

# Prospective Evaluation of Frailty and Fall Susceptibility in Geriatrics Receiving Fall Risk-Increasing Drugs and Its Impact on Quality of Life

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## Introduction

- The global population is aging rapidly, with 771 million elderly individuals worldwide in 2022, representing 10% of the total population.
- This proportion is projected to rise to 16% by 2050 and 24% by 2100, leading to increased reliance on healthcare services due to frailty, falls, and age-related conditions.
- FRIDs contribute significantly to dizziness, confusion, and balance issues. While FRIDs such as anxiolytics, antiepileptics, antipsychotics, sedatives, narcotics, and antidepressants are well documented internationally, there is limited evidence in the Indian context.
- Addressing this gap, the current study evaluates the prevalence of FRIDs among geriatric patients, explores deprescribing strategies, and assesses their impact on frailty, fall risk, and quality of life using the Barthel Index.

## Objectives

- To determine the prevalence of fall risk increasing drugs (FRIDs) among geriatric patients
- To evaluate the feasibility of deprescribing of FRIDs in clinical practice
- To assess the impact of deprescription on frailty, fall risk and quality of life (QoL)

## Methods

- Study Design:** Prospective cohort study, 12 months (Nov 2023–Nov 2024)
- Population:** Geriatric patients ≥65 years (n = 340)
- Data Collection:**
  - Sociodemographic details, medical history, inpatient medications
  - Structured patient interviews and medication reviews

## Reference

Cesari, M. (2020). How polypharmacy affects frailty. *Expert Review of Clinical Pharmacology*, 13(11), pp.1179–1181. doi:https://doi.org/10.1080/17512433.2020.1829467

Ming, Y., Zecevic, A.A., Hunter, S.W., Miao, W. and Tirone, R.G. (2021). Medication Review in Preventing Older Adults' Fall-Related Injury: a Systematic Review & Meta-Analysis. *Canadian Geriatrics Journal*, [online] 24(3), pp.237–250. doi:https://doi.org/10.5770/cgj.24.478.

## Assessment Tools:

**Frailty** → Frailty Index For Elderly (FIFE)

**Fall risk** → Modified Morse Fall Scale (MMFS)

**Quality of Life** → Barthel Index (functional independence)

## Follow-up:

Baseline, 1 month, and 2 months

## Interventions:

Deprescribing strategies (dose/frequency reduction, tapering, discontinuation, switching to safer alternatives)

## Sample Size Calculation:

$$n = \frac{z^2 \cdot p(1-p)}{\epsilon^2}$$

## Statistical Analysis:

**Friedman's test** → Ranked intervention impact across baseline and follow-ups

## Results

- Participants:** 340 geriatric patients (185 males, 54%; 155 females, 46%)
- Age distribution:** Majority (61%) aged 65–74 years
- Comorbidities:** Hypertension (62.35%) and type 2 diabetes mellitus (55.88%) most prevalent
- FRIDs prescribed:**
  - Cardiovascular agents most frequent (33.56%)
  - Mean FRIDs per patient: 2.72 ± 1.78
- Baseline scores:**
  - FIFE: 5.82 (↑ frailty)
  - MMFS: 78.35 (↑ fall risk)

