



C I G

Center for Interdisciplinary
Gerontology
<http://www.unige.ch/cig>

Operationalization of frailty and its external validity in the Swiss Interdisciplinary Longitudinal Study on the Oldest Old (SWILSO-O)

Franca Armi, Edith Guilley, Paolo Ghisletta, Christian Lalive d'Epinay

Center for Interdisciplinary Gerontology, University of Geneva



UNIVERSITÉ DE GENÈVE
Switzerland

This research is supported by a grant from the Swiss National Science Foundation (Priority Program, "Switzerland: towards the future": No 5004-058534/058536)
Principal Investigator: Prof. Lalive d'Epinay

Abstract

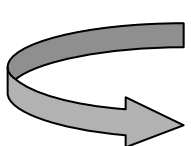
Data are from 340 community-dwelling octogenarians participating in the Swiss Interdisciplinary Longitudinal Study on the Oldest-Old (SWILSO-O) measured five times. We first operationalized the concept of frailty based on the presence of deficiencies in two or more of the following domains: physical, mobility, energy, memory, and sensory. This gave rise to a distinction between frail and non-frail. We then combined the frailty indicator with the ADL and constructed three statuses: "independent" (non-frail and no ADL restriction), "frail" (frail and no ADL restriction), and "dependent" (frail and one or more ADL restrictions). At study inception, 38% of the sample were independent, 50% were frail, and 12% were dependent. The "independent", "frail", and "dependent" groups differed qualitatively with respect to risks of adverse outcomes (falls, illness, and death) and the most frequently mentioned deficiency (sensory disabilities, lack of energy, and mobility disabilities). The proposed "health status" will allow a better perception of the frailty process in a longitudinal perspective.

Sample

340 community-dwelling octogenarians aged 80-84 years were randomly selected at baseline in two contrasting regions of Switzerland (urban and semi-urban). The participants in the SWILSO-O were interviewed 5 times (between 1994 and 1999). The information was gathered by means of face-to-face interviews based on a closed-end questionnaire.

1 Interest in frailty

- As a consequence of a longer life expectancy
- and a global improvement of population's health



An intermediate state emerges, where old people have some deficiencies without being dependent

3 Dimensions of frailty and its threshold

Dimensions		Deficiencies
Mobility « Could you ... alone » 1/ go up and down stairs 2/ move around outside 3/ walk 200 meters	Sensory « Could you... » 1/ read a newspaper 2/ hear a conversation with two persons 3/ hear a conversation with many persons	2/ yes, but with difficulty 3/ no
Physical ailment « Which part of body may cause suffering » 1/ lower limbs 2/ upper limbs 3/ head, face 4/ back 5/ heart 6/ respiratory organs 7/ stomach, abdomen 8/ genital, urinary organs 9/ chest 10/ fever		3/ yes, a lot
Energy 1/ I'm tired 2/ I'm not hungry	Memory Have you some problems with your memory?	3/ often 4/ always

