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Frailty Associations with Socioeconomic Status, Healthcare Utilisation, Quality of Life among Older Women residing in Regional Australia

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INTRODUCTION

- The health and well-being of older women maybe influenced by frailty and low socioeconomic status.
- There is limited research in Australia into the relationship between socioeconomic status and frailty, particularly for older women residing in regional Australia.
- Poorer health associated with frailty in older women raises important implications for healthcare utilisation and the impact on their quality of life.

OBJECTIVES

- This study examined the association between frailty and socioeconomic status, healthcare utilisation and quality of life among older women residing in south-eastern Australia.

METHODS

- This is a cross-sectional analysis of the Geelong Osteoporosis Study (GOS)¹ involving 360 women participants (ages ≥ 60 years) in the 15-year follow-up.
- Multinomial logistic regression was conducted with frailty groupings as outcome and results were reported as odds ratio (OR) with 95% confidence interval (CI).
- Frailty was identified using a modified version of the Fried's frailty phenotype² including unintentional weight loss, weakness, low physical activity, exhaustion and slowness; frail ≥3 items and pre-frail 1-2 items.
- Individual measures of socioeconomic status and healthcare utilisation were documented by questionnaires. Area based socioeconomic status was determined by cross-referencing residential addresses with the Australian Bureau of Statistics Index of Relative Socio-economic Advantage and Disadvantage (IRSAD)¹. Quality of life was measured using the Australian World Health Organisation Quality of Life Instrument (WHOQoL-Bref)³.

RESULTS

- Sixty-two (17.2%) participants were frail, 199 (55.3%) were pre-frail and 99 (27.5%) were robust.
- Frail participants were older (OR 1.15, 95% CI 1.08-1.21) and had higher body mass index (OR 1.10, 95% CI 1.03-1.18) than robust participants (Table 1).
- Frailty was associated with lower education (secondary education vs no secondary education: OR 0.20, 95% CI 0.05-0.72) but not with marital status, occupation or IRSAD (Table 1).
- Strong associations with frailty were demonstrated for all WHOQoL-Bref domains (Table 2).
- Frailty was associated with more primary care doctor visits (16.1% frail, 6% pre-frail, 0% robust participants had ≥3 visits over a 4-week period, p < 0.001) but not with hospital presentations (Table 3).

Table 1. Multinomial logistic regression model comparing Age, BMI, Marital Status, Highest Education level, Occupation, IRSAD between Pre-frail and Frail vs Robust Group

Characteristics	Pre-frail (N=199)		Frail (N=62)	
	Comparison with robust group		Comparison with robust group	
	OR unadjusted (95% CI) [p-value]	OR adjusted (95% CI)* [p-value]	OR unadjusted (95% CI) [p-value]	OR adjusted (95% CI)* [p-value]
Age, yr	1.05 (1.02-1.09) [p=0.003]	1.04 (1.01-1.08) [p=0.025]	1.14 (1.09-1.19) [p<0.001]	1.15 (1.08-1.21) [p<0.001]
BMI, kg/m ²	1.05 (1.00-1.10) [p=0.035]	1.07 (1.02-1.12) [p=0.009]	1.07 (1.01-1.13) [p=0.027]	1.10 (1.03-1.18) [p=0.007]
MARITAL STATUS				
Married/ Living with partner	Ref	Ref	Ref	Ref
Single/ Never married	4.37 (0.53-36.38) [p=0.172]	3.69 (0.33-41.04) [p=0.288]	5.00 (0.44-57.42) [p=0.196]	4.07 (0.32-52.32) [p=0.282]
Separated/ Widowed	1.96 (1.13-3.40) [p=0.017]	1.62 (0.89-2.94) [p=0.112]	3.26 (1.64-6.50) [p=0.001]	1.50 (0.63-3.56) [p=0.357]
HIGHEST EDUCATION LEVEL				
Did not complete secondary education	Ref	Ref	Ref	Ref
Completed secondary education	0.62 (0.33-1.18) [p=0.146]	0.66 (0.34-1.27) [p=0.211]	0.27 (0.09-0.76) [p=0.013]	0.20 (0.05-0.72) [p=0.014]
Completed tertiary education	0.95 (0.50-1.78) [p=0.864]	1.06 (0.50-2.25) [p=0.883]	0.29 (0.10-0.84) [p=0.023]	0.55 (0.16-1.97) [p=0.361]
LONGEST OCCUPATION HELD				
Skilled/ Professional	Ref	Ref	Ref	Ref
Low-skilled/ Non-professional	1.03 (0.59-1.77) [p=0.926]	0.98 (0.51-1.87) [p=0.954]	2.20 (0.98-4.93) [p=0.056]	1.39 (0.23-8.69) [p=0.512]
Housewife/ Unemployed	0.96 (0.46-1.98) [p=0.904]	0.96 (0.43-2.14) [p=0.921]	2.05 (0.75-5.63) [p=0.162]	1.56 (0.48-5.07) [p=0.460]
IRSAD				
Most Disadvantaged	Ref	Ref	Ref	Ref
Intermediate	0.66 (0.36-1.20) [p=0.172]	0.61 (0.31-1.21) [p=0.157]	0.75 (0.35-1.61) [p=0.465]	0.56 (0.23-1.37) [p=0.202]
Most Advantaged	0.63 (0.34-1.19) [p=0.152]	0.70 (0.34-1.43) [p=0.328]	0.47 (0.20-1.11) [p=0.084]	0.70 (0.25-1.94) [p=0.496]

