The frequency and relationships of frailty markers in older populations with low health literacy

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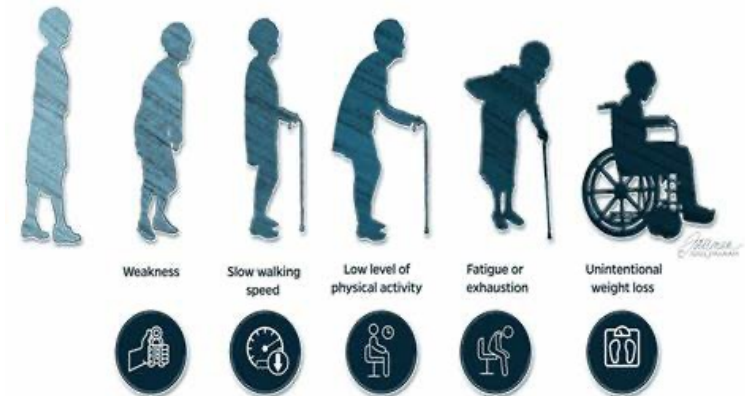NSU Florida

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Research team

- The interdisciplinary and interprofessional research team includes representatives from medicine, nursing, psychology, education, social work, and health sciences. The data presented here draw on the skills of persons from several of these disciplines in their collection (physical status variables), analysis, and interpretation. Results focus on a key concept in gerontology, frailty. Gerontology is itself a multidisciplinary field.

What is frailty?

- Definition : a condition in elderly adults that increases their vulnerability to external stressors due to the decline in many of their body systems.

- Can happen as adults start to age

- Lack of physical activity and continued health neglect can amplify the frailty

Weakness · Slow walking speed · Low level of physical activity · Fatigue or exhaustion · Unintentional weight loss

So why is it important?

- Frailty causes a plethora of physical problems in the elderly
- Should be closely monitored by health professionals
- A single accidental fall could be detrimental for a frail elderly person

Deficit Driven Model

Functional decline, Depression, Medical Conditions, Cognition, Social Vulnerability, Nutrition, Physical activity, Weight loss, Muscle strength, Walking speed, Energy level

Biological Driven Model

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How do we detect frailty?

- Linda Fried created multiple factors which detect signs of frailty including walking time, grip strength, physical activity, exhaustion, and waist-hip ratio

- 2 of these 5 factors mean someone is pre-frail

- 3 of these 5 factors mean someone is considered frail

- Detection using these factors could be life saving

FP criteria	Measurement
Weakness	Grip strength: lowest 20% (by sex, body mass index)
Slowness	Walking time/15 feet: slowest 20% (by sex, height)
Low level of physical activity	Kcal/week: lowest 20% Males: 383 Kcal/week Females: 270 Kcal/week
Exhaustion; poor endurance	"Exhaustion" (self-report)
Weight loss	>10 lb lost unintentionally in prior year

Methods

- In the study, we took study participants over 40 years old with low health literacy and at least one chronic health condition

- Walking speed was measured using a 10 meter walk

- Grip strength was assessed with a dynamometer

- Waist to Hip ratio was measured using direct measurements of participants

Waist-to-Hip Ration

Men	Women	Risk Level
<0.9 Ratio	<0.85 Ratio	Normal Risk
>0.9 Ratio	>0.85 Ratio	Increased Risk

Methods Pt. 2

- Exhaustion and physical activity were measured using self-report surveys

- Participants completed an SF-36 which is a measure of quality of life

- Descriptive statistics and correlations were computed using SPSS.

Background of Results

- Included 334 men and women with various ethnic backgrounds
- Had at least one chronic disease
- Mean years of education was 11.9
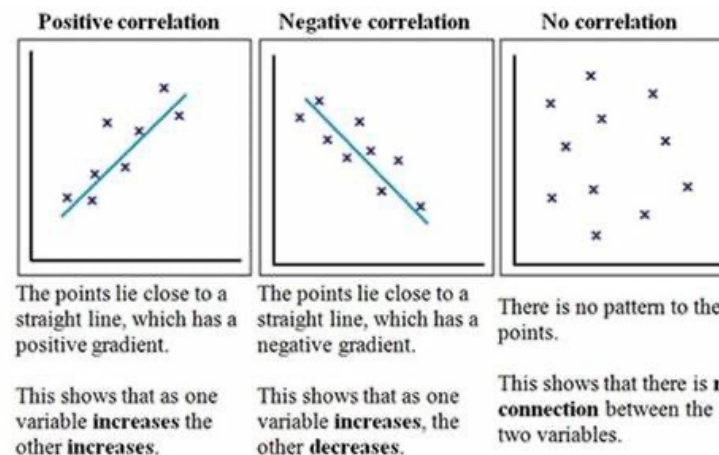- Average of 6.3 health conditions

American Education

| Age	College / University	
Any age with a high school diploma	Senior	4th year
	Junior	3rd Year
	Sophomore	2nd Year
	Freshman	1st Year
	Secondary School (High School) (academic, vocational, general)	
17	Senior	Grade 12
16	Junior	Grade 11
15	Sophomore	Grade 10
14	Freshman	Grade 9
	Secondary School (Junior High)	
12-13	Grades 7 & 8	
	Primary School	
6-11	Grades 1 – 6	
5	Kindergarten	
3-4	Daycare or Pre-school	

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Results

- Individuals had an average of 2.4 frailty indicators

- 18 were non-frail, 151 were pre-frail, and 165 were frail

- Relationship between frailty indicators and health conditions (r = 0.21, p <0.001)

- Relationship between indicators and quality of life (r = -0.25, p < 0.001)

Very fit · Fit · Managing Well · Vulnerable · Mildly Frail · Moderately Frail · Severely Frail · Very Severely Frail · Terminally ill

Positive correlation · **Negative correlation** · **No correlation**

The points lie close to a straight line, which has a positive gradient.

The points lie close to a straight line, which has a negative gradient.

There is no pattern to the points.

This shows that as one variable **increases** the other **increases**.

This shows that as one variable **increases**, the other **decreases**.

This shows that there is **no connection** between the two variables.

Discussion

- There was a very small number of people who were considered non-frail

- Important to consider the fact that the participants were chosen on specific qualifications

- Helps us in further aiding people to their safety health wise.
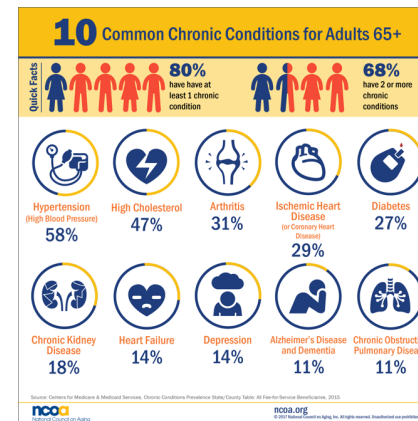
Conclusion

- Can be used for early detection or prevention of severe frailty

- Elderly individuals and their family members have a clearer path to make sure their health stays their number one priority

- Can lead to finding more efficient ways of secondary prevention

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