

Prevalence of Osteoporosis in a Community Sample

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INTRODUCTION

Osteoporosis is a condition which places a burden on the health care system and continues to increase in prevalence as the population ages. This research presents the data relating to the prevalence of osteoporosis and osteopenia and its associations among participants in a population-based cohort study.

METHODS

The North West Adelaide Health Study is a representative longitudinal cohort study of people aged 18 years and over living in the north west region of Adelaide. The original sample (n=4060) was randomly selected and recruited by computer assisted telephone interview (CATI) to participate in a clinic assessment. In Stage 2 of the study (2004-06), information regarding the prevalence of musculoskeletal conditions was included. The self-reported prevalence of osteoporosis was determined using CATI and participants attending the clinic who were aged 50 years and over were offered a DXA scan. Sunlight exposure was also determined from a self-complete questionnaire.

RESULTS

Overall, n=3502 respondents participated in the CATI component of the study, with 3.8% (95% CI 3.2-4.5) reporting that they had been told by a doctor that they had osteoporosis. Age, sex, income and education were all significantly associated with osteoporosis (Table 1) and 14.4% (95% CI 12.1-17.1) of respondents who had gone through menopause had osteoporosis (Table 2).

Table 1. Unadjusted odds ratios for demographic characteristics associated with self-reported osteoporosis

	OR	(95% CI)	p-value
SEX			
Male	1.00		
Female	7.01	(4.19-11.74)	<0.001
AGE GROUP			
20 to 49 years	1.00		
50 to 59 years	21.56	(6.96-66.73)	<0.001
60 to 69 years	52.26	(17.34-157.52)	<0.001
70 years and over	103.23	(35.40-301.02)	<0.001
EDUCATION LEVEL			
Secondary	1.00		
Trade/ Apprentice/ Certificate/ Diploma	0.52	(0.34-0.79)	<0.002
Bachelor Degree or higher	0.09	(0.03-0.85)	<0.001
Other/ Not stated	1.49	(0.50-4.43)	0.472
INCOME LEVEL			
Less than \$20,000	1.00		
\$20,001 to \$40,000	0.67	(0.44-1.05)	0.078
\$40,001 to \$60,000	0.19	(0.10-0.37)	<0.001
More than \$60,000	0.09	(0.04-0.19)	<0.001
Not stated	1.13	(0.57-2.23)	0.728

Table 2. Unadjusted odds ratios for menopause associated with self-reported osteoporosis

	OR	(95% CI)	p-value
MENOPAUSE			
No/ currently going through	1.00		
Yes	23.35	(6.27-87.02)	<0.001

Overall, 8.8% (95% CI 7.5-10.4) of those aged 50 years and over reported that they had been told by a doctor that they had osteoporosis. Of the respondents aged 50 years and over who attended the clinic assessment and underwent a DXA scan, 3.6% (95% CI 2.6-4.9) were identified as osteoporotic and 15.0% (95% CI 13.0-17.3) osteopenic. Of those respondents identified as having osteoporosis, 23.3% stated that they had been told by a doctor that they had osteoporosis (Table 3).

Table 3. Proportion with osteoporosis according to DXA

	n	%	(95% CI)
DXA SCAN			
No osteoporosis	868	81.4	(78.9-83.6)
Osteopenia	160	15.0	(13.0-17.3)
Osteoporosis	38	3.6	(2.6-4.9)
Total	1067	100.0	

Overall, 41.2% (95% CI 33.2-49.7) of participants with self-reported osteoporosis had had a fall in the past year. Among participants who had fallen, those without osteoporosis were less likely to have had a fracture (Table 4). In the past five years, the most common site of fracture among those with osteoporosis was the wrist (11.7%).

Table 4. Unadjusted odds ratios for fracture associated with self-reported osteoporosis

	OR	(95% CI)	p-value
FRACTURE			
Yes	1.00		
No	0.18	(0.08-0.41)	<0.001
Don't know	0.76	(0.09-6.41)	0.761

During an average week day in summer those with osteoporosis were statistically significantly less likely to have four or more hours of sunlight exposure. During winter, those with osteoporosis were more likely to have one to less than two hours exposure and less likely to have four or more hours exposure on week days. On weekends in summer, those with osteoporosis were less likely to have three or more hours of sunlight exposure and in winter were less likely to have two to less than three hours exposure or four or more hours exposure to sunlight.

CONCLUSIONS

Osteoporosis exists within the community and is associated with demographic factors. However, a large proportion of participants with low bone density have not been previously identified by their doctor. Those with self-reported osteoporosis were also more likely to have had a fall and sustained a fracture and generally had less sun exposure.