

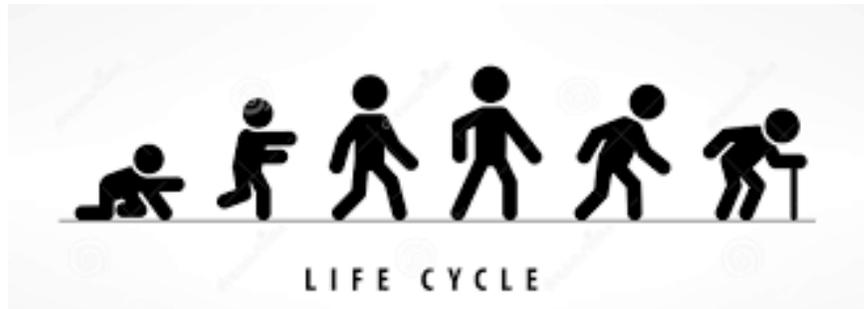


***THE CARE-RELATED BURDEN OF FAMILY CAREGIVERS IS
ASSOCIATED WITH FRAILTY
AND OPTIMISM EVALUATED IN OLDER OUTPATIENTS***

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BACKGROUND

Older adults denote a remarkably vulnerable population, due to the progressive decline of physical and cognitive functions, as well as multimorbidity, which lead to a progressive loss of independence in daily life.



Potential risk for family caregivers of developing a care-related burden, precisely due to the older subjects' health status.

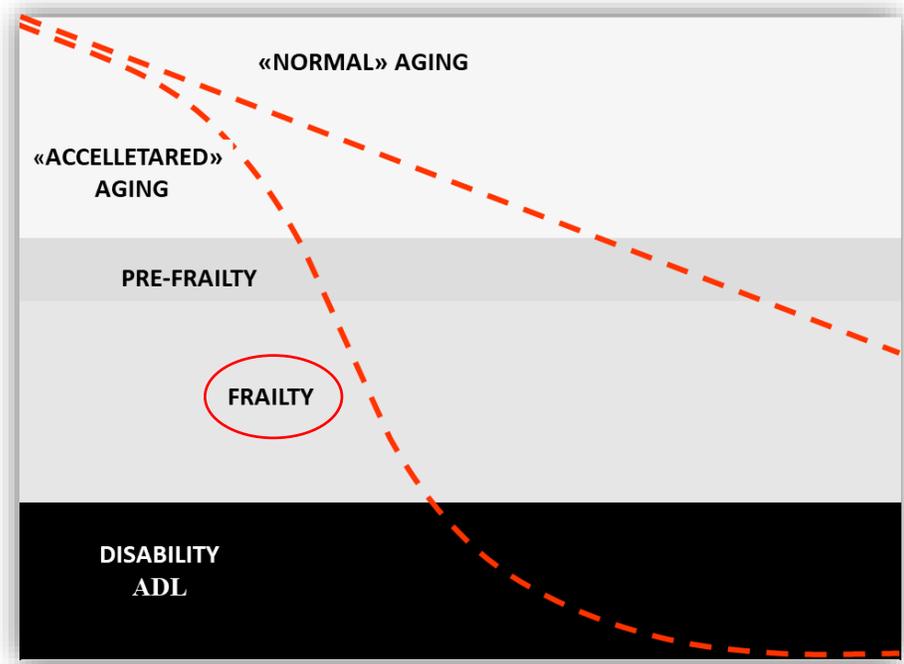
In the last years, the construct of **caregiver burden** has also increasingly acquired a multifactorial dimension, which encompasses physical, psychological, emotional, social, and economic consequences for the caregivers

“The extent to which caregivers perceive the adverse effect that caregiving has on their emotional, social, financial, and physical functioning” (Zarit et al., 1980)



BACKGROUND

Frailty is defined as a **state of increased vulnerability** of the individual to stressors due to reduced homeostatic reserves.



