Preventing Recurrent Falls in the Elderly: A Multidisciplinary Intervention Study

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THE QUEEN'S MEDICAL CENTER

Disclosure

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  - Queen Emma Research Foundation
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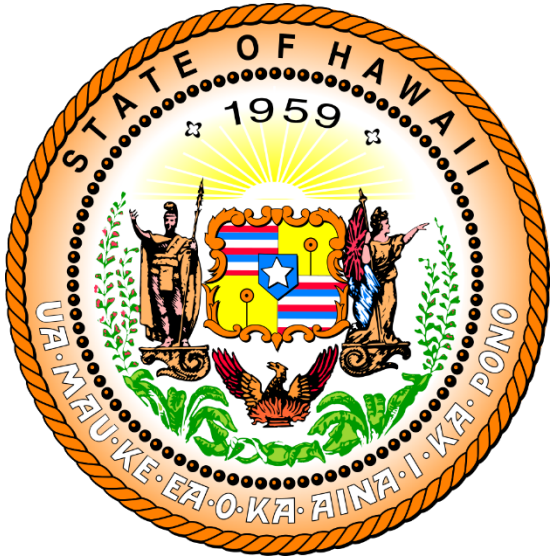
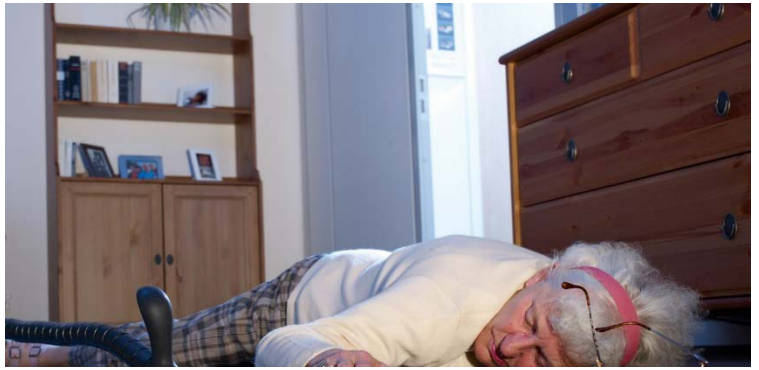


Background

- Falls are the leading cause of traumatic brain injury (TBI) and death among elderly age 65 and older (CDC)
  - ➢Responsible for >80,000 emergency department (ED) visits annually
  - ➢¾ of ED visits result in hospitalization
- Nearly 75% of falls occur in the home environment

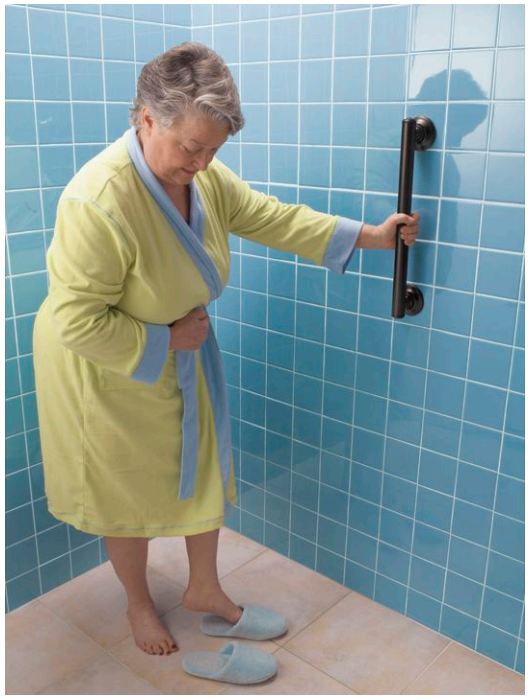


Background

- In Hawaii, for every elderly resident who dies from a fall
  - ➢ 60 will require treatment in the ED
  - ➢ 41 will require hospitalization
- The Queen's Medical Center (QMC)
  - ➢ Level 1 Trauma Center
  - ➢ More than 1,200 elderly people visit the QMC ED due to a fall annually

Objective

- To determine if a multidisciplinary intervention program will decrease the number of recurrent falls in elderly patients treated at the QMC ED by 30% within 12 months



Methods

Inclusion criteria:

- Age $\geq$ 65 years
- AMT $\geq$ 7
- Community dwelling
- Ability to understand and speak English, and ability to complete surveys or forms

Exclusion criteria:

- Age < 65 years
- AMT < 7
- Hospital Admission
- Discharged to a skilled nursing facility or other hospital

Study personnel obtained informed consent, re-administered abbreviated mental test, enrolled eligible participants. Fall prevention handouts given. Three quarterly surveys (Fall Diary) were given.

