Policy to Practice: Falls in Adults with Intellectual Disabilities

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Outline

- Prevalence of falls
- Risk factors for falls
- Evidence-based fall intervention programs
- Practical applications
- Policy recommendations

What is a fall?

- Definition of a fall varies across studies
- Commonly used:
  - "An unexpected event in which the participant comes to rest on the ground, floor, or lower level." (Lamb et al., 2005)
  - "A sudden unintentional change in position causing an individual to land at a lower level, on an object, the floor, or the ground, other than a consequence of a sudden onset of paralysis, epileptic seizure, or overwhelming external forces." (Tinetti et al., 1997)

Types of Falls and Definition

Recurrent (Repeat) Falls

- 2 or more falls in a set time frame

Frequent fallers

- Fallers who have 2 or more falls in a set time frame

Injurious Falls

- Falls that require medical attention
  - Ranges from cuts, fracture, contusions, or head/spinal cord injury

Falls among Adults with ID

- 50-60% of injuries reported in people with ID are due to falls (Hsieh et al., 2001; Sherrard et al., 2004)
- Injury-related visits to ED and hospital admissions in persons with ID are primarily due to falls (Wang et al., 2002)
- Injury due to falls represents one of the leading causes of liability claims against group homes and other care providers (Tidelksaar, 2007)
- 1.7-3.3 times higher in fractures than the general population and falls are the most common cause (Tannenbaum et al 1989; Lohiya et al. 1999)

Falls among Adults with ID (continued)

- Higher rates of osteoporosis, vitamin D deficiency, poor nutrition and sedentary lifestyle increase risk of injury following a fall (Schrager, 2006; Vanlint & Nugent, 2006; Robertson et al, 2000)
- 5-22% of injurious falls are serious.
- Most studies on falls conducted in residential settings with small samples.

Results of Baseline Data from the Longitudinal Health and Intellectual Disability Study (LHIDS)

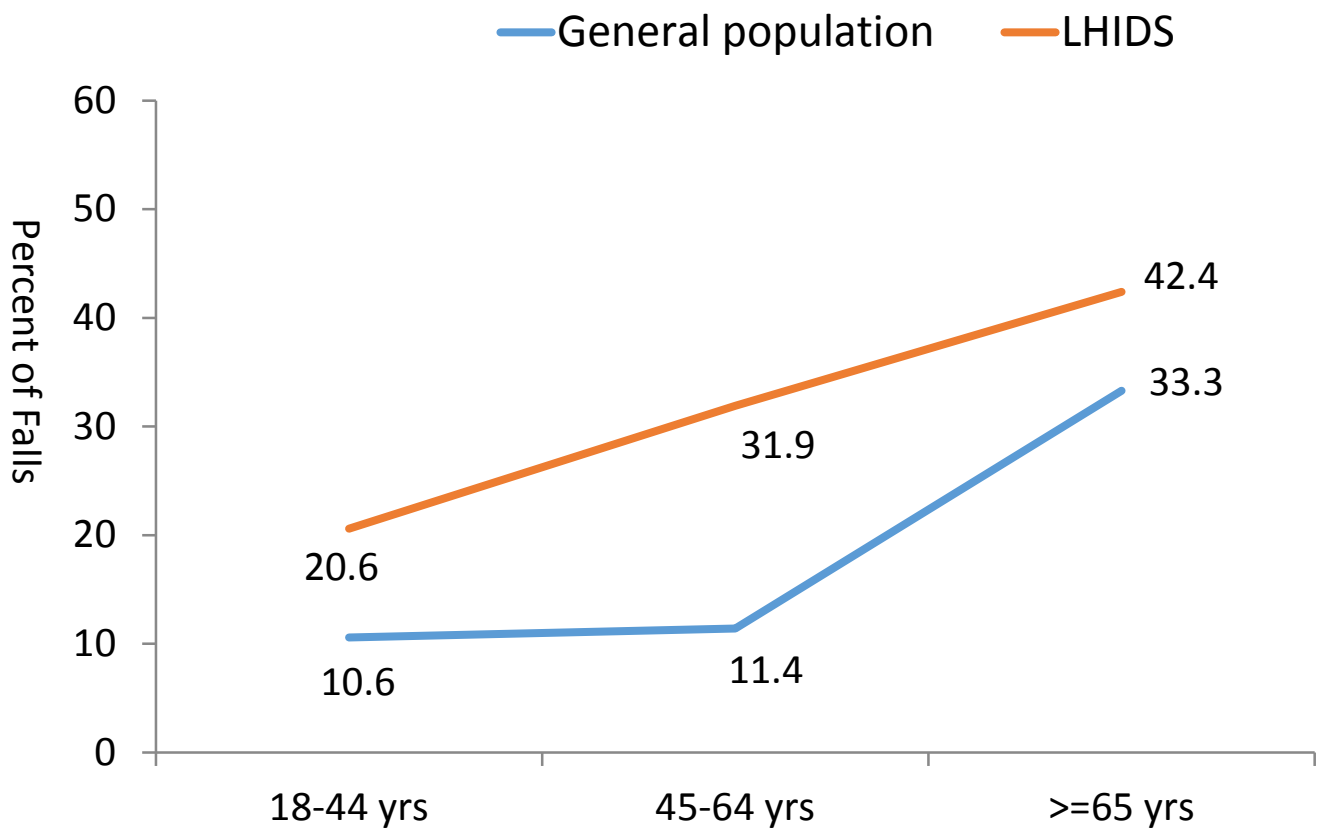
Hsieh K, Rimmer J, Heller T. (2012). Prevalence of falls and risk factors in adults with intellectual disability. *American Journal on Intellectual and Developmental Disabilities,* 117(6), 442-454

