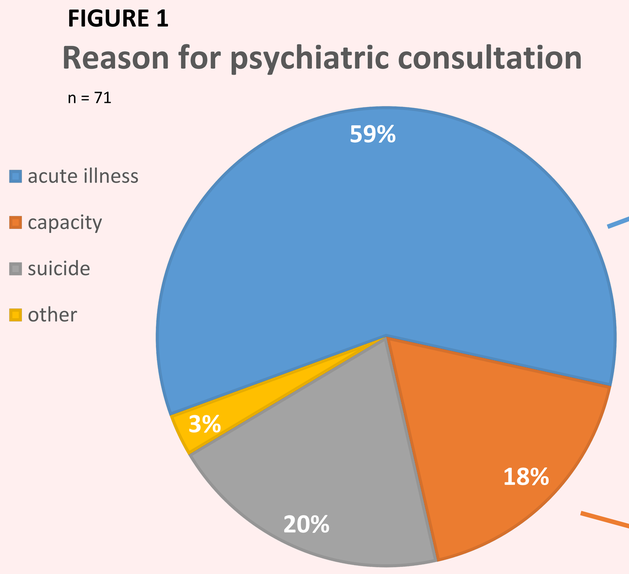


FIGURE 2

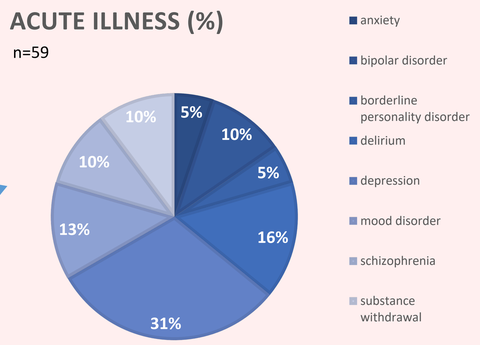
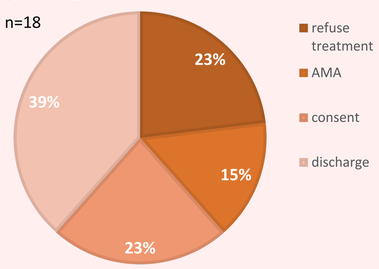
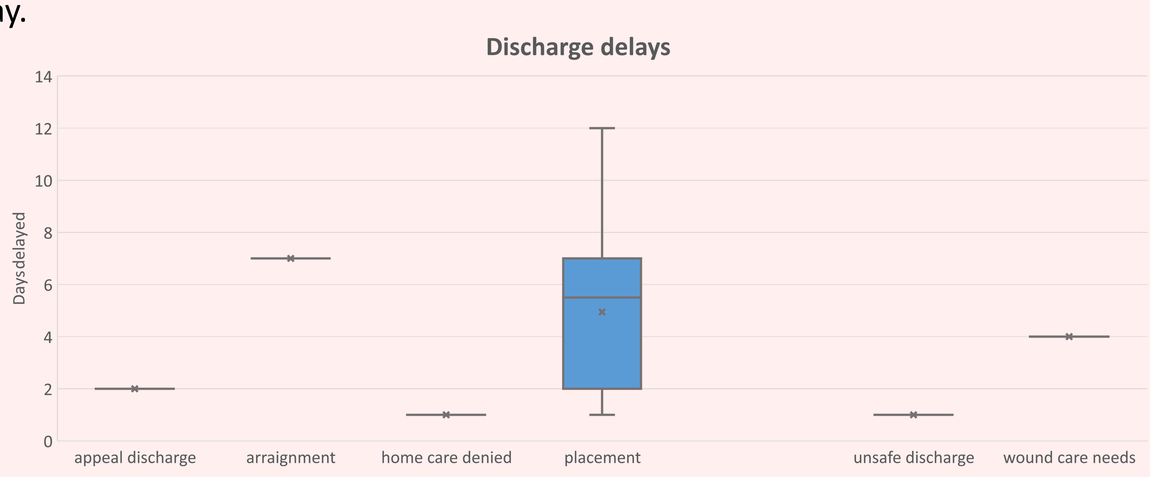


FIGURE 3



Most patients (n=48) did not have a documented reason for increased length of stay associated with psychiatric treatment. Surgical procedures were delayed in 2 patients.

Discharge delays (n=24) were the most documented reason for increased length of stay.



Conclusion

A significantly longer length of stay was seen for patients seen by psychiatry during their hospitalization. Psychiatry was most frequently consulted to assist with acute exacerbations of mental illness. Evaluations for capacity were not immediately associated with a delay in surgical intervention or discharge plan. Ongoing assessment of the relationship between length of stay and psychiatric treatment is needed.

References, Funding and Disclosure

Johnson, L., Shupp, J., Pavlovich, A., Pezzullo, J., Jeng, J., & Jordan, M. (2011). Hospital Length of Stay—Does 1% TBSA Really Equal 1 Day? Journal of Burn Care & Research, 32(1), 13-19.

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