

A Behavior Protocol to Reduce Falls in Assisted Living Facility Residents with Dementia Related to Neuropsychiatric Symptoms

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PROBLEM STATEMENT

Approximately 60% of individuals with dementia fall annually with neuropsychiatric symptoms (NPS) as a leading indicator (Roitto et al., 2018).

- Residents in an assisted living facility (ALF) in Southwest Florida were noted to have an average fall rate of 140.97 per 1,000 patient days.
- Exercise or physical therapy intervention reduce the risk of falling for older adults by 13% (Michael et al., 2010).
- Adapted exercise such as walking, movement, and hand exercises have also been shown to decrease the prevalence of NPS (Hamilton et al., 2017) and improve balance, mobility, cognition, and functional ability (Brett et al., 2016).
- Long-term and short-term exercise intervention can significantly reduce fall occurrence (Roitto et al., 2018, Fleiner et al., 2017).

PROJECT PURPOSE

To improve quality of care for residents with dementia in a community assisted living facility (ALF) through achieving a reduction in falls related to NPS.

Aim: To reduce the rate of falls by 20% in ALF residents with dementia within 90 days of implementing a behavioral monitoring and exercise protocol by May 1st, 2021.

CLINICAL QUESTION

Does implementation of an evidence-based exercise protocol reduce incidence of falls related to NPS compared to usual practice for residents with dementia in an ALF within 90 days?

MODEL/NURSING THEORY

- Quality improvement model following PDSA cycle (Langley et al., 2009; Deming, 2021).



- Based on Jean Watson's Human Caring Theory. This theory explains the relationship between the subjective inner healing processes and outside physical reality of the patient (Watson, 2020). This theory is applied by improving resident's internal dignity and physical independence through social engagement in exercise and fostering a trusting and sensitive relationship.

METHODS

Subjects

ALF residents age 65 years or older with a diagnosis of dementia

Setting

80-bed ALF with memory care unit in suburban, Southwest Florida

Project exempted from USF IRB oversight

Intervention and Data Collection

1. Conducted comprehensive review of incident reports and patients charts to establish baseline fall rate for the residents with dementia experiencing NPS.

2. Implemented an evidence-based protocol with exercise and behavioral monitoring components

- Residents engaged in facility-based 30-minute exercise activity twice weekly
- Professional caregivers completed assessments using the Caregiver Administered Neuropsychiatric Inventory (CGA-NPI) biweekly
- Instrument measures individuals experience of agitation, irritability, nighttime symptoms, appetite, hallucinations, delusions, aggression, aberrant motor activity (CGA Toolkit, n. d.).

3. Tracked falls within incident reports and conducted comprehensive chart reviews approximately every two weeks.

Analysis

$$\text{Fall rate} = \frac{(\text{total falls in month} \times 1,000)}{(\text{sum of patient days} + \text{days in month})}$$

- The fall rate prior to project implementation and post project implementation was compared
- A chi-squared test was performed to calculate the p-value

