

The association between psychological distress, disease, disability and socio-demographic factors in the 45 and Up Study

This report was prepared for *beyondblue: the national depression initiative* on behalf of the Sax Institute by the Priority Research Centre for Gender, Health and Ageing at the University of Newcastle and Hunter Medical Research Institute. The report provides data from the K – 10 measure of psychological distress in the 45 and Up Study, and correlates of high K – 10 scores.

February 2010

Project Team

Julie Byles

Emily Banks

Richard Gibson

Louisa Jorm

Ian Robinson

Bryan Rodgers

Anna Williamson

Lucy Galliène

INTRODUCTION

Mental health conditions are common at older ages, and can be associated with age, social circumstances, occupation and employment. Further, many physical conditions such as heart attack, diabetes and arthritis are co-morbidly associated with depression and other mental health conditions.

In this report we describe the measurement of mental health problems within the NSW 45 and Up study, assessed using the Kessler (K10) measure of psychological distress, and the association between demographic factors, diagnosed disease, and disability.

The NSW 45 and Up Study

The 45 and Up Study is a large scale study of healthy ageing recruiting 266,848 men and women aged 45 years and over from the general population of New South Wales, the most populous state in Australia. The study has been described in detail elsewhere (1). Briefly, individuals aged 45 years and over were sampled from the Medicare Australia database, which provides virtually complete coverage of the general population, and joined the study by completing a postal questionnaire and providing written consent to follow their health in the long term, through repeat questionnaires, linkage to health records and additional more detailed data collection. There was two-fold oversampling of individuals aged 80 and over and those resident in rural areas. For the first 34,645 study participants, those with an active Medicare card were sampled, i.e. those who had had some use of government funded health services in the previous 6 years. Subsequent to this, eligibility was changed slightly to reduce mailings to deceased individuals. To be eligible for sampling, individuals aged less than 80 were required to have had at least one Medicare service within the last 2 years. Individuals aged over 80 were required to have had a Medicare Service within the last 6 months. Data from Medicare Australia indicate that 97% of the NSW general population aged 45 and over met this criterion.

Recruitment into the study began in February 2006 and was completed in December 2009.

Data

All of the variables presented in this report were derived from self-reported data from the 45 and Up Study questionnaire (available at www.45andUp.org.au).

The main outcome measure was the Kessler Psychological Distress Scale (K10) (2). The K10 is a widely used and well validated tool which measures symptoms of psychological distress experienced over the past four weeks (3). High K10 scores correlate well with current CIDI diagnoses of depression and anxiety (4). A five value response scale is used for each question – all of the time, most of the time, some of the time, a little of the time and none of the time. The maximum score is 50 indicating severe distress, the minimum score is 10 indicating no distress. In keeping with the National Survey of Mental Health and Wellbeing, The National Health Survey and the NSW Health Survey in the following analyses we have considered K10 scores of 22 and above to be indicative of high levels of psychological distress and scores of 30 and above to indicate very high levels of distress.

The ten survey questions used to calculate the K-10 are provided in the box below.

The Kessler 10-item

During the past 4 weeks, about how often did you feel:

- Tired out for no good reason
- Nervous
- So nervous that nothing would calm you down
- Hopeless
- Restless or fidgety
- So restless that you could not sit still
- Depressed
- So sad that nothing could cheer you up
- That everything was an effort
- Worthless

When a participant does not answer all 10 questions, the K-10 score cannot be calculated without substitution of data for missing responses. For this analysis, two sequential approaches were used to substitute missing responses and thereby minimise the effect of missing data on K-10 scores:

Method 1: Pairing up: An assumption that questions 2 and 3 (nervous and so nervous), questions 5 and 6 (restless and so restless) and questions 7 and 9 (depressed and so sad) can be “paired” has been made. The basis of this assumption is that the response from the second question within the pair is related to and correlated with the response given in the first question within the pair. Participants who fail to give a valid response to the second question

within the pair have this imputed with their response given in the first question of the pair (where possible).

Method 2: Mean substitution: This method can be applied to those who have completed all but 1 of the 10 questions. In this instance, the missing value is imputed by taking the participant's average score across the other nine questions. This method is the same as used in the NSW Health Survey.

Participants for whom K-10 scores could be calculated were involved in the full analysis reported here. For these participants K-10 scores were categorised, and the proportions and 99% confidence intervals of people reporting high and very high scores (K-10 score of 22 or higher) were calculated for each of the other survey variables of interest. Logistic regression approaches were then used to calculate odds ratios for high scores according to socio-demographic and health variables, with separate analyses being produced for men and women. Odds ratios for sociodemographic variables were adjusted for age, and Odds ratios for conditions and risk factors were adjusted for age, marital status, education, income and language spoken at home. High and very high categories were combined for numerical purposes due to the low prevalence of very high score and better discrimination using the high score cut-point, and a 99% confidence interval was chosen to allow for large sample sizes.

