national council on aging®

Evidence-Based Programs ROI Assessment Report

Falls Prevention Programs

July 2025

AUTHORS:

Brian Ezeonu Ph.D., Senior Research Associate, National Council on Aging

Table of Contents

This project was supported by the Administration for Community Living (ACL), U.S. Department of Health and Human Services (HHS) as part of a financial assistance award totaling $5,000,000 with 100 percent funding by ACL/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by ACL/HHS, or the U.S. Government.

Table of Contents

Tables & Figures

Table of Tables

Table of Figures

Acronyms

Acronym	Definition
ACL	Administration for Community Living
AMOB/VLL	A Matter of Balance with Volunteer Lay Leaders
CDSME	Chronic Disease Self-Management Education
EB	Evidence-based
EBPs	Evidence-based programs
ED	Emergency Department
ER	Emergency room
GDP	Gross Domestic Product
HAPID	Healthy Aging Programs Integrated Database
HARP	Home Hazard Removal Program
HCBS	Home and Community-Based Services
HSIM	Healthy Steps in Motion
HSOA	Healthy Steps for Older Adults
MOB	Matter of Balance
NCOA	National Council on Aging
OEP	Otago Exercise Programme
OLS	Ordinary Least Squares
QALY	Quality-Adjusted Life Year
RCTs	Randomized Controlled Trials
ROI	Return on Investment
SAIL	Stay Active and Independent for Life
TJQMBB	Tai Ji Quan: Moving for Better Balance

Evidence-Based Programs ROI Assessment Report

Falls Prevention Programs

Executive Summary

1.1 BACKGROUND AND PURPOSE

Falls are the leading cause of fatal and non-fatal injuries among adults aged 65 and older in the United States. With over 36 million fall incidents annually, about $80 billion is spent on medical costs related to non-fatal fall injuries, most of which is absorbed by Medicare, and this burden is expected to increase as the older adult population grows. Falls not only result in emergency room visits, hospitalizations, and long-term care admissions but also lead to reduced independence, poorer quality of life, and increased fear of mobility for older adults.

In response, the National Council on Aging (NCOA), through Administration for Community Living (ACL) funding, supports implementation of evidence-based fall prevention programs nationwide. Some of these fall prevention programs include A Matter of Balance, Tai Ji Quan: Moving for Better Balance, Otago Exercise Program, Stepping On, and others. According to data collected via the Healthy Aging Programs Integrated Database (HAPID), over 275,000 older adults participated in these evidence-based fall prevention programs between 2014 and 2024 and this report presents the first large-scale assessment of the return on investment (ROI) of these programs.

This analysis was designed to help policymakers understand the full health and economic impact of fall prevention programs at scale. Specifically, it aimed to:

- Quantify reductions in fall-related healthcare utilization
- Measure improvements in general health, self-efficacy, and psychosocial wellbeing
- Estimate economic savings and ROI from avoided medical costs
- Provide evidence to guide federal and state funding decisions for preventive aging services

1.2 METHODOLOGY OVERVIEW

This return on investment (ROI) study used a robust, six-step methodology to analyze program effectiveness and translate outcomes into economic terms. Data were drawn from HAPID, encompassing 275,462 individuals enrolled in ACL-funded fall prevention programs between 2014 and 2024. Data included demographics, self-reported falls history, general health, self-efficacy, fear of falling, loneliness, and healthcare utilization. Participants were matched on pre- and post-program surveys and the data was reshaped for longitudinal analysis. Fixed effects regression estimated within-person changes over time, while random effects models explored associations across demographic and program characteristics.

Key outcomes included falls incidence, emergency room (ER) visits, hospitalizations, outpatient visits, fear of falling, and loneliness. Outcome improvements were monetized using nationally reported cost estimates (adjusted to 2024 dollars) from peer-reviewed literature. Hospitalizations range from $9,805 to $40,619, with an average of $25,423. ER visits and outpatient care costs range from $1,485 to $6,421, with a mean of $3,525. Additionally, the average cost per injurious fall is estimated at $15,807. Total savings were calculated using healthcare utilization outcome improvements from regression models multiplied by associated costs and return on investment calculated by dividing the difference between total savings and program cost, by program cost. Finally, ROI was modeled under conservative, mean, and optimistic cost scenarios to provide a credible range of potential returns.

1.3 KEY FINDINGS

The results of this analysis reveal compelling evidence that fall prevention programs yield significant health improvements and substantial economic benefits. Participants experienced marked improvements in several key areas following completion of a fall prevention program.

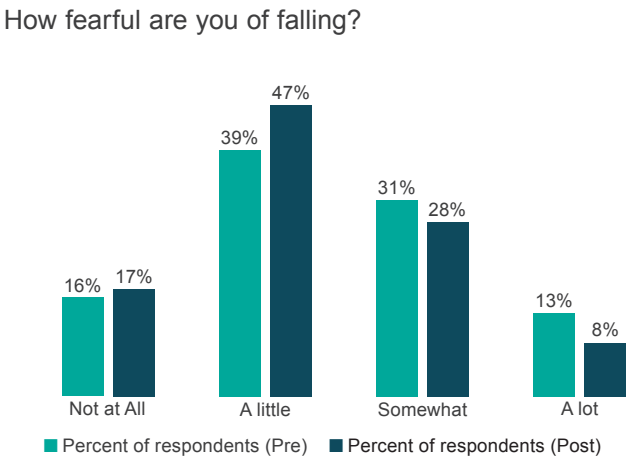
Table 2: Results of fixed effects regressions for key fall prevention program outcomes

Outcome Measured	Before the Program	After the Program	Change	What This Means
General health	2.86	2.93	Slight improvement	Participants reported feeling a healthier overall post program
Loneliness and isolation	2.04	2.02	Slight reduction	A small decrease in feelings of loneliness
Number of times fallen	**0.46**	**0.22**	**52% reduction**	**Substantial drop in how often participants fell**
Injurious fall	**0.18**	**0.08**	**56% reduction**	**Significant decrease in falls that caused injuries**
ER visit due to fall	**0.50**	**0.41**	**18% reduction**	**Fewer emergency room visits, suggesting fewer serious fall incidents**
Hospitalization	0.50	0.37	No significant change	Fewer hospitalizations, but change not statistically conclusive
Outpatient visit	0.50	0.42	No significant change	Minimal difference in outpatient visits
Fear of falling	2.44	2.28	Moderate reduction	Participants felt more confident and less fearful of falling

1.3.1 Fear of Falling and Fall Incidence

The assessment found a notable shift in perceived fear levels, particularly at the higher end of the fear spectrum. The proportion of respondents who reported being afraid of falling “A lot” declined from 13% pre-program to 8% post-program, indicating a reduction in the most severe levels of fall-related anxiety. Conversely, more participants reported feeling “A little” fearful after the program, increasing from 39% to 47%, while those who were “Not at all” fearful rose slightly from 16% to 17%, suggesting a general shift away from high levels of fear toward more moderate or minimal concern. In addition, a fixed effects regression model showed substantial improvement in fall incidence, with the average number of falls decreasing significantly from 0.46 to 0.22, and the rate of injurious falls dropping from 18% to 8%, highlighting the program’s impact on both fall frequency and severity. These reductions in fall frequency and severity were observed consistently across demographic groups and delivery formats.

Figure 4: Self-reported Fear of Falling

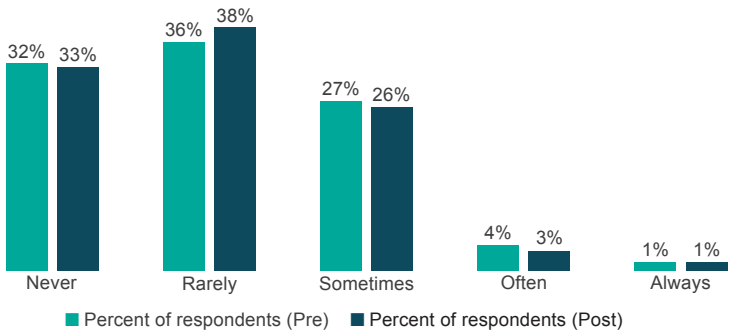


1.3.2 Loneliness and Social Isolation

Participants in fall prevention programs also reported slight improvements in feelings of loneliness or isolation. The proportion of respondents who reported “Rarely” feeling lonely or isolated increased from 36% pre-program to 38% post-program, while those reporting “Sometimes” declined slightly from 27% to 26%. Meanwhile, the proportion of participants who “Never” felt lonely or isolated decreased slightly from 33% to 32%.

Figure 3: Self-reported perception on Loneliness and Isolation

How often do you feel lonely or isolated?



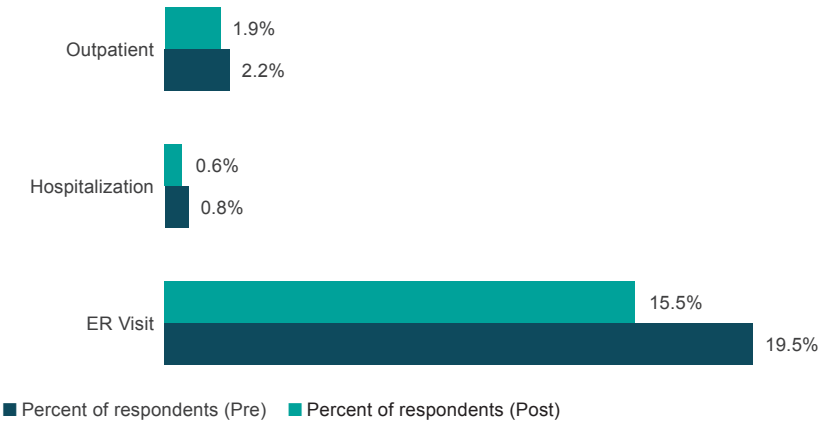
1.3.3 Healthcare Utilization

The figure illustrates participants' responses regarding the type of medical care received following a fall, both before and after participating in fall prevention programs. The most notable change occurred in the proportion of participants who reported visiting the emergency room (ER) after a fall, which declined from 19.5% pre-program to 15.5% post-program. This reduction suggests that the program may have contributed to a decrease in fall severity or improved participants' ability to manage fall-related incidents without requiring emergency care.

Smaller decreases were also observed in hospitalizations, which declined from 0.8% to 0.6%, and outpatient visits, which dropped from 2.2% to 1.9%. Fixed effects logistic regression results also showed a decrease in healthcare utilization, with the likelihood of emergency room visits following a fall decreasing by 18%, hospitalizations declined by 26%, and outpatient visits declined by 16%. This downward trends across all forms of medical response indicate that fall prevention programs are associated with reductions in fall-related health system utilization, particularly in high-cost settings like emergency departments.

Figure 5: Self-reported Healthcare Utilization

What happened after you fell?



1.3.4 Return on Investment (ROI)

From a fiscal perspective, the programs demonstrated extraordinary efficiency. Using the avoided incidents per participant (from fixed effects regression models) and healthcare cost estimates from the literature (adjusted to 2024 USD using the U.S. GDP Price Index), Tables 9 through 11 present projected cost savings across three cost scenarios: lower bound, mean, and upper bound. In the lower-bound scenario (Table 9), which applies the most conservative cost estimates for each type of incident, the program yields an estimated savings of $1,527.14 per participant and a total savings of over $420 million across all 275,462 participants. Under the mean cost scenario (Table 10), savings per participant rise to $3,904.13, with a total estimated savings exceeding $1.07 billion. The upper-bound estimates (Table 11) suggest the greatest potential return, with total program savings reaching approximately $1.76 billion, or $6,371.95 per participant. When measured against the $45 million invested in program delivery, the return on investment ranged from $8.36 to $38.04 for every dollar spent on fall prevention programs.