A person is frail if he/she has at least two deficiencies on the five dimensions



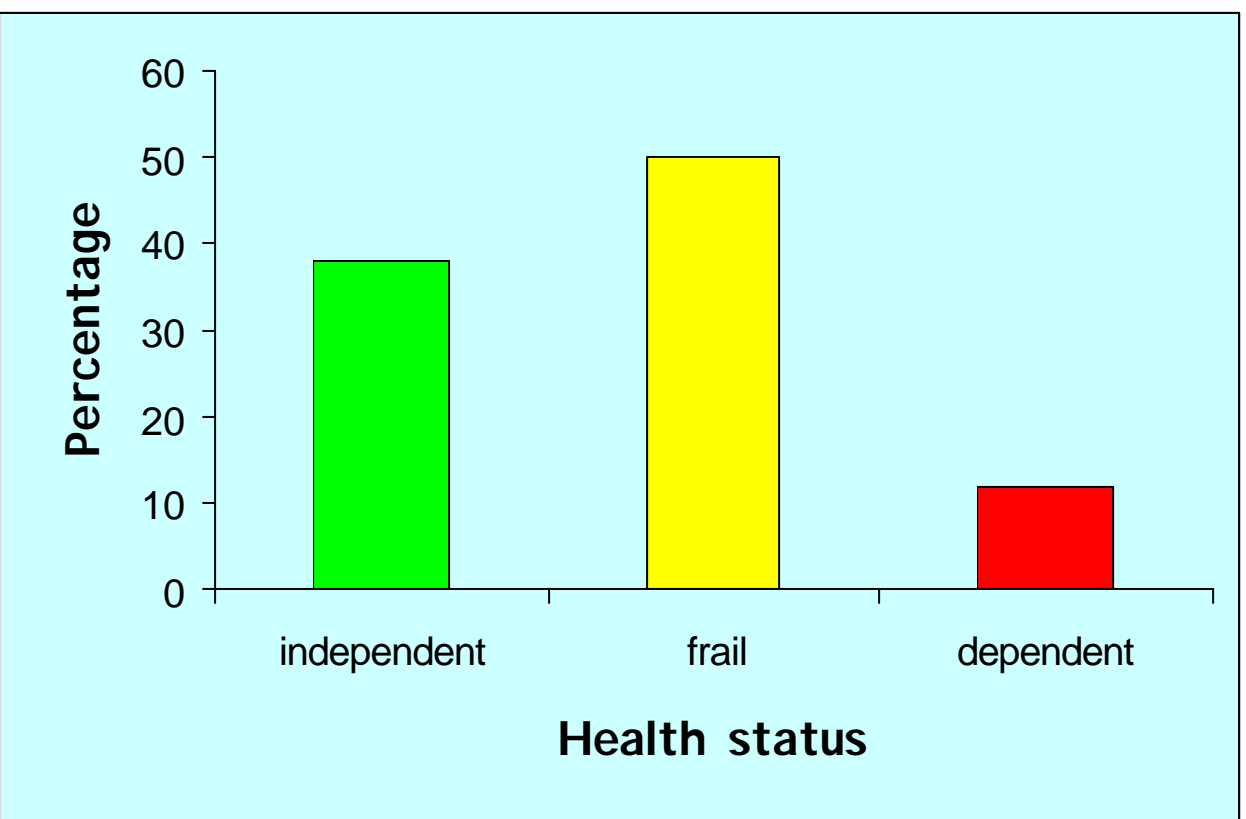
Independent
non frail and no ADL restriction



Frail
frail and no ADL restriction

Dependent
frail and at least one ADL restriction

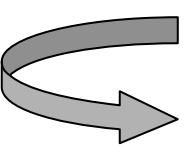
4 Situation at wave 1



Most very old people (80-84 years old) are frail

2 Theoretical definition of frailty

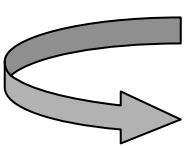
Loss of physiological, sensory and motor's reserves.
As a consequence, the capacity to maintain adaptability after some disruptive event is jeopardized.