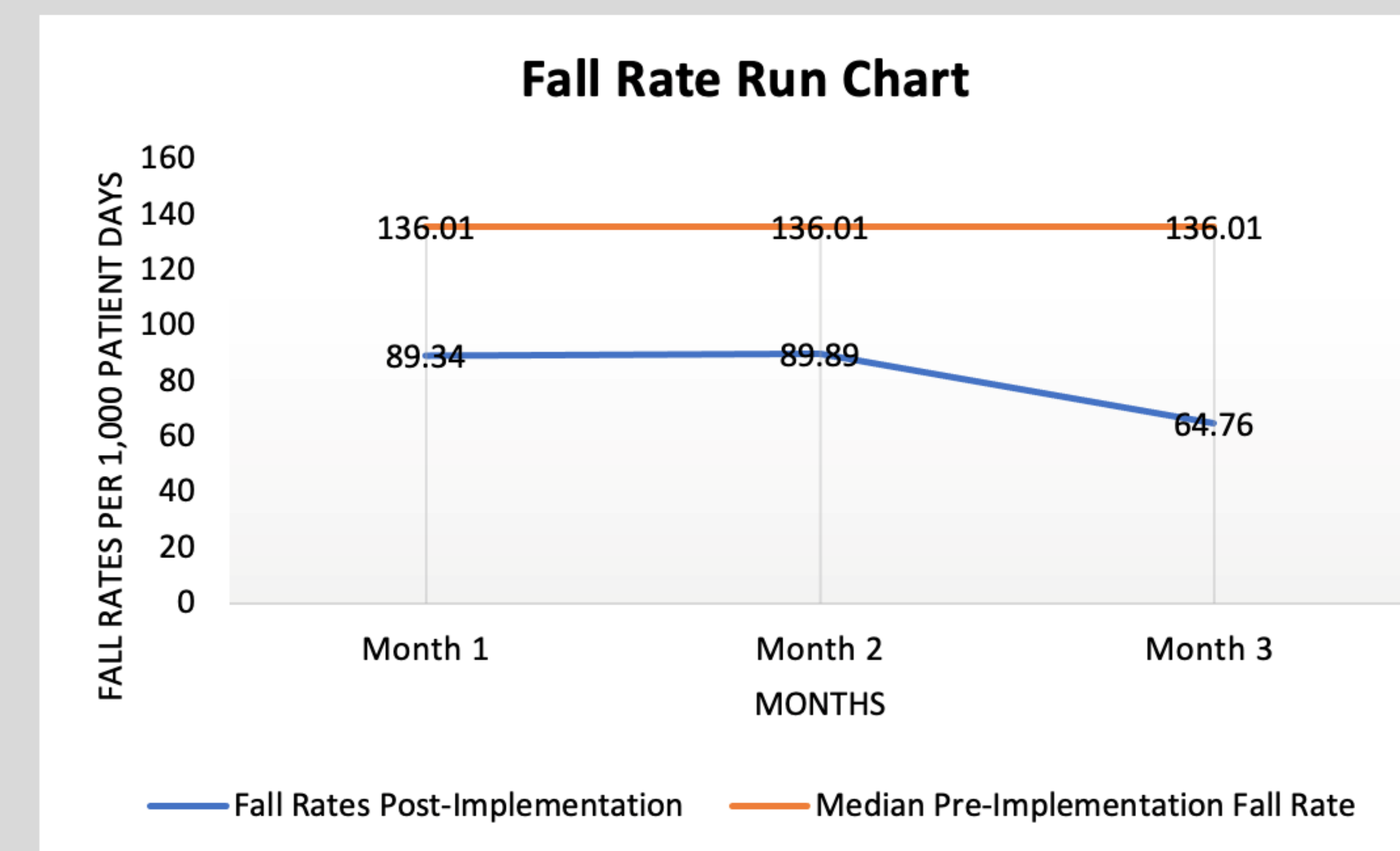
The CGA-NPI scores were collected biweekly. Data was extracted and deidentified. The scores were not analyzed as a primary outcome but did show improvement for individuals with early dementia and more able-bodied.

- Twelve domains of NPS were assessed resulting in a global score (higher scores correlate with greater behavioral disturbance).

