

## Body Mass Index and Quality of Life (SF36V2)

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The North West Adelaide Health (NWAH) Study is a representative longitudinal cohort study of  $n = 4056$  randomly selected adults, aged 18 years and over at the time of recruitment, from the north-west region of Adelaide. During a recent 15 year follow up survey, undertaken between August 2015 and January 2016; 1562 of 2881 contactable respondents completed a questionnaire, with a response rate of 54.1%. The respondents are now aged 30 years and over.

Of the cohort who answered the questionnaire, using self-reported height and weight measurement Body Mass Index was calculated<sup>1</sup>. It was found that 1.1% of respondents were classified as underweight, 28.5% were classified with a normal weight, 40.5% were classified as overweight and 29.9% were classified as obese, as described in Table 1.

**Table 1: Proportion of participants by body mass index, 30 years and over**

	NWAHS Cohort 2015	
	n	% (95% CI)
Underweight (<18.5)	16	1.1 (0.7 - 1.8)
Normal ( $\geq 18.5$ & < 25)	410	28.5 (26.3 - 30.9)
Overweight ( $\geq 25$ & <30)	582	40.5 (38.0 - 43.1)
Obese ( $\geq 30$ )	429	29.9 (27.6 - 32.3)
<b>Total</b>	<b>1436</b>	<b>100.0</b>

Note: The weighting of data can result in rounding discrepancies or totals not adding. CI: Confidence Interval.

Note: 126 cases were missing as did not provide either or both height or weight data.

Using the SF-36V2<sup>2</sup>, a valid and reliable instrument and generic indicator of health status for use in population surveys, Health-Related Quality of Life was measured. Version 2 of the SF36 was designed as an improvement over Version 1, particularly in terms of less ambiguous instructions and questions, and some changes in response sets. The SF-36V2 is comprised of 36 questions that are summarised to eight domains: Physical Functioning, Role Physical, Bodily Pain, General Health, Vitality, Social Functioning, Role Emotional, and Mental Health.

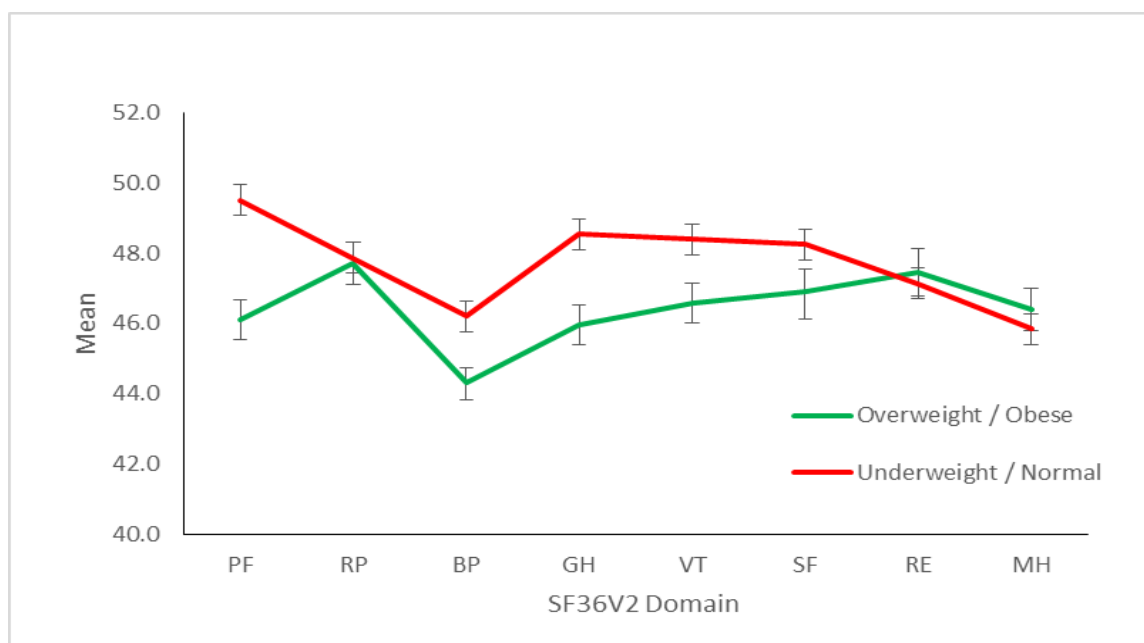
In total 1200 participants answered sufficient questions to be analysed for Quality of Life domains as measured by the SF36V2. The scoring used here (Australian Normed T-Scores) is based on Australian weights derived from the 2004 Autumn HOS<sup>3</sup>. The following report outlines the results of the SF36V2 questionnaire by how the participant was classified according to their Body Mass Index and is part of a series of reports detailing Quality of Life as measured by the SF36V2 for different demographic and socioeconomic variables, as well as for chronic conditions and risk factors. Age and sex adjusted scores (to account for differences in these factors between groups) were also presented to test for significant differences between those classified as Underweight or Normal Weight and Overweight or Obese.

It can be seen from Table 2 and Figure 1 that those who were overweight or obese, scored statistically significantly lower than those who were normal or underweight for the Physical Functioning, Bodily Pain, General Health, and Vitality domains of the SF-36V2.

**Table 2: Age and sex adjusted Quality of Life profile of participants by body mass index, 30 years and over**

	<b>PF</b> Physical Functioning	<b>RP</b> Role Physical	<b>BP</b> Bodily Pain	<b>GH</b> General Health	<b>VT</b> Vitality	<b>SF</b> Social Functioning	<b>RE</b> Role Emotional	<b>MH</b> Mental Health
<b>Underweight or Normal Weight</b> <i>n</i> = 328								
Mean	49.53*	47.87	46.21*	48.54*	48.39*	48.25	47.14	45.83
95% CI	(48.5 - 50.5)	(46.8 - 48.9)	(45.4 - 47.4)	(47.5 - 49.6)	(47.4 - 49.4)	(47.1 - 49.4)	(45.9 - 48.3)	(44.8 - 46.9)
<b>Overweight or Obese</b> <i>n</i> = 791								
Mean	46.13*	47.69	44.31*	45.95*	46.59*	46.89	47.45	46.39
95% CI	(45.5 - 46.8)	(47 - 48.4)	(43.8 - 44.8)	(45.3 - 46.6)	(45.9 - 47.3)	(46.2 - 47.6)	(46.7 - 48.2)	(45.7 - 47.1)

\* Statistically significantly different to those without the condition (t-test,  $p < 0.05$ )

**Figure 1: Graph of age and sex adjusted Quality of Life profile of participants by body mass index, 30 years and over**

## References

- 1 World Health Organization. Obesity: Preventing and Managing the Global Epidemic. Geneva: World Health Organization. 2002
- 2 Ware J, Kosinski M, Dewey J. How to Score Version 2 of the SF- 36 Health Survey. Lincoln, RI: Quality Metric Incorporated 2000.
- 3 Hawthorne G, Osborne RH, Taylor A, Sansoni J. The SF36 Version 2: critical analyses of population weights, scoring algorithms and population norms. *Quality of Life Research*. 2007 May;16(4):661-73. Epub 2007 Feb 1.

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