## Deprescribing outcomes:

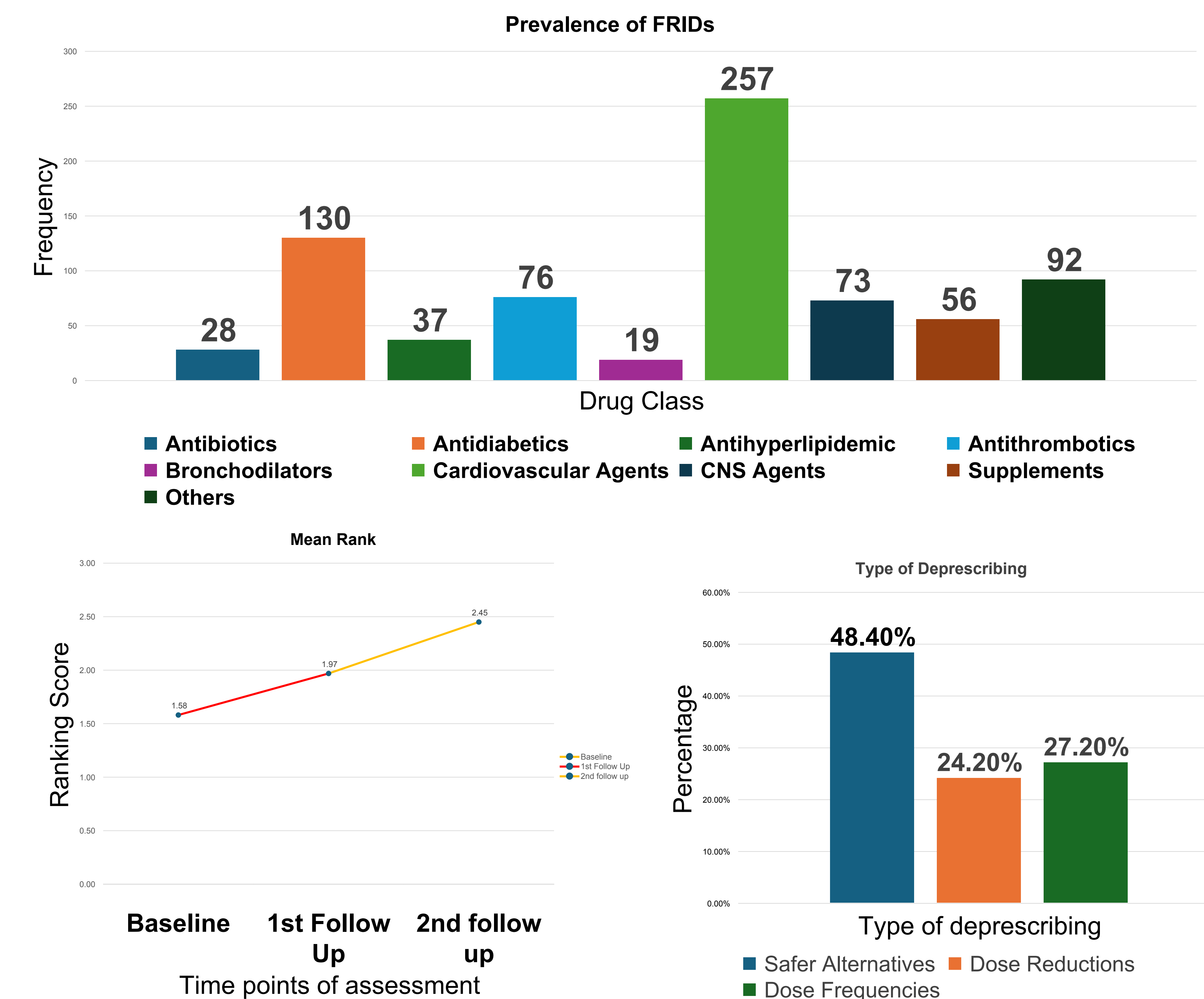
- Patients were transitioned to safer alternatives (48.4%)
- Patients with dose reductions (24.2%)
- Patients with adjusted dosing frequencies (27.2%)

## Quality of Life (Barthel Index):

- Severe dependency: 45.2% at baseline → 32.3% at follow-up
- Indicates improved functional autonomy post-intervention

## Statistical analysis:

- Friedman test** scores was utilized to determine the improvement across baseline and follow up
- Chi-square analysis** demonstrated significant improvement (p<0.001)



## Conclusion

Identification of FRIDs utilization among geriatric patients is critical for minimizing the risk of frailty and falls. Implementing targeted deprescribing strategies can significantly enhance patient safety and improve QoL.