Survey Question of Falls in LHIDS

- How many falls has the person with ID experienced in the past 12 months?

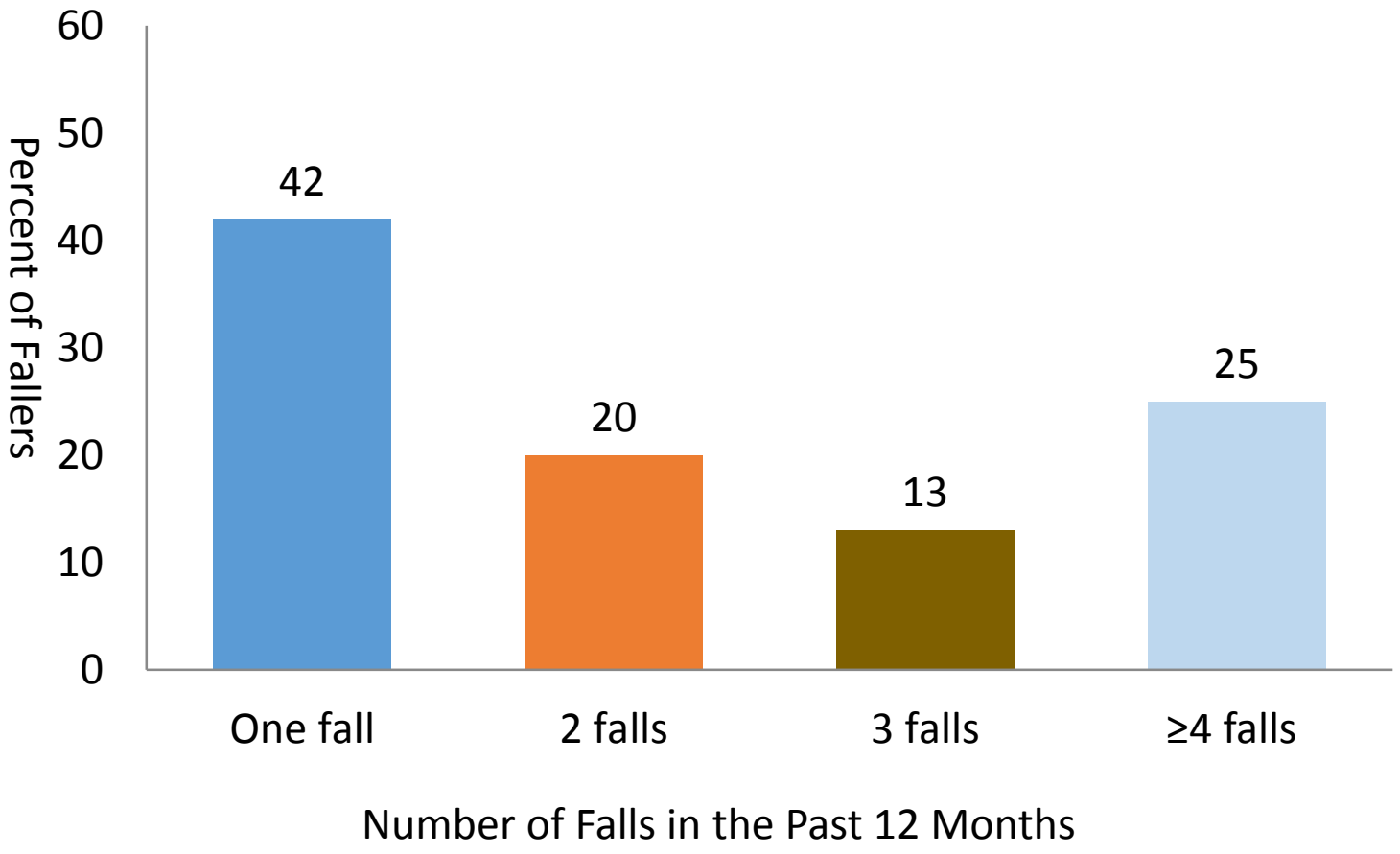
(A fall is a sudden unintentional change in position causing an individual to land at a lower level, on an object, the floor, or the ground, other than a consequence of a sudden onset of paralysis, epileptic seizure, or overwhelming external forces.)