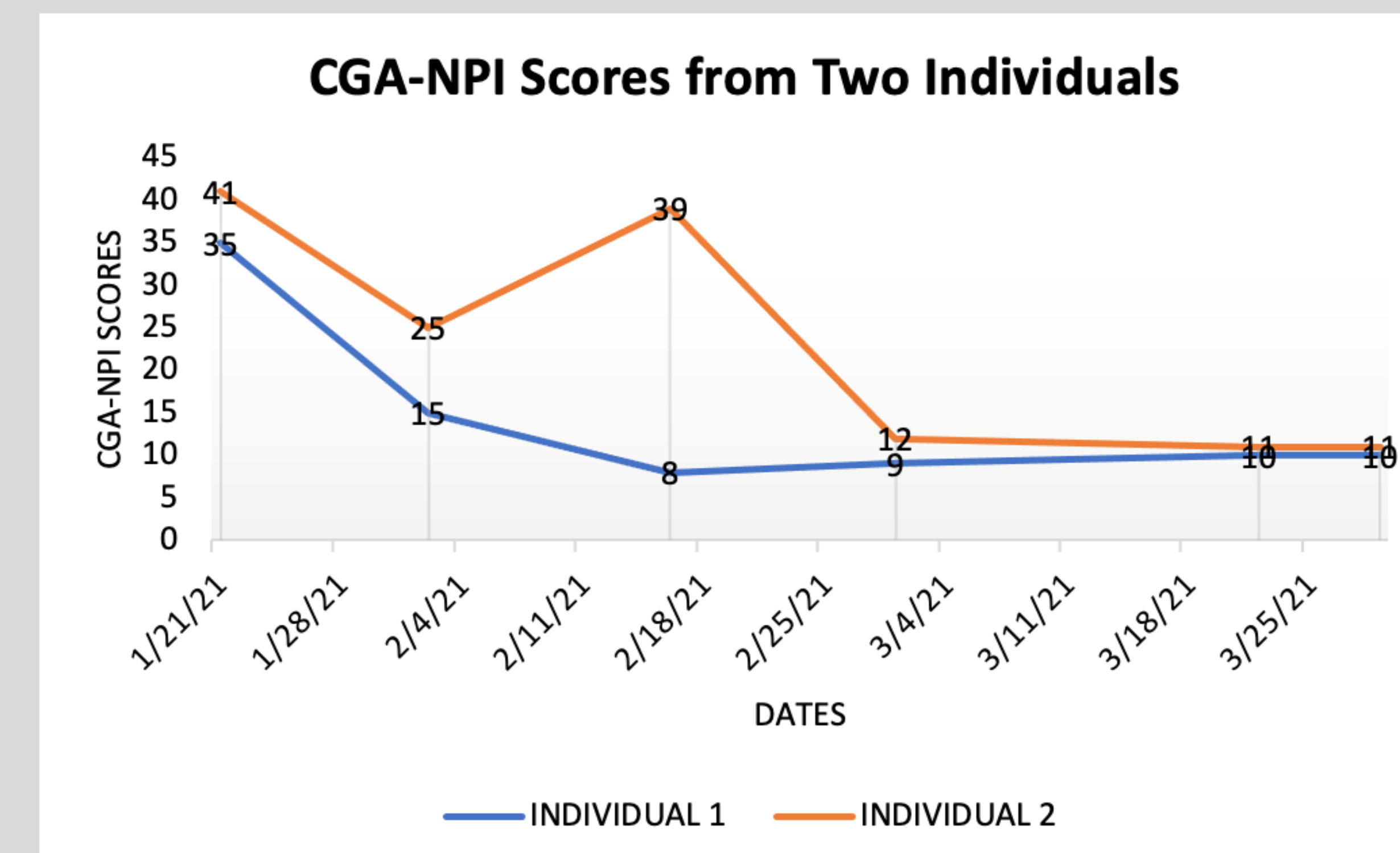
RESULTS

Average 90-day fall rate pre-protocol implementation was 141 per 1,000 patient days. The average 90-day fall rate during protocol implementation was 81 per 1,000 patient days.

- Statistically significant $p = 0.0001$
- There were 0.06 less falls per 1,000 patient days over protocol implementation
- The fall rate decreased 43% during implementation of the protocol



Post-implementation reduction in rates support the use of the protocol with comprehensive plan of care.



Individual cases of CGA-NPI score tracking show decreased experience of NPS symptoms

- Most compelling for residents that are younger, able-bodied, less advanced in dementia progression

DISCUSSION

A 43% decrease in fall rate was achieved in the 90 days of project implementation. This project provides support for the use of non-pharmacologic interventions to improve quality and safety for in the care of patients with dementia. Anecdotally, the protocol greatly improved morale in the care environment amidst the coronavirus pandemic.

LIMITATIONS

- Small sample size ($n = 12$) decreases generalizability
- Limited family involvement due to the pandemic

IMPLICATIONS FOR ADVANCED PRACTICE NURSING

This project helps to meet needs of a IHI age-friendly health care system and improved team awareness of NPS (Tinetti, 2020).

- Advanced practice nurses can develop and implement practice changes that benefit older adults in long-term care settings meeting IHI goals
- There is great potential for advanced practice nurses to have a profound impact on improving patient care for older adults in assisted living settings
- Staff reported "this [project] has taught me that their agitation is related to their dementia and exercise helps to make this happen less."
- Staff members understanding of dementia and ability to offer exercise intervention improved

SUSTAINABILITY

This program presents no additional cost excluding small paper cost for completion of CGA-NPI assessments.

- Non-fatal fall injuries in older adults cost around \$50 billion dollars per year (Florence et al., 2018).
- Fatal fall injuries cost around \$754 million dollars per year (Florence et al., 2018).

REFERENCES



SCAN ME

The fall rate decreased 43% during implementation.