Table 2. Comparison of WHOQoL-BREF scores across Frailty groups

WHOQoL-Bref Domains	Data summary Mean (SD)	Comparison across Groups			
		Unadjusted		Adjusted*	
		Difference (95% CI)	p-value	Difference (95% CI)	p-value
PHYSICAL HEALTH					
All participants	67.7 (17.8)				
Robust	80.6 (12.0)	Ref		Ref	
Pre-frail	66.7 (14.9)	-13.8 (-17.0, -10.6)	<0.001	-11.6 (-14.8, -8.3)	<0.001
Frail	49.4 (17.6)	-31.2 (-36.2, -26.1)	<0.001	-28.9 (-34.7, -23.1)	<0.001
PSYCHOLOGICAL					
All participants	67.9 (16.2)				
Robust	76.6 (13.4)	Ref		Ref	
Pre-frail	66.5 (15.6)	-10.0 (-13.5, -6.6)	<0.001	-8.9 (-12.5, -5.4)	<0.001
Frail	58.0 (15.4)	-18.6 (-23.3, -13.9)	<0.001	-17.2 (-22.6, -11.8)	<0.001
Social relationships					
All participants	72.5 (18.6)				
Robust	78.1 (19.1)	Ref		Ref	
Pre-frail	71.2 (17.5)	-7.0 (-11.5, -2.4)	0.003	-5.9 (-10.5, -1.3)	0.012
Frail	67.3 (19.1)	-10.9 (-17.1, -4.7)	0.001	-8.4 (-15.4, -1.5)	0.017
ENVIRONMENT					
All participants	78.9 (13.2)				
Robust	85.1 (11.6)	Ref		Ref	
Pre-frail	78.1 (13.0)	-7.1 (-10.0, -4.1)	<0.001	-5.3 (-8.3, -2.3)	0.001
Frail	71.8 (12.3)	-13.3 (-17.2, -9.4)	<0.001	-10.1 (-14.4, -5.9)	<0.001

Table 3. Comparison of Healthcare Utilisation across Frailty groups

Healthcare Utilisation	All participants (N=360)	Robust (N=99)	Pre-frail (N=199)	Frail (N=62)	Comparison between groups (P-value)
Primary care doctor visits					
None	146 (40.6)	52 (52.5)	80 (40.2)	14 (22.6)	<0.001
1-2	192 (53.3)	47 (47.5)	107 (53.8)	38 (61.3)	
≥ 3	22 (6.1)	0 (0)	12 (6.0)	10 (16.1)	
Hospital Presentations					
None	337 (94.1)	92 (93.9)	189 (95.0)	56 (91.8)	0.556
≥ 1	21 (5.9)	6 (6.1)	10 (5.0)	5 (8.2)	

CONCLUSIONS

- In this population-based study, lower education is associated with frailty in older women.
- Findings from this study also highlights the significant impact frailty has on older women, indicating reduced quality of life and increased primary care doctor visits.
- More research is required to address whether increasing health literacy for older women can improve frailty outcomes.

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