

Enhanced Skin Assessment Methodology to Equitably Detect Pressure Injuries in Adult Patients in the Acute Care Setting

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Background/Significance

Racial health disparities occur when healthcare professionals fail to adequately assess, identify, and prevent PIs in people with dark skin tones. This can delay early identification and treatment, resulting in more severe PIs.

Purpose:

The purpose of this study was to examine the effectiveness, feasibility and equity of an enhanced skin assessment methodology using a sub-epidermal moisture measurement (SEM) device to assess, identify, and prevent PIs in adult critical care adults.

Methods

Design: Retrospective, descriptive, comparative research study of adult Surgical Trauma Intensive Care Unit (STICU) patients with a SEM delta score.



Study Procedures: Data were collected from the medical records and included: age, race/ethnicity, admission date, unit site of entry into the hospital, diagnoses, procedure/surgical duration, mortality, Braden total/subscale scores, PI prevention interventions, and PI characteristics if developed within 7 days of SEM measurement. Descriptive analysis of the data was performed.

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Results

Participant characteristics

N= 69	Mean (SD)
Age	58.8 (18.1)
N (%)	
Sex at birth	
Female	29 (42%)
Male	40 (58%)
Race	
Black	29 (42%)
White	36 (52%)
Asian	1 (1.45%)
Other	3 (4.35%)
Ethnicity	
Hispanic or Latino	3 (4.35%)
Non-Hispanic or Latino	62 (89.86%)
Unknown/not reported	4 (5.8%)
Mortality this admission	
Yes	12 (18.18%)
No	54 (81.82%)

Pressure Injury (Yes/No)	N (%)
HAPI	15 (22%)
POA	5 (7%)
No	49 (71%)
HAPI	
Black	6 (40%)
White	7 (47%)

Results

	N	% of Total
SEM Delta-Sacrum(0.6)		
Sacrum <0.6	26	42.62%
Sacrum ≥0.6	35	57.38%
SEM Delta-R heel(0.6)		
R heel <0.6	31	53.45%
R heel ≥0.6	27	46.55%
SEM Delta-L heel(0.6)		
L heel <0.6	31	54.39%
L heel ≥0.6	26	45.61%

Pressure Injury Prevention Measures by SEM delta and Race

		Appropriate Pressure Injury Prevention Measures (Yes/No)	
SEM Delta-Sacrum(0.6)	Race:	No	Yes
Sacrum <0.6	Black	9	3
	Asian	0	1
	Other	0	1
Sacrum ≥0.6	White	6	6
	Black	9	5
	Other	1	0
	White	14	6

*SEM was not used to drive prevention measures

Results

SEM sacral delta ≥0.6 was consistent with lower Braden total scores on all 3 days. A negative correlation was observed between Braden total scores on day 2 and SEM sacral delta (p= 0.03) and R heel delta (p= 0.03) scores.

Of 35 patients with a sacral SEM delta ≥0.6, 24 (69%) did not have appropriate PI prevention interventions. Of those 24, 9 (37.5%) were Black and 14 (58%) White.

Nurses (n=13) indicated the SEM device was easy to use, helped perform an accurate skin assessment in patients with darker skin tones and helped identify a patient's risk for PI.

Conclusion

The findings of this study demonstrate SEM technology to promote racial health equity, the utility of SEM technology to drive location-specific PI prevention measures and improve skin assessment accuracy beyond existing standard care.

References

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