

Category : **Respiratory: mechanical ventilation**

A203 - Examining social determinants of care in ventilated patients in critical care

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Introduction:

This study investigates non clinical factors affecting adherence to clinical turning protocols in mechanically ventilated patients; factors we call Social Determinants of Care (SDoC). Social Determinants of Health are known contributors to health outcomes, however the impact of SDoC on clinical care has yet to be investigated. Utilizing the MIMIC-IV database, we analyzed a cohort of 8,919 patients to identify disparities in care related to social factors.

Methods:

The study included all patients who underwent invasive mechanical ventilation (IMV), excluding cases with missing weight data or weights outside the 10-250 Kg range. Frequency of turning documentations per day were evaluated and compared using Kolmogorov–Smirnov tests and predictive models such as ridge regression, to assess adherence to turning protocols during IMV. These methods were cross-validated and included varying degrees of artificially injected noise for robustness.

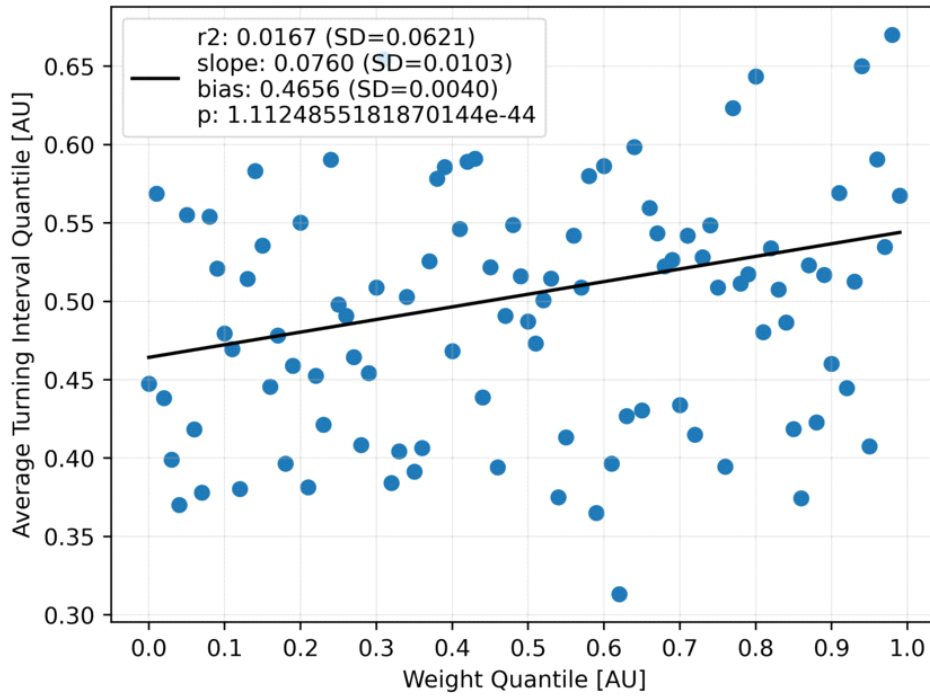
Results:

The patient cohort mean age was 63.5 years, with 58% males, White Ethnicity (61.2%), and 88.8% reported English as their first language. There was a significant difference between the observed and simulated turning frequencies ($p < .05$), indicating poor adherence to local protocols, as confirmed by Fisher's method over the two-sided Kolmogorov-Smirnov test. Furthermore, regression on the quantile space, reflecting the relationship between patient weight and turning frequency, yielded a low R2 score (ranging from .0185 to -.0166), suggesting high variance across quantiles. A positive correlation between weight and turning frequency was significant across all noise thresholds and Fisher's aggregation ($p < .05$) (Figure 1).

Conclusion:

Our findings indicate significant disparities in the adherence to IMV care protocols in ICUs, influenced by patients weight. The variance in care frequencies, irrespective of clinical features, highlights the need for tracking such features to encourage more equitable ICU care practices.

Image :



Correlation between the quantiles of weight and the quantiles of the observed average turning interval.