RESULTS

Psychological distress

The 10 item Kessler psychological distress scale was analysed to determine the distribution of scores and the prevalence of low, medium, high and very high scores using standard scoring categories. Due to missing data on K-10 items scores could not be calculated for all participants, leaving 111154 male and 125130 female participants with valid K-10 scores for this analysis (see Appendix 1 for missing data report). Prevalence of high and very high scores decreased with age up to age 80, and was lower for men than for women at all ages (see Figure 1).

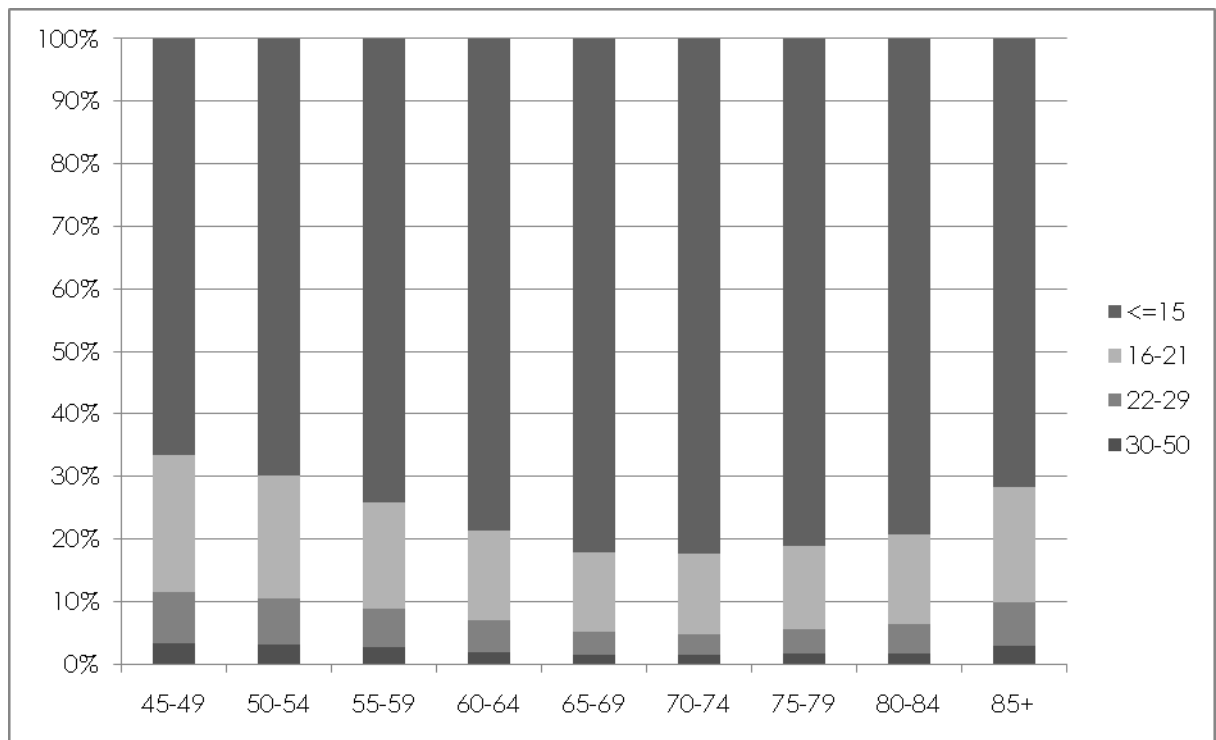
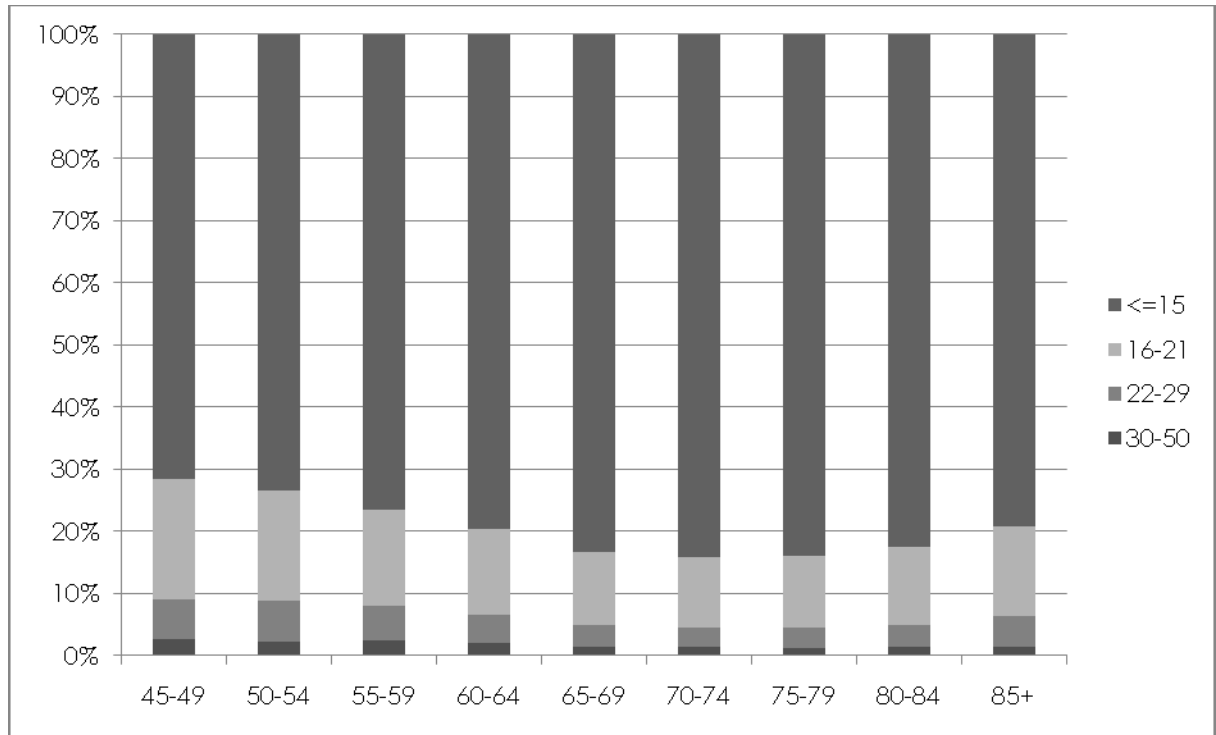


