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Effectiveness of Educational Nursing Nome Visits in Older Adults with Mobility Impairments: A Randomized Controlled Trial

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Purpose

The loss of functional status is a major risk factor for loss of independence, hospital stays, and for admittance into long-term nursing home care in vulnerable elderly populations. Facilitating and maintaining functional ability and quality of life is and will increasingly become a major task of nursing. Home visits may have positive effects on functional ability and quality of life in elderly people. The aim of this study was to determine the effectiveness of educational home visits on the functional status, quality of life, and care dependency in older adults with mobility impairments.

Methods

We performed a randomized controlled trial. The study was conducted in the living environments of the 123 participants with functional impairments from Hamburg, Germany. The intervention group received a nursing consultation intervention on mobility and quality of life. The control group received usual care. Data were collected from August 2011 to December 2012 at baseline, 6 months and 12 months of follow-up. The main outcomes were functional status (Barthel Index), quality of life (WHO Quality of Life-BREF), and care dependency (Care Dependency Scale). Data were analyzed using descriptive statistics and generalized linear models.

Results

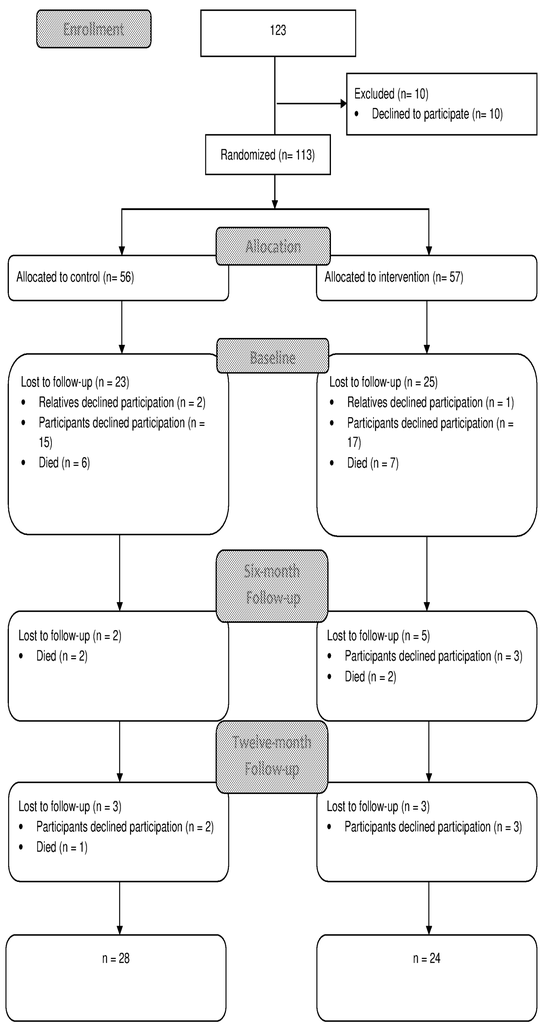

Figure 1 Participant flow

In total, 113 participants (57 in the intervention and 56 in the control group) were included in the study (see Figure 1). The intervention group participants showed poorer functional status, quality of life (environment) and higher care dependency at baseline and higher care dependency after 6 months (see Table 1). The intervention had no effect on functional status, quality of life, and care dependency. Self-efficacy and younger age were related to better functional status over time. Better self-efficacy and less depression resulted in a better quality of life and better self-efficacy resulted in a better functional status and lower care dependency (see Table 2).

Table 1 Variables between groups

		T1			T2			T3		
		CG M (SD) n = 33	IG M (SD) n = 32	p	CG M (SD) n = 31	IG M (SD) n = 27	p	CG M (SD) n = 28	IG M (SD) n = 24	p
Barthel-Index		67.93 (27.04)	86.09 (18.35)	**.004[1]**	75.40 (25.74)	87.24 (17.09)	.057[1]	72.83 (29.92)	85.18 (17.40)	.089[1]
WHOQOL-BREF	**Overall**	45.09 (23.16)	55.65 (19.50)	.060[1]	49.48 (20.68)	51.25 (14.81)	.716[1]	53.41 (20.84)	60.71 (20.33)	.218[1]
	Physical	50.74 (11.71)	56.84 (15.01)	.090[1]	56.20 (14.60)	61.39 (14.93)	.206[1]	54.25 (16.08)	59.69 (15.52)	.231[1]
	Psychological	60.86 (17.38)	64.54 (16.65)	.414[1]	61.67 (14.52)	64.44 (13.52)	.471[1]	59.66 (13.69)	62.05 (16.13)	.581[1]
	Social	70.98 (12.47)	74.46 (13.43)	.333[1]	73.26 (14.38)	77.78 (12.05)	.215[1]	72.73 (15.68)	75.60 (12.82)	.480[1]
	Environment	70.87 (12.47)	78.20 (12.72)	**.030[1]**	75.84 (8.37)	79.85 (12.55)	.184[1]	72.30 (7.43)	76.12 (15.69)	.263[1]
CDS		54.73 (13.36)	65.29 (10.36)	**.001[1]**	56.40 (14.04)	65.44 (13.67)	**.023[1]**	57.52 (14.47)	62.33 (8.82)	.173[1]