Table 9: Cost Savings Estimates (Lower Bound)

Incident	Avoided Per Participant	Cost	Savings Per participant	Total Savings
Injurious fall	0.1	$15,807.00	$1,580.70	$435,422,783.40
ER visit	0.09	$1,485.00	$133.65	$36,815,496.30
Hospitalization	0.13	$9,805.32	$1,274.69	$351,129,097.52
Outpatient visit	0.08	$1,485.00	$118.80	$32,724,885.60
Total			**$1,527.14**	**$420,669,479.42**

Table 10: Cost Savings Estimates (Mean)

Incident	Avoided Per Participant	Cost	Savings Per participant	Total Savings
Injurious fall	0.1	$15,807.00	$1,580.70	$435,422,783.40
ER visit	0.09	$3,524.67	$317.22	$87,382,138.28
Hospitalization	0.13	$25,422.57	$3,304.93	$910,383,757.05
Outpatient visit	0.08	$3,524.67	$281.97	$77,673,011.80
Total			**$3,904.13**	**$1,075,438,907.14**

Table 11: Cost Savings Estimates (Upper Bound)

Incident	Avoided Per Participant	Cost	Savings Per participant	Total Savings
Injurious fall	0.1	$15,807.00	$1,580.70	$435,422,783.40
ER visit	0.09	$6,420.60	$577.85	$159,176,818.55
Hospitalization	0.13	$40,618.80	$5,280.44	$1,454,561,665.13
Outpatient visit	0.08	$6,420.60	$513.65	$141,490,505.38
Total			**$6,371.95**	**$1,755,228,989.05**

Table 12: Return on Investment (ROI)

Scenarios	Total Savings	Cost	Savings Per participant	Total Savings
Scenario 1 (Lowest)	$420,669,479.42		$375,710,947.42	$8.36 per $1
Scenario 2 (Mean)	$1,075,438,907.14	$44,958,532.00	$1,030,480,375.14	22.92 per $1
Scenario 3 (Highest)	$1,755,228,989.05		$1,710,270,457.05	38.04 per $1

These figures underscore the clinical and economic value of fall prevention programming, highlighting its cost-effectiveness and broader societal benefit as a preventive health strategy for older adults.

1.4 POLICY IMPLICATIONS

The findings from this report present a clear and urgent policy opportunity. Given that 67% of fall-related costs are paid by Medicare and an additional 4% by Medicaid, the reductions in hospitalizations, emergency visits, and long-term care admissions translate directly into federal and state budget relief.

Beyond cost savings, these programs contribute to federal priorities related to healthy aging and preventative care. They promote independence, reduce caregiver burden, and help older adults remain connected to their communities. Importantly, the analysis also highlights the value of in-person and hybrid delivery models, especially in underserved and rural areas.

Recommendations for Policymakers:

1. Expand ACL and CDC funding for fall prevention under Title III-D, Injury Prevention grants, and Medicaid HCBS waivers.
2. Incorporate fall prevention into Medicare Advantage and managed care incentive structures to reduce avoidable acute care use.
3. Strengthen monitoring through robust data systems like HAPID, linking self-reported outcomes with claims-based utilization data.
4. Support scalable delivery models, including hybrid and virtual programs, to improve accessibility in rural and high-risk communities.
5. Mandate routine cost tracking from grantees to enhance future ROI analyses and benchmarking.

1.5 LIMITATIONS

While this study presents some of the strongest national evidence to date on the value of fall prevention, some key limitations must be acknowledged:

1. The time periods for pre- and post-program outcome reporting were not equivalent, potentially inflating post-program improvement.
2. Program costs were estimated using federal funding totals rather than site-specific expense data.
3. All outcome measures were self-reported, making them susceptible to recall or social desirability bias.
4. Income data was not available for most participants, limiting socioeconomic subgroup analysis.

These limitations underscore the need for continued investments in standardized data infrastructure for more robust outcome monitoring and program cost tracking, and integration with administrative claims systems.

1.6 CONCLUSION

This assessment provides robust evidence that evidence-based fall prevention programs are both clinically effective and economically sound. With high rates of participation, clear improvements in health and wellbeing, and return on investment figures as high as $38 per dollar spent, these programs represent a model for efficient, scalable public health intervention.

In an era of rising healthcare costs and an aging population, fall prevention should be viewed as a core component of national aging policy, not a supplementary wellness initiative. Sustained funding, improved data integration, and program delivery will be essential to maximizing these benefits. For Medicare, Medicaid, and public health systems, investing in fall prevention is not only good public health policy, it is sound fiscal policy.

Introduction

2.1 INTRODUCTION

Falls are the leading cause of fatal and non-fatal injuries among adults aged 65 and older in the United States. Each year, approximately 36 million falls occur in this population, resulting in over 3 million emergency department visits and more than 32,000 deaths.[1,2] These incidents often lead to fractures, traumatic brain injuries, loss of independence, and long-term functional decline[3]. Beyond the clinical outcomes on older adults, falls impose a heavy economic burden. Each year, about $80 billion is spent on medical costs related to non-fatal fall injuries, most of which is absorbed by Medicare.[4,5] Without proactive intervention, these costs are expected to rise as the older adult population grows.

Evidence-based falls prevention programs have emerged as an effective means to reduce fall risk and improve health outcomes. Evidence-based fall prevention programs are structured interventions designed to reduce the risk of falls among older adults by improving physical function, confidence, and awareness of environmental and behavioral risk factors. According to the National Council on Aging's Falls Prevention Programs Fidelity Hub, these programs are backed by research and approved by federal agencies such as the Administration for Community Living. They include a variety of approaches such as group classes, individualized home-based interventions, and educational workshops, focusing on strength and balance training, behavior change, home safety, and self-efficacy.[6] These programs have demonstrated success in increasing physical activity, enhancing balance and strength, and reducing the fear of falling.[7] Some key evidence-based Fall prevention programs implemented and/or supported by National Council on Aging (NCOA) as approved by the Administration on Community Living (ACL) include:[8]

- **A Matter of Balance:** A group-based program designed to reduce the fear of falling and increase physical activity among older adults. Through facilitated discussions, role-playing, and gentle exercises, participants learn practical strategies to manage concerns about falling, build confidence, and remain active in daily life. The program emphasizes that falls are preventable and promotes behavioral changes that enhance balance and safety.
- **Bingocize:** A 10-week group-based program from Western Kentucky University that uniquely combines exercise and health education within a bingo game format. Participants play bingo while performing inserted physical activities (e.g., resistance exercises) and answering health-related questions, all aimed at improving functional fitness, health literacy, and social engagement. The program requires a licensed facilitator and fidelity is ensured through structured training, facilitator observation, and standardized materials.

---

[1]Karthik N. Shankar and Angela Li, "Older Adult Falls in Emergency Medicine, 2023 Update," *Clinics in Geriatric Medicine* 39, no. 4 (November 2023): 503–518.

[2]TRICARE. "Fall Prevention." *Nellis Air Force Base*, accessed June 10, 2025. https://nellis.tricare.mil/Patient-Resources/Fall-Prevention#:~:text=About%2036%20million%20falls%20are,a%20fracture%20or%20head%20injury.

[3]Centers for Disease Control and Prevention. "Important Facts About Falls." Last reviewed January 26, 2023. https://www.cdc.gov/falls/data-research/facts-stats/index.html.

[4]Yara K. Haddad et al., "Healthcare Spending for Non-Fatal Falls among Older Adults, USA," Injury Prevention, July 19, 2024, https://injuryprevention.bmj.com/content/30/4/272

[5]Curtis S. Florence, Gwen Bergen, Adam Atherly, Elizabeth Burns, Judy Stevens, and Cara Drake, "Medical Costs of Fatal and Nonfatal Falls in Older Adults," *Journal of the American Geriatrics Society* 66, no. 4 (April 2018): 693–698.

[6]National Council on Aging. "Falls Prevention Evidence-Based Programs Fidelity Hub." Accessed June 10, 2025. https://www.ncoa.org/page/falls-prevention-evidence-based-programs-fidelity-hub.

[7]Cathie Sherrington et al., "Exercise for Preventing Falls in Older People Living in the Community," Cochrane Database of Systematic Reviews 2019, no. 1 (2019): CD012424.

[8]Ibid

Introduction

- **Enhance Fitness:** Enhance Fitness is a community-based group exercise program that focuses on improving cardiovascular endurance, muscle strength, flexibility, and balance. Classes are led by certified instructors and tailored to meet the needs of older adults at varying fitness levels. The program fosters social engagement while improving functional health, and it is particularly effective in helping older adults manage chronic conditions that may increase fall risk.
- **FallScape:** An individualized, multimedia-based intervention designed to complement FallsTalk. Participants engage in one to three brief (~10–30 minutes) tailored sessions that use scripted videos and interactive content to address personal risk factors. Delivered over at least four weeks, FallScape works best when combined with FallsTalk and incorporates fidelity monitoring through licensed AI-driven software and refresher trainings.
- **FallsTalk:** a one-on-one intervention providing a personalized approach to fall prevention. Trained facilitators conduct an initial FallsTalk interview (in-person or remote), followed by regular personal reflection exercises and brief weekly then monthly check-ins. Clinical trials demonstrate that FallsTalk significantly reduces fall rates compared to untreated individuals.
- **Fit and Strong:** An eight-week evidence-based physical activity program specifically tailored for older adults with lower extremity osteoarthritis. It blends strength and flexibility training with health education, encouraging participants to set goals for sustaining physical activity. The dual focus on exercise and behavior change helps participants improve mobility and reduce pain, while also addressing barriers to maintaining an active lifestyle.
- **Healthy Steps for Older Adults (HSOA):** HSOA is a falls prevention program aimed at increasing awareness of fall risks and providing preventive strategies. It includes a brief risk assessment, followed by interactive education sessions that cover topics such as balance, home safety, and the importance of physical activity. The program targets community-dwelling adults and often integrates referrals to additional health and social services.
- **Healthy Steps in Motion (HSIM):** HSIM is a group exercise program designed to improve balance, flexibility, strength, and overall fitness in older adults. The curriculum follows a progressive structure, with participants advancing through three levels of increasing intensity. HSIM emphasizes the importance of warm-ups, proper breathing, posture, and cool-downs, fostering physical resilience to reduce fall risks.
- **Home Hazard Removal Program (HARP):** HARP is an in-home intervention that uses occupational therapists to identify and eliminate fall hazards in the home environment. After conducting a standardized home safety assessment, therapists work with clients to make modifications that reduce environmental risks. This personalized, one-on-one approach has been shown to be effective in lowering fall incidence among high-risk individuals, especially those recently discharged from hospitals.
- **Otago Exercise Program:** The Otago Exercise Program is an individualized, home-based intervention developed in New Zealand and designed to prevent falls among frail older adults. Delivered by a physical therapist, the program includes a series of strength and balance exercises prescribed based on an initial assessment. Sessions are conducted over a 6 to 12-month period, with follow-ups to monitor progress and encourage continued adherence.
- **Stepping On:** Stepping On is a seven-week, small-group workshop (plus two follow-up visits) developed by the Wisconsin Institute for Healthy Aging to bolster confidence and reduce fall risk among older adults. Delivered by two trained leaders (often a health professional and a peer), sessions incorporate guest expert presentations, exercise components, and behavior change techniques. Fidelity is supported through leader training, key-element quizzes, and observed coaching during initial sessions.

- **Tai Chi for Arthritis and Falls Prevention:** Tai Chi for Arthritis and Falls Prevention, developed by the Tai Chi for Health Institute, is a certified instructor-led program designed to improve muscular strength, flexibility, balance, and stamina—particularly among older adults with arthritis. The program requires instructors to hold a current two-year certificate and includes scripted exercises delivered over a minimum of 16 hours (typically across 8–12 weeks) in small group settings. Regular instructor refresher training and periodic fidelity checks ensure effective delivery over time.