Prevalence of Falls: LHIDS vs. General Population

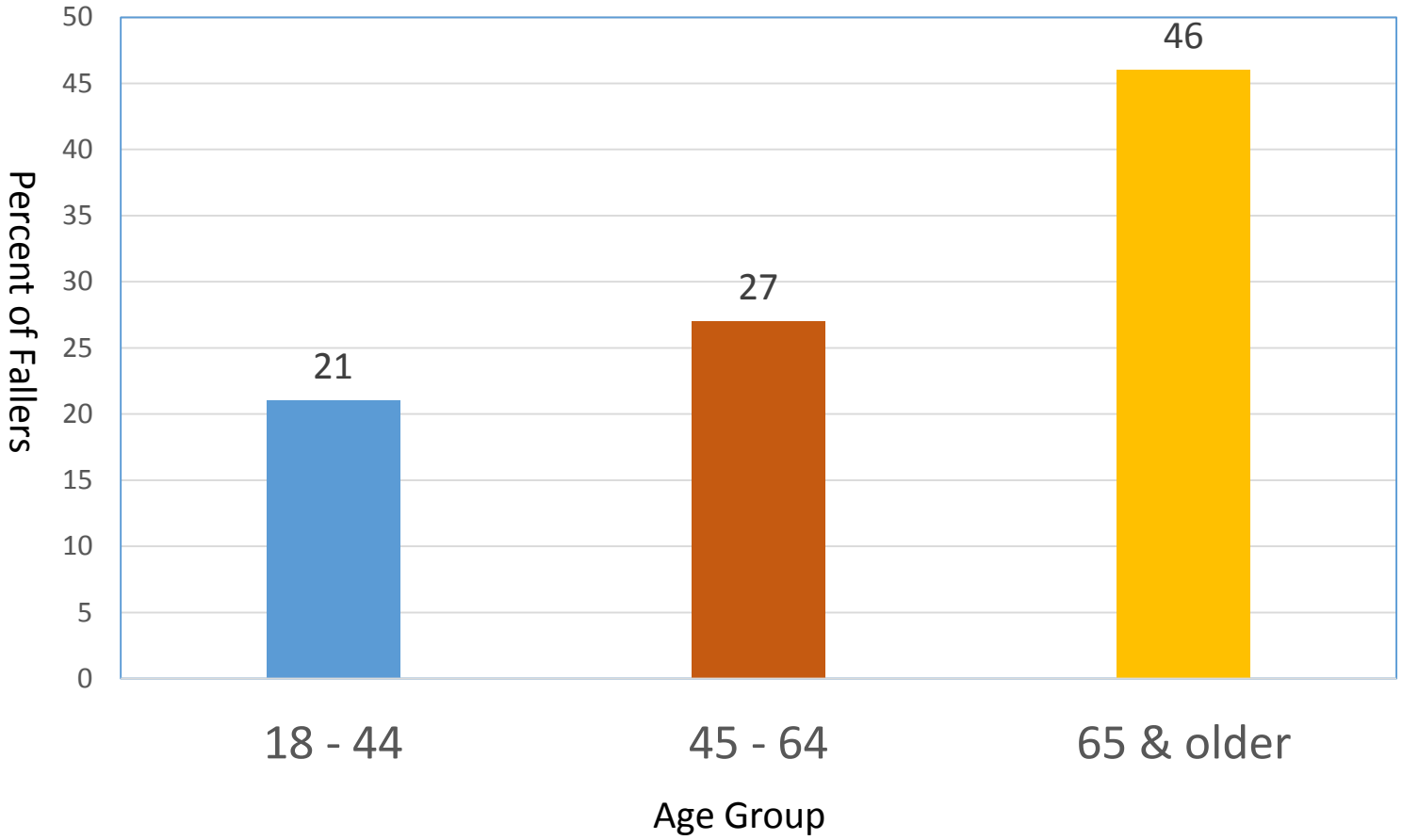


Source: Verma et al. Falls and fall-related injuries among community-dwelling adults in the United States.

