

Frailty-related Risk Factors: a prevalence study in older adults seen by community nurses in Dublin, Ireland

Julianne Ballard RN, BSN, MSN, PHN, Mary Mooney RGN, RM, RNT, MA, MSc., Orla Dempsey BA, PhD.

Background

•Irish Public health and community nurses estimate the majority of their time is spent on care of older adults.

•In July 2009, community health nurses began screening for the following four frailty-related risk factors:

1. **Cognitive impairment-** Abbreviated Mental Test (AMT) score of ≤ 7
2. **Malnutrition-** Nutritional Screening Initiative (NSI) score of ≥ 6
3. **Fall Risk-** Falls Risk Assessment Tool (FRAT) score of ≥ 3
4. **Functional dependence for activities of daily living (ADL)-** Barthel Index (BI) score of ≤ 15

Aims

The aim of this study was to characterise a cohort of older adults in relation to their frailty-related risk and various demographic details.

Methodology

•A retrospective clinical audit.

•Prevalence was captured at a rate per 100 of the population.

•A quantitative, cross-sectional design. Data generated for the four frailty-related risk factors were then measured against demographic details.

•Six North Dublin health centers were chosen. These represented a cross section of socio-economic groups, ages and ethnic diversities.

•Ethical approval granted. All participants signed informed consents

•Measures of central tendency: mean, median and mode.

•Measures of variance: standard deviation, minimum and maximum risk-related test scores.

•Non-parametric inferential statistics were incorporated for three of the independent variables (referral source, living alone and/or receipt of home support) and bivariate descriptive statistics for the independent variable of oldest age.

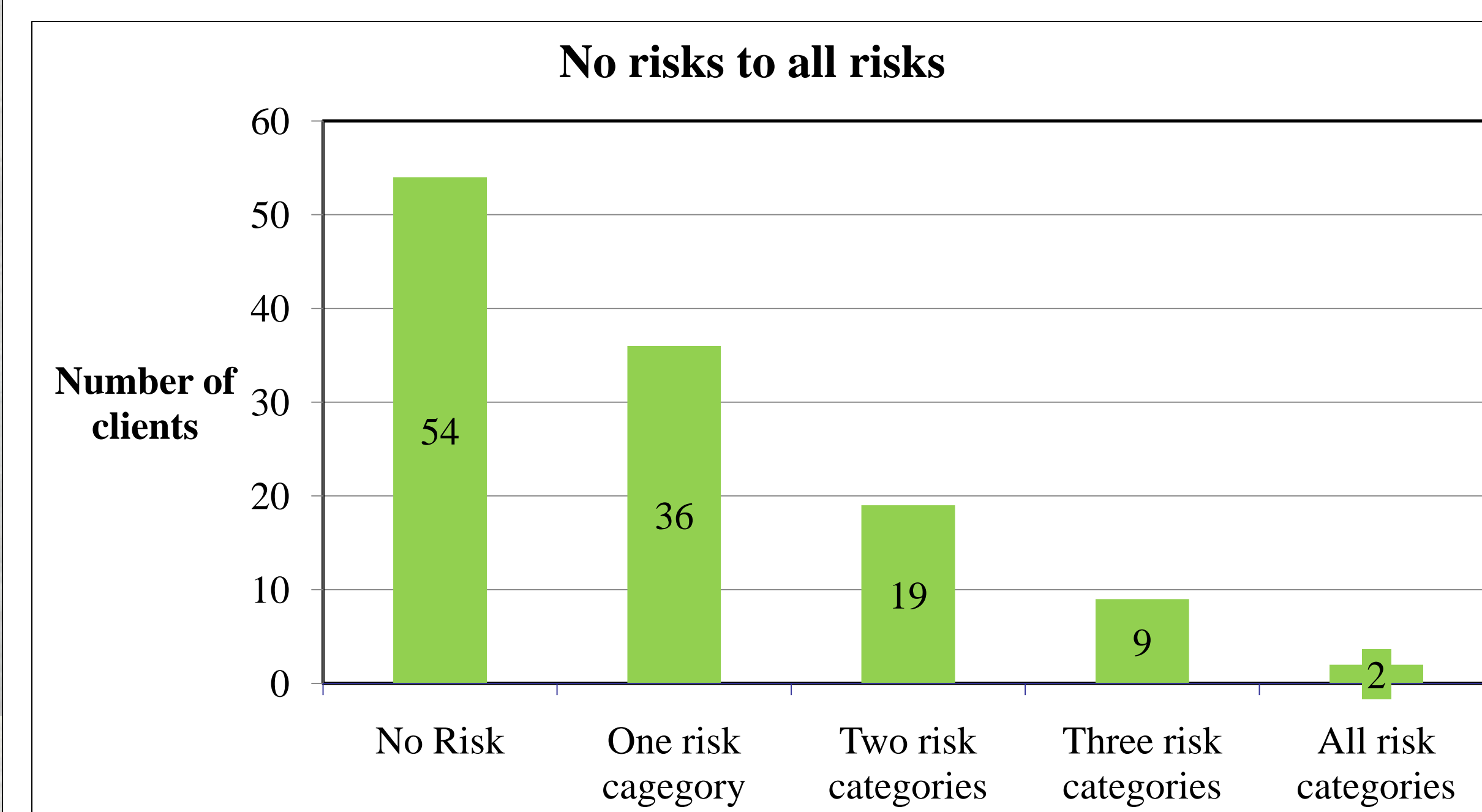
•Where the frailty-related risk factors equal the dependent variables (DV) and the demographic details equal the independent variables (IV), this study measured the data available against the expected value from the Chi-squared distribution.