A growing body of evidence supports the cost-effectiveness and health benefits of evidence-based falls prevention programs, such as A Matter of Balance, Tai Ji Quan: Moving for Better Balance, Otago, and Stepping On. These programs enhance strength, balance, and falls self-efficacy, and have demonstrated reductions in fall incidence ranging from 20% to 55%, particularly among high-risk populations.[9,10] Beyond individual benefits, these interventions offer substantial financial savings. Economic evaluations consistently show that falls prevention programs are cost-effective, particularly when measured against benchmarks like cost per quality-adjusted life year (QALY). For example, a statewide implementation of the Healthy Steps for Older Adults program in Pennsylvania was associated with a cost saving of $718–$840 per participant, primarily due to reduced hospitalizations and emergency department visits.[11] Studies have also shown home assessment and exercise programs frequently fall below the widely accepted threshold of $50,000 per QALY.[12] Hence, investing in scalable, community-based falls prevention initiatives represents a practical and evidence-driven policy strategy for improving health outcomes for older adults as well as reducing reducing healthcare spending.

2.2 REPORT OBJECTIVES

The National Council on Aging (NCOA) delivers a comprehensive portfolio of evidence-based (EB) falls prevention programs aimed at reducing fall risk and improving the health, independence, and quality of life of older adults. While numerous evaluations have demonstrated the effectiveness of individual programs, NCOA has undertaken a broader analysis using participant-level, self-reported data from the Healthy Aging Programs Integrated Database (HAPID) to assess the societal and economic impact of falls prevention initiatives at scale.

This analysis aims to:

- Quantify potential healthcare cost savings from reductions in fall-related emergency room visits, hospitalizations, and long-term care utilization;
- Measure improvements in participants' physical function, confidence, and fall self-efficacy, as well as reductions in fear of falling and social isolation;
- Demonstrate the economic and public health value of continued investment in community-based falls prevention programs;
- Support efforts to scale and sustain evidence-based interventions that reduce preventable injuries and lessen the financial burden on Medicare, Medicaid, and other healthcare systems.

The next section provides a synthesis of current research on the impact of falls prevention programs across health, behavioral, and economic outcomes.

---

[9]Pinheiro, M. B., Sherrington, C., Howard, K., et al. (2022). Economic evaluations of fall prevention exercise programmes: A systematic review. *British Journal of Sports Medicine*, 56(21), 1353–1365.

[10]Juniper. Cost Savings Associated with *Preventing Falls in Older Minnesotans*. Innovations for Aging, LLC, May 2024.

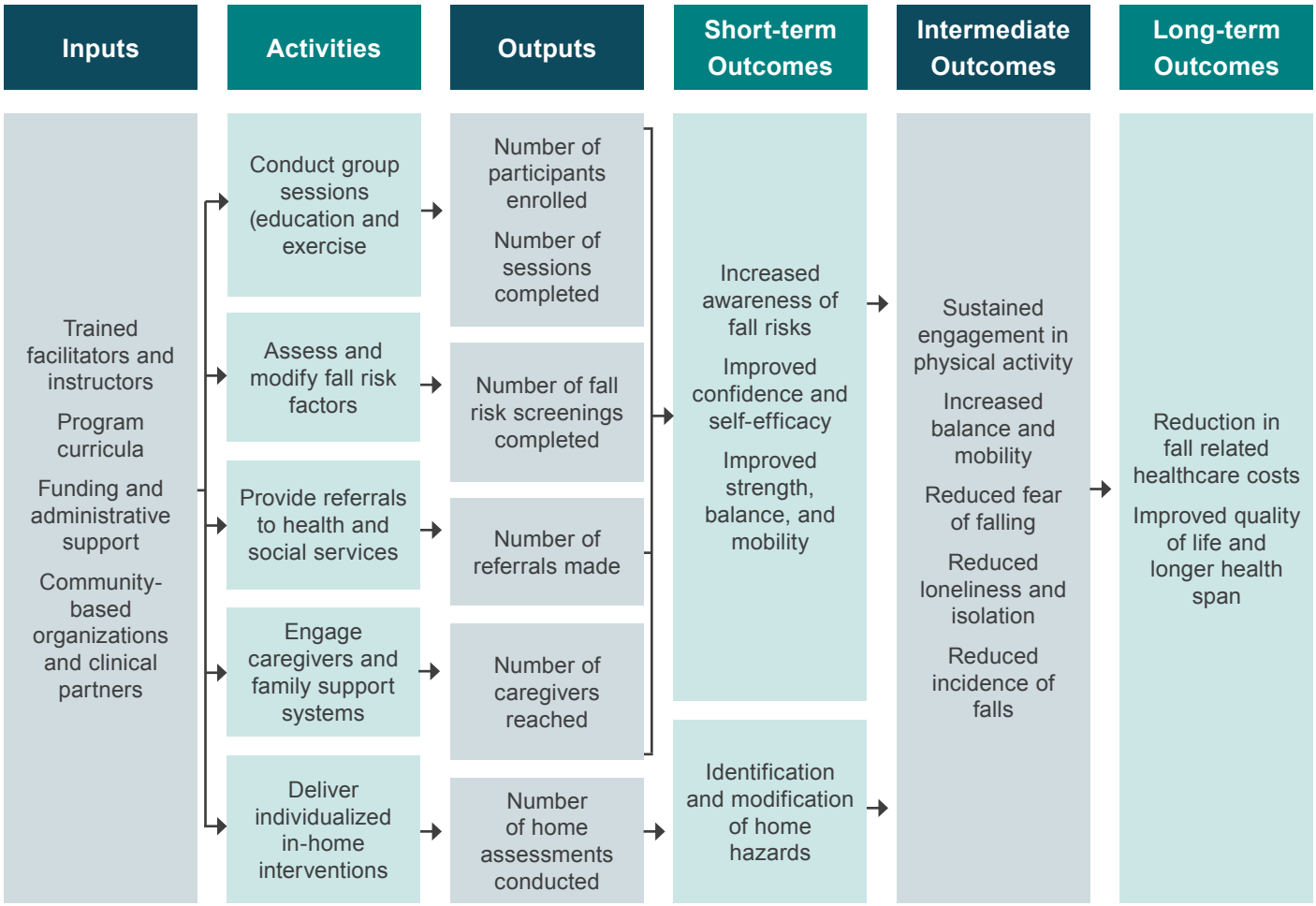
[11]Steven M. Albert, Jonathan Raviotta, Chyongchiou J. Lin, Offer Edelstein, and Kenneth J. Smith, "Cost-Effectiveness of a Statewide Falls Prevention Program in Pennsylvania: Healthy Steps for Older Adults," *American Journal of Managed Care* 22, no. 10 (October 2016): 638–644.

[12]Branko F. Olij et al., "Economic Evaluations of Falls Prevention Programs for Older Adults: A Systematic Review," *JAMA Internal Medicine* 178, no. 12 (December 2018): 1700–1710.

Literature Review

Evidence-based falls prevention programs have been widely studied for their impact on the physical, psychological, and social well-being of older adults at risk of falling. These structured interventions are designed to enhance balance, strength, confidence, and environmental awareness. Delivered in both community and clinical settings, these programs empower participants to take a proactive role in reducing fall risk, promoting independence, and maintaining mobility. Their focus on self-efficacy, peer engagement, and behavior change aligns with national public health priorities and has demonstrated measurable benefits across a variety of populations or a myriad of older adults populations. Figure 1 below presents a general logic model illustrating different fall prevention program activities and how they translate into expected outcomes that includes improved quality of life and reduced healthcare utilization.

Figure 1: Logic Model for Fall Prevention Programs



This literature review synthesizes current research on the outcomes of falls prevention programs, with particular attention to four key domains: (1) fear of falling and fall incidence, (2) self-efficacy and overall well-being, (3) loneliness and social isolation, and (4) healthcare utilization. Each of these areas represents a critical dimension of healthy aging, with implications not only for individual quality of life but also for reducing costly and preventable healthcare events such as emergency department visits and long-term care admissions. Together, these findings underscore the multifaceted value of falls prevention programs in improving lives, supporting health education, and advancing cost-effective care for an aging population.

Literature Review

3.1 FEAR OF FALLING AND FALL INCIDENCE

Fear of Falling is a well-documented barrier to mobility among older adults. It leads to reduced physical activity, deconditioning, and a self-perpetuating cycle of frailty and fall risk.[13] Multiple studies confirm that fall prevention programs significantly reduce participants' fear of falling. For example, participants in A Matter of Balance reported increased confidence and self-efficacy in managing fall risk, with improvements maintained for up to one year.[14] The Sunbeam Program, which combines progressive resistance and high-level balance training, significantly improved participants' scores on the Falls Efficacy Scale International, indicating reduced fear of falling in long-term care residents.[15] Similarly, Tai Ji Quan: Moving for Better Balance (TJQMBB), a community-based Tai Chi program, showed reductions in fear of falling alongside functional improvements in mobility and balance among older adults attending senior centers.[16] In Minnesota, a statewide analysis of Juniper-supported fall prevention programs found that 27–34% of participants reported improved fear of falling, and up to 40% reported improved well-being after program completion.[17]

Falls prevention programs have also consistently demonstrated reductions in actual fall rates. A systematic review Sherrington et al. (2020) found that balance and functional exercise programs reduced fall rates by 24%, while Tai Chi programs achieved a 23% reduction. A comparative study of Pennsylvania's Healthy Steps in Motion (HSIM) program found that falls incidence was significantly lower among participants compared to both non-program participants and those enrolled in less intensive education-only programs.[18] Programs that combined balance and strength training were particularly effective, with a 42% reduction when delivered for three or more hours weekly.[19] In the TJQMBB study, participants experienced a 49% reduction in total falls over the 48-week program.[20] Similarly, the Sunbeam Program reduced falls by 55% compared to usual care in residential aged care settings.[21] Even in populations with neurodegenerative conditions, like Parkinson's disease, minimally supervised group-based exercise interventions were shown to be cost-effective and effective in reducing fall frequency.[22]

Together, these findings reinforce the importance of implementing falls prevention programs as evidence-based interventions that target both physical and psychological dimensions of fall risk. They not only reduce actual fall events but also empower older adults by mitigating fear-related inactivity and dependency.

---

[13]Robert G. Cumming, Wendy L. Salkeld, Michael Thomas, and Jane Szonyi, "Prospective Study of the Impact of Fear of Falling on Activities of Daily Living, SF-36 Scores, and Nursing Home Admission," *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 55, no. 5 (May 2000): M299–M305.

[14]Tuo-Yu Chen, Jerri D. Edwards, and Megan C. Janke, "The Effects of the A Matter of Balance Program on Falls and Physical Risk of Falls, Tampa, Florida, 2013," *Preventing Chronic Disease* 12 (September 24, 2015): E157.

[15]Jennifer Hewitt et al., "Progressive Resistance and Balance Training for Falls Prevention in Long-Term Residential Aged Care: A Cluster Randomized Trial of the Sunbeam Program," *Journal of the American Medical Directors Association* 19, no. 4 (April 2018): 361–369.

[16]Fuzhong Li, Peter Harmer, and Kathleen Fitzgerald, "Implementing an Evidence-Based Fall Prevention Intervention in Community Senior Centers," *American Journal of Public Health* 106, no. 11 (November 2016): 2026–2031.

[17]Juniper. *Cost Savings Associated with Preventing Falls in Older Minnesotans*. Innovations for Aging, LLC, May 2024.

[18]Steven M. Albert, Jonathan Raviotta, Chyongchiou J. Lin, Offer Edelstein, and Kenneth J. Smith, "Cost-Effectiveness of a Statewide Falls Prevention Program in Pennsylvania: Healthy Steps for Older Adults," *American Journal of Preventive Medicine* 52, no. 6 (June 2017): 763–770.

[19]Catherine Sherrington et al., "Evidence on Physical Activity and Falls Prevention for People Aged 65+ Years: Systematic Review to Inform the WHO Guidelines on Physical Activity and Sedentary Behaviour," International Journal of Behavioral Nutrition and Physical Activity 17, no. 1 (October 2020): 144.

[20]Ibid

[21]Jennifer Hewitt et al., "Progressive Resistance and Balance Training for Falls Prevention in Long-Term Residential Aged Care: A Cluster Randomized Trial of the Sunbeam Program," *Journal of the American Medical Directors Association* 19, no. 4 (April 2018): 361–369.

