Profiles of geriatric patients in a community hospital:

A pilot project of an individualized case management system among 80 year olds and older

Carine FEDERSPIEL[1,2], Jean-Paul STEINMETZ[1]

[1]Department of Research and Development, ZithaSenior [2]Department of Geriatric Rehabilitation, ZithaKlinik
Luxembourg, Europe (contact: jean-paul.steinmetz@zitha.lu)

Theoretical Background

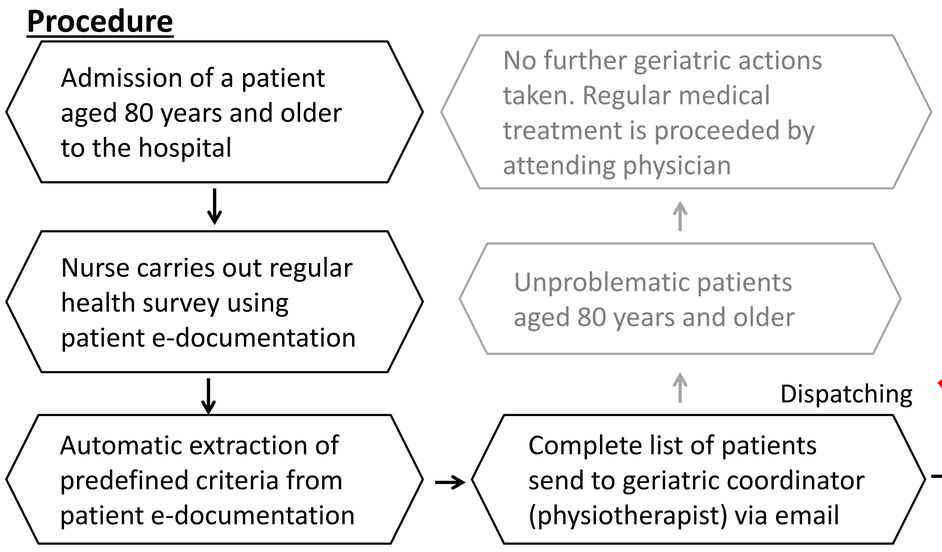
The risk of functional decline in old adults demonstrating a state of vulnerability is amplified. Covinsky et al. (2003) discuss functional declines in up to two thirds of hospitalized patients aged 80 and older, entailing dependencies in ADLs and decreasing independency in the patient. The nutritional, cognitive and psychological status, comorbidities, polymedication, and social factors have recently been discussed to play a crucial role in this process. Additionally and as stressed by the I.A.G.G/A.M.P.A. Task Force, hospital organizations seem currently unable to improve functional status in old patients, as they are designed to deliver rapid and effective care (Lafont et al., 2011). Importantly, to optimize hospital organization addressing specific geriatric needs of the patient, identification of different frailty status and appending vulnerabilities is vital.

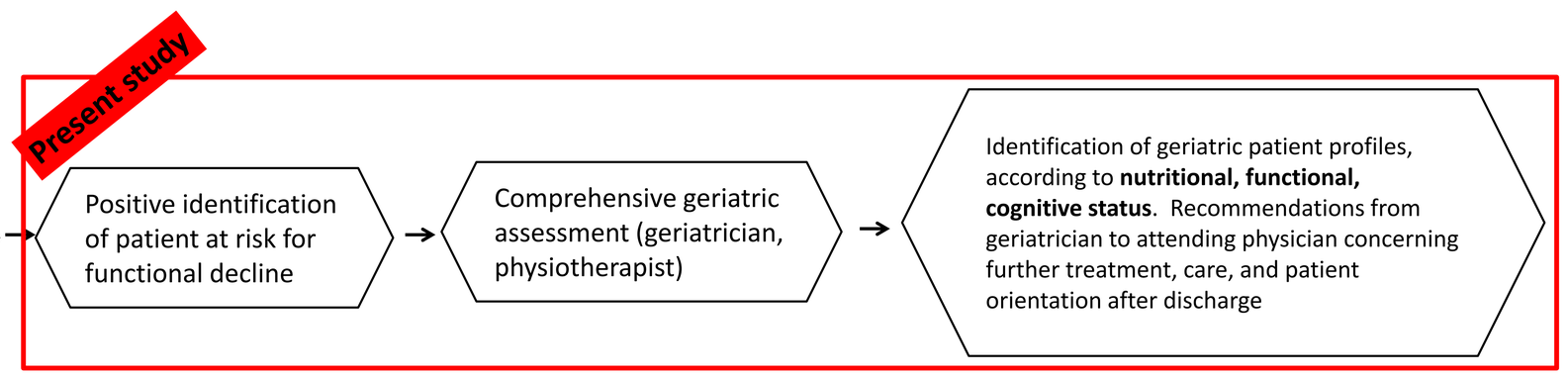
Aims of the study

The present pilot study investigates profiles of (pre-)frail hospitalized adults aged 80 years and older with the aim of differentiating subgroups of geriatric inpatients. Based on this knowledge about the underlying geriatric profiles served in the present community hospital, services and organizational structures to prevent and to remediate functional declines can be developed and adapted.

