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Hyesoo Chae

Providence Portland Medical Center, hyesoo.chae@providence.org

Sharon Leigh

Providence Health & Services • Portland, OR, Sharon.Leigh@providence.org

Colleen M Casey

Providence Health & Services, Portland, Oregon., colleen.casey@providence.org

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Medication and Pharmacy-Related Outcomes As Part Of The Seniors At Risk For Falls after Emergency Room Visit (SAFER) Project



Hyesoo Chae, PharmD, Sharon Leigh, PharmD, BCPS, Colleen M. Casey, PhD, ANP-BC
 Providence Health & Services • Portland, OR

Purpose

Falls continue to be a significant cause of morbidity and mortality in older adults, with falls accounting for 70% of accidental deaths in patients who are 75 years of age or older.¹ This project is a sub-analysis of a larger multi-clinic study examining multifactorial fall-risk interventions in the primary care setting. The purpose of this project is to describe medication and pharmacy-related variables for both an intervention and matched control group of patients 75 years of age and older admitted to the Emergency Department (ED) for a fall and quantitatively assess the outcome of interventions.

Background

The United States is comprised of an aging population; adults over the age of 85 are the fastest-growing age group in the United States and will reach approximately 9 million in 2030.¹ 25% of patients ≥ 65 years old in the United States report falling each year.¹ There are over 3 million emergency department visits related to falls in the United States, totaling approximately 50 billion dollars in total medical expenditures.²

Falls are a major threat for older adults as they can lead to increased risk of further injury, loss of independence, decreased mobility, and premature death.^{1,2} Despite numerous studies showing evidence that multifactorial fall risk interventions are effective in decreasing fall risk, older adults who have an injurious fall often do not receive meaningful interventions to mitigate their fall risk.^{3,4,5}

Polypharmacy and high-risk medication (HRM) use is one such modifiable fall risk factor. In 2015, it was estimated that 29% of older adults in the United States had filled at least one medication listed in the Beers Criteria. Studies have demonstrated that primary care pharmacists can help bridge that gap and play an important role in the interdisciplinary healthcare team by identifying and intervening to reduce HRMs use in older adults.⁷

The Seniors At Risk for Falls after Emergency Room visits (SAFER) project was created in 2018 to better serve seniors greater than 75 years of age who go to the Emergency Room for a fall, increase coordinated services, improve various outcome measures, and appreciate cost savings for delivery side and health plan with less costly services. SAFER provides a structured pathway to help teams provide tailored care to at-risk seniors.

Methods

This project was a retrospective comparative cohort analysis of patients in the SAFER project in four Providence Medical Group (PMG) primary care clinics from December 2018 to June 2019 in the Portland metro area. Inclusion criteria included patients who were active PMG patients at a SAFER pilot clinic, ≥75 years, prescribed ≥1 high-risk medication associated with increased falls, and went to the ED for a fall. Exclusion criteria included no clinic visits in the previous two years, enrollment in hospice or hospitalization, skilled nursing facility discharge, and death within two weeks of ED visit. For purposes of analysis, patients were matched by age, gender, Stopping Elderly Accidents, Deaths, and Injuries (STEADI) fall risk score and geographic location: eastside, westside, and southern Oregon and stratified by the STEADI score. A comparator group of patients who met inclusion criteria but were not enrolled in the SAFER project were used as a matched control group. Descriptive statistics include: patient demographics across control and intervention groups; occurrence of pharmacy (PharmD) consults during and after the formal intervention period; whether patients were on Vitamin D3; and changes in HRMs.

Results

	Control (n = 121)	SAFER (n = 122)
Age	84.46 (5.59)	84.62 (5.57)
Female	68.59%	68.85%
White	90%	90%
Lives at Home	22.3%	18.85%
Lives at Home with Roommates or Other Family Member	27.27%	23.7%
Lives at Home with Caregiver Help	16.5%	20.49%

Figure 1. This figure shows the baseline characteristics of both the control and intervention group