[22]Inez Farag et al., "Economic Evaluation of a Falls Prevention Exercise Program Among People With Parkinson's Disease," *Movement Disorders* 31, no. 1 (January 2016): 53–61.

3.2 SELF EFFICACY AND GENERAL WELLBEING

Evidence-based fall prevention programs have demonstrated significant positive effects on self-efficacy and general wellbeing among older adults. These programs, which commonly include interventions like Tai Ji Quan: Moving for Better Balance, A Matter of Balance, Stepping On, and Stay Active and Independent for Life (SAIL), emphasize physical activity, education, and peer support to empower participants in managing their fall risks.

Several studies underscore these psychological and behavioral benefits. For example, participants in Juniper-supported programs reported substantial improvements in their confidence to manage fall-related risks. Specifically, 27–40% of participants across various programs reported higher overall wellbeing after the intervention, while 27–34% were less fearful of falling.[23] Participants also expressed increased comfort in discussing fall risks with providers and family members, planning to remain active, and greater satisfaction with life. These gains reflect enhanced self-efficacy, which is vital to promoting sustained behavior change and preventing activity restriction caused by fear of falling.

The AMOB/VLL program (A Matter of Balance with Volunteer Lay Leaders) further illustrates this effect. Cho et al. (2015) found significant increases in falls efficacy among oldest-old adults post-intervention, especially among those who increased their physical activity levels. Participants who initially reported lower self-efficacy showed the greatest gains, suggesting that such interventions are particularly effective in shifting psychological beliefs about fall risk among vulnerable populations.[24]

The structure of evidence-based fall prevention programs which combines educational sessions with peer support and goal-setting, creates a reinforcing environment that cultivates self-confidence and perceived control. This psychosocial benefit, in turn, contributes to improved mental health and resilience. The literature also indicates that self-efficacy improvements were maintained months after the programs concluded, highlighting their potential for long-term impact.[25,26] Evidence suggests that fall prevention programs not only reduce fall risk but also play a critical role in enhancing self-efficacy and general wellbeing among older adults. These outcomes are central to helping participants maintain independence, engage in regular physical activity, and experience a better quality of life.

[23] Ibid

[24] Joohong Min Cho, Jing Wang, Yuji Zhang, Matthew Lee Smith, and Marcia G. Ory, "Effects of an Evidence-Based Falls Risk-Reduction Program on Physical Activity and Falls Efficacy among Oldest-Old Adults," *Frontiers in Public Health* 3 (2015): Article 190.

[25] Ibid

[26] Matthew Lee Smith, Lingling Jiang, and Marcia G. Ory, "Falls Efficacy Among Older Adults Enrolled in an Evidence-Based Program to Reduce Fall-Related Risk: Sustainability of Individual Benefits Over Time," *Family & Community Health* 35, no. 3 (2012): 256–263

3.3 LONELINESS AND ISOLATION

Falls prevention programs are not only effective in reducing fall risk and improving physical functioning but also provide meaningful psychosocial benefits. Fall prevention programs, especially those that are group-based and community-delivered, have shown positive effects on reducing loneliness and improving social connectedness among older adults. Several studies have found evidence that group-based fall prevention programs helps participants build a sense of community and re-engage with others, which can reduce feelings of isolation.

A recent study analyzed data from 12,944 participants across 12 fall prevention programs including A Matter of Balance, Stepping On, and Bingocize, between January 2021 and July 2023 to assess changes in loneliness before and after fall prevention workshops. Significant reductions in loneliness scores were observed from baseline to post-workshop, and was more pronounced among participants with higher baseline loneliness.[27] A comprehensive systematic review by Petersen et al. (2020) examined the relationship between falls, social isolation, and loneliness. The review found evidence of a bidirectional association: social isolation and loneliness may increase the risk of falls, and experiencing a fall may, in turn, lead to greater isolation. Falls often trigger a fear of re-engagement in daily activities, reducing social interactions and compounding loneliness. Conversely, socially integrated individuals showed a lower incidence of falls, suggesting that group-based preventive interventions could mitigate both physical and psychosocial risks.[28]

These findings are consistent with other evaluations of well-established fall prevention programs. Participants in these programs consistently report increased social engagement and decreased feelings of isolation following program completion.[29] The benefits appear to extend beyond program duration, with evidence suggesting that social bonds formed during participation promote sustained interaction and emotional well-being.[30] These psychosocial outcomes should be considered essential program benefits, particularly given the growing awareness of social isolation as a serious health risk among older adults.

[27]Matthew Lee Smith and Gang Han, "Effectiveness of Evidence-Based Fall Prevention Programs to Reduce Loneliness in the United States," *Frontiers in Public Health* 12 (2024): 1459225

[28]Nicola Petersen, Hans-Helmut König, and André Hajek, "The Link Between Falls, Social Isolation and Loneliness: A Systematic Review," *Archives of Gerontology and Geriatrics* 88 (2020): 104020

[29]T. C. Healy, C. Peng, M. S. Haynes, E. M. McMahon, J. L. Botler, and L. Gross, "The Feasibility and Effectiveness of Translating A Matter of Balance into a Volunteer Lay Leader Model," *Journal of Applied Gerontology* 27, no. 1 (2008): 34–51

[30]Tamara Herrick, Kirsten Dorsey, Sarah Hallen, and Heidi Wierman, "Comparing the Outcomes of Virtual versus In-Person Delivery of an Evidence-Based Falls Prevention Program," *Innovation in Aging* 7, suppl. 1 (2023): 703.

3.4 HEALTHCARE UTILIZATION

Fall prevention programs have demonstrated considerable success in reducing health care utilization among older adults, particularly by decreasing emergency department (ED) visits, hospitalizations, and related costs. These reductions hold significant implications for public health and aging services systems, particularly in efforts to mitigate costs associated with Medicare and Medicaid.

One of the earliest randomized controlled trials (RCTs) on a home-based exercise intervention conducted in New Zealand found a 46% reduction in falls among the intervention group, with no hospital admissions due to falls compared to five in the control group. Notably, the intervention cost was offset significantly when avoided hospital costs were included, demonstrating strong cost-effectiveness.[31] Similarly, a Canadian evaluation of the Otago Exercise Programme (OEP) reported significant reductions in fall incidence and health care costs, particularly among older men. Men in the intervention group incurred lower health care costs and experienced fewer falls compared to those in usual care. The program was found to be cost-saving for men and cost-neutral for women, suggesting its value in targeted populations.[32]

In addition, a Cochrane review by Sherrington et al. (2019) reinforced that exercise significantly reduces the rate of falls and may reduce the risk of requiring health care services due to injuries. These programs also reduced the number of people experiencing falls that led to hospitalization or medical attention.[33] Furthermore, Tricco et al. (2017), in a network meta-analysis to assess what types of fall-prevention programs may be effective for reducing injurious falls in older people, found that multifactorial interventions, those combining clinical assessments with exercise or environmental modifications, led to significant reductions in fall-related health service use, including fewer visits to primary providers and lower odds of ED visits.[34]

Collectively, these findings demonstrate that fall prevention programs can meaningfully reduce unnecessary health care utilization among older adults. By decreasing the frequency and severity of falls, these interventions prevent avoidable ED visits, hospital stays, and specialist care, resulting in cost savings and improved population health outcomes.

[31]M. Clare Robertson, A. John Campbell, Mary M. Gardner, and Nancy Devlin, "Preventing Injuries in Older People by Preventing Falls: A Meta-Analysis of Individual-Level Data," Journal of the American Geriatrics Society 50, no. 5 (2002): 905–911.

[32]Jane Davis, Janet D. McElhaney, Geneviève Ferguson, and Dawn C. Mackey, "Cost-Effectiveness of the Otago Exercise Programme in Community-Dwelling Older Adults in Canada," PLOS ONE 17, no. 6 (2022): e0267247.

[33]Catherine Sherrington et al., "Exercise for Preventing Falls in Older People Living in the Community," *Cochrane Database of Systematic Reviews* 2019, no. 1 (2019): CD012424,

[34]Andrea C. Tricco et al., "Comparative Effectiveness of Interventions for Preventing Falls in Older Adults: A Systematic Review and Network Meta-Analysis," *JAMA* 318, no. 17 (2017): 1687–1699.

Data and Methodology

4.1 DATA

This study employed a structured, evidence-based approach to estimate health care cost savings and return on investment (ROI) resulting from participation in the National Council on Aging's (NCOA) grant-funded falls prevention programs implemented between 2014 and 2024. The analysis draws on participant-level data collected through NCOA's Healthy Aging Programs Integrated Database (HAPID): a centralized data system developed to support the evaluation, continuous improvement, and sustainability of evidence-based programs (EBPs) aimed at enhancing the health, safety, and independence of older adults.

Table 1: Demographic information of fall prevention program participants

Variable	Mean (sd)	N
Age	74.76 (9.69)	213,635
Number of Chronic Conditions	1.39 (1.39)	275,462
Race	**Percentage of Participants**	
American Indian or Alaska Native	0.8%	2,166
Asian American	2.7%	7,438
Black/African American	6.8%	18,860
Hispanic/Latino	4.4%	199,076
Native Hawaiian or Pacific Islander	0.1%	289
White	63.1%	173,905
Education Level		
Some elementary, middle, or high school	4.0%	11,341
High school graduate or GED	13.3%	37,252
Some college or technical school	20.8%	58,285
College (4 years or more)	30.9%	86,709
Bachelor's degree or higher	0.1%	208
Sex		
Male	13.7%	38,403
Female	65.1%	37,726
Prefer not to say	0.1%	175

Data and Methodology

HAPID integrates standardized data from individuals enrolled in various NCOA-supported interventions, including A Matter of Balance, Tai Ji Quan: Moving for Better Balance, Otago Exercise Program, Stepping On, and other community-based falls prevention initiatives across the United States. Participants are predominantly adults aged 60 and older, though the programs also serve adults with disabilities or chronic health conditions who are at risk of falling. Recruitment commonly occurs through senior centers, aging services providers, health systems, and community-based nonprofits that deliver NCOA-affiliated programs. Table 1 breaks down the demography of participants that enrolled in one of ACL-funded fall prevention programs between 2014 and 2024, including their average age, sex, race, and the highest education attained.

As part of their participation, individuals complete standardized pre- and post-program surveys capturing data on demographics, physical activity, falls history, fear of falling, self-efficacy, and health service utilization (e.g., emergency room visits, hospitalizations). In some cases, additional outcomes such as loneliness, isolation, and quality of life are also measured. This robust data infrastructure enables stakeholders at local, state, and national levels to assess how participation in falls prevention programs influences functional status, psychosocial well-being, and downstream health care use. HAPID's scalable, standardized framework supports consistent monitoring of implementation and impact across settings, making it a valuable resource for program implementers, researchers, funders, and policymakers committed to reducing falls and promoting healthy aging.

4.2 METHODOLOGY

To investigate individual health outcomes of evidence-based fall prevention programs and translate them into financial values that will inform funders, policymakers, and program implementers about the fiscal and societal value of fall prevention programs this assessment The methodology followed a six-step process: (1) survey design and data collection, (2) data cleaning and transformation, (3) statistical estimation of program effects, (4) cost valuation of outcomes, (5) return on investment (ROI) calculation, and (6) reporting of results and sensitivity analysis. Together, these steps enabled a comprehensive evaluation of Fall prevention program outcomes in terms of both clinical outcomes and financial value.

4.2.1 Data Cleaning and Transformation

The raw data extracted from NCOA's Salesforce system on evidence-based fall prevention program participants were processed using Stata to prepare the dataset for analysis. This included only participants who enrolled in fall prevention programs such as A Matter of Balance (MOB), Tai Ji Quan: Moving for Better Balance, Stepping On, and Otago Exercise Program. Observations with missing pre- or post-program outcome data were excluded to ensure comparability.

Each participant was assigned a unique identifier, and variables capturing key outcomes (e.g., general health, fear of falling, fall self-efficacy, and physical activity) were renamed to indicate their time point (pre or post). The dataset was reshaped from wide to long format using a two-time-point variable to facilitate paired analyses. Additional binary indicators were generated to identify whether participants improved on specific outcomes (e.g., decreased fear of falling or increased physical activity), providing simple flags for further statistical modeling. These transformations were necessary to align the dataset with the assumptions and requirements of regression modeling and to ensure longitudinal consistency across participants.