Methods

Procedure





Sample, Statistical analysis, cluster extraction

The sample investigated for the present research report is composed of N = 65, with a mean age of 86.8 years (SD=4.7, range=79-100). Participants included in the study were either planned admissions (19.1%) (i.e., surgery) or were admitted as an emergency (80.9%) to the present community hospital.
Hierarchical cluster analysis (Ward's method) with squared Euclidian distances were performed. The inspection of the dendogram suggests a three cluster solution.

Instrument

The development of our comprehensive geriatric assessment was informed by common risk factors that have previously been identified to play a key role in functional decline of older adults during hospitalization (e.g., Lafont et al., 2011). Precisely, our instrument focuses on a number of medical, physical/mobility, cognitive, social and functional parameters. Noteworthy, the development process was closely guided by attending physicians and therapists to guarantee (1) a complete record of the most important information and (2) a broad acceptance of the instrument across the multidisciplinary team.

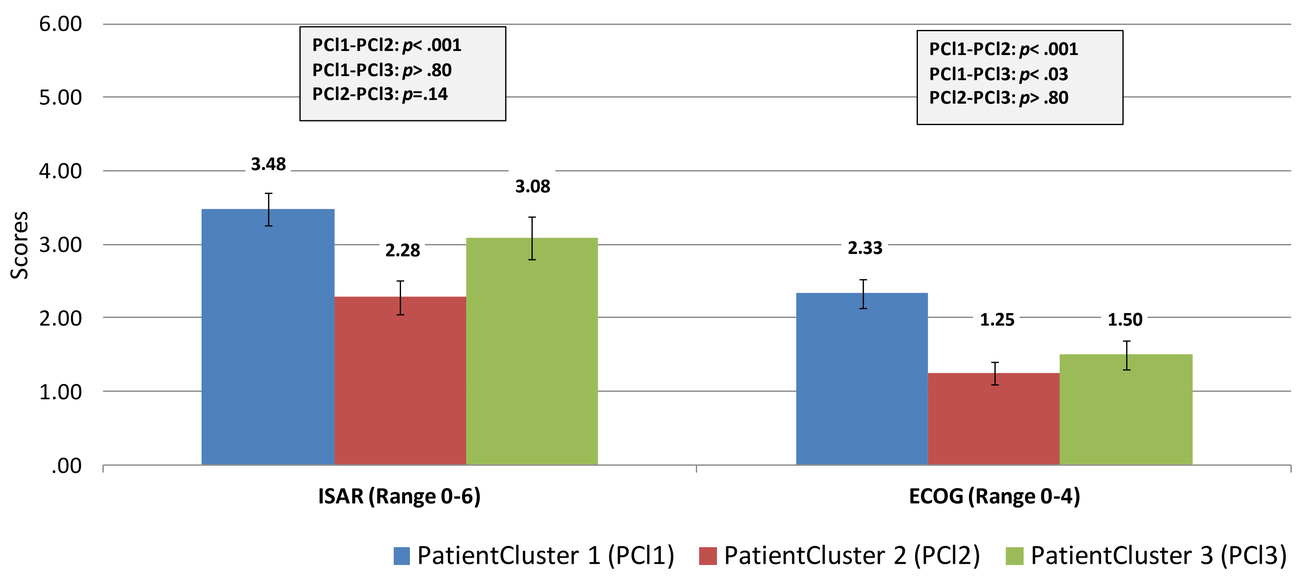
Results

Mean age of to three clusters differ significantly from each other (*p*s <.01). No differences are observed in the number of comorbidities or acute health concerns at admission to the hospital. Importantly, the three identified patient clusters differ significantly from each other in their mobility and ADL status. Cognitive status of patient cluster 1 and 3 do not differ from each other. No significant differences are observed on the nutritional status, although a strong tendency suggests a poorer nutritional status in patient cluster 1. ISAR scores are positive (≥2) in the three clusters, with patient cluster 1 demonstrating the highest risk for (further) decline. Similarly, general performance and well-being (ECOG measure) are most deficient in patient cluster 1.