Figure 1: Prevalence of low (score <=15), medium (score range 16-21), high (score range 22-29) and very high (score range 30-50) K10 scores for 111154 men (top) and 125130 women (bottom) by five year age categories.

The association between K-10 scores and reported diagnosis of depression and of treatment for depression are shown in Figure 2. There were stronger associations between K-10 scores and reported depression and medication use for men than for women, indicating that men may not be diagnosed or treated with medication until they have higher levels of distress.

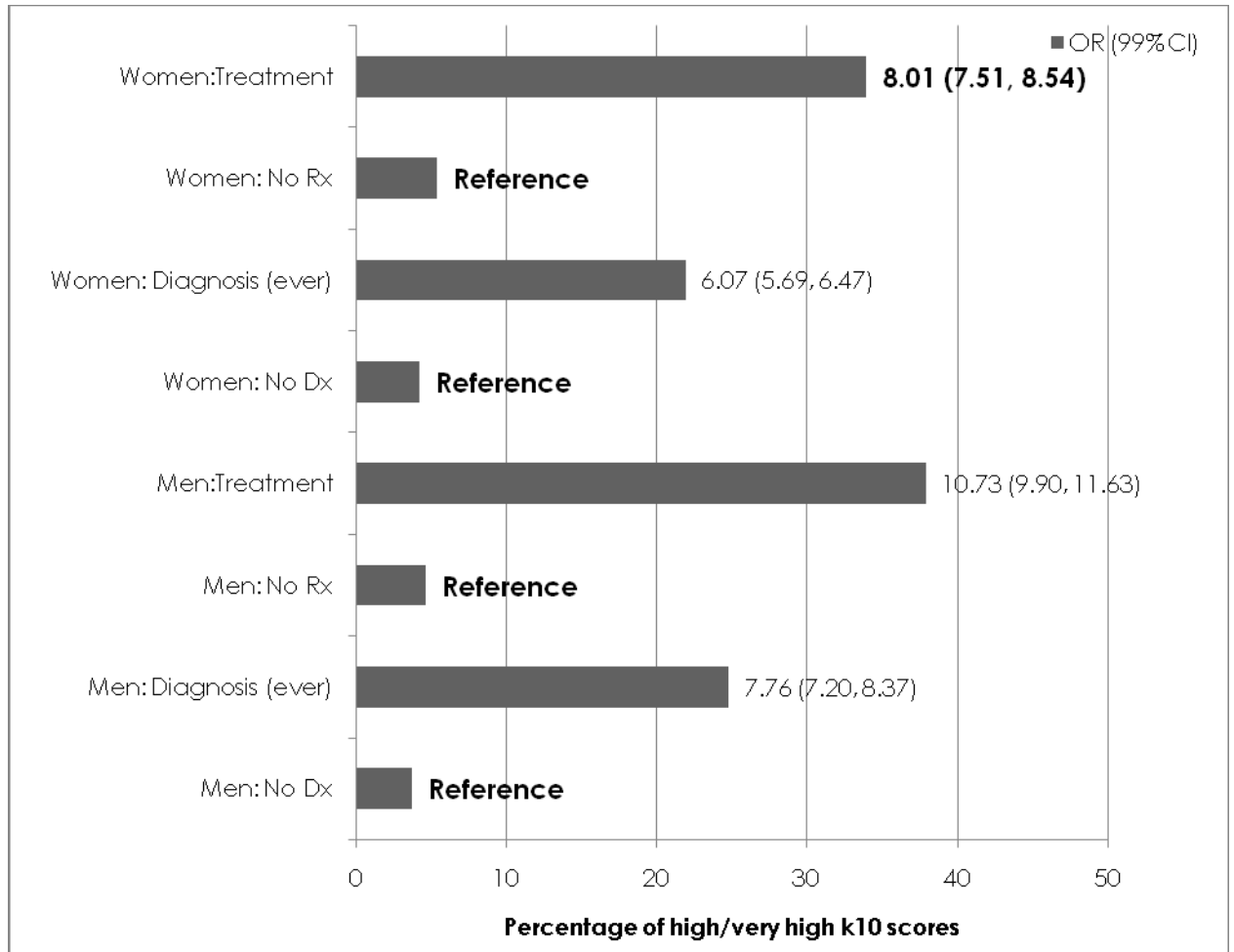


Figure 2: High/Very high K10 Scores (>22) by *diagnosis and treatment of depression or anxiety*. Percentages (bars) and OR (99% CI) adjusted for age, marital status, education, income language spoken at home. N = 111154 Men, 125130 Women.

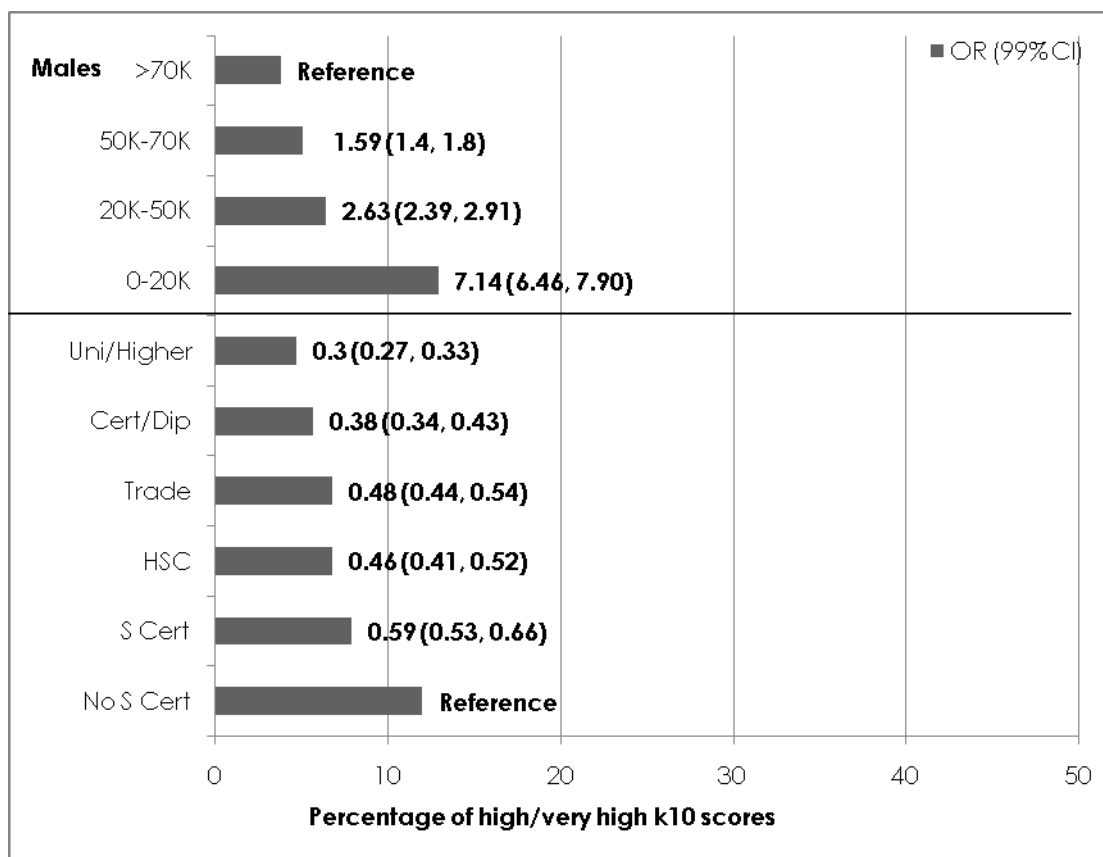
Associations between K-10 scores and socio-demographic variables