Randomization

Control (n=70)

Experimental (n=70)

Within 1 week of discharge from ED: OT and Geriatrician appointments scheduled

Within 1 month of discharge from ED:
OT home visit (~ 2 hours). Home assessment report given to subjects, sent to coordinator, geriatrician, and PCP (optional)
Geriatrician office visit approximately 80 minutes. Geriatrician assessment sent to study coordinator and PCP (optional)

3, 6, and 12 months post-falls: Quarterly surveys (Fall Diary) sent to Study Coordinator

Statistical Analysis

- All statistical test is two-sided
- Data is analyzed using the (SAS version 9.4, Cary, NC):
  - Wilcoxon Rank Sum Test
  - Chi Squared Test
  - Fischer's Exact Test
- p-value less that 0.05 is considered significant

Results

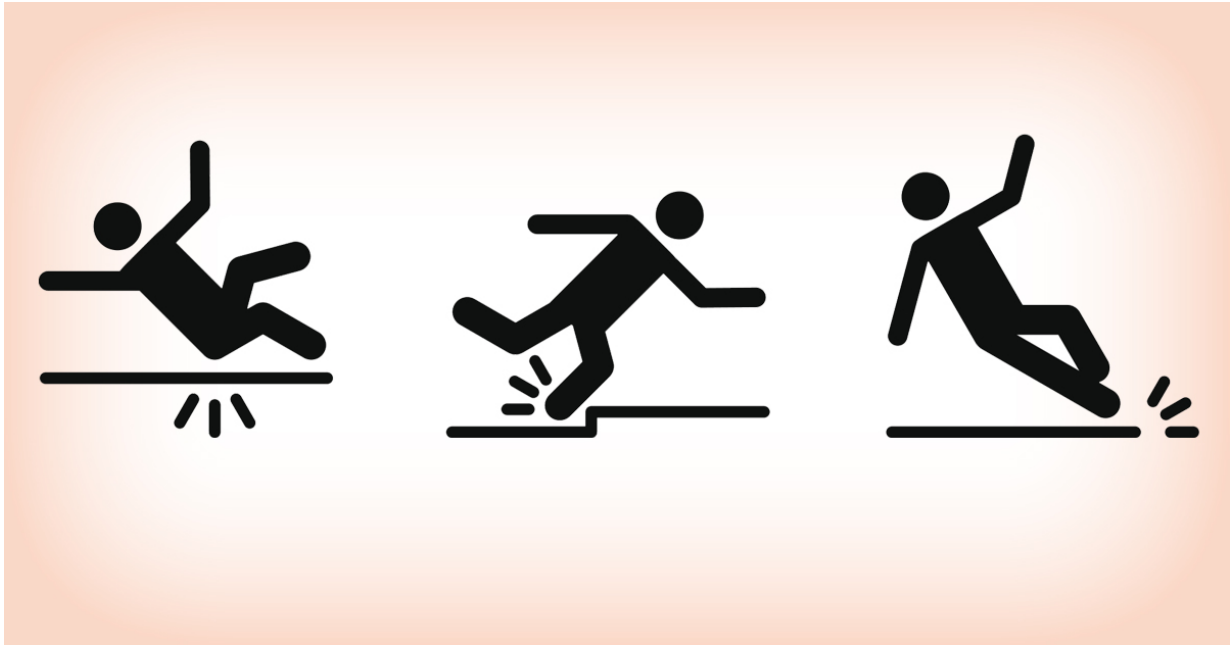
Attrition (Drop Out)	Control	Experimental (Treatment)
Died	5	0
Withdrew	8	21
No Response	1	5
Total	14	26

Results

Patient Characteristics	Control (n=36)	Experimental (n=21)	p-Value
Age (mean ± SD)	82.5 ± 7.5	81.5 ± 8.6	0.89
Gender (M:F)	(15:21)	(7:14)	
AMT (mean ± SD)	9.4 ± 1.0	9.2 ± 1.2	0.59
Lives alone	13	3	0.08
Uses a cane/walker	23	16	0.34
Cataract, Glaucoma, Macular degeneration	16	10	0.82
Prior Stroke	3	7	0.02*
Any Physical Fitness	23	7	0.04*

