



# Pre-Operative Frailty Assessment as a Predictive Measure of PACU Length of Stay



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## Background

The U.S. population is aging, with individuals 65+ experiencing the largest numeric growth since 1880.

This demographic shift, combined with increased comorbidities, has led to more elderly patients undergoing elective surgeries.

Preoperative frailty assessment is critical, yet no standardized tool exists.

The Edmonton Frail Scale - Acute Care (EFS-AC) is a validated tool that numerically evaluates frailty without requiring physical tests.

Its correlation with Post Anesthesia Care Unit (PACU) length of stay (LOS) has not yet been studied.

## Purpose

The purpose of this study is to compare preoperative frailty assessment to LOS in the PACU at Albany Medical Center (AMC).

The primary goal is to correctly identify at-risk elderly patients to improve care and facilitate operating room and PACU throughput.

## Methods

Prospective survey design.

Participants: Surgical patients 65 years+ undergoing elective surgery.

Sample size: 57

Setting: AMC, Level I trauma center.

Data collected in two phases:

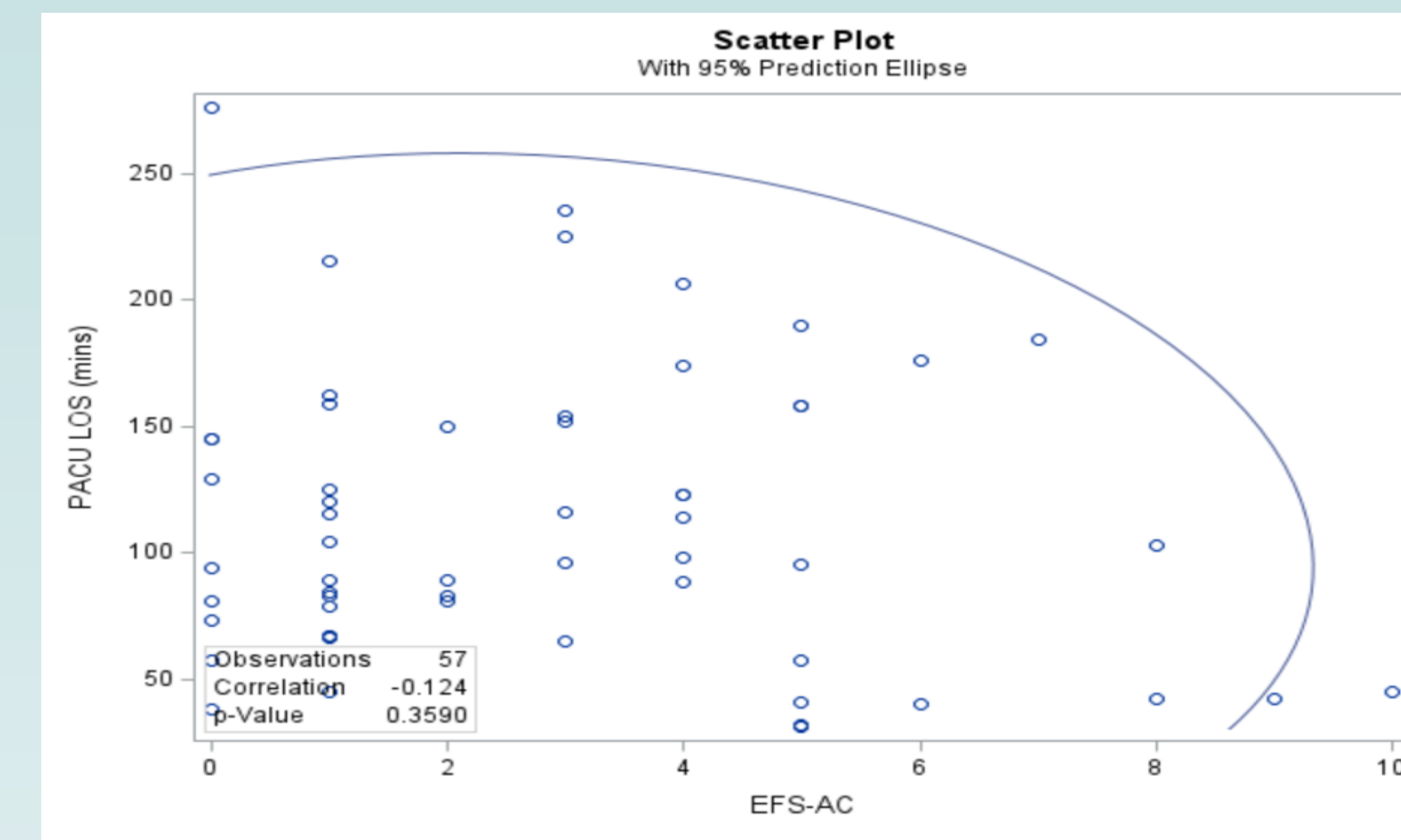
Phase 1: Patients were identified, consented, and completed preoperative EFS-AC assessments (November 2024–February 2025).