There were moderate to strong associations between high K-10 scores and socio-demographic variables (after adjustment for age). Separate bi-variate analyses were undertaken for men and women to determine whether effects differed by gender (See Appendix 2 for detailed breakdown of data by gender). Most effects were equal for men and women. Adjusting for age significantly increased the associations

between K-10 and income and work status, and marginally increased association between K-10 and disability.

A clear relationship between disadvantage and high levels of psychological distress was evident. The prevalence of high/ very high K10 scores in the sample increased as income decreased such that men who reported earning less than \$20k per year were 7.14 times more likely than those earning more than \$70k to report high levels of psychological distress. The prevalence of high/very high scores was also inversely associated with education. Compared to people with no school certificate, those with a university qualification were 70% less likely to have high/very high scores (Figure 3) (conversely, high scores are around three times more common in those with no school certificate than among those with a university degree). Similar associations were observed for women.

Figure 3: High/Very high K-10 (>22) scores by income and education. Percentages (bars) and OR (99% CI) adjusted for age. N = 111154 men



Employment status was also significantly related to psychological distress with those who were currently in paid employment being the least likely to record high K10 scores. The percentage of men in each employment category and the odds ratios and 95% confidence intervals of the association between employment status and high/very high K-10 scores for men are shown in Figure 4 below. Similar results were observed for women. While unemployed men were 4.4 times as likely as employed men to report high levels of distress, the most striking difference was seen between the employed and those who reported being unable to work due to disability or sickness. This group were 12.21 times as likely as the employed to be highly distressed. Further illustrating the strong relationship between disability and distress in the sample, those who reported needing assistance due to illness or disability were 7.83 times as likely (after adjustment for age marital status, education, income and language) as those who did not require assistance to report high levels of distress (Figure 4).