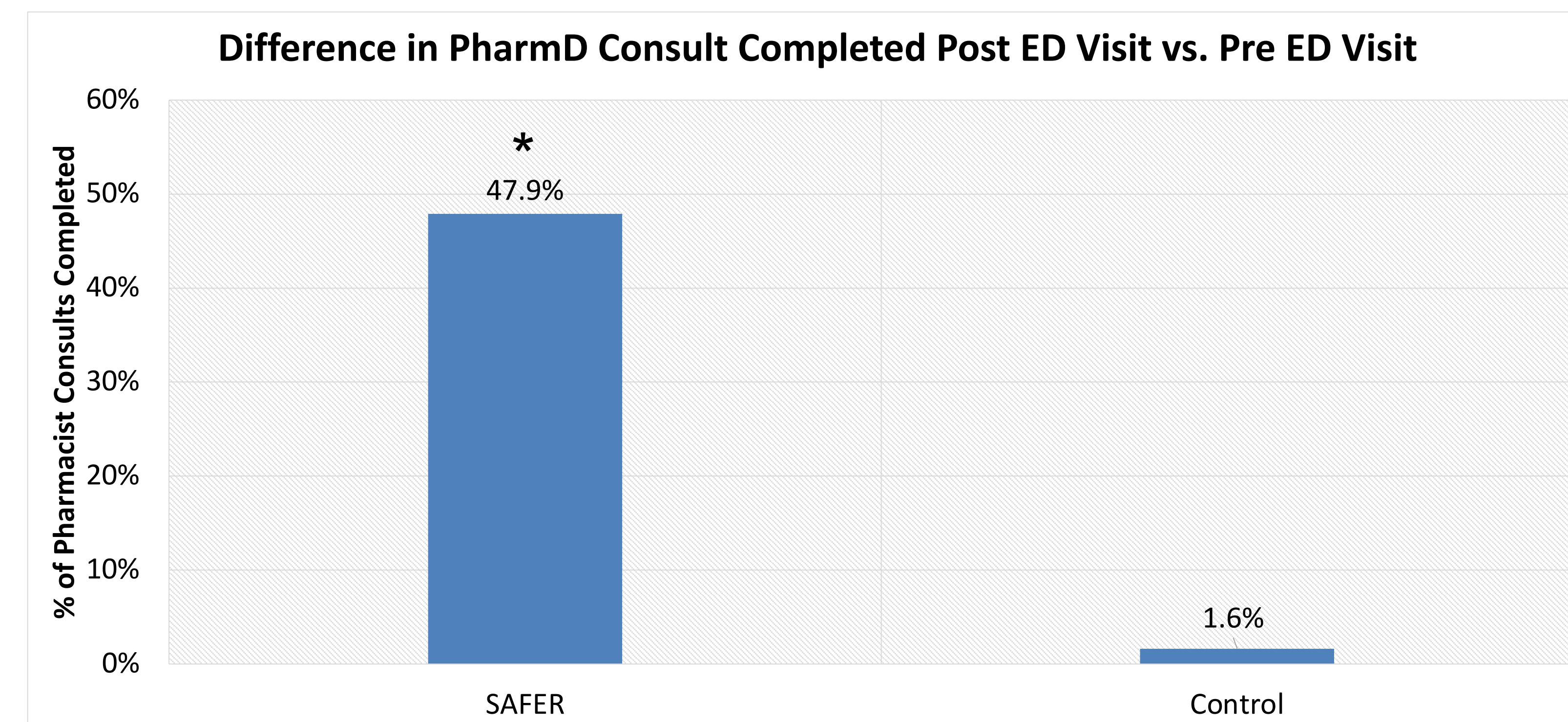


Figure 2. This figure compares the percentage of pharmacist consults completed post-ED admission for Falls between the SAFER and control group. * denotes statistical significance