•This formula was calculated using the statistical software SPSS (version 15) and analyzed by the statistician.

•For the purpose of this study a 5% significance level was selected with alpha equal to 0.05.

Study participants

- N=120 Community-dwelling consenting adults > age 65 years
- Visited by Public Health Nurse or Community nurse



Demographic Profile of Study Participants (N=120)			
		N	%
Gender	Female	83	69.2
	Male	37	30.8
Age Group	65-74 years	30	25
	75-84 years	61	50.8
	85-95 years	26	21.7
	95 years and over	3	2.5
	Total	120	100
Referral Source	Hospital	51	42.5
	General Practitioner	20	16.7
	Self and/or family	37	30.8
	Other Professional	6	5
	Unknown	6	5
	Total	120	100



Results

Screening Tool	N	Mean	SD	Median	Mode	Min.	Max.	Prevalence
AMT	116	8.77	1.85	10.00	10	2	10	16.4%
NSI	119	3.55	2.62	3.00	2	0	13	20.2%
FRAT	120	1.97	1.28	2.00	1	0	5	30.8%
BI	119	17.17	3.78	19.00	20	0	20	23.5%

Screening Tool	Age in years							
	65-74		75-84		85-94		95 and older	
	Risk	No Risk	Risk	No Risk	Risk	No Risk	Risk	No Risk
AMT N=116 % =	1 3.6%	27 96.4%	12 20%	48 80%	5 19.2%	21 80.8%	1 50%	1 50%
NSI N=119 % =	7 23.3%	23 76.7%	13 21.7%	47 78.3%	2 7.7%	24 92.3%	2 66.7%	1 33.3%
FRAT N=120 % =	10 33.3%	20 66.7%	18 29.5%	43 70.5%	6 23.1%	20 76.9%	3 100%	0 0%
BI N=119 % =	7 23.3%	23 76.7%	15 25%	45 75%	3 11.5%	23 88.5%	3 100%	0 0%

	Results of Chi-square tests measuring association between frailty-related risk factors and independent variables		
	Living alone	Home support in-situ	Professional referred
	Continuity correction value	Continuity correction value	Continuity correction value
AMT risk	0.45	0.06	1.00
NSI risk	0.07	0.87	0.11
FRAT risk	0.17	0.06	0.07
BI risk	0.00	0.46	0.04

The two significant findings noted on chi square analysis relate to professional referral source and dependency in ADLs and living alone and dependency in ADLs.



Discussion

•Prevalence rates for suspected cognitive impairment, risk of malnutrition and fall risk captured in this cohort sample of community nurses' clients in Dublin Ireland is comparable to similar international studies (Posner *et al.* 1993, Heslin *et al.* 2001, Ahn & Kim 2004).

•Frequency of ADL dependency is much higher than a previous European study (Heslin *et al.* 2001).

•There was a higher prevalence rate in this study for ADL dependence at age 65-84 years than at 85-94 years; those at risk for ADL dependence were also far less likely to live alone and more likely to be referred to the nursing service by their family or refer themselves.

•In Dublin, Ireland, the identification of older people who would benefit most from receipt of home nursing (i.e. the most frail) is not occurring from professional sources.

•input from medical professionals enhances care of frail older adults.

•Clear criteria are needed in the professional referral process, preferably based on frailty factors.

•Further research indicated:

How can professional frailty screening prior to referral to the PHN service in Dublin, Ireland enhance identification of older adults with highest need due for community nursing services?