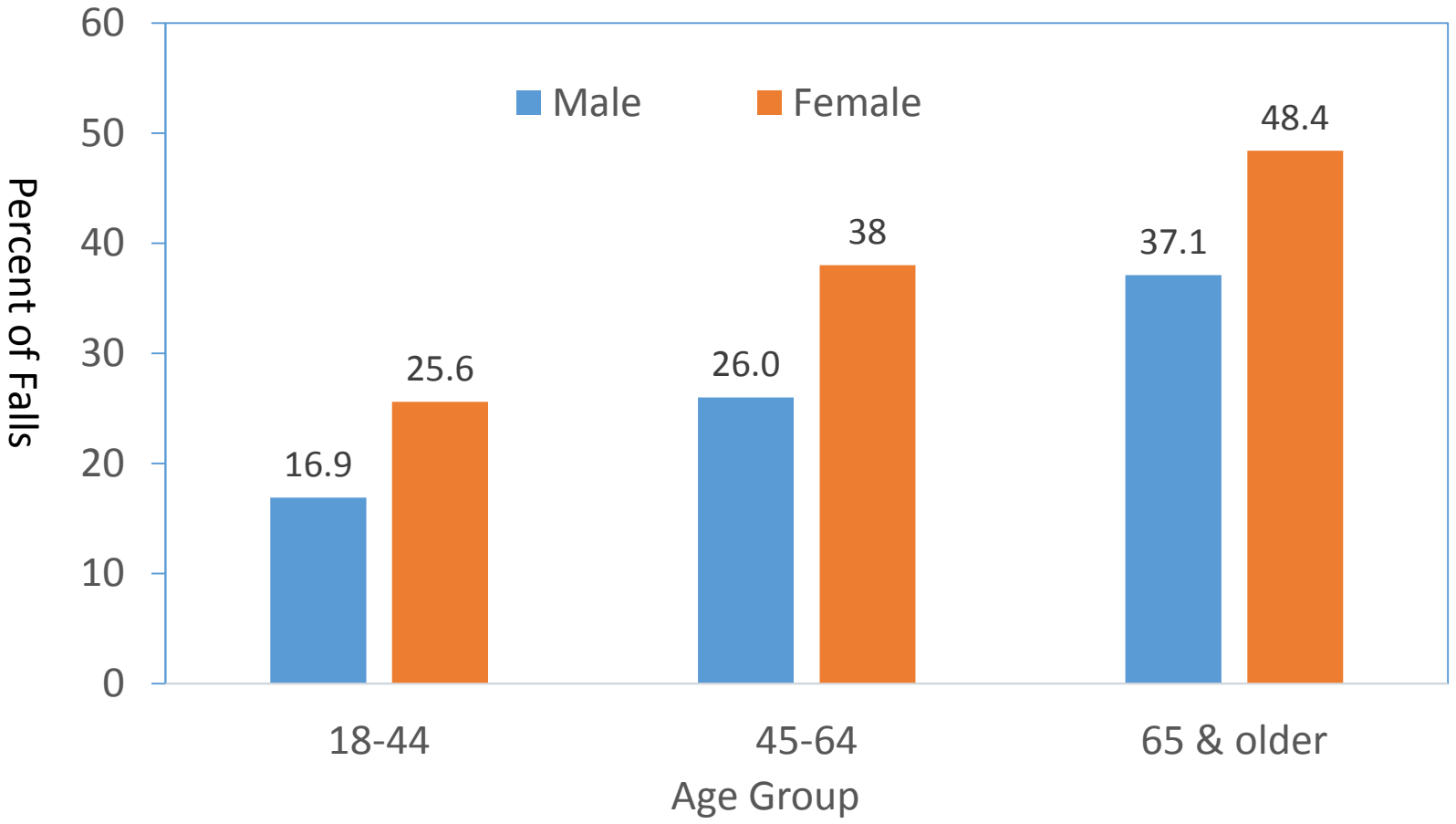
Fallers and Recurrent Falls



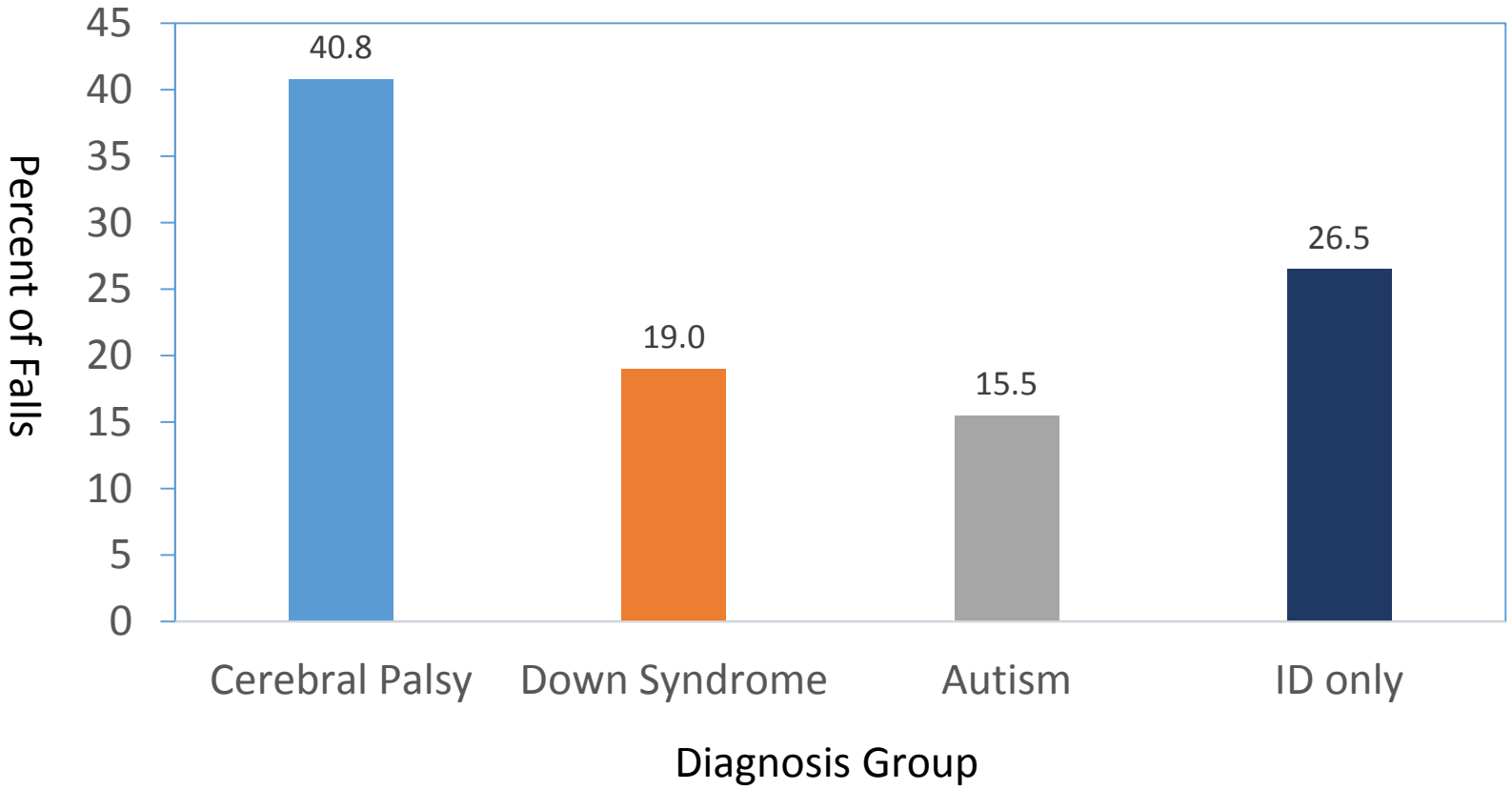
Fallers Required Medical Care



Prevalence of Falls by Age Group & Sex