4.2.2 Fall Prevention Program Effect Estimation

The cleaned dataset was then prepared for multivariate regression analysis to estimate the effect of program participation on outcome changes, controlling for covariates such as age, sex, and number of chronic conditions. These adjustments aimed to minimize confounding and better isolate the program effect. Outcome variables were modeled using appropriate statistical techniques: binary logistic regression for dichotomous outcomes (e.g., improved fall self-efficacy), ordered logistic regression for ordinal scales (e.g., fear of falling and general health rating), and ordinary least squares (OLS) regression for continuous scores (e.g., fall frequency). These models were used to estimate marginal effects and predicted probabilities, quantifying the average treatment effect on key participant-reported outcomes. This approach enabled evaluation of both statistical significance and clinical relevance across multiple measures..

Key Outcome Measures: A paired pre-post survey design was utilized to measure changes in participant outcomes following evidence-based fall prevention program completion. The survey instrument included validated measures aligned with key domains known to influence healthcare utilization and expenditures. Table 2 below provides a summary statistic of these measures.

Table 2: Summary Statistics Table for Key Outcomes

Variable	Mean	SD	Minimum	Maximum	N
General health	2.96	0.83	1	5	171,791
Loneliness and isolation	2.03	0.79	1	5	72,943
Number of times fallen	0.39	1.47	-1	180	89,287
Injurious fall	0.19	0.97	-1	180	22,787
Report fall	0.73	0.45	0	1	16,005
ER visit	0.18	0.39	0	1	24,701
Hospitalization	0.01	0.08	0	1	24,701
Outpatient visit	0.02	0.13	0	1	24,701
Did not seek medical care	0.69	0.46	0	1	24,701
Fear of falling	2.36	0.89	1	4	252,648

4.2.3 Cost Valuation and Return on Investment Calculation

To translate improvements in participant outcomes into economic value, the analysis applied standardized cost-avoidance estimates derived from national literature on fall-related healthcare utilization. For instance, reductions in fall-related emergency department visits, hospitalizations, and medical services were converted into dollar savings using average treatment costs for older adult falls.[35] Total estimated savings were calculated by multiplying the number of participants who demonstrated improvement in high-cost outcomes (e.g., reduced fear of falling, fewer reported falls) by associated cost-avoidance values. Program delivery costs were subtracted from these savings to estimate net benefit, and the ROI was calculated as:

ROI=(Total Savings−Program Costs)/Program Costs

Confidence intervals were generated around key estimates to account for uncertainty in outcome attribution and variation in cost assumptions. To test the sensitivity of ROI results, a range of plausible cost inputs (e.g., high vs. low estimates for ER visits and hospital stays) was used. This allows funders and policy stakeholders to understand the potential value of fall prevention programs under conservative, moderate, and optimistic cost-saving scenarios.

[35]Juniper. *Cost Savings Associated with Preventing Falls in Older Minnesotans*. Innovations for Aging, LLC, May 2024.

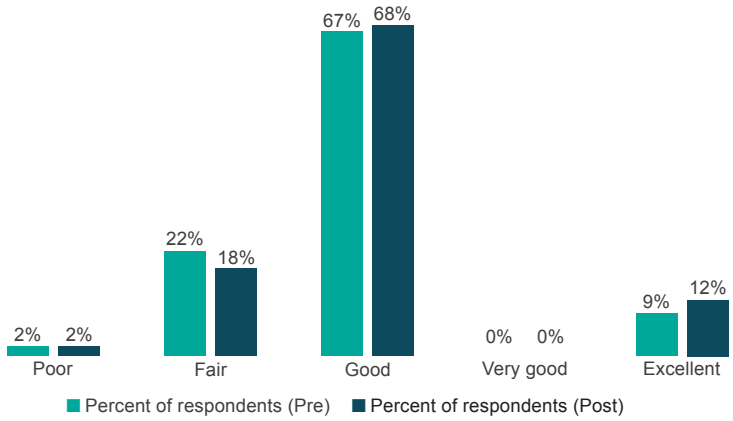
Results

5.1 DESCRIPTIVE STATISTICS

This section presents changes in key self-reported outcomes following participation in fall prevention programs, including perceptions of general wellbeing, loneliness and isolation, fear of falling, and healthcare utilization. The findings highlight modest but consistent shifts toward improved health outcomes across these multiple indicators. Figure 2 presents the distribution of self-rated general health before and after participation in fall prevention program. The data indicate a positive shift in participants' health perceptions following program completion. Specifically, the proportion of respondents rating their health as "Excellent" increased from 9% pre-program to 12% post-program, suggesting a modest improvement in perceived health at the highest level. Meanwhile, the share of individuals reporting "Fair" health declined from 22% to 18%, indicating fewer participants considered their health only average after the intervention. Notably, the "Good" category remained dominant, with a slight increase from 67% to 68%, reflecting stable but slightly improved overall perceptions of health.

Figure 2: Self-reported General Health

In general, would you say that your health is?



In addition to changes in perceived general health, participants in Fall Prevention programs also reported slight improvements in feelings of loneliness or isolation, as shown in Figure 3. The proportion of respondents who reported "Rarely" feeling lonely or isolated increased from 36% pre-program to 38% post-program, while those reporting "Sometimes" declined slightly from 27% to 26%. Reports of feeling lonely "Often" decreased from 4% to 3%, and the percentage reporting "Always" remained unchanged at 1%. Meanwhile, the proportion of participants who "Never" felt lonely or isolated decreased slightly from 33% to 32%. Although modest, these trends suggest that Fall Prevention programs may play a role in helping participants experience slightly fewer or less frequent feelings of loneliness and isolation which are closely associated with emotional and social well-being among older adults.

Results

Figure 3: Self-reported perception on Loneliness and Isolation

How often do you feel lonely or isolated?

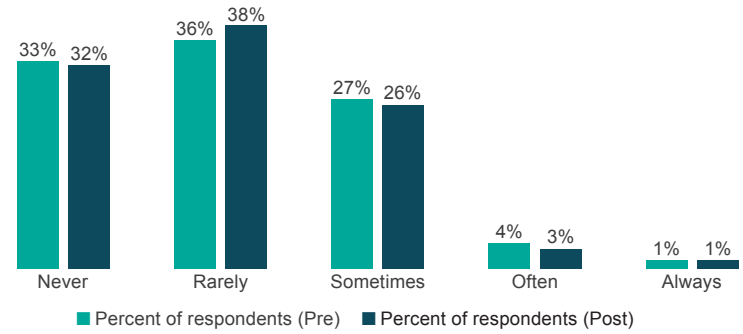


Figure 4 presents participants' self-reported fear of falling before and after completing Fall Prevention programs. The data reveal a notable shift in perceived fear levels, particularly at the higher end of the fear spectrum. The proportion of respondents who reported being afraid of falling "A lot" declined from 13% pre-program to 8% post-program, indicating a reduction in the most severe levels of fall-related anxiety. Similarly, those reporting "Somewhat" decreased slightly from 31% to 28%. Conversely, more participants reported feeling "A little" fearful after the program, increasing from 39% to 47%, while those who were "Not at all" fearful rose slightly from 16% to 17%. This distribution suggests a general shift away from high levels of fear toward more moderate or minimal concern.

Figure 4: Self-reported Fear of Falling

How fearful are you of falling?

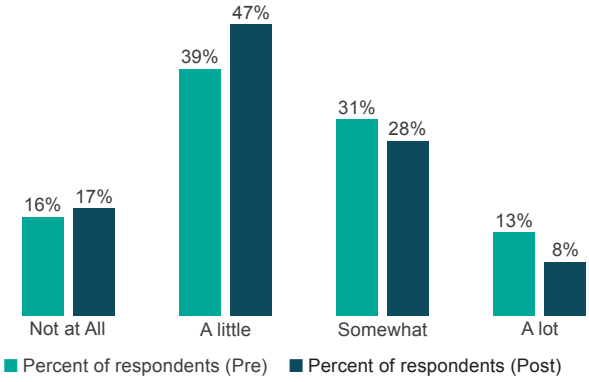


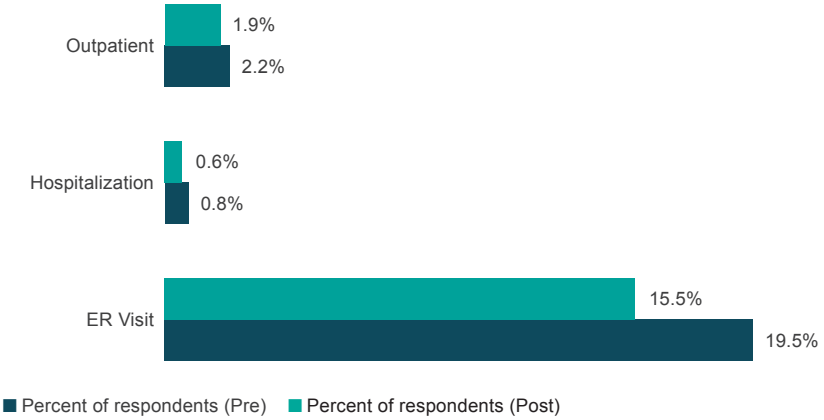
Figure 5 illustrates participants' responses regarding the type of medical care received following a fall, both before and after participating in Fall Prevention programs. The most notable change occurred in the proportion of participants who reported visiting the emergency room (ER) after a fall, which declined from 19.5% pre-program to 15.5% post-program. This reduction suggests that the program may have contributed to a decrease in fall severity or improved participants' ability to manage fall-related incidents without requiring emergency care.

Results

Smaller decreases were also observed in hospitalizations, which declined from 0.8% to 0.6%, and outpatient visits, which dropped from 2.2% to 1.9%. Although the absolute differences are modest, the downward trends across all forms of medical response indicate that Fall Prevention programs are associated with reductions in fall-related health system utilization, particularly in high-cost settings like emergency departments. This has potential implications for both individual well-being and broader healthcare cost savings.

Figure 5: Self-reported Healthcare Utilization

What happened after you fell?



Overall, the descriptive findings suggest consistent improvements across a range of self-reported outcomes among participants in Fall Prevention programs. Participants reported slightly better general health post-program, with a small increase in those rating their health as “Excellent” and a decline in those reporting “Fair” or “Poor” health. Feelings of loneliness and isolation also showed slight reductions, as more participants reported rarely or never feeling isolated following the program. Additionally, fear of falling appeared to shift downward, with fewer respondents indicating they were “Somewhat” or “A lot” afraid of falling after participation. Importantly, the percentage of participants who visited the emergency room following a fall decreased by four percentage points, and minor reductions were also observed in hospitalizations and outpatient visits. These trends point to potential improvements in well-being, confidence, and reduced healthcare utilization following fall program participation.

The next section builds on these descriptive patterns by presenting multivariate regression analyses that estimate the net effects of Fall Prevention program participation, accounting for key demographic, socioeconomic, and health-related characteristics. These models offer a more rigorous assessment of whether observed improvements can be statistically attributed to program involvement.

5.2 PROGRAM EFFECT ESTIMATION

5.2.1 Fixed Effects Estimation

The fixed effects regression results presented in Table 3 indicate statistically significant improvements in key outcomes following participation in Fall Prevention programs. General health scores increased modestly from 2.86 to 2.93, reflecting a positive shift in participants' self-rated health. Perceptions of loneliness and isolation declined slightly, with a statistically significant reduction of 0.03 points ($p < 0.001$). Physical outcomes showed more substantial changes with the average number of falls decreased significantly from 0.46 to 0.22, and the rate of injurious falls dropping from 18% to 8%, highlighting the program's impact on both fall frequency and severity.