Multidimensional assessment

5 Percentage of people with some deficiencies

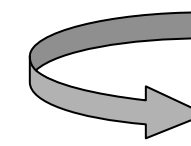
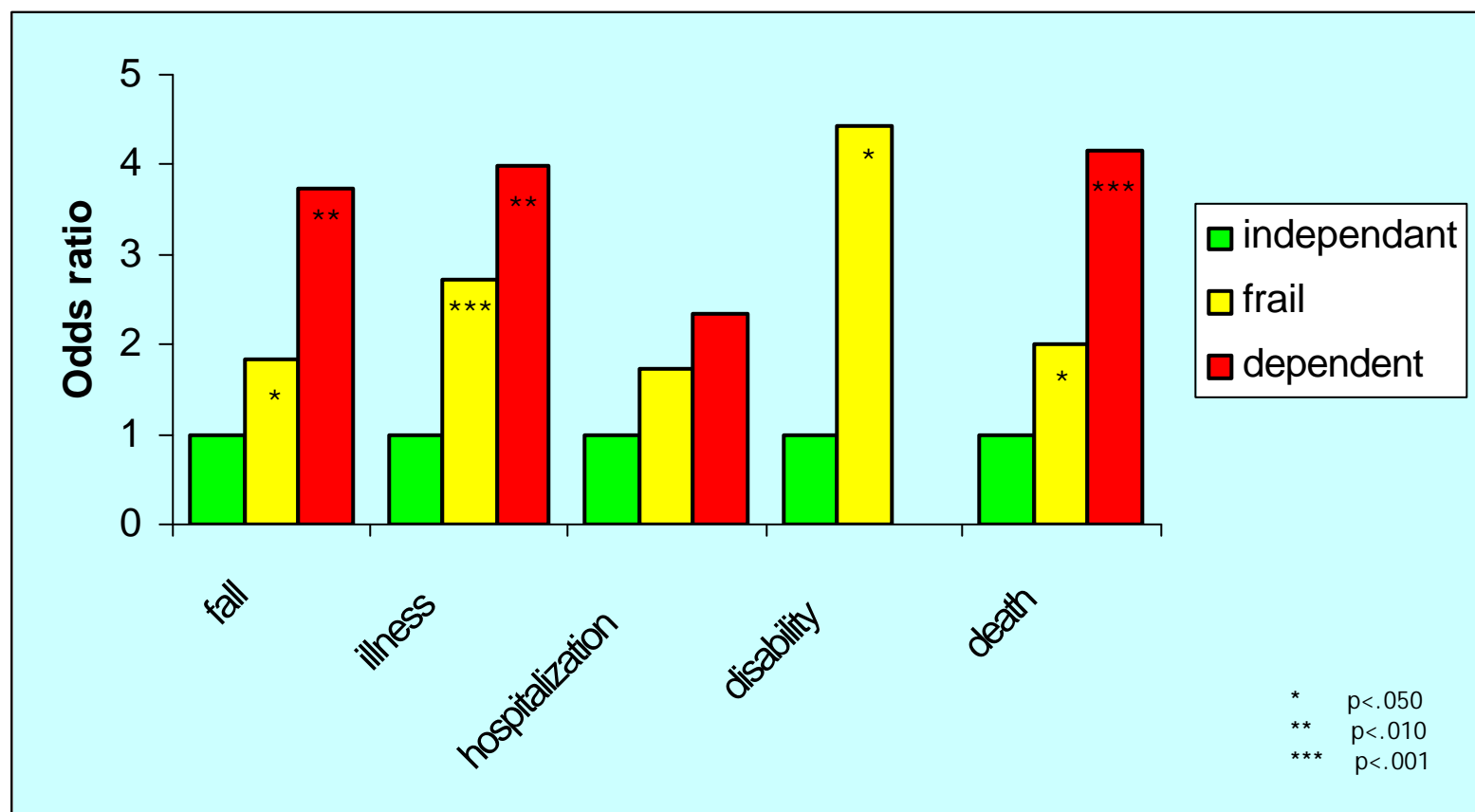
	Sensory	Memory	Energy	Physical	Mobility	Number of deficiencies (SD)
Independent N=129	27.0	18.1	11.6	6.4	3.9	0.7 (0.5)
Frail N=170	66.3	48.5	70.6	63.5	52.9	2.9 (0.9)
Dependent N=40	70.0	55.0	71.1	66.7	92.5	3.4 (1.3)



- Dependent persons have more deficiencies than the frail persons
- Disability is an extreme situation of frailty

6 External validity of the operationalization

Frailty = Loss of reserves and loss of resilience → **Situation at risk** (falls, hospitalization disability and death)



- Frail people have a higher risk of falls, illnesses, disabilities (1 year later) and death (5 years later) than the independent
- Frailty leads to disability

7 Conclusions and perspectives

- A) Life in old age is not synonymous with disability: most very old people are frail
- B) Disability is an extreme situation of frailty
- C) Frail people have a higher risk of falls, illnesses, disabilities and death than the independent
- D) Frailty leads to disability
- E) This working definition will allow a better perception of the frailty process in a longitudinal perspective

Does frailty lead to a rapid decline towards dependence?
Is frailty always a precursor of disability?
Is frailty reversible?

Our construction is validated