Prevalence of Falls by Diagnosis



Multivariate Logistic Regression: Final Model

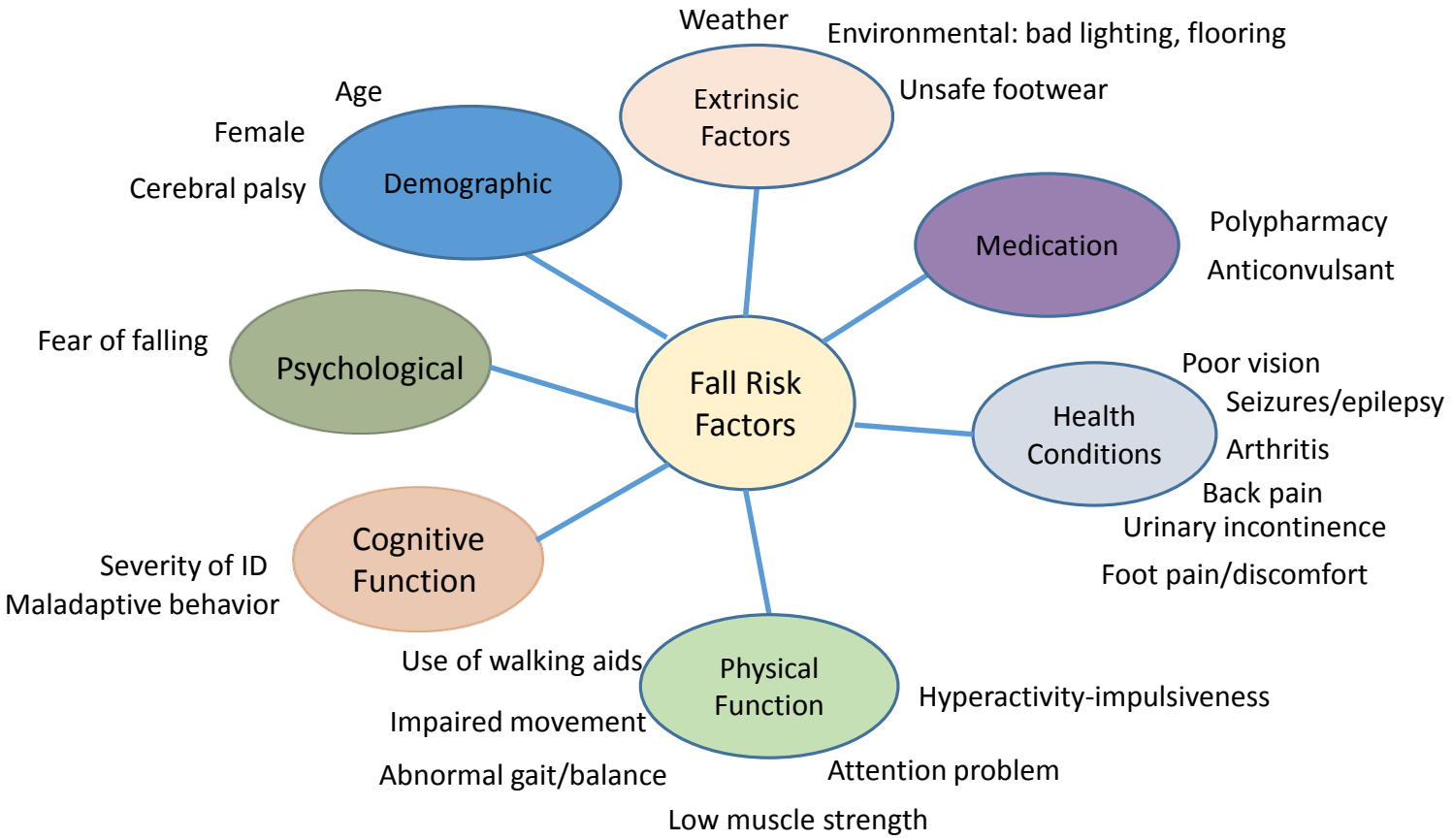
Outcome = occurrence of falls in the past 12 months