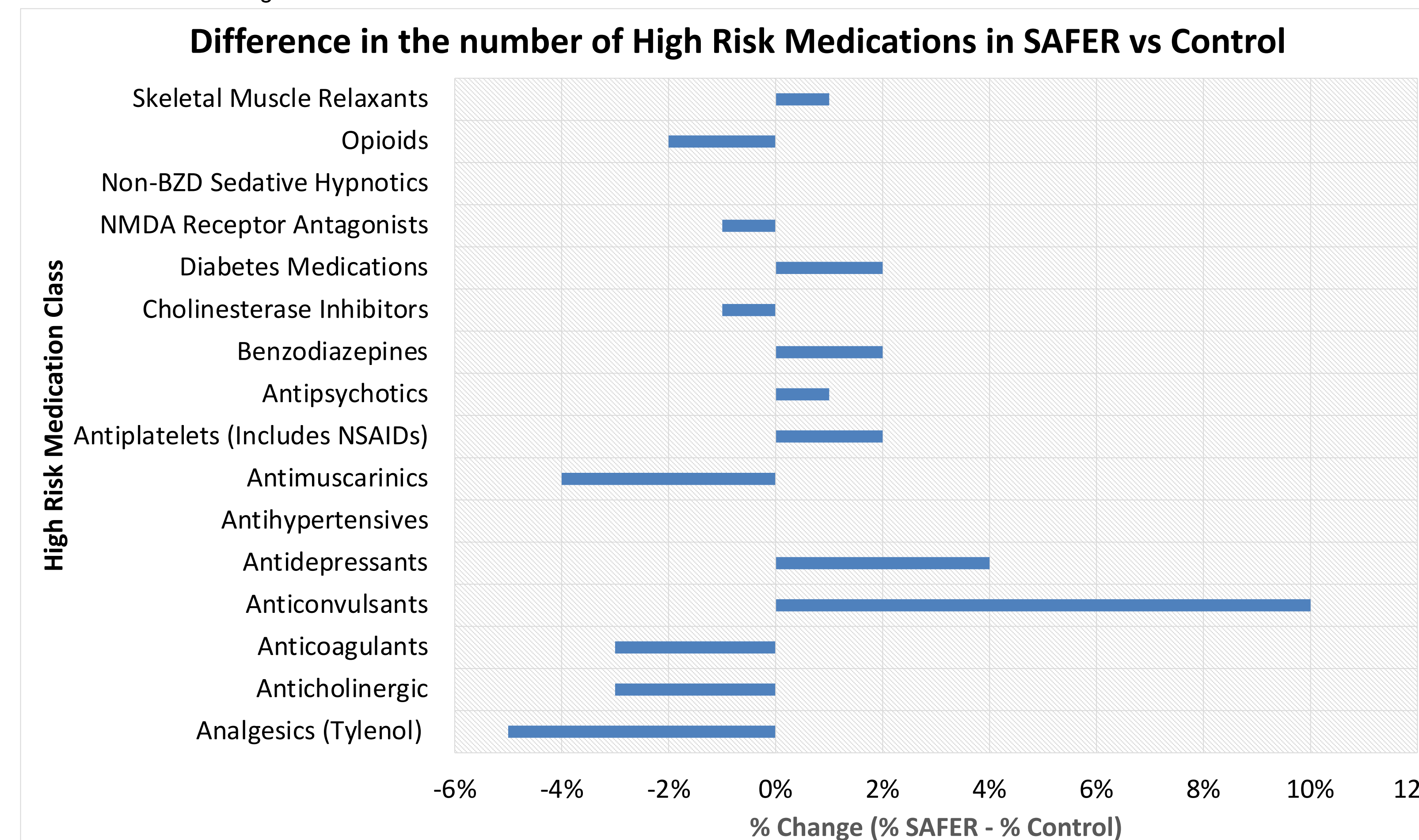


Figure 3. This figure shows the percentage of the High Risk Medication drug class change from the control group to SAFER; Drugs to right of 0% increased more in SAFER group.

