

# Physical Activity and Depressive Symptoms in Advanced Age: LiLACS NZ

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Received date: Aug 12, 2015; Accepted date: Sep 11, 2015; Published date: Sep 23, 2015

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## Abstract

**Background:** Increased physical activity is associated with positive physical and mental health outcomes. The aim of this study was to assess the relationship between physical activity and depressive symptoms in advanced age people by gender and ethnicity in New Zealand.

**Methods:** We used cross sectional data from Life and Living in Advanced Age: A Cohort Study in New Zealand Te Puawaitanga o Nga Tapuwae Kia Ora Tonu (LiLACS NZ) (n=665, aged 83.66 ± 2.0) with a comprehensive set of demographic, physical and mental health indicators. Physical activity was assessed using the Physical Activity Scale for the Elderly (PASE), while the Geriatric Depression Scale (GDS) was used to measure depressive symptoms. Both bivariate and multivariable general linear regression models were used to examine the influence of demographic and health indicators in the relationship between physical activity and depressive symptoms. Analyses were conducted by gender and ethnicity.

**Results:** Higher levels of physical activity were associated with fewer depressive symptoms in non-Maori men (Beta=-0.001, p<0.01) and women (Beta=-0.006, p<0.01); however no significant associations were observed between these variables for Maori men or women.

**Conclusion:** Physical activity appears to be related to depressive symptoms in some people in advanced age; however differences exist by ethnicity and sex. Factors related to depression in older Maori men and women and in non-Maori women need further investigation.



baseline year. Living arrangements were categorized as either living alone or with others. Marital status included never married/separated/divorced or currently partnered/married or widowed/widower. Education included primary/no school or secondary school with no or secondary school with or trade or tertiary. Self-perceived economic resources included categories of comfortable or just enough to get along or can't make ends meet as a response to the question "thinking of your money situation would you say that you are...". Self-reported health was a measure for health related quality of life and ranged from poor; fair; good, very good to excellent. Pain was assessed using an item of the SF-12 measure and was based on the experience of pain interfering in daily activities, and ranged from never to almost always [39]. Disability was a dichotomous measure of whether or a not a person self-reported experiencing a long term disability. Visual disability was a dichotomous measure as to whether the person had visual impairment interfering with daily life. Alcohol use referred to the number of times per week or month a person had a drink containing alcohol, the measure ranged from never to four times per week. Additional variables were available for descriptive information but were not included in the models as they were repetitive of some of the constructs of the GDS measure. Instrumental support referred to whether a person had someone who could help them with practical daily tasks such as getting groceries, etc. when they need it. Emotional

Living Arrangement	0.027	0.617	-0.019	0.857	0.502	0.092	-0.115	0.068
Marital Status	0.184	0.549	0.052	0.379	0.012	0.949	0.091	0.025 <sup>†</sup>
Education	-0.384	0.010 <sup>†</sup>	-0.026	0.493	-0.213	0.037	-0.015	0.47
Financial Situation	-1.25	0.003 <sup>†</sup>	-0.376	0.399	-0.032	0.561	-0.682	0.063
Self-reported Health	0.784	<0.001 <sup>**</sup>	0.168	0.001 <sup>**</sup>	0.802	<0.001 <sup>**</sup>	0.123	<0.001 <sup>**</sup>
Pain	0.688	<<0.001						

Pain				-0.034	0.183
Not at All	71	49	2.4		
Slightly	27	19	3.01		
Moderately	25	17	2.9		
Quite a Bit/Extremely	21	15	3.11		
Disability				0.672	0.117
Yes	57	46	3.34		
No	68	54	2.68		
Cognitive Impairment				3.093	0.000**
Yes	9	6	3.31		
No	139	94	1.11		
Alcohol Use				-0.312	0.059
Never	78	55	3.72		
Monthly or Less	36	25	2.5		
Monthly-3/week	18	12	3.1		
Four or more/week	11	8	2.72		

Notes.  $R^2=0.390$ , Adjusted  $R^2=0.351$  \*Significant at 0.05 level \*\*Significant at 0.001 level.

No	89	90	2.4		
Psychological stress				0.228	0.041*
Yes	17	18	5.32		
No	75	82	4.41		

Visual Impairment				0.204	0.445
Yes	45	23	2.38		
No	149	77	2.34		
Cognitive Impairment				3.19	0.000**
Yes	6	3	5.55		
No	204	97	2.05		

Notes.  $R^2=0.291$ , Adjusted  $R^2=0.270$  \*Significant at 0.05 level \*\*Significant at 0.001 level.





sample, however because the samples were more homogenous the