Frailty phenotype
(Fried et al., 2001)

Components of frailty (criteria)
Unintended weight loss in past year >4.5 kg
Self-reported exhaustion
Weakness (grip strength)
Slow walking speed
Low physical activity

0 component present: robust
1-2 components present: pre-frail
≥ 3 component present: frail



Deficit accumulation
(Rockwood & Mitnitski, 2007)

Frailty as the result of the cumulative presence of several deficits (*accumulated* over time)

Calculation of a **FRAILTY INDEX (FI)**

$$FI = \frac{\text{Number of deficits present}}{\text{Number of deficits considered}}$$

FI ≥ 0,25 = Subject classified as FRAIL

BACKGROUND

Dispositional optimism is acknowledged as one of the psychological factors involved in the **adaptation to aging** in older adults, by promoting the adoption of healthy behaviours and a consequent better quality of life.

Dispositional optimism is considered one of the two sides of individual life orientation, and the opposite side is configured as pessimism; as a **stable dispositional factor**, optimism reflects the individual **positive expectations** for the future.

This optimistic “engine” translates into daily life in the **adoption of proactive and health-oriented behaviours**, with benefits in terms of both general wellbeing and physical health, especially in the presence of adversity to overcome.



Micheal Scheier



Charles S. Carver



MAIN PURPOSES OF THE STUDY

What do we know?

Previous evidence have only highlighted the association between older adults' physical frailty (based on the frailty phenotype model or by the evaluation of physical proxies, such as gait speed and balance) and caregivers burden.

To the best of our knowledge, the contribution of older patients' dispositional optimism on caregiver burden has been poorly investigated. Previous evidence has suggested that lower levels of optimism among men, who had to undergo coronary artery bypass surgery, predicted higher levels of burden among their wives (Ruiz et al., 2006)



Which aim for our study?

- Exploring the level of burden among a sample of family caregivers of older adults.
- Investigating whether older care recipients' **multidimensional frailty** and **dispositional optimism** might be differently associated with the burden of their family caregivers.

MATERIALS AND METHODS

The **setting** of the present study was the Geriatrics and Multidimensional Evaluation Clinic (University of Messina, Italy).

Patients and caregivers were recruited on a voluntary basis, during the first visits scheduled at the Clinic. The recruitment took place from October 2018 to October 2019, and involved family members and patients who referred to the clinic for the first time.

Inclusion / exclusion criteria for caregivers

We evaluated the effective contribution of caregivers in helping the older care recipients to carry out basic and instrumental activities of daily life. Indeed, we used the items contained in the Basic Autonomy in Daily Living (BADL) and the Instrumental Autonomy of Daily Living (IADL) scales as a source of information, in order to qualify a family member as a caregiver.

Inclusion / exclusion criteria for older patients

The presence of severe major neurocognitive disorders, and the presence of severe functional limitations (e.g. inability to walk, severe limitations in the upper limbs, severe diagnosed sensory deficits) were considered exclusion criteria for patients.

MATERIALS AND METHODS

1. The **Caregiver Burden Inventory (CBI)** was used to measure the multidimensional care-related burden of caregivers:

- **time-dependence burden (CBI TD),**
- **developmental burden (CBI EV),**
- **physical burden (CBI PHYS),**
- **social burden (CBI SOC),**
- **emotional burden (CBI EMOT),**
- **total score of caregiver burden (CBI Total).**

High scores are representative of high levels of burden. The total score ranges from 0 to 100.



2. The **frailty status** of each patient was evaluated by the calculation of a 35-item **Frailty Index (FI)**

3. The **revised Life Orientation Test (LOT-R)** was used to evaluate **dispositional optimism** of the patients.

The score ranges from 0 to 24; higher scores reflect a greater individual expectation of positive results.