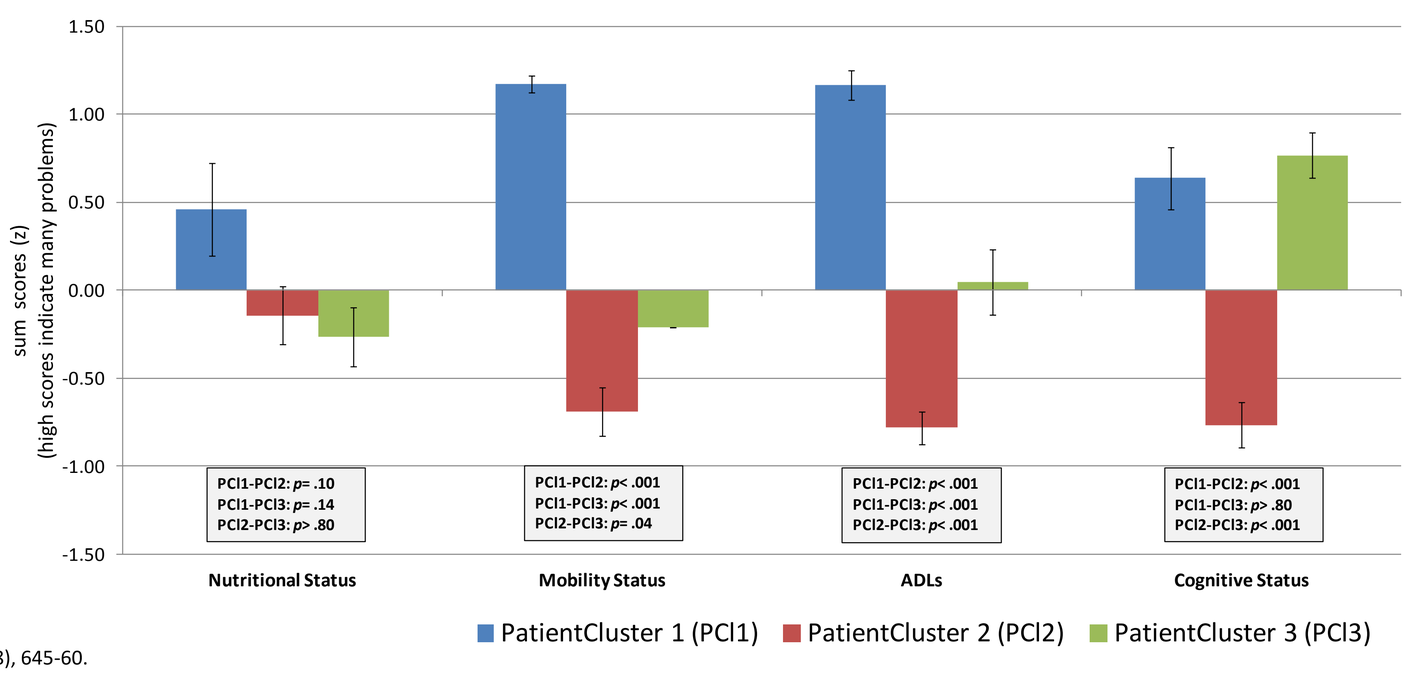
Table 1. Overview of the three identified patient clusters

	Patient Clusters		
	PCl1	**PCl2**	**PCl2**
n	21	32	12
Age, mean (*SD*)	89.3 (5.4)	85.1 (3.6)	86.9 (4.1)
Admission			
Emergency/Planned (in %)	81/19	87.5/12.5	83.3/16.7
Mean number of acute health conditions (SD)	1.0 (0.7)	1.3 (0.8)	1.3 (0.5)
Mean number of comorbidities (*SD*)	2.3 (1.5)	2.4 (1.2)	2.3 (1.1)
Mean number of medications/day (*SD*)	8.1 (3.0)	7.9 (3.2)	7.8 (4.9)
Type of residence before admission (in %)			
At home	30.0	65.6	50.0
Senior residence/assisted living	15.0	3.1	8.3
Nursing home	55.0	31.3	41.7

ISAR Scores and ECOG Performance Status of the three clusters



Nutritional, Functional and Cognitive Status of the three clusters



Discussion

The preliminary findings of this ongoing research suggest the identification of three subgroups of (pre-)frail geriatric patients. They differ significantly on a number of parameters (e.g., ADLs, mobility, general performance), other than their immediate gravity of health status at hospital admission (see table 1). Final findings of the present research on profiles of old patients should help to develop different geriatric pathways of care aiming to provide specific geriatric care to the patient in the present community hospital (e.g., acute geriatric unit care, geriatric rehabilitation, memory and mobility clinic). Hence, patients could be better and faster guided to specific medical and nursing services, to either prevent further decline, to restore adequate quality of life, and if possible discharge the patient from hospital to home.

Literature: Covinski et al. (2003). J Am Geriatr Soc, 51(4), 451-8. **Lafont et al.** (2011). J Nutr Health Aging: Geriatric Science. 15(8), 645-60.