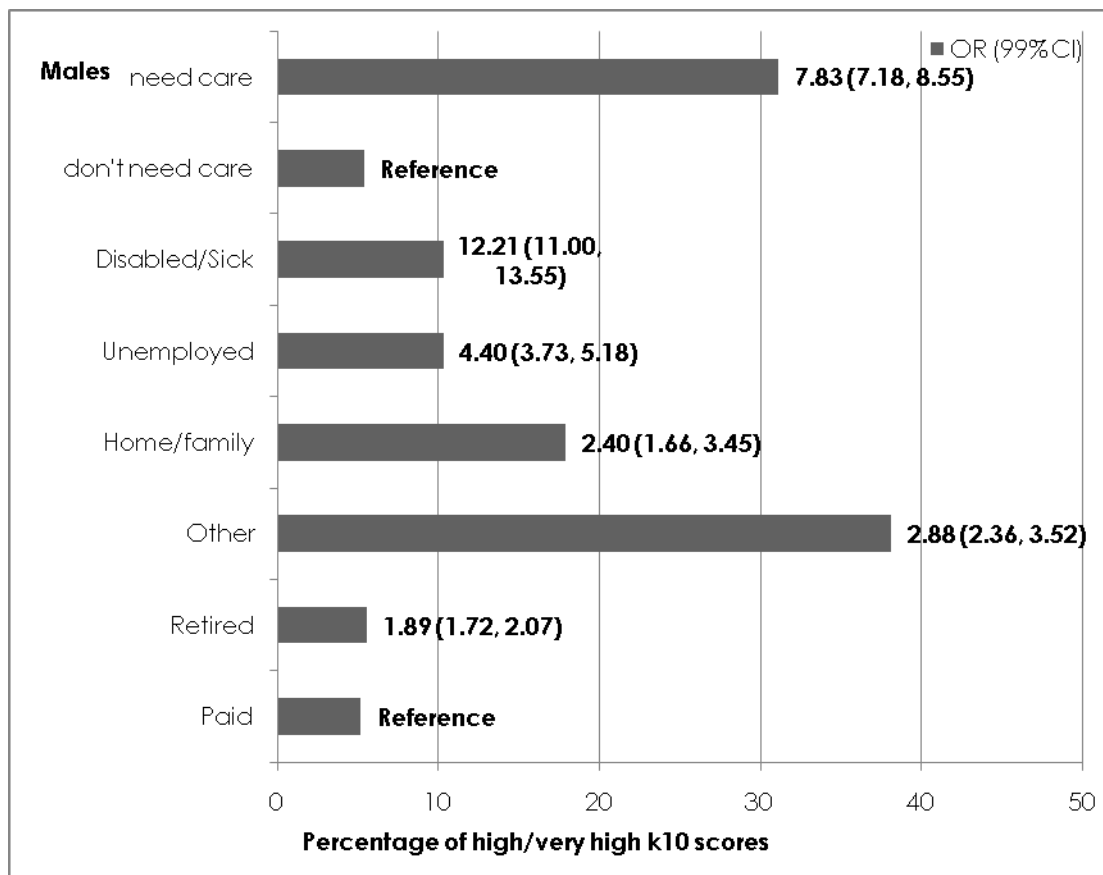


Figure 4: High/Very high K-10 (>22) scores by employment status and disability. Percentages (bars) and OR (99% CI) adjusted for age, marital status, education, income and language. N = 111154 men.

Associations between K-10 scores and co-morbid conditions

After adjustment for age marital status, education, income and language, weak to moderate association were observed between comorbid conditions and high K-10 scores (see Figures 5 and 6). Of note, similar odds ratios are recorded for all conditions and all are much smaller than those describing the relationship between disability and psychological distress seen in Figure 4.

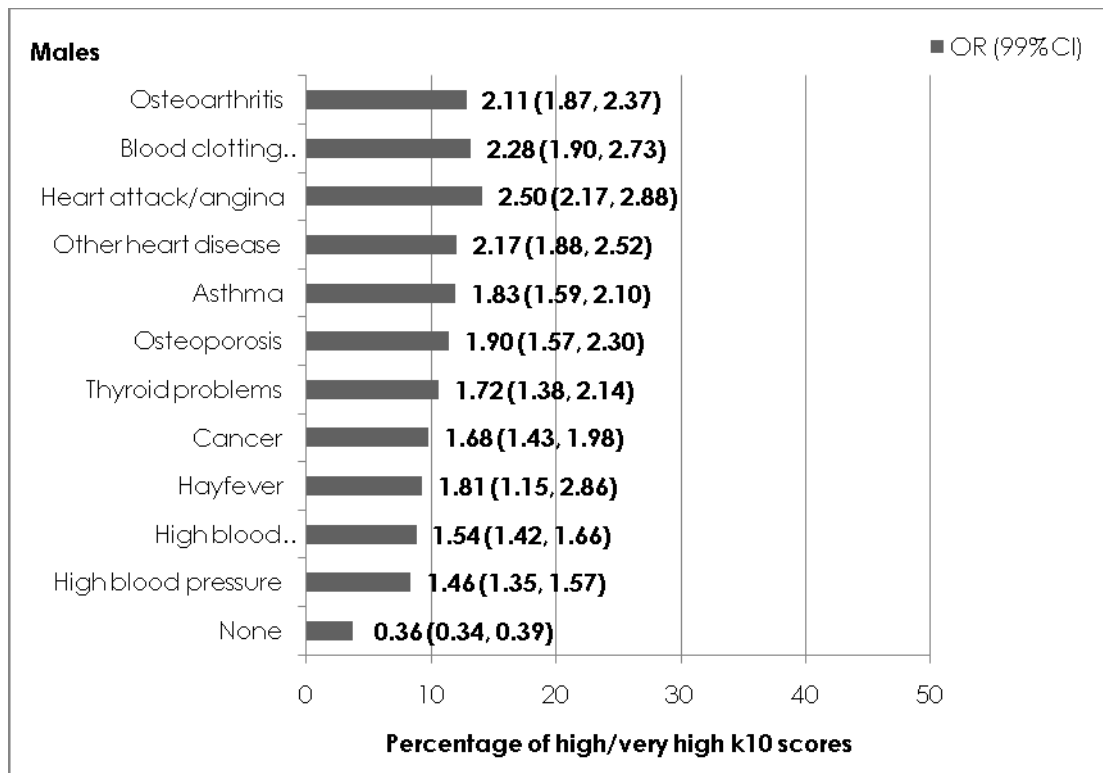


Figure 5: High/Very high K-10 (>22) scores by diagnosis (current treatment). Percentages (bars) and OR (99% CI) adjusted for age, marital status, education, income and language spoken at home, N = 111154 men.