Phase 2: Retrospective EMR reviews (EPIC) included demographics, surgical/anesthesia details, and outcomes (January–April 2025).

Statistical analyses: Descriptive statistics, two sample independent t-test, correlation, chi-square, Fisher exact test, and Pearson correlation (rho).

## Results

EFS-AC score		
Characteristic	Not frail (0-5) n(%)	Frail (6-10) n(%)
<b>ASA Score</b>		
1	212 (100.0%)	0 (0.0%)
2	336 (90.0%)	4 (10.0%)
3	42 (40.0%)	3 (60.0%)
<b>General MAC</b>		
Yes	47 (90.4%)	5 (9.6%)
No	3 (60.0%)	2 (40.0%)
<b>Regional</b>		
Yes	23 (85.2%)	4 (14.8%)
No	27 (90.0%)	3 (10.0%)
<b>Disposition</b>		
Home	25 (86.2%)	4 (13.8%)
Admitted	25 (89.3%)	3 (10.7%)
ICU	0 (0.0%)	0 (0.0%)
<b>Age &amp; PACU LOS</b>		
Age	Not Frail 72.6	Frail 79.4
PACU LOS (min)	Not Frail 115	Frail 90
	Mean	SD
	Min.	Max.
	65	87
	64	770
	56	31
	40	184



There was no difference in average PACU LOS between EFS-AC score < 6 and EFS-AC ≥ 6 (frail) ( $p = 0.2585$ ).

The correlation between EFS-AC and PACU LOS was -0.124 ( $p = 0.3590$ ), which is not statistically significant.