Table 3: Results of fixed effects regressions for key fall prevention program outcomes

Variable	Mean (Pre)	Mean (Post)	Difference	P-value	N
General health	2.86	2.93	0.08***	0.00	120,789
Loneliness and isolation	2.04	2.02	-0.03***	0.00	46,882
Number of times fallen	0.46	0.22	-0.24***	0.00	147,120
Injurious fall	0.18	0.08	-0.10***	0.00	82,304
Report fall	0.50	0.46	-0.04**	0.04	552
ER visit	0.50	0.41	-0.09***	0.00	479
Hospitalization	0.50	0.37	-0.13	0.12	35
Outpatient visit	0.50	0.42	-0.08	0.18	69
Did not seek medical care	0.50	0.58	0.08***	0.00	668
Fear of falling	2.44	2.28	-0.17***	0.00	161,702

Healthcare utilization also declined. The likelihood of emergency room visits following a fall decreased by 18%, hospitalizations declined by 26%, and outpatient visits declined by 16%. Notably, the proportion of participants who did not seek any medical care after a fall increased significantly by 16%, suggesting improved confidence or reduced injury severity. Finally, fear of falling significantly decreased, with average scores falling from 2.44 to 2.28, indicating increased perceived stability and reduced anxiety about falls. Overall, these results provide strong evidence of the program's effectiveness across physical, psychological, and healthcare utilization domains.

5.2.2 Multivariate Estimation

To better understand the factors associated with changes in health outcomes among participants in Fall Prevention programs, multivariate analyses were conducted using random effects regression models. These models leveraged the panel structure of the data to account for within-individual variation across time (pre and post program participation), while incorporating both time-invariant and time-varying characteristics. The analyses aimed to isolate the effect of program participation on key outcomes such as fear of falling and fall incidence, while examining the role of demographic, clinical, and program delivery factors. Two models were estimated for each outcome: the first controlled for core demographic and health variables, and the second introduced monthly income to explore how socioeconomic status may influence program-related improvements.

Table 4: Results of Random Effects Models for General Health and Loneliness and Isolation

	Model 1 General Health		Model 2 Loneliness and Isolation	
Time=Post	0.096***	(0.007)	-0.026***	(0.007)
Participant: Age Today	0.001	(0.001)	-0.005***	(0.001)
Race (Base=White)				
American Indian or Alaska Native	-0.148**	(0.055)	0.078	(0.057)
Asian American	-0.226***	(0.028)	0.170***	(0.029)
Black/African American	-0.138***	(0.018)	-0.114***	(0.020)
Native Hawaiian or Pacific Islander	-0.230	(0.148)	-0.168	(0.174)
Non-Hispanic/Latino	-0.142***	(0.023)	0.105***	(0.025)
Sex (Base=Male)				
Female	0.131***	(0.016)	0.075***	(0.017)
Prefer not to say	0.153	(0.121)	0.206	(0.120)
Education	0.107***	(0.007)	-0.043***	(0.007)
Completer=1	0.060***	(0.013)	0.018	(0.014)
Chronic Conditions Count	-0.117***	(0.003)	0.084***	(0.003)
Program Delivery (Base=In-person)				
Phone or Virtual	-0.033*	(0.015)	-0.021	(0.017)
Self-Directed	-0.340	(0.301)	-0.070	
Mixed w/In-person	0.273**	(0.091)	-0.070	(0.088)
Mixed w/o In-person	-0.268	(0.289)	0.481	(0.320)
Constant	2.833***	(0.062)	2.207***	(0.065)
Observations	19,924		26,276	

Standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Results

The random effects regression models presented in Table 4 assess predictors of self-rated general health and self-reported loneliness and isolation among fall prevention program participants. In both models, participation in fall prevention programs was positively associated with higher general health scores and lower levels of loneliness and isolation. Model 1 also found higher general health scores associated with the indicators; being females, having higher educational attainment, and completing a fall prevention program. Conversely, more chronic conditions and identifying as non-white were associated with lower general health scores. Additionally, participants who received fall prevention programs via virtual formats reported lower general health scores. In Model 2, we find fall prevention program participation was associated with a statistically significant reduction in loneliness and isolation. Younger age, higher educational attainment, and identifying as Black/African American were also associated with lower levels of loneliness and isolation, while identifying as female was linked to higher levels of loneliness and isolation relative to males. Having more chronic conditions was found to be positively associated with greater loneliness and isolation. Overall, the result indicate that fall prevention programs may slightly reduce feelings of loneliness and isolation, particularly among younger, more educated individuals.

Table 5: Results of Random Effects Models for Number of Falls and Fear of Falling

	Model 3 Number of Falls		Model 4 Fear of Falling	
Time=Post	-0.193***	(0.012)	-0.122***	(0.007)
Participant: Age Today	-0.002*	(0.001)	0.013***	(0.001)
Race (Base=White)				
American Indian or Alaska Native	0.415***	(0.092)	0.100	(0.053)
Asian American	-0.171***	(0.045)	-0.017	(0.026)
Black/African American	-0.096**	(0.031)	-0.208***	(0.018)
Native Hawaiian or Pacific Islander	-0.072	(0.277)	0.093	(0.150)
Non-Hispanic/Latino	0.086*	(0.041)	0.024	(0.023)
Sex (Base=Male)				
Female	-0.229***	(0.026)	0.165***	(0.015)
Prefer not to say	-0.192	(0.197)	0.278*	(0.116)
Education	0.003	(0.012)	0.020**	(0.007)
Completer=1	-0.031	(0.021)	0.061***	(0.012)
Chronic Conditions Count	0.059***	(0.004)	0.090***	(0.002)
Program Delivery (Base=In-person)				
Phone or Virtual	0.013	(0.024)	0.006	(0.014)
Self-Directed	0.269	(0.515)	0.025	(0.304)
Mixed w/In-person	-0.099	(0.137)	-0.244**	(0.082)
Mixed w/o In-person	0.633	(0.517)	0.565	(0.300)
Monthly Income				
Constant	0.607***	(0.101)	0.881***	(0.058)
Observations	28,289		29,306	

Standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

The random effects regression results for number of falls in Table 5 provide additional evidence of the Fall Prevention program's impact on reducing fall incidence. In Model 3, participation in a fall prevention program was significantly associated with a reduction in the number of falls. This suggests that, on average, individuals reported fewer falls after completing the program. Other significant predictors in this model include sex and race: women and Asian American or Black/ African American participants reported significantly fewer falls than their white counterparts. Additionally, a higher number of chronic conditions was associated with increased fall frequency. Higher education levels was also found to be significantly associated with fewer falls. In sum, Model 3 provides strong support for the program's effectiveness in reducing fall incidence.

Finally the random effects models in Model 5, assessing fear of falling reveal meaningful changes following participation in fall prevention programs. Model 4 shows fall prevention program participation was significantly associated with a reduction in fear of falling, indicating that participants reported feeling less afraid of falling after participation. Additional significant predictors included age (positively associated with greater fear), identifying as female, number of chronic conditions, and program completion. Participants identifying as Black/African American reported significantly less fear of falling compared to White participants. The evidence from Model 4 supports the conclusion that participation in Fall Prevention programs is associated with reduced fear of falling across different demographic groups.

In sum, all the estimated models provide compelling evidence that participation in fall prevention programs is associated with measurable improvements in a range of health and well-being outcomes. Program participation was consistently linked to better self-rated general health and reduced fear of falling, as well as fewer reported falls and lower perceived loneliness and isolation. These effects remained statistically significant in models that accounted for demographic and health-related covariates, although the inclusion of monthly income in smaller analytic samples often resulted in diminished precision and fewer statistically significant findings. Across outcomes, factors such as sex educational attainment, and number of chronic conditions emerged as important predictors, highlighting disparities in baseline risk and program response. Notably, in-person delivery formats were associated with stronger benefits, suggesting the value of delivery formats involving in-person interactions.

5.3 RETURN ON INVESTMENT ESTIMATION

5.3.1 Fall Prevention Program Cost

To assess the economic value of the Fall Prevention programs implemented between 2014 and 2024, a basic return on investment (ROI) analysis was conducted using federal grant award data and participant counts. In the absence of detailed, program-specific cost data from grantees, this analysis utilized total federal funding allocations as a proxy for overall program expenditure. Between 2014 and 2024, approximately $44.96 million in federal grants were awarded to support the delivery of Fall Prevention workshops across implementing organizations. During this same period, 275,462 individuals were recorded in the Healthy Aging Programs Integrated Database (HAPID) as participants in at least one Fall Prevention program. Dividing total program expenditures by participant count yields an estimated cost of approximately $162 per participant as shown in Table 6. This estimate provides a practical benchmark for evaluating the cost-efficiency of the Fall Prevention programs given current data limitations.

Table 6: Program Cost

Total Funding (2014 – 2024)[36]	Total Participants	Cost Per-Participant
$44,958,532.00	275,462	$163.21

5.3.2 Healthcare Utilization Costs

The healthcare utilization cost estimates summarized in Tables 7 and 8 provide an updated benchmark for evaluating the potential cost savings associated with fall prevention programs. These figures are derived from peer-reviewed literature that has previously estimated the direct medical costs of hospitalizations and emergency room (ER) visits linked to falls and related injuries among older adults. Hospitalization costs are primary driven fractures, with a majority being hip fractures while ER costs include non fractures and superficial injuries.[37] Given that the original cost figures in these studies were reported between 2012 and 2016, they were adjusted to 2024 values using the U.S. Gross Domestic Product (GDP) Price Index to ensure comparability and relevance.

Table 7: Healthcare Utilization Costs based on Literature

Study	Cost Type (Year)	Estimated Cost	Cost in 2024 USD
Howland (2015)	ER visit (2013 Hospitalization (2013)	$3,529 $31,835	$3,811 $34,381
Carande-Kulis (2015)	Direct medical costs (2012)	$14,633	$15,803
Spetz (2015)	Hospitalization – Non Injurious (2012) Hospitalization – Injurious (2012) Hospitalization – Serious Injury (2012)	$1,438 - $2,586 $9,079 - $19,649 $22,350 - $39,352	$1,553 - $2,792 $9,805 - $21,220 $24,138 - $42,500
Burns (2016)	Hospitalization (2012) ER visit (2012)	$37,610 $5,945	$40,618 $6,420
Albert et al., 2016[38]	Hospitalization (2016) ER visit (2016)	$18,083 $1,100	$24,412 $1,485
Reider et al., 2024[39]	Hospitalization ER visit	- -	$18,658 $1,112

[36]Administration for Community Living, "Falls Prevention Grantee Profiles," ACL.gov, last modified October 3, 2024, https://acl.gov/programs/falls-prevention/grantee-profiles.

[37]Lisa Reider, Jason R. Falvey, Safiyyah M. Okoye, Jennifer L. Wolff, and Joseph F. Levy, "Cost of U.S. Emergency Department and Inpatient Visits for Fall Injuries in Older Adults," *Injury* 55, no. 2 (2024): 111199

[38]Steven M. Albert, Jonathan Raviotta, Chyongchiou J. Lin, Offer Edelstein, and Kenneth J. Smith, "Cost-Effectiveness of a Statewide Falls Prevention Program in Pennsylvania: Healthy Steps for Older Adults," *American Journal of Managed Care* 22, no. 10 (October 2016): 638–644

[39]Lisa Reider, Jason R. Falvey, Safiyyah M. Okoye, Jennifer L. Wolff, and Joseph F. Levy, "Cost of U.S. Emergency Department and Inpatient Visits for Fall Injuries in Older Adults," *Injury* 55, no. 2 (2024): 111199

Table 7 compiles cost data from multiple studies, including Howland (2015), Carande-Kulis (2015), Spetz (2015), Burns (2016), as cited in Juniper (2024) and Albert et al. (2016). For example, Howland estimated the average cost of an ER visit at $3,811. Similarly, Burns reported a 2012 ER visit cost of $6,420. Hospitalization costs vary substantially depending on injury severity. Spetz (2015) reported a wide range for hospitalization, from $1,553 for non-injurious falls to $42,500 for serious injuries.[40] Albert et al. (2016), one of the most program-relevant studies, found an average hospitalization cost of $24,412 and ER visit of $1,485. All costs are reported in 2024 adjusted figures.

