

Accuracy and Feasibility of Fall Reports in Patients with Dementia

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Accuracy and Feasibility of Fall Reports in Patients with Dementia

Methods of Measuring Falls

Preliminary Analysis of Fall Data

Why Do We Want to Measure Falls?

serious public health problem in older persons

persons with dementia represent a high risk group for falls and fractures

falls are a bad outcome measure for trials

fractures are a good outcome measure for trials

Methodological Problems in Measuring Falls

- Missreporting of falls
- Various fall definitions
- Methods of measuring falls



Participants forget fall events

Participants deliberately deny fall events



Fall Definitions

ProFaNE (Prevention of Falls Network Europe) – Definition:

An unexpected event in which the participant comes to rest on the ground, floor or lower level.

Review (90 RCTs): approximately 50% of the RCTs do not specify a definition .

Hauer et al. Age & Ageing, 2006

Kellogg working group –

An unexpected event in which the participant comes to rest on the ground, floor or lower level, other than violent blow, syncope or acute onset of paralysis.



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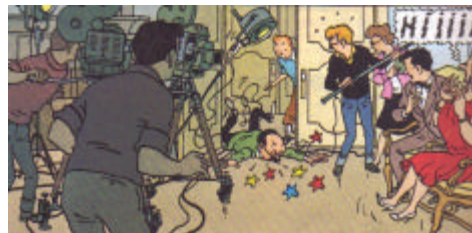
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Methodological Problems in Measuring Falls

▪ Missreporting of falls

▪ Various fall definitions

▪ **Methods of measuring falls**



Review (90 RCTs): 27% retrospective, 42% prospective, 18% health care records, 13% no information on data-collection .

Hauer et al. Age & Ageing, 2006

- prospective: fall calendars
fall diaries
fall postcards

- retrospective: telephone or face-to-face interviews
various periods of recall

- formal charts in hospitals and nursing homes

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■ Methodological Problems in Measuring Falls

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Recommendation of the ProFaNE working group

Lamb JAGS 2005

prospective daily recording

**adequate surveillance of documentation and
ascertainment of details of falls at least once a month**

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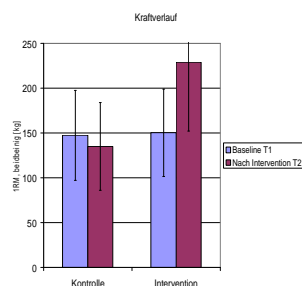
Physical Training in Persons with Dementia

**Project lead: PD Dr. Klaus Hauer,
Bethanien Krankenhaus, Heidelberg**

Study design: RCT, n=131

**Intervention: Standardised progressive
resistance, functional & balance training**

**Control: Unspecific group exercises with
conversation whilst seated**



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Fall Recording over 12 Months

▪ **Face-to-face interview at each session**

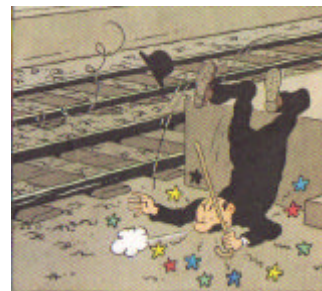
▪ **Telephone interview with participants**

- weekly during training period (3 months)
- monthly after training period (9 months)

▪ **Fall calendar**

▪ **Telephone interview with proxy
(at 3/6/12 months)**

▪ **Telephone interview with GP
(at 3/6/12 months)**



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Study Population

n = 131

97 (74%) women, 34 (26%) men

Age: 83 ± 7 years

MMSE (median, range): 22 ± 3 points

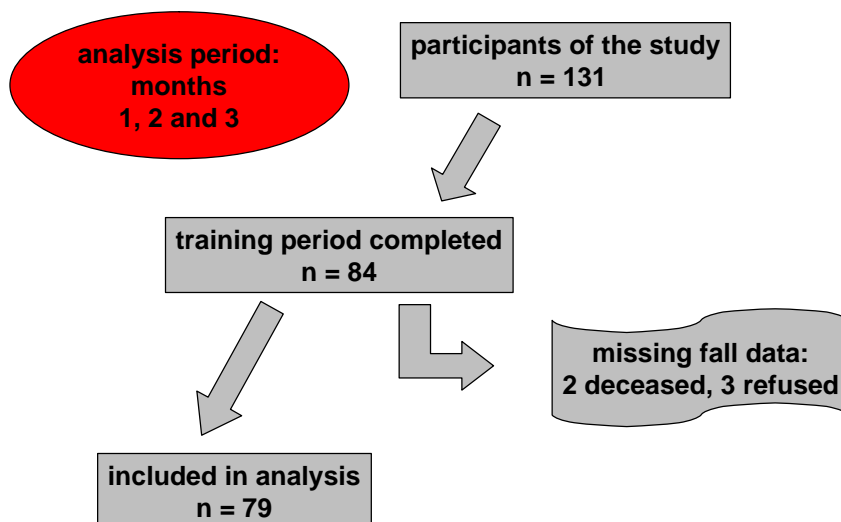
ADL (Barthel): 81 ± 15 points

Recruitment:

