



Musculoskeletal Conditions

Shoulder pain

Stage 2

Epidemiological Series Report # 2007-16

April 2007

Introduction

The following is an overview of shoulder pain among the participants of the North West Adelaide Health Study. Prevalence of shoulder pain is examined, and the demographic factors associated with shoulder pain are presented. Stage 1 (baseline examination) of the study between 2000 and 2003, with Stage 2 (second examination) conducted from 2004 to 2006.

Measurement of shoulder pain

Information relating to shoulder pain has only been collected in Stage 2 and is obtained using the Computer Assisted Telephone Interview. Respondents are asked whether they have had shoulder pain or stiffness in the past month. Respondents who report shoulder pain or stiffness on most days for at least a month were also asked the Shoulder Pain and Disability Index (SPADI), which is a series of questions examining pain and stiffness and used as a clinical assessment tool of pain and disability associated with a painful shoulder¹. Shoulder range of movement was also measured as part of the clinic assessment

Prevalence of shoulder – Stage 2 (self report)

The self reported prevalence of shoulder pain (pain or aching in shoulder either at rest or when moving, on most days for at least a month) is shown in Table 1. Overall, in Stage 2, **20.9%** (95% CI 19.6-22.2) of study participants reported that they had shoulder pain most days for at least a month.

Table 1: Prevalence of self reported shoulder pain

	Stage 2	
	n	%
No shoulder pain	2760	79.1
Shoulder pain	728	20.9
Total	3488	100.0

Note: (Stage 2) 14 participants did not know and were excluded

Prevalence of shoulder stiffness – Stage 2

Participants were asked if they had had stiffness in their shoulder when first getting out of bed in the morning, on most days for at least a month. Overall, 12.4% (95% CI 11.3-13.5) of respondents had shoulder stiffness (Table 2). Of those reporting shoulder stiffness, 77.5% (95% CI 73.4-81.2) stated that the stiffness lasted at least 15 minutes.

Table 2: Prevalence of self reported shoulder stiffness

	Stage 2	
	n	%
No shoulder stiffness	3062	87.6
Shoulder stiffness	432	12.4
Total	3494	100.0

Note: (Stage 2) 8 participants did not provide a response and were excluded

The prevalence of shoulder pain in Stage 2 was 20.9%.

The prevalence of shoulder stiffness was 12.4%.

¹ Roach K, Budiman-Mak E, Songsiridej N, Lertratanakul Y (1991): *Development of a Shoulder Pain and Disability Index. Arthritis Care and Research* 4:143-149

Prevalence of shoulder pain and/or stiffness

Overall, 22.3% of participants (95% CI 20.9-23.7) reported that they had pain and/ or stiffness in their shoulder on most days for at least a month. The responses are in Table 3

Overall, 22.3% had shoulder pain and/or stiffness.

Table 3: Prevalence of shoulder pain and/or stiffness

	Stage 2	
	n	%
Pain and stiffness	383	11.0
Pain only	345	9.9
Stiffness only	48	1.4
No pain or stiffness	2712	77.7
Total	3488	100.0

Note: (Stage 2) 14 participants responded no and/or did not know and were excluded

Demographic profile of respondents with shoulder pain and/ or stiffness

The prevalence of shoulder pain and/ or stiffness was statistically significantly higher among females, those aged 50 years and over, or those retired or undertaking home duties. Respondents with a bachelor degree level of education, earning above \$20,000 or never married were significantly less likely to state they had shoulder pain and/ or stiffness (Table 4).

Those with shoulder pain or stiffness were more likely to be:

- female;
- aged 50 years and over; or
- retired or undertaking home duties.

Table 4: Univariate Odds Ratios for demographic variables associated with self reported shoulder pain and/or stiffness

Variable	n	%	OR	(95% CI)	p value
Sex					
Male	331/1712	19.3	1.00		
Female	446/1775	25.1	1.40	(1.19-1.65)	<0.001
Age group					
20 to 49 years	373/2034	18.3	1.00		
50 to 59 years	177/578	30.6	1.97	(1.60-2.43)	<0.001
60 years and over	227/875	25.9	1.56	(1.29-1.88)	<0.001
Highest education level obtained*					
Secondary	336/1409	23.9	1.00		
Trade/apprenticeship/cert/diploma	260/1177	22.1	0.90	(0.75-1.09)	0.28
Bachelor degree or higher	79/558	14.2	0.53	(0.40-0.69)	<0.001
Gross annual household income*					
Up to \$20,000	164/585	28.0	1.00		
\$20,001- 40,000	156/726	21.5	0.70	(0.55-0.91)	0.006
\$40,001- 60,000	133/692	19.2	0.61	(0.47-0.80)	<0.001
More than \$60,000	211/1063	19.8	0.64	(0.50-0.80)	<0.001
Marital status*					
Married or living with partner	490/2152	22.8	1.00		
Separated/divorced	68/269	25.1	1.14	(0.85-1.53)	0.38
Widowed	50/195	25.5	1.16	(0.83-1.62)	0.40
Never married	80/567	14.2	0.56	(0.43-0.72)	<0.001
Work status*					
Full time employed	283/1465	19.3	1.00		
Part time/casual employed	112/537	20.8	1.10	(0.86-1.41)	0.44
Unemployed	19/75	25.8	1.46	(0.86-2.48)	0.17
Home duties/retired	246/952	25.9	1.46	(1.20-1.78)	<0.001
Student/other	27/150	17.8	0.91	(0.59-1.41)	0.67