Results

- Incidence of recurrent falls over subsequent 12 months did not differ between control (6) and experimental (treatment) groups (5) [p=0.84]



Results (Excluding Prior Stroke and Any Physical Fitness)

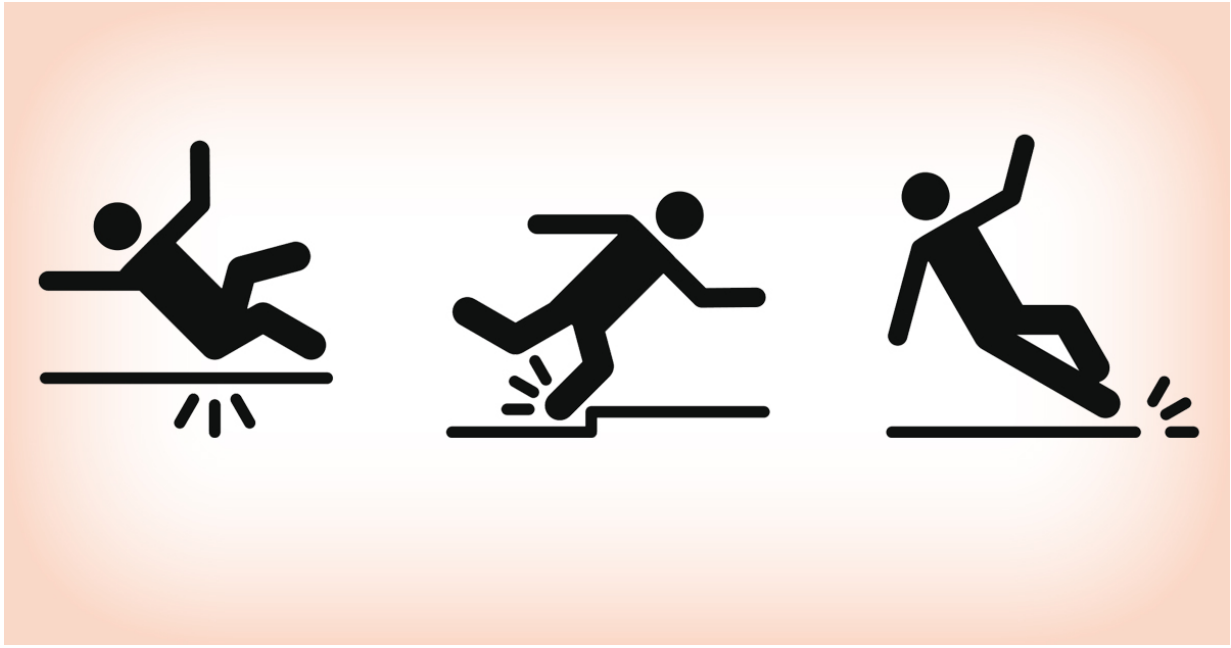
Patient Characteristics	Control (n=11)	Experimental (n=8)	p-Value
Age (mean ± SD)	80.4 ± 5.2	83.8 ± 8.1	0.34
Gender (M:F)	(6:5)	(0:8)	
AMT (mean ± SD)	9.3 ± 1.3	8.6 ± 1.5	0.45
Lives alone	4	1	0.34
Uses a cane/walker	7	6	0.99
Cataract, Glaucoma, Macular degeneration	3	5	0.18

Results

- Incidence of recurrent falls over subsequent 12 months did not differ between control (2) and experimental (treatment) groups (3) even after excluding subjects with prior strokes and any fitness activity [p=0.62]

Results

- Incidence of recurrent falls over subsequent 3 months also did not differ between control (2) and experimental (treatment) groups (2), even after excluding subjects with prior strokes and any fitness activity [p=0.99]



Conclusion

- Number of challenges inherent in the study of this cohort
  - Patient accrual (resulted in small sample size)
  - Significant loss due to withdrawal of participants
  - Adherence to submission of fall diaries
- Despite randomization, there was an imbalance of cohorts
  - Physical fitness
  - Prior strokes
- Future work
  - Despite these limitations, our results suggest that other interventions should be evaluated to address this important public health concern

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