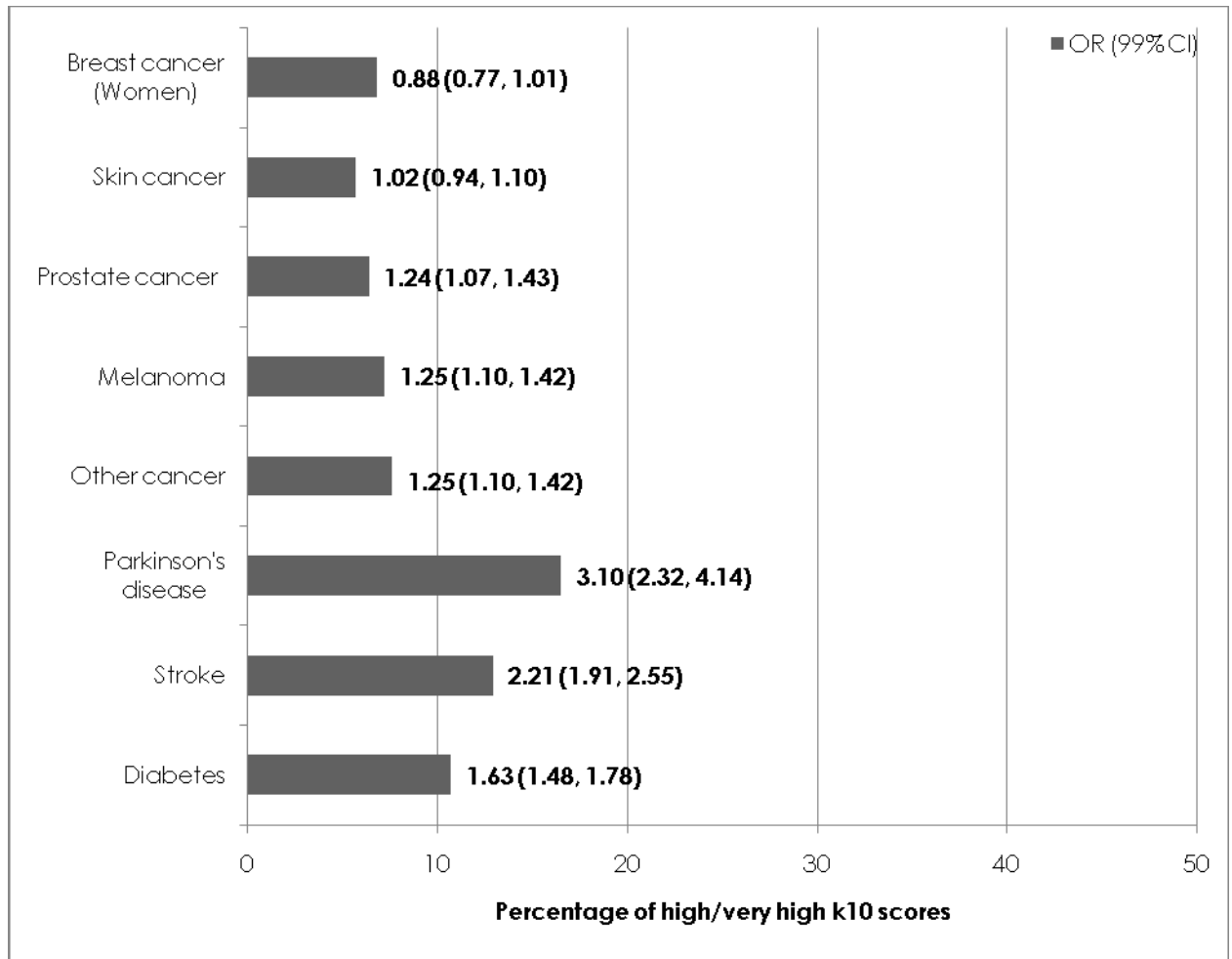


Figure 6: High/ Very high K-10 (>22) scores by diagnosis (ever). Percentages (bars) and OR (99% CI) adjusted for age, marital status, education, income and language spoken at home. N = 111154 men (skin cancer, prostate cancer, melanoma, other cancer, Parkinson's disease, Stroke, Diabetes) N = 125130 women (breast cancer).

Implications

While depression is reported more commonly for women, and women have higher K-10 scores, associations between K-10 scores and demographic factors, comorbid conditions and disability do not vary greatly for men and women. The most significant gender difference was that men had a higher association between K-10 scores and reported use of anti-depressant medication suggesting that men may have a higher threshold for seeking help or for medication prescription and use.

The other significant finding is that while high K-10 scores are associated with many other physical conditions, these associations are not as strong as the association between psychological distress and demographic factors and disability. Further analyses are required to determine the extent to which these factors modify or explain comorbid associations between depression and physical conditions.

The data also provide information on K-10 scores for large numbers of people at older ages, allowing more precise analyses of the psychological distress in these older age groups than has been previously available. It is particular interest to explore the increase in prevalence of high scores among those over 80 years.

