

The Use of Time-and-Motion Observation Captures Nurse Initiated Patient Mobility



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Background

- Older adults lose the ability to independently ambulate during their hospital stay
- Frequency of ambulation during the hospital stay is an independent predictor of loss of independent ambulation
- Patient mobility is frequently omitted in nursing care
- Only one study has documented the frequency of hallway ambulation of older adults during their hospital stay
- Documentation of patient mobility is inconsistent in medical records.
- Nurse’s self-report of patient mobility may be unreliable.

Aims

To compare two different methods of measuring the frequency and duration of mobility-related nursing care activities of hospitalized older adults:

- Continuous time-and-motion (TAM) observation
- Nurse’s self-report

Methods

- Design: Observational comparative study
- Setting: 2 hospitals in WI
- Sample
 - 15 RNs were observed 2-3 times (a total of 43 observations)
 - 87 patients’ data were analyzed
- Data collection methods:
 - (1) **Direct observation** (TAM observation data): Using Andriod tablets loaded with the WorkStudy+ software program (Quetech Ltd.).
 - (2) **Nurse’s self-report** direct care activities using paper and pencil format.

Mobility-related nursing care activities

(1) Transferring, (2) Walking to and from the bathroom, (3) Walking in the hospital room and (4) Walking in the hallway

Characteristics of Subjects

- RN subjects (n=15)
- Age (years): 35.4 (\pm 13.1)
- Gender: Male (n=1), Female (n=14)
- Education: Associated degree (n=1), Bachelor degree (n=13), Master’s degree (n=1)
- Years of RN experience: 7.3 (\pm 8.9)

Results

Comparison and ICC

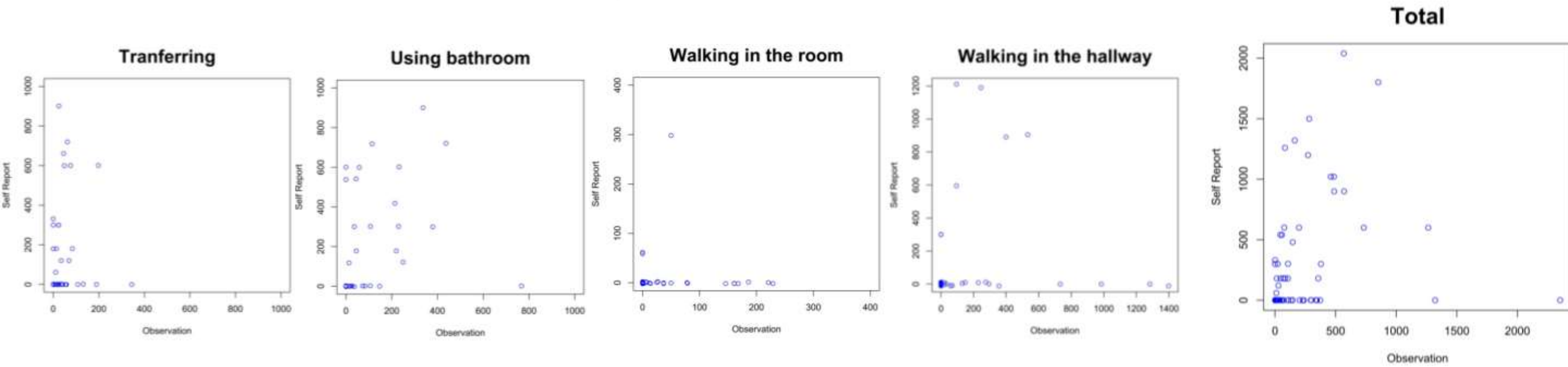
Types	FREQUENCY (time)						DURATION (second)					
	Mean (SD)			Median [Range]		ICC	Mean (SD)			Median [Range]		ICC
	Obs	SR	Diff	Obs	SR		Obs	SR	Diff	Obs	SR	
Transferring	0.7 (1.1)	0.3 (0.7)	0.4	0 [0 – 4]	0 [0 – 4]	.409	22.9 (52.1)	76.8 (188.4)	-53.9	0 [0 – 345]	0 [0 – 900]	.112
Using bathroom	0.7 (1.6)	0.3 (0.6)	0.4	0 [0 – 8]	0 [0 – 2]	.395	47.7 (119.8)	88.6 (204.8)	-40.9	0 [0 – 768]	0 [0 – 900]	.392
Walking in the room	0.4 (0.9)	0.0 (0.2)	0.4	0 [0 – 4]	0 [0 – 1]	.016	20.2 (52.1)	5.0 (33.8)	15.2	0 [0 – 229]	0 [0 – 300]	.039
Walking in the hallway	0.3 (0.6)	0.1 (0.5)	0.2	0 [0 – 3]	0 [0 – 3]	.296	88.2 (254.5)	64.3 (237.8)	23.9	0 [0 – 1,399]	0 [0 – 1,200]	.166
Total	3.0 (3.2)	0.7 (1.3)	2.3	2 [0 – 15]	0 [0 – 7]	.333	179.0 (349.7)	234.6 (445.0)	-55.6	45 [0 – 2,353]	0 [0 – 2,040]	.294

Note: Obs = Observation; SR = Self-report; SD = Standard deviation; Diff = Difference of self-report data from observation data; Range [minimum – maximum]; ICC = Intra-class correlation. ICC lower than .4 indicates significantly different.

Frequencies of mobility-related nursing care activities



Durations of mobility-related nursing care activities



Conclusion & Implication

- Nurse’s self-report data to measure frequency of mobility-related nursing care activities are significantly lower than those obtained from TAM observation method.
- Nurse’s self-report data of durations of mobility-related nursing care activities vary. Overall, nurse’s self-report data to measure the durations of mobility-related nursing care activities are significantly higher than those obtained from TAM observation method.
- Nurse’s self-report of mobility-related care activities were unreliable compared to the TAM method. Self- Report as a method to measure frequency and duration of nursing care activities should be used cautiously.