Independent variables: **Demographic Factors** (age, sex, level of ID, cerebral palsy, Down syndrome), **Medical Factors** (chronic health conditions, functional limitations), & **Physical Activity Factors** (Special Olympics participation)

Significant risk factors:

Full Sample (N = 1,515)	Sample without seizure (N = 1,225)
✓ Female (OR = 1.44)	✓ Female (OR = 1.44)
✓ Arthritis (OR = 1.75)	✓ Level of ID (OR = 1.30)
✓ Seizure disorder (OR = 1.94)	✓ Arthritis (OR = 1.83)
✓ Use of walking aids (OR = 2.89)	✓ Heart condition (OR = 1.97)
✓ Difficulty lifting/carrying > 10 lb (OR = 1.94)	✓ Back pain (OR = 2.01)
✓ Polypharmacy (OR = 1.78)	✓ Urinary incontinence (OR = 2.06)
	✓ Use of walking aids (OR = 3.0)
	✓ Difficulty walking 3 blocks (OR = 2.12)

Risk Factors of Falls Among Adults with ID Living in the Community



Practical Applications

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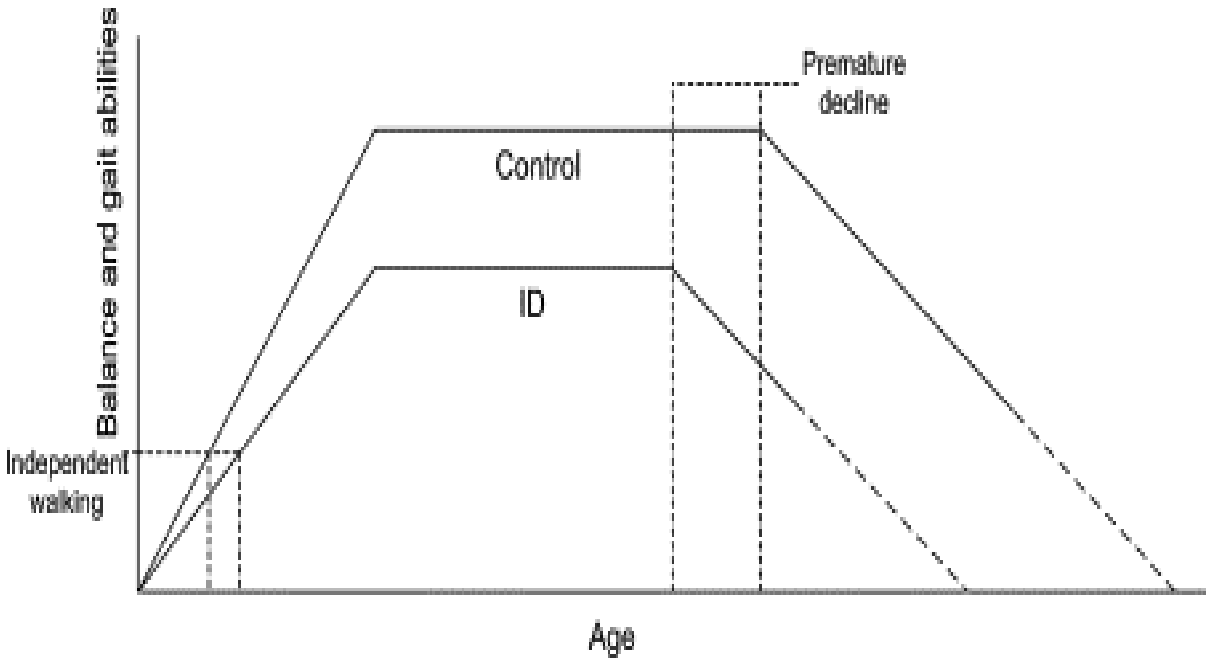


Fig. 2. Conceptual model of balance and gait capacities during the lifespan of persons with ID and controls. Independent walking is an example of a motor milestone which is reached at higher age in ID than in controls.