Results

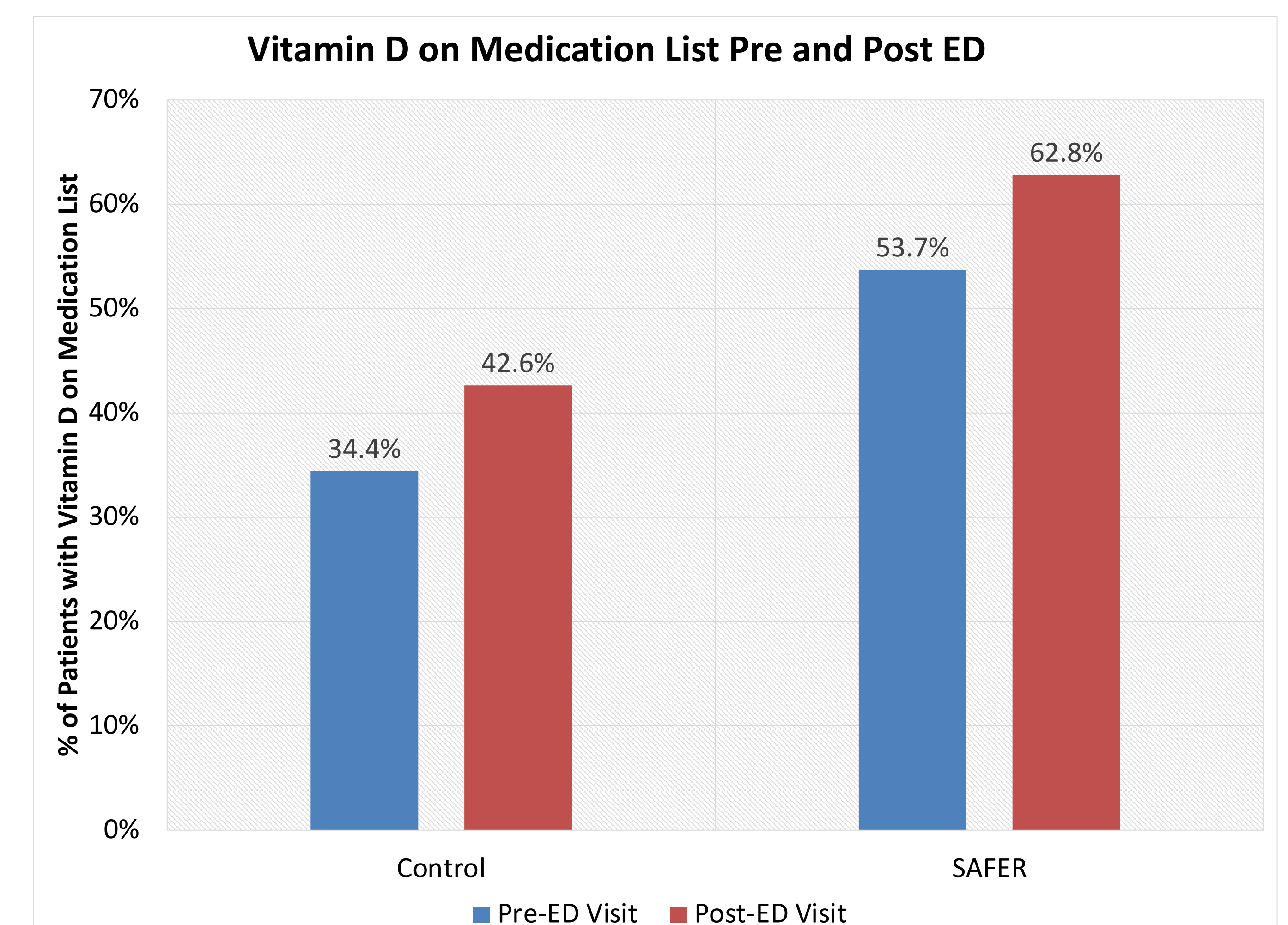


Figure 4. These figures show the difference in Vitamin D on patient medication list before and after ED visit for falls.

Discussion

- Results reflect a retrospective comparative cohort analysis.
- Baseline characteristics of both groups were comparable.
- There were significantly more PharmD consults completed post-ED visit compared to pre-ED visit between SAFER and control group (0.479 vs 0.016; P < 0.0001).
- 16 different HRM classes for pre-ED and post-ED visits in both groups were analyzed but did not show a statistical or clinical difference.
- Prescription of Vitamin D significantly increased in both the SAFER and Control group with p values of 0.0093 and 0.0124, respectively. The difference in Vitamin D prescriptions between SAFER and control was not statistically significant.

Limitations:

- This study does not exclude patients who have died during the study (44 patients total).
- This study did not analyze which medications in each HRM drug class were continued or discontinued.
- This study did not analyze what was being recommended during the PharmD consults and whether recommendations were followed.
- This study did not include combination products that include opioids such as hydrocodone-acetaminophen or oxycodone-acetaminophen
- This study did not look at tapering or dose decrease of HRMs.

Conclusion

The SAFER intervention helped increase pharmacist consults after patients who are greater than 75 years of age are admitted to the ED for falls. To understand the clinical impact of increased pharmacist consults, additional analysis is necessary.

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