



Association Between the Occurrence of Stigmatizing Language within Clinical Notes and Outcomes Among Patients with Sepsis

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Introduction

- Stigmatizing language is language that assigns negative labels or stereotypes to certain groups of people.
- Previous studies have found that patient characteristics are a factor in receiving stigmatizing language in clinical notes within a medical record.
- Such language can serve as a surrogate for the healthcare provider's implicit or explicit bias and may influence patient care.
- This could translate to poor outcomes, especially for patients with life-threatening conditions, such as sepsis.

Aim: To determine if the presence of stigmatizing language in clinical notes was associated with worse outcomes among patients with sepsis.

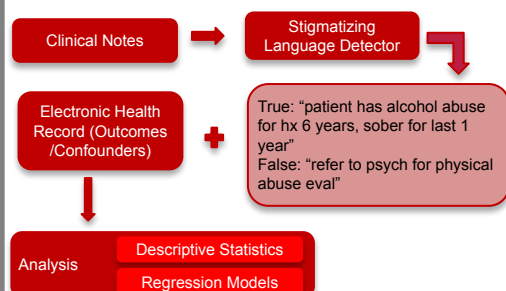
Methods

Setting and study population: We used MIMIC-III data, a publicly available EHR, to study the clinical notes of all patients in the intensive care unit (ICU) with a sepsis diagnosis (n = 18,386). Of these patients, 2,926 (15.9%), had at least one note with stigmatizing language, according to the NIH National Institute on Drug Abuse list of words representing stigma.

Outcome:

- The primary outcome was mortality.
- Secondary outcomes included the need for mechanical ventilation, time to antibiotics, receiving vasoactive treatment, and hospital discharge within 7 days.

Analysis: We examined differences in characteristics and outcomes between patients with and without stigmatizing language. Significance testing was performed with non-parametric tests for numeric and chi-squared tests for categorical variables. A multivariable logistic regression was used to determine the association between the occurrence of stigmatizing language and binary outcomes, adjusting for age, sex, race/ethnicity, Substance Use Disorder (SUD) diagnosis, and vital signs at hour 1 of ICU admission.



Results

	Patients with clinical notes containing stigmatizing language (n = 2,926)	Patients with clinical notes <u>not</u> containing stigmatizing language (n = 15,460)	P-value
Age (years)			
Median (IQR)	57 (47-68)	69 (56-80)	<0.001
Female, n (%)	1,000 (34.2)	7,249 (46.9)	<0.001
Race/Ethnicity, n (%)			<0.001
Asian	31 (1.1)	469 (3)	
Black	267 (9.1)	1,190 (7.7)	
Hispanic/Latino	103 (3.5)	525 (3.4)	
Other	352 (12.0)	1,912 (12.4)	
White	2,173 (74.3)	11,364 (73.5)	
Substance Use Disorder (SUD), n (%)	1,455 (49.7)	603 (3.9)	<0.001
Mortality, n (%)	369 (12.6)	1,756 (11.4)	0.056
Mechanical Ventilation, n (%)	1,289 (44.1)	6,965 (45.1)	0.3294
Vasoactive Treatment, n (%)	842 (28.8)	5,506 (35.6)	<0.001
Antibiotics, n (%)	2,131 (72.8)	11,365 (73.5)	0.4573
Discharged Within 7 Days, n (%)	2,460 (84.1)	13,221 (85.5)	0.046
Length of Stay (days)			
Median (IQR)	8 (5-14)	8 (5-12)	0.008

Table 1: Patients with sepsis with stigmatizing language are more likely to be younger, male, Black, and have a Substance Use Disorder compared to patients who do not have stigmatizing language. They are more likely to experience mortality, less likely to receive vasoactive treatment, and less likely to be discharged from the hospital within 7 days.

Patients with sepsis who received antibiotics (n = 13,496; 73.4%)			
	Patients with clinical notes containing stigmatizing language (n = 2,131)	Patients with clinical notes <u>not</u> containing stigmatizing language (n = 11,365)	P-value
Time to Antibiotics (hours)			
Median (IQR)	4 (0-11)	3 (0-11)	0.002

Table 2: Patients with sepsis with stigmatizing language receive antibiotics later than patients without stigmatizing language.

Model	OR (95% CI)			
	Mortality	Mechanical Ventilation	Vasoactive Treatment	Discharge Within 7 Days
Full Cohort (n = 18,386)	1.23 (1.06, 1.43)	0.90 (0.81, 0.99)	0.92 (0.83, 1.02)	0.93 (0.81, 1.06)
SUD Patients (n = 2,058)	2.11 (1.49, 3.05)*	0.69 (0.56, 0.84)*	0.72 (0.57, 0.90)	0.76 (0.57, 1.00)
Non-SUD Patients (n = 16,328)	1.06 (0.88, 1.26)	0.97 (0.87, 1.09)	0.97 (0.86, 1.10)	0.99 (0.85, 1.17)

*P<0.001

Table 3: Stigmatizing language is associated with an increase in mortality and a decrease in mechanical ventilation for all patients with sepsis, especially in the subgroup with a Substance Use Disorder.

Conclusions

- Stigmatizing language was associated with worse outcomes and care for patients with sepsis, including longer time to antibiotics and increased odds for in-hospital mortality.
- Limitations: Residual confounding from other factors, such as multiple medical conditions, and the inability to account for the bias of physicians that is not documented in the notes.
- Future Directions: Externally validate these results in the UW Health EHR and consider other outcomes in care delivery.

Acknowledgements / References

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