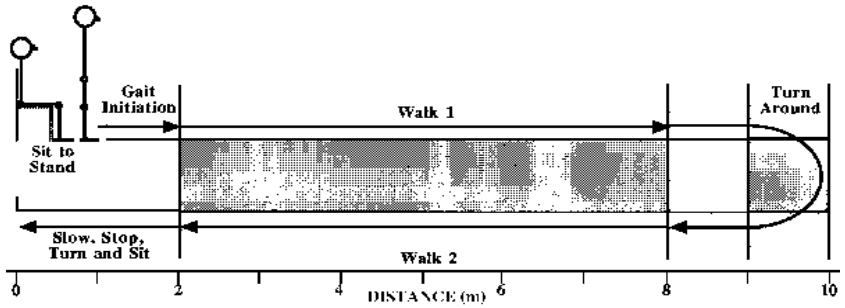
Enkelaar, L., et al. (2012). A review of balance and gait capacities in relation to falls in persons with intellectual disability, Research in Developmental Disabilities, 33(1), 291–306.

Strength Assessment

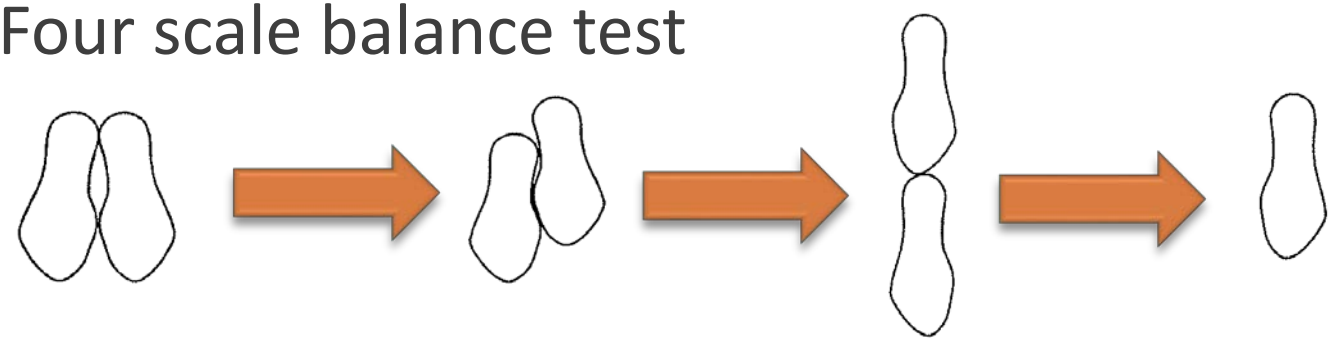
- 30-second chair stand test

Balance Assessments

- Timed up and go test



- Four scale balance test



Core Elements of Evidence-Based Falls Prevention Interventions

Stepping On (Seven weekly 2-hour program sessions, a group workshop and individualized follow up)

- Improving lower limb balance and strength, improving environmental and behavioral safety in both the home and community, and encouraging vision and medical screenings to check for poor vision and possible medication problems.

Tai Chi: Moving for Better Balance (one-hour, 2-3 times/week for 12 weeks)

- Using the classical Yang style (24 forms): multidirectional weight shifting, body alignment, and coordinated movement of arms, legs, and trunk
- The Y is able to scale the program through a YMCA instructor delivery network in Moving For Better Balance: This program uses 8 modified forms of Tai Chi instead of the 24 used in the study intervention.

The Otago Exercise Program (30 minutes exercise x 3/week + walk x 2 for one year)

- A PT delivers a home exercise program + monthly telephone calls
- An individually tailored program of muscle-strengthening and balance-retraining exercises of increasing difficulty, combined with a walking program.

Music-Based Multitask Exercise program (a one-hour class/week for 6 months)

- Experienced instructors lead a one-hour class of modified Jaques-Dalcroze eurhythmics.

Selected Evidence-Based Falls Prevention Programs

- Stepping On

  https://wihealthyaging.org/stepping-on
- Tai Chi: Moving for Better Balance

  http://tjqmbb.org/ or contact local YMCA
- The Otago Exercise Program

  http://www.med.unc.edu/aging/cgec/exercise-program/tools
- Music-Based Multitask Exercise program

  http://www.dalcrozeusa.org/ & Andrea.Trombetti@hcuge.ch

Source: Stevens JA, Burns ER. A CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Older Adults. 3rd ed. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 2015.

http://www.cdc.gov/homeandrecreationalsafety/pdf/falls/cdc_falls_compendium-2015-a.pdf

National Expert Panel on Physical Activity

- For older adults at risk of falling, strong evidence exists that regular physical activity is safe and reduces falls by about 30%.
- Most evidence supports a program of exercise with the following characteristics: 3 times per week of balance training and moderate intensity muscle-strengthening activities for 30 minutes per session and with additional encouragement to participate in moderate intensity walking activities 2 or more times per week for 30 minutes per session.
- Some evidence, albeit less consistent, suggests that tai chi exercises also reduces falls.