98 (75%) from rehabilitation ward or day clinic

33 (25%) community dwelling or nursing home

Preliminary Analysis



Adherence to Documentation by Calendars

n = 237

fall calendar	n (%)
filled in correctly	134 (57)
complete, but obviously not filled in on a daily basis	4 (2)
complete, but obviously filled in by proxy	3 (1)
nearly complete (<4 missing)	3 (1)
incomplete, with documented fall	3 (1)
incomplete, without documented fall	24 (10)
not returned	66 (28)

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Adherence to Weekly Telephone Interviews

number of missing calls (out of 12 telephone interviews)	participants n (%)
0	25 (32)
1	16 (20)
2	22 (28)
3	10 (13)
=4	6 (8)

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Lack of a Gold Standard

- **total number of falls:** for each participant, sum of all distinct falls recorded by at least one of the methods. Reconciliation (matching) of recorded falls across different sources with the help of temporal information and details of the fall event.
- **missing falls:** falls of the participant known from other sources but not recorded by a particular method.
- **faller:** person with at least one recorded fall by any method during the period of 3 months.

fall data concerning each participant	participants n (%)
reconciliation successful, reported number of falls identical	61 (77)
reconciliation successful, reported number of falls differ	14 (18)
reconciliation incomplete, number of falls probably underestimated	2 (3)
reconciliation incomplete, number of falls probably overestimated	2 (3)

Recorded Falls by Method (n=79)

method \ falls	recorded falls ? 70 n (%)	missing falls	method not feasible	number of fallers ? 30 n (%)
face-to-face	33 (47)	31	6	23 (77)
phone call participant	41 (59)	29	0	25 (83)
evaluable calendars	29 (41)	22	0	21 (70)
all calendars	29 (41)	41	0	21 (70)
proxy	21 (30)	44	5	14 (47)
GP	9 (13)	55	6	6 (20)
calendar and phone call	51 (73)	19	0	28 (93)

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Kappa Measure of Agreement

	phone participant	evaluable calendars	all calendars	proxy	GP
face-to-face	0.80	0.76	0.75	0.48	0.48
telephone participant		0.74	0.72	0.46	0.41
evaluable calendars				0.45	0.43
all calendars				0.49	0.60
proxy					0.69

Kappa: 0.41-0.60? moderate agreement; 0.61-0.80 ? substantial agreement; 0.81-1.00? almost perfect agreement. [Landis&Koch 1977](#)

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Fall Definitions

method	Profane	Kellogg	not attained	not documented
face-to-face	31	30	0	1
telephone participant	35	35	1	5
proxy	11	11	8	0
GP	4	4	3	2
sum	81	80	12	8

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Summary of Intermediate Results

- first methodological study on measuring falls in persons with dementia
- daily prospective method + weekly telephone calls register the greater part of recorded falls
- daily prospective method + monthly telephone calls will be analyzed, see ProFaNE recommendation
- prospective method (calendar) as a single source of information is insufficient, but improves recording in combination with telephone calls
- not a single participant with recorded fall in whom all falls were recorded by all sources
- GP's only know of about 20% of their patients who suffered a fall. The number of falls is underestimated to an even larger extend.

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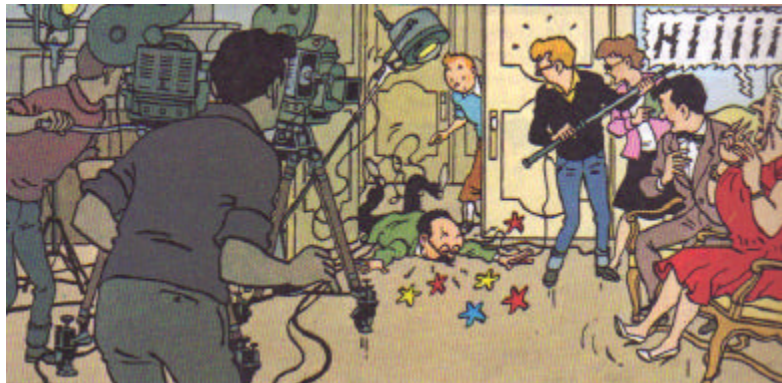
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■ Take Home Message

■ Beware of fall data !

■ Don't fall !!

■ And if you do, be sure to document it well !



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Thank you very much for your attention !