n = Number; M = Mean; SD = Standard Deviation; p = p-value; WHOQOL-BREF = WHO Quality of Life-BREF; CDS = Care Dependency Scale; 1t-test; 2 Fisher's exact test

Table 2 Results of the GLM analyses of the main outcome parameters

Outcome parameter	Effect over time (multivariate test of within-subjects effects)	Interaction between time and factor (multivariate test of within-subjects effects)	Group (factor) differences (test of between-subjects effects)
Functional status (Barthel Index) (n = 40)	$p = 0.651^a$	***group p = 0.081[a]***	*group p = 0.250*
		sex p = 0.446[a]	*sex p = 0.835*
		age p = 0.022[a]	*age p = 0.073*
		self-efficacy p = 0.007[a]	***self-efficacy p = 0.012***
Quality of life WHOQOL-BREF overall score (n = 37)	$p = 0.460^b$	*group p = 0.372[b]*	*group p = 0.108*
		sex p = 0.465[b]	*sex p = 0.753*
		age p = 0.594[b]	*age p = 0.891*
		GDS p = 0.227[b]	***GDS p = 0.001***
		MMSE p = 0.653[b]	*MMSE p = 0.317*
		self-efficacy p = 0.479[b]	***self-efficacy p = 0.032***
Quality of life WHOQOL-BREF physical score (n = 37)	$p = 0.390^a$	*group p = 0.732[a]*	*group p = 0.510*
		sex p = 0.648[a]	*sex p = 0.688*
		age p = 0.309[a]	*age p = 0.162*
		GDS p = 0.339[a]	***GDS p = 0.007***
		MMSE p = 0.497[a]	*MMSE p = 0.520*
		self-efficacy p = 0.286[a]	***self-efficacy p = 0.009***
Quality of life WHOQOL-BREF psychological score (n = 37)	$p = 0.441^a$	*group p = 0.586[a]*	*group p = 0 .411*
		sex p = 0.462[a]	*sex p = 0.999*
		age p = 0.510[a]	*age p = 0.332*
		GDS p = 0.355[a]	***GDS p = 0.001***
		MMSE p = 0.459[a]	*MMSE p = 0.870*
		self-efficacy p = 0.855[a]	*self-efficacy p = 0.182*
Quality of life WHOQOL-BREF social score (n = 37)	$p = 0.823^a$	*group p = 0.895[a]*	*group p = 0.290*
		sex p = 0.408[a]	*sex p = 0.943*
		age p = 0.211[a]	*age p = 0.446*
		GDS p = 0.276[a]	***GDS p = 0.065***
		MMSE p = 0.281[a]	*MMSE p = 0.573*
		self-efficacy p = 0.558[a]	*self-efficacy p = 0.309*
Quality of life WHOQOL-BREF environmental score (n = 37)	$p = 0.916^a$	*group p = 0.805[a]*	*group p = 0.167*
		sex p = 0.904[a]	*sex p = 0.402*
		age p = 0.904[a]	*age p = 0.488*
		GDS p = 0.326[a]	***GDS p = 0.019***
		MMSE p = 0.853[a]	***MMSE p = 0.095***
		self-efficacy p = 0.594[a]	*self-efficacy p = 0.105*
Care dependency (n = 37)	$p = 0.247^a$	*group p = 0.452[a]*	*group p = 0.271*
		sex p = 0.177[a]	*sex p = 0.318*
		age p = 0.196[a]	*age p = 0.310*
		self-efficacy p = 0.052[a]	***self-efficacy p = 0.033***

p = *p*-value; GDS = Geriatric Depression Scale, MMSE = Mini Mental State Examination; statistically significant values and trends in bold characters; a = Greenhouse-Geisser–correction for sphericity; b = sphericity assumed.

Conclusion

The intervention did not show the benefits that we assumed. Further studies on the effects of educational nursing interventions should be performed using different concepts and rigorous research methods. The intervention examined cannot be recommended for nursing practitioners. However nursing education should be part of nursing practice and may be integrated in everyday care.