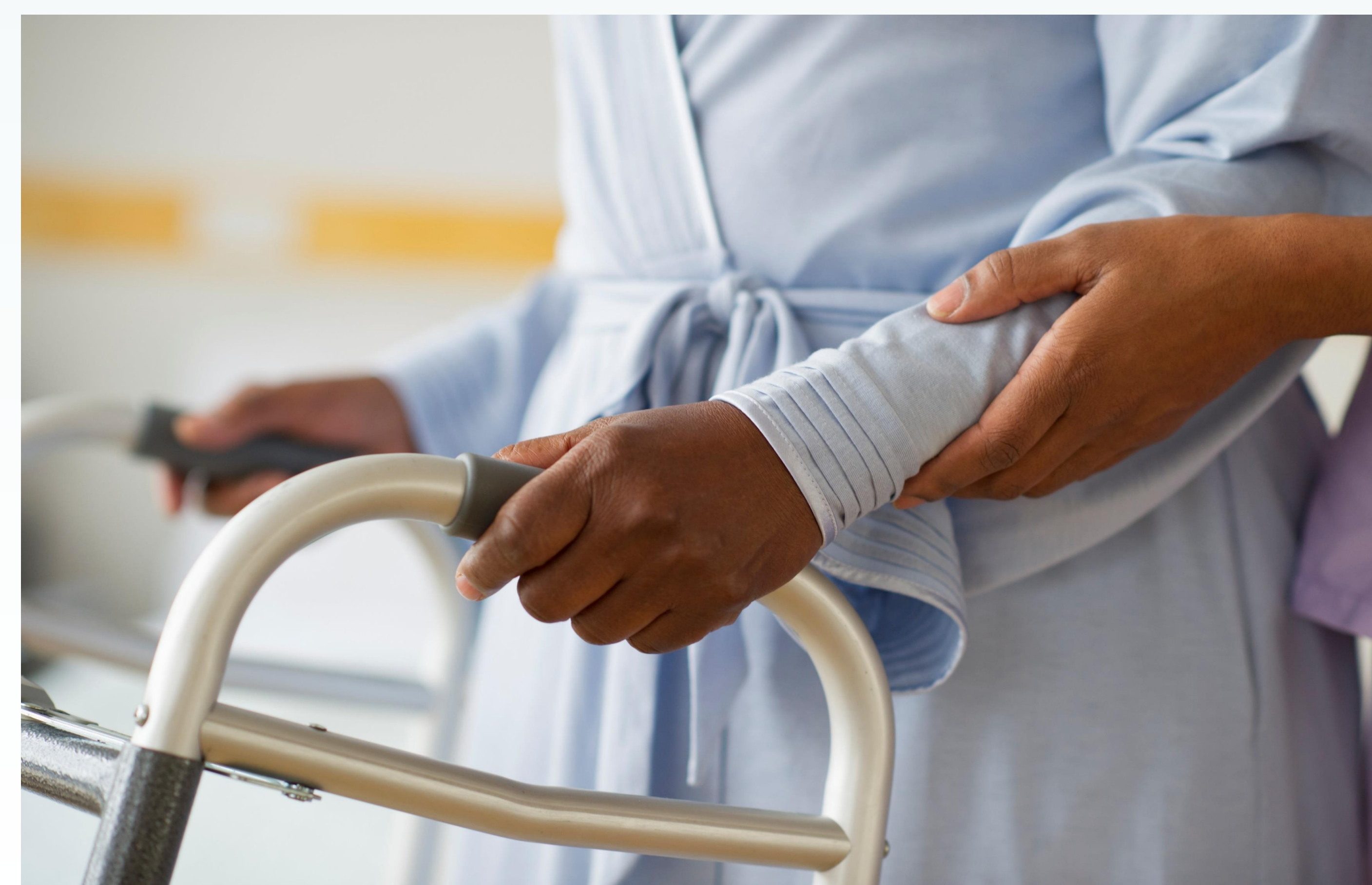
There was no significant difference between EFS-AC score < 6 and EFS-AC score ≥ 6 (frail) and disposition (home vs. admitted) ( $p = 0.7233$ ).

There was a statistically significant association between age and not frail ( $\bar{x} = 72.6$  yrs) vs. frail ( $\bar{x} = 79.4$  yrs) ( $p = 0.0136$ ).

The Pearson correlation coefficient between PACU LOS and age is  $r = 0.24503$  ( $p = 0.0662$ ).

The Fisher exact test demonstrated an association between EFS-AC (3 level) and ASA status ( $p = 0.0400$ ).

There was a small difference in PACU LOS between regional ( $\bar{x} = 127.2$  mins) vs. no regional ( $\bar{x} = 98.3$  mins) ( $p = 0.0549$ ).



## Discussion

There is no association between EFS-AC scores and PACU LOS.

There is no association between EFS-AC score < 6 and EFS-AC score ≥ 6 (frail) and disposition (home vs. admitted)

There is a statistically significant association between EFS-AC (3 level) and ASA status.

There is no association between PACU LOS and patient age.

The results between PACU LOS vs. regional / no regional are clinically significant.

Strengths:  
The EFS-AC tool is efficient to administer (≈5 minutes) and minimally disruptive to workflows.

Potential for generalizability.

Limitations:  
Response bias.

Social-desirability bias: Patients may want to appear a certain way. There is potential for skewed data.

A small sample size; the study is underpowered.



## Future Studies

Data collection will continue until a sample size of 80 is achieved. After statistical analyses, if results show a statistically significant difference between EFS-AC and PACU LOS, then the results will provide support for integrating the EFS-AC tool into EPIC for early frailty identification.

If integrated into EPIC, training sessions for preoperative staff can ensure familiarity with the tool and its benefits, fostering its long-term use.

Future studies could include a multi-institutional setting with a larger sample size.

## References