MATERIALS AND METHODS

Variables considered in the calculation of the Frailty Index (FI)

Hospitalization	Pain	Urinary incontinence	Heart failure	Cerebrovascular disease
Fractures	Bathing	Faecal incontinence	Chronic Obstructive Pulmonary Disease	Handgrip strength
Caregiver	Dressing	Telephone	Body Mass Index	Parkinsonism
Cognitive status	Walking	Drugs	Cancer	Gait speed
Malnutrition	Getting up / Sitting down	Hypertension	Cirrhosis	Medications
Dehydration	Feeding	Diabetes	Chronic kidney failure	Benzodiazepines
Oral health	Toileting	Heart disease	Obesity	Neuroleptics
			Total number of detected deficits ___ / 35	Frailty Index _____

RESULTS

	Family Caregivers (N=80)	Patients (N=80)
Age (mean ± SD)	64.28 ± 8.6	80.45 ± 7.13
Education (mean ± SD)	10.9 ± 6.5	6.35 ± 3.52
Gender male (%)	37.6	33.5
Gender female (%)		
Married (%)		
Widow/er (%)		
Other (%)		
Kinship with the patient		
Son/Daughter (%)		
Husband/Wife (%)		
Other family member (%)		
Clinical characteristics		
Frail subjects (%)		
Not frail subjects (%)		

Variables	Mean (± SD)	1	2	3	4	5	6	7	8
1. Patient's age	80.45 ± 7.13								
2. FI	0.29 ± 0.09	0.198*							
3. LOT-R	16.98 ± 5.38	ns	-0.329**						
4. CBI TD	7.66 ± 4.77	0.172*	0.750**	-0.439**					
5. CBI EV	3.54 ± 3.64	ns	0.638**	-0.312**	0.794**				
6. CBI PHYS	3.01 ± 2.1	ns	0.651**	-0.345**	0.786**	0.776**			
7. CBI SOC	1.42 ± 1.91	ns	0.387**	-0.288**	0.547**	0.724**	0.722**		
8. CBI EMOT	0.70 ± 1.12	ns	0.352**	-0.230**	0.538**	0.693**	0.680**	0.819**	
9. CBI Total	16.32 ± 11.33	0.176*	0.705**	-0.400**	0.914**	0.924**	0.916**	0.790**	0.758**

* = significant at p < 0.05; ** = significant at p < 0.01; ns = not significant.

RESULTS

Multivariate linear regression.

Dependent variables	Tested variables	Model				Coefficients			
		R ²	R ² adjusted	F	p	SE(B)	β	t	p
CBI Total		0.507	0.490	28.85	<0.001				
	Patient's age					0.134	-0.048	-0.618	0.53
	FI					9.79	0.629	7.69	<0.001
	LOT-R					0.167	-0.193	-2.38	0.019
CBI TD		0.573	0.558	37.62	<0.001				
	Patient's age					0.048	-0.077	-1.06	0.28
	FI					3.48	0.658	8.65	<0.001
	LOT-R					0.059	-0.223	-2.96	0.004
CBI EV		0.346	0.331	22.52	<0.001				
	FI					2.88	0.528	5.68	<0.001
	LOT-R					0.049	-0.138	-1.49	0.14
CBI PHYS		0.458	0.446	35.97	<0.001				
	FI					2.64	0.617	7.30	<0.001
	LOT-R					0.045	-0.141	-1.67	0.09
CBI SOC		0.189	0.169	9.87	<0.001				
	FI					1.73	0.344	3.32	0.001
	LOT-R					0.030	-0.175	-1.69	0.09
CBI EMOT		0.146	0.126	7.25	0.001				
	FI					1.12	0.323	3.04	0.003
	LOT-R					0.019	-0.124	-1.16	0.24

CONCLUSIONS

1. The burden of family caregivers may be exacerbated also by the complex frailty status (and not only by physical frailty) of their care recipients, with a negative impact on a wide range of burden-related aspects, such as the caregiver's restriction of personal time, feeling of failure, physical stress, feeling of role conflicts, and feeling of embarrassment.

2. Patients' dispositional optimism was associated with different aspects of caregiver burden.

Caregivers may benefit from the adoption of health-oriented behaviours by optimistic patients, which in turn would ease the care burden.

Patients' dispositional optimism may be associated with the wellbeing of both patients and their caregivers.

Limitations:

- cross-sectional design
- relatively small sample size, and the predominant presence of female participants
- the age of the included caregivers (64.28 ± 8.6), which might have affected the perception of care-related burden
- lack of caregiver-related adjustment factors (e.g. sociodemographic characteristics; psychological factors)