Table 8 synthesizes these findings to present a summary of cost ranges for healthcare utilization. Hospitalizations range from $9,805 to $40,619, with an average of $25,423. ER visits and outpatient care costs range from $1,485 to $6,421, with a mean of $3,525. Additionally, the average cost per injurious fall is estimated at $15,807.[41,42] These values provide critical context for estimating potential healthcare savings from avoided falls and related events in economic evaluations of evidence-based fall prevention programs.

Table 8: Summary of Healthcare Utilization Costs

	Lowest	Mean	Highest
Hospitalization	$9,805.32	$25,422.57	$40,618.80
ER Visits/Outpatient	$1,485.00	$3,524.67	$6,420.60
Cost Per Injurious Fall		$15,807.00	

5.3.3 Economic value of Outcome Improvements

Building on the outcome improvements documented through fixed effects regression models in Table 2, we estimate the potential economic savings generated by the falls prevention programs. As shown in Table 9, program participation was associated with meaningful reductions in several key outcomes. The average number of falls per participant declined from 0.46 to 0.22, representing a reduction of 0.24 falls per individual. Similarly, the rate of injurious falls decreased from 0.18 to 0.08 (a reduction of 0.10), while ER visits fell by 0.09, and hospitalizations declined by 0.13. Outpatient visits also saw a reduction by 0.08. These changes reflect important improvements in participant safety and reduced reliance on acute care services following program engagement.

[40]Joanne Spetz, Douglas S. Brown, and Carolyn Aydin, "The Economics of Preventing Hospital Falls: Demonstrating ROI through a Simple Model," *Journal of Nursing Administration* 45, no. 1 (January 2015): 50–57.

[41]Vilma Carande-Kulis, Judy A. Stevens, Curtis S. Florence, Barbara L. Beattie, and Ingrid Arias, "A Cost-Benefit Analysis of Three Older Adult Fall Prevention Interventions," *Journal of Safety Research* 52 (February 2015): 65–70

[42]Juniper. *Cost Savings Associated with Preventing Falls in Older Minnesotans*. Innovations for Aging, LLC, May 2024

Results

Table 9: Key Outcome Improvement

Incident	Mean (Pre)	Mean (Post)	Avoided Per Participant	N
Number of times fallen	0.46	0.22	0.24	226,604
Injurious fall	0.18	0.08	0.10	118,273
ER visit	0.50	0.41	0.09	958
Hospitalization	0.50	0.37	0.13	70
Outpatient visit	0.50	0.42	0.08	138

Using the avoided incidents per participant and healthcare cost estimates from the literature (adjusted to 2024 USD using the U.S. GDP Price Index), Tables 9 through 11 present projected cost savings across three cost scenarios: lower bound, mean, and upper bound. In the lower-bound scenario (Table 10), which applies the most conservative cost estimates for each type of incident, the program yields an estimated savings of $1,527.14 per participant and a total savings of over $420 million across all 275,462 participants. Under the mean cost scenario (Table 11), savings per participant rise to $3,904.13, with a total estimated savings exceeding $1.07 billion. The upper-bound estimates (Table 12) suggest the greatest potential return, with total program savings reaching approximately $1.76 billion, or $6,371.95 per participant.

Table 10: Cost Savings Estimates (Lower Bound)

Incident	Avoided Per Participant	Cost	Savings Per participant	Total Savings N=275,462
Injurious fall	0.1	$15,807.00	$1,580.70	$435,422,783.40
ER visit	0.09	$1,485.00	$133.65	$36,815,496.30
Hospitalization	0.13	$9,805.32	$1,274.69	$351,129,097.52
Outpatient visit	0.08	$1,485.00	$118.80	$32,724,885.60
Total			$1,527.14	$420,669,479.42

Table 11: Cost Savings Estimates (Mean)

Incident	Avoided Per Participant	Cost	Savings Per participant	Total Savings N=275,462
Injurious fall	0.1	$15,807.00	$1,580.70	$435,422,783.40
ER visit	0.09	$3,524.67	$317.22	$87,382,138.28
Hospitalization	0.13	$25,422.57	$3,304.93	$910,383,757.05
Outpatient visit	0.08	$3,524.67	$281.97	$77,673,011.80
Total			$3,904.13	$1,075,438,907.14

Table 12: Cost Savings Estimates (Upper Bound)

Incident	Avoided Per Participant	Cost	Savings Per participant	Total Savings N=275,462
Injurious fall	0.1	$15,807.00	$1,580.70	$435,422,783.40
ER visit	0.09	$6,420.60	$577.85	$159,176,818.55
Hospitalization	0.13	$40,618.80	$5,280.44	$1,454,561,665.13
Outpatient visit	0.08	$6,420.60	$513.65	$141,490,505.38
Total			$6,371.95	$1,755,228,989.05

5.3.4 Estimated Return on Investment

To translate the estimated impact of evidence based fall prevention programs into a measure of economic efficiency, a return on investment (ROI) analysis was conducted across the three cost savings scenarios: lowest, mean, and highest. ROI offers a practical and policy-relevant tool for comparing the value of health interventions relative to their costs. By dividing the total estimated cost savings by the total program expenditures, the ROI analysis captures the financial returns generated for each dollar invested in fall prevention programming.

As shown in Table 13, even under the most conservative assumptions (Scenario 1), the program achieved an ROI of $8.36 per $1 invested, indicating that for every dollar spent, approximately $8.36 was saved in healthcare costs. In the mean-cost scenario (Scenario 2), the ROI rises substantially to $22.92 per dollar, while the upper-bound scenario (Scenario 3) yields an ROI of $38.04 per dollar invested. These returns reflect both the magnitude of healthcare costs avoided and the relatively low per-participant implementation costs of the programs.

Results

Table 13: Return on Investment (ROI)

Scenarios	Total Savings N=275,462	Total Program Cost	Net Benefit	Return on Investment (ROI)
Scenario 1 (Lowest)	$420,669,479.42		$375,710,947.42	$8.36 per $1
Scenario 2 (Mean)	$1,075,438,907.14	$44,958,532.00	$1,030,480,375.14	22.92 per $1
Scenario 3 (Highest)	$1,755,228,989.05		$1,710,270,457.05	38.04 per $1

In conclusion, the ROI estimates strongly support the economic value of falls prevention programs. Regardless of the scenario considered, the financial returns far exceed the program investment, highlighting the cost-effectiveness and broader societal benefits of supporting preventive health strategies for older adults. These findings offer compelling evidence for sustaining and scaling such programs within aging and public health systems.

Discussion

6.1 POLICY IMPLICATIONS

The findings of this study provide compelling evidence that evidence-based fall prevention programs provides participants with substantial health and economic benefits, making them immensely valuable public health investment. For policymakers, particularly with the increased concern regarding controlling federal healthcare spending, these findings highlight a critical opportunity to scale high-impact, low-cost intervention that reduces preventable acute care utilization among older adults and significantly reduce healthcare spending through Medicare and Medicaid. Based on data from 2020, the total health care cost of non-fatal older adult falls is $80 billion per year with 67% of fall-related costs paid for by Medicare, 4% by Medicaid, and 29% paid privately/out-of-pocket by older adults and families.[43]

First, the observed reductions in fall incidence, injurious falls, emergency room visits, and hospitalizations translate directly into lower healthcare expenditures. Given that the vast majority of program participants are Medicare beneficiaries, and that Medicaid often covers long-term care services after injury-related hospitalizations,[44] the impact of fall prevention on federal spending is substantial. Participants experienced a 52% reduction in fall frequency and a 10 percentage point drop in the probability of sustaining an injurious fall. Emergency department use decreased by 9 percentage points post-program, with hospitalizations also trending downward. These declines reduce demand for high-cost services commonly reimbursed by Medicare Parts A and B, as well as Medicaid-funded skilled nursing and post-acute care.

The economic analysis shows that these health improvements resulting from evidence-based fall prevention programs generate significant financial returns. The program achieved a return on investment (ROI) of $8.36 to $38.04 per $1 invested, depending on the cost scenario applied. These savings, ranging from $420 million to $1.76 billion across 275,462 participants, are largely from avoided ER visits, hospital admissions, and injuries, all of which are key drivers of Medicare and Medicaid costs in older populations. The average implementation cost, approximately $163 per participant, is modest relative to the potential per capita savings of $1,500 to $6,300. From our finding, a $45 million investment in fall prevention programs could save the federal government between $263 million and $1.2 billion in Medicare and Medicaid costs annually (using 70% of net benefits in Table 12).

In addition to financial savings, the programs deliver measurable improvements in participants' general health, reduced fear of falling, and enhanced well-being. These gains support broader Medicare and Medicaid goals around preventive care.[45] Moreover, disparities identified in program effects by race, education, and delivery format suggest opportunities for targeted implementation strategies to reduce inequities in fall risk and healthcare use. The reduction in extreme fear of falling is a promising outcome, as excessive fear can contribute to physical inactivity and increased fall risk. These findings imply that Fall Prevention programs may effectively reduce fear-related barriers to mobility and confidence among participants. Collectively, the results from this study underscore the positive impact of fall prevention programs on key physical and psychosocial and economic outcomes, while also identifying population subgroups that may benefit most from targeted support and programming.

---

[43]National Council on Aging, "Get the Facts on Falls Prevention," last modified September 1, 2022, https://www.ncoa.org/article/get-the-facts-on-falls-prevention/.

[44]Medicaid.gov, "Nursing Facilities," Centers for Medicare & Medicaid Services, accessed June 10, 2025, https://www.medicaid.gov/medicaid/long-term-services-supports/institutional-long-term-care/nursing-facilities.

[45]Centers for Medicare & Medicaid Services, "CMS Innovation Center Strategy: Make America Healthy Again," accessed June 10, 2025, https://www.cms.gov/priorities/innovation/about/cms-innovation-center-strategy-make-america-healthy-again.

Discussion

In sum, the study highlights the following policy implications for policymakers:

1. Sustain and expand federal funding for fall prevention programs in several areas including ACL Title III-D, CDC Injury Prevention grants, and Medicaid Home and Community-Based Services (HCBS) waivers, to scale the clinical and economic benefits of fall prevention programs.
2. Support data-driven oversight and monitoring by investing in longitudinal costs and outcome tracking through platforms like NCOA's HAPID, which allows payers and policymakers to measure returns and reach underserved communities.
3. Promote hybrid fall prevention program delivery models that preserve the effectiveness of in-person formats while extending access through virtual and self-directed modes, especially in rural or mobility-limited areas.

In summary, fall prevention programs offer a rare alignment of clinical efficacy, behavioral impact, and economic efficiency. At a time when federal Medicare and Medicaid budgets face rising pressure from an aging population, these programs represent a scalable, evidence-based solution for improving health outcomes while lowering public expenditures.

6.2 LIMITATIONS OF INTERPRETATIONS OF THE RESULTS

While this analysis provides strong evidence of the effectiveness and economic value of fall prevention programs, several limitations should be acknowledged to contextualize the findings and guide future research.

1. **Non-Equivalent Pre- and Post-Timeframes for Falls Measurement:** A primary limitation lies in the structure of the fall incidence measure, which compares the number of falls reported in the three months prior to program enrollment (pre) with the number of falls reported since the start of the program (post), typically a shorter timeframe of six weeks or less. This discrepancy introduces a risk of underestimating post-program fall events simply due to the compressed observation window. Although existing literature suggests that fall prevention program benefits persist at 6 and even 12 months post-intervention, the shorter post-period in this analysis limits direct comparability and may lead to overstated improvements.
2. **Limited Cost Data from Grantees:** The analysis relied on total federal grant awards as a proxy for program costs due to the unavailability of detailed, program-specific cost data from grantees implementing ACL-NCOA-funded programs between 2014 and 2024. As a result, ROI estimates may not fully capture variability in delivery costs across sites, program types, and implementation models. A more granular cost analysis would allow for a nuanced understanding of cost-efficiency across different contexts.
3. **Incomplete and Missing Data Across Key Outcomes:** The dataset included substantial missing values for several key outcome measures, such as ER visits, hospitalizations, income, and fear of falling. While the analysis employed complete-case methods, this limitation restricts the generalizability of the results and may introduce bias if missingness is systematically related to participant characteristics or program experience.