Source: Https://health.gov/paguidelines/pdf/paguide.pdf

Martial Arts To Reduce Falls Risk

Martial Arts to Reduce Falls: A Case Story

Participated in a martial arts club at a local university for 2+ years

Video from a regional test

Play Video 1

https://youtu.be/ONYn0Z30Z_k

Potential benefits of martial arts

- Physical fitness
  - Power, speed, strength, reaction speed
- Learning to fall
  - Rolling and dropping
- Mentality
  - Confidence, self-efficacy, awareness
- Setting
  - Individualized attention adapted to individual's level of ability and performance

Exercises that can be implemented *today*

- Posture assessment
- Seated exercises
  - Sitting upright, shifting weight, muscle contractions, leg extensions, etc.
- Supported exercises
  - Using a chair, or railing to perform lower body and core exercises (e.g., squats)
- General fitness promotion (assess risk before beginning)

Links to information and exercises to prevent falls:
http://www.nchpad.org/388/2139/Don~t~Get~Tripped~Up~~The~Role~of~Fitness~in~Fall~Prevention

http://www.nchpad.org/1078/5494/Senior~Corner~~ABC~s~of~Balance

What's the Problem?

- Many interventions found to be effective, including falls prevention programs, fail to translate into meaningful practice outcomes across multiple contexts.
- What's discovered to be effective in one setting may not generalize to new settings – the 'devil is in the context.'
- Successful adapted falls preventions programs may never be identified from one community to another.
- Nothing is archived, synthesized (systematically) and used in future iterations.

New Funding Cycle 2016-2021

WWW.NCHPAD.ORG

NCHPAD's Overarching Goal

Bridging the Gap

NATIONAL CENTER ON HEALTH PHYSICAL ACTIVITY AND DISABILITY
NCHPAD

Disability Community

Community
Health
Inclusion

APHA

World of Public Health

NCHPAD Knowledge Adaptation, Translation and Scale up (N-KATS) Framework

Practice & Policy Recommendations

JESSICA A. MINOR, MPP, AUCD AND CHRISTINE M. GROSSO, MS, AUCD

Strategies

Helping to set the stage for proper policy implementation

- Partnerships with state-based falls prevention coalitions and the ID community
- Education to caregivers
- Reduce environmental factors
- Provide interventions that improve balance and strength
- Identify more specific research
- Crate culturally and linguistic competent care

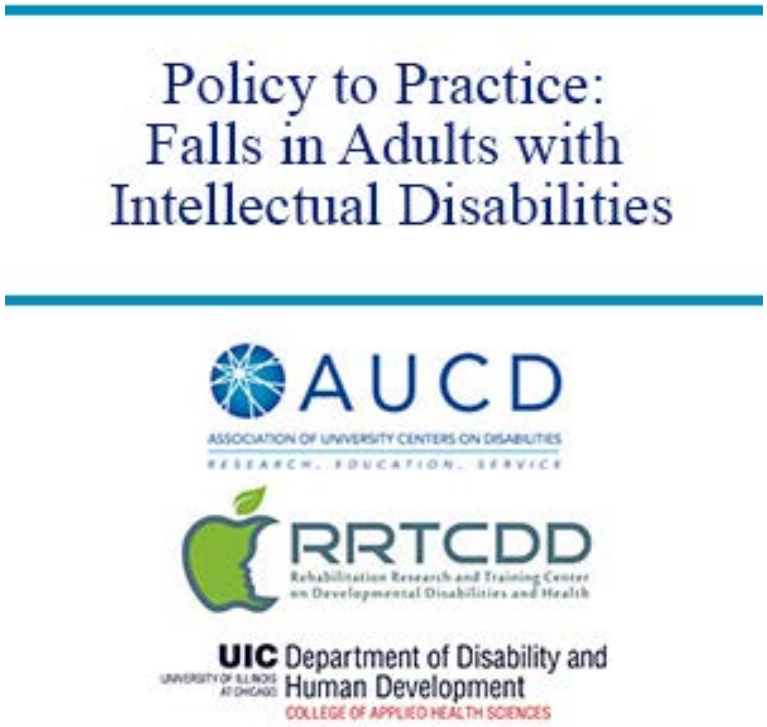
Policy Recommendations

1. Addition of language:
   - Medicare Part D
   - Older Americans Act
2. Falls prevention programming needs to be addressed within HCBS and MLTSS programs.
3. Request additional funding from the Prevention and Public Health Trust fund.

Additional Needs for Falls Prevention

- Falls risk assessment
- NIDILRR should invest more in research to adapt, test, and translate existing evidence-based falls prevention programs for people with ID
  - Medicaid Incentives for Prevention of Chronic Diseases program

Issue Brief



Download Issue Brief Here
http://bit.ly/2aHYZG0

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http://rrtcadd.org/

Building Healthy Inclusive Communities

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http://www.nchpad.org/