*Not stated category not reported

Shoulder pain, stiffness and SPADI scores

All respondents with shoulder pain and/ or stiffness were asked the SPADI index. The SPADI has two scoring dimensions, pain and physical functioning. The average percentage scores for respondents who provided a sufficient number of responses to calculate a score are reported in Table 5.

Table 5: Mean percentage SPADI scores for pain and physical functioning domains and total score

	Pain (SD; Range)	Physical functioning (SD; Range)	Total (SD; Range)
Pain and stiffness	37.36 (26.66; 0-100.0)	23.73 (24.39; 0-100.0)	28.96 (23.66; 0-100.0)
Pain only	21.40 (20.33; 0-96.0)	11.22 (16.54; 0-78.8)	15.15 (16.72; 0-85.4)
Stiffness only	-	9.26 (16.54; 0-71.3)	9.25 (16.54; 0-71.3)

Shoulder pain and stiffness and range of movement

Shoulder range of movement was measured during the clinic assessment. Shoulder flexion, abduction, external rotation and the level to which the hand could be placed behind the back for both the left and right arms were measured. The average range of movement of flexion, abduction and external rotation are presented in Table 6 for those with pain and/or stiffness and no shoulder pain or stiffness.

Table 6: Prevalence of self reported knee arthritis among those with and without shoulder pain/stiffness

	Flexion (Mean, SD)		Abduction (Mean, SD)		External rotation (Mean, SD)	
	Right	Left	Right	Left	Right	Left
Pain and stiffness	144.8 (28.7)	144.9 (28.1)	131.2 (33.5)	131.0 (32.1)	51.4 (18.6)	49.7 (19.0)
Pain only	149.9 (26.8)	152.6 (21.6)	137.5 (30.8)	141.1 (24.6)	51.6 (18.8)	51.9 (17.8)
Stiffness only	149.6 (20.4)	148.1 (18.0)	141.7 (25.1)	138.7 (22.4)	59.1 (21.3)	53.5 (19.7)
No pain or stiffness	159.9 (19.1)	158.4 (18.3)	150.4 (20.4)	148.5 (20.3)	58.6 (17.9)	56.5 (17.9)

Quality of Life profile of participants with shoulder pain and/ or stiffness

Figure 1 shows the mean scores of the SF-36 subscales for those with and without shoulder pain or stiffness. People with shoulder pain and/or stiffness scored statistically significantly lower on all domains of the SF-36.

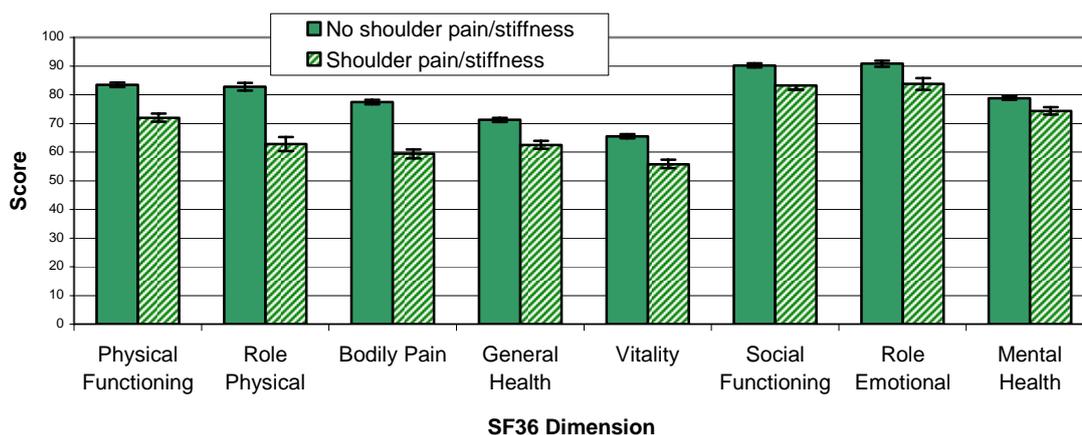


Figure 1: SF-36 mean scores for participants with and without shoulder pain/stiffness

This document is one of a series of reports concerning Stage 2 of the North West Adelaide Health Study. Please see website for other reports in the series - www.health.sa.gov.au/pros

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The total SPADI score was lower for participants with shoulder pain and stiffness.

Participants with shoulder pain/ stiffness scored statistically significantly lower on all dimensions of the SF36