Discussion

4. **Lack of Access to Medicare and Medicaid Claims Data:** The analysis was not able to incorporate administrative claims data from Medicare or Medicaid, which would have provided a more precise and objective measure of fall-related healthcare utilization and costs. Without linkage to claims, outcome estimates are based solely on participant self-report, limiting insight into actual service use, billing patterns, and long-term cost offsets across public insurance programs.
5. **Reliance on Self-Reported Outcomes:** All outcome measures in the HAPID database are self-reported by program participants. While validated survey instruments were used, self-reported data are inherently subject to recall error, reporting bias, and social desirability effects. These factors may result in either overstatement of program benefits (e.g., fewer falls reported than actually occurred) or understatement of certain conditions (e.g., reluctance to report fear or loneliness).
6. **Limited Income Data for Socioeconomic Analysis:** Although socioeconomic status is a key determinant of health outcomes and program access, income data were only available for a subset of participants. This limitation constrained the ability to assess how financial barriers or socioeconomic gradients influence program effectiveness or participant outcomes. Future studies would benefit from more comprehensive income and insurance data to better evaluate impacts.

Conclusion

This report provides robust evidence that evidence-based fall prevention programs deliver meaningful health improvements and substantial economic returns. Using one of the largest participant-level datasets available from the National Council on Aging's Healthy Aging Programs Integrated Database (HAPID), the analysis demonstrates that participants experienced statistically significant reductions in fall incidence, fear of falling, loneliness, and emergency healthcare utilization. These outcomes were observed across a variety of demographic groups and sustained across multiple delivery formats, underscoring the adaptability and effectiveness of these programs in real-world settings.

The financial implications are equally compelling. Estimated healthcare cost savings ranged from about $420 million to $1.76 billion depending on cost assumptions, translating to a return on investment (ROI) of $8.36 to $38.04 per dollar spent. These findings are particularly relevant for federal and state policymakers seeking to reduce Medicare and Medicaid expenditures linked to fall-related injuries, hospitalizations, and long-term care admissions. By preventing even a fraction of these costly events, fall prevention programs offer a scalable, fiscally responsible approach to improving the health of older Americans.

However, the analysis also highlights important areas for improvement. Incomplete outcome data, lack of cost reporting from grantees, reliance on self-reported measures, and limited access to Medicare and Medicaid claims constrain the precision and generalizability of the findings. Strengthening data systems, ensuring consistent program cost tracking, and linking administrative claims data will enhance the accuracy of future evaluations and support more strategic funding and implementation decisions.

Ultimately, this report affirms that fall prevention programs are not only clinically effective but also economically sound. Investing in their expansion, particularly through ACL-funded initiatives, represents a smart, evidence-based strategy to advance healthy aging, reduce preventable healthcare spending, and promote independent community-based living long-term care. As the U.S. population continues to age, these programs should be viewed not as ancillary services but as core public health infrastructure. Investing in fall prevention is not only good public health policy, it is sound fiscal policy.

Bibliography

Administration for Community Living, “Falls Prevention Grantee Profiles,” ACL.gov, last modified October 3, 2024, https://acl.gov/programs/falls-prevention/grantee-profiles.

Albert, Steven M., Jonathan Raviotta, Chyongchiou J. Lin, Offer Edelstein, and Kenneth J. Smith. “Cost-Effectiveness of a Statewide Falls Prevention Program in Pennsylvania: Healthy Steps for Older Adults.” *American Journal of Managed Care* 22, no. 10 (October 2016): 638–644.

“Cost-Effectiveness of a Statewide Falls Prevention Program in Pennsylvania: Healthy Steps for Older Adults.” *American Journal of Preventive Medicine* 52, no. 6 (June 2017): 763–770.

Campbell, A. John, M. Clare Robertson, Mary M. Gardner, and Nancy Devlin. “Preventing Injuries in Older People by Preventing Falls: A Meta-Analysis of Individual-Level Data.” Journal of the American Geriatrics Society 50, no. 5 (2002): 905–911.

Carande-Kulis, Vilma, Judy A. Stevens, Curtis S. Florence, Barbara L. Beattie, and Ingrid Arias. “A Cost-Benefit Analysis of Three Older Adult Fall Prevention Interventions.” Journal of Safety Research 52 (February 2015): 65–70.

Centers for Disease Control and Prevention. “Important Facts About Falls.” Last reviewed January 26, 2023. https://www.cdc.gov/falls/data-research/facts-stats/index.html.

Centers for Medicare & Medicaid Services. “CMS Innovation Center Strategy: Make America Healthy Again.” Accessed June 10, 2025. https://www.cms.gov/priorities/innovation/about/cms-innovation-center-strategy-make-america-healthy-again.

Chen, Tuo-Yu, Jerri D. Edwards, and Megan C. Janke. “The Effects of the A Matter of Balance Program on Falls and Physical Risk of Falls, Tampa, Florida, 2013.” *Preventing Chronic Disease* 12 (September 24, 2015): E157.

Cho, Joohong Min, Jing Wang, Yuji Zhang, Matthew Lee Smith, and Marcia G. Ory. “Effects of an Evidence-Based Falls Risk-Reduction Program on Physical Activity and Falls Efficacy among Oldest-Old Adults.” *Frontiers in Public Health* 3 (2015): Article 190.

Cumming, Robert G., Wendy L. Salkeld, Michael Thomas, and Jane Szonyi. “Prospective Study of the Impact of Fear of Falling on Activities of Daily Living, SF-36 Scores, and Nursing Home Admission.” *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 55, no. 5 (May 2000): M299–M305.

Davis, Jane, Janet D. McElhaney, Geneviève Ferguson, and Dawn C. Mackey. “Cost-Effectiveness of the Otago Exercise Programme in Community-Dwelling Older Adults in Canada.” *PLOS ONE* 17, no. 6 (2022): e0267247.

Farag, Inez, Julie C. Stout, Meg E. Morris, et al. “Economic Evaluation of a Falls Prevention Exercise Program Among People With Parkinson’s Disease.” *Movement Disorders* 31, no. 1 (January 2016): 53–61.

Florence, Curtis S., Gwen Bergen, Adam Atherly, Elizabeth Burns, Judy Stevens, and Cara Drake. “Medical Costs of Fatal and Nonfatal Falls in Older Adults.” *Journal of the American Geriatrics Society* 66, no. 4 (April 2018): 693–698.

Bibliography

Haddad, Yara K., Gabrielle F. Miller, Ramakrishna Kakara, Curtis Florence, Gwen Bergen, Elizabeth Rose Burns, and Adam Atherly. “Healthcare Spending for Non-Fatal Falls among Older Adults, USA.” Injury Prevention, July 19, 2024. https://injuryprevention.bmj.com/content/30/4/272

Healy, T. C., C. Peng, M. S. Haynes, E. M. McMahon, J. L. Botler, and L. Gross. “The Feasibility and Effectiveness of Translating A Matter of Balance into a Volunteer Lay Leader Model.” *Journal of Applied Gerontology* 27, no. 1 (2008): 34–51.

Herrick, Tamara, Kirsten Dorsey, Sarah Hallen, and Heidi Wierman. “Comparing the Outcomes of Virtual versus In-Person Delivery of an Evidence-Based Falls Prevention Program.” *Innovation in Aging* 7, suppl. 1 (2023): 703.

Hewitt, Jennifer, Kathryn Goodall, Suzanne Clemson, et al. “Progressive Resistance and Balance Training for Falls Prevention in Long-Term Residential Aged Care: A Cluster Randomized Trial of the Sunbeam Program.” *Journal of the American Medical Directors Association* 19, no. 4 (April 2018): 361–369.

Juniper. *Cost Savings Associated with Preventing Falls in Older Minnesotans*. Innovations for Aging, LLC, May 2024.

Li, Fuzhong, Peter Harmer, and Kathleen Fitzgerald. “Implementing an Evidence-Based Fall Prevention Intervention in Community Senior Centers.” American Journal of Public Health 106, no. 11 (November 2016): 2026–2031.

Medicaid.gov. “Nursing Facilities.” *Centers for Medicare & Medicaid Services*. Accessed June 10, 2025. https://www.medicaid.gov/medicaid/long-term-services-supports/institutional-long-term-care/nursing-facilities.

National Council on Aging. “Falls Prevention Evidence-Based Programs Fidelity Hub.” Accessed June 10, 2025. https://www.ncoa.org/page/falls-prevention-evidence-based-programs-fidelity-hub.

National Council on Aging. “Get the Facts on Falls Prevention.” Last modified September 1, 2022. https://www.ncoa.org/article/get-the-facts-on-falls-prevention/.

Olij, Branko F., Jorieke E. H. van der Velde, Renate van den Heuvel, et al. “Economic Evaluations of Falls Prevention Programs for Older Adults: A Systematic Review.” *JAMA Internal Medicine* 178, no. 12 (December 2018): 1700–1710.

Petersen, Nicola, Hans-Helmut König, and André Hajek. “The Link Between Falls, Social Isolation and Loneliness: A Systematic Review.” *Archives of Gerontology and Geriatrics* 88 (2020): 104020.

Pinheiro, Marcelo B., Cathie Sherrington, Kirsten Howard, et al. “Economic Evaluations of Fall Prevention Exercise Programmes: A Systematic Review.” *British Journal of Sports Medicine* 56, no. 21 (2022): 1353–1365.

Reider, Lisa, Jason R. Falvey, Safiyyah M. Okoye, Jennifer L. Wolff, and Joseph F. Levy. “Cost of U.S. Emergency Department and Inpatient Visits for Fall Injuries in Older Adults.” *Injury 55*, no. 2 (2024): 111199.

Shankar, Karthik N., and Angela Li. “Older Adult Falls in Emergency Medicine, 2023 Update.” *Clinics in Geriatric Medicine* 39, no. 4 (November 2023): 503–518.

Bibliography

Sherrington, Cathie, N. J. Fairhall, G. K. Wallbank, et al. “Exercise for Preventing Falls in Older People Living in the Community.” *Cochrane Database of Systematic Reviews* 2019, no. 1 (2019): CD012424.

Sherrington, Catherine, Taren Sanders, Jenni Suomi, et al. “Evidence on Physical Activity and Falls Prevention for People Aged 65+ Years: Systematic Review to Inform the WHO Guidelines on Physical Activity and Sedentary Behaviour.” *International Journal of Behavioral Nutrition and Physical Activity* 17, no. 1 (October 2020): 144.

Smith, Matthew Lee, and Gang Han. “Effectiveness of Evidence-Based Fall Prevention Programs to Reduce Loneliness in the United States.” *Frontiers in Public Health* 12 (2024): 1459225.

Smith, Matthew Lee, Lingling Jiang, and Marcia G. Ory. “Falls Efficacy Among Older Adults Enrolled in an Evidence-Based Program to Reduce Fall-Related Risk: Sustainability of Individual Benefits Over Time.” *Family & Community Health* 35, no. 3 (2012): 256–263.

Spetz, Joanne, Douglas S. Brown, and Carolyn Aydin. “The Economics of Preventing Hospital Falls: Demonstrating ROI through a Simple Model.” *Journal of Nursing Administration* 45, no. 1 (January 2015): 50–57.

TRICARE. “Fall Prevention.” *Nellis Air Force Base*. Accessed June 10, 2025. https://nellis.tricare.mil/Patient-Resources/Fall-Prevention#:~:text=About%2036%20million%20falls%20are,a%20fracture%20or%20head%20injury.

Tricco, Andrea C., Wei Cheng, Charlene Soobiah, et al. “Comparative Effectiveness of Interventions for Preventing Falls in Older Adults: A Systematic Review and Network Meta-Analysis.” JAMA 318, no. 17 (2017): 1687–1699. https://doi.org/10.1001/jama.2017.15006.