Next steps

A series of nested models are now being constructed to determine the proportion of risk of psychological distress that can be attributed to demographic components, major diagnoses and co morbidities, and associated disability.

Further analyses are in progress to describe the prevalence and correlates of high K-10 scores among 45 and UP Study participants aged 80 years and over.

REFERENCES

1. Banks E, Redman S, Jorm L, Armstrong B, Bauman A, Beard J, et al. Cohort profile: the 45 and up study. *Int J Epidemiol*. 2008 2008 Oct (Epub 2007 Sep);37(5):941-7.
2. Kessler RC, Andrews G, Colpe LJ, Hiripi E. Short screening scales to monitor population prevalences and trends in nonspecific psychological distress. *Psychological Medicine*. 2002;32(959-976).
3. Furukawa TA, Kessler RC, Slade T, Andrews G. The performance of the K6 and K10 screening scales for psychological distress in the Australian National Survey of Mental Health and Well-Being. *Psychological Medicine*. 2003;33:357-62.
4. Andrews G, Slade T. Interpreting scores on the Kessler Psychological Distress Scale (K10). *Australian and New Zealand Journal of Public Health*. 2001;25(6):494-7.

APPENDIX 1.

Missing data Report

Number of observations in the 45 and Up Study database N = 266 848.

Table A1.1: Invalid responses for K10 component questions

Question	Missing/Inv.
Tired for no good reason?	12119 (4.5)
Nervous?	25420 (9.5)
So nervous nothing could calm you down?	28475 (10.7)
Hopeless?	27525 (10.3)
Restless or fidgety?	25848 (9.7)
So restless that you could not sit still?	28179 (10.6)
Depressed?	24116 (9.0)
So sad that nothing could cheer you up?	26878 (10.1)
That everything was an effort?	23935 (9.0)
Worthless?	27048 (10.1)

Table A1.2: Valid K10 scores under different methods of imputation

Methods of Imputation	N (%)
No imputation	39709 (14.9)
Method 1: pairing up	39069 (14.6)
Method 2: mean substitution	30723 (11.5)
Method 3: combined approach	30340 (11.4)

APPENDIX 2.

A2.1 Summary table of Demographic characteristics by K-10 scores

		MALE N = 111154			FEMALE N = 125130		
		Low 10-15 87428 (78.7)	Med 16-21 16271 (14.6)	High/V. High 22-50 7455 (6.7)	Low 10-15 93699 (74.9)	Med 16-21 21106 (16.9)	High/V. High 22-50 10325 (8.3)
Age	45-49	9495 (71.7)	2552 (19.3)	1199 (9.1)	13578 (66.6)	4470 (21.9)	2353 (11.5)
	50-54	12615 (73.5)	3036 (17.7)	1504 (8.8)	16783 (70.0)	4704 (19.6)	2494 (10.4)
	55-59	14608 (76.5)	2970 (15.6)	1520 (8.0)	17492 (74.2)	4028 (17.1)	2066 (8.8)
	60-64	14044 (79.6)	2466 (14.0)	1135 (6.4)	15150 (78.8)	2766 (14.4)	1308 (6.8)
	65-69	12559 (83.4)	1771 (11.8)	734 (4.9)	11835 (82.3)	1830 (12.7)	723 (5.0)
	70-74	9149 (84.2)	1233 (11.3)	488 (4.5)	7519 (82.4)	1180 (13.0)	424 (4.7)
	75-79	6681 (84.0)	916 (11.5)	353 (4.4)	4707 (81.2)	776 (13.4)	306 (5.5)
	80-84	6337 (82.5)	974 (12.7)	367 (4.8)	4601 (79.4)	824 (14.2)	368 (6.4)
	85+	1940 (79.3)	353 (14.4)	155 (6.3)	2034 (71.8)	528 (18.6)	273 (9.6)
Area (ARIA+)	Major City	40730 (79.4)	7250 (14.1)	3335 (6.5)	41105 (74.6)	9375 (17.0)	4632 (8.4)
	Inner Regional	30013 (78.3)	5716 (14.9)	2611 (6.8)	33727 (75.0)	7588 (16.9)	3668 (8.2)
	Outer Regional	15059 (78.0)	2923 (15.1)	1335 (6.9)	16914 (75.5)	3706 (16.6)	1783 (8.0)
	Remote/very remote	1558 (74.6)	363 (17.4)	169 (8.1)	1885 (74.5)	414 (16.4)	233 (9.2)
	Missing	68 (73.9)	19 (20.7)	5 (5.4)	69 (68.0)	23 (23.0)	9 (9.0)
Household income	0-20K	13051 (69.9)	3212 (17.2)	2417 (12.9)	16150 (67.7)	4495 (18.8)	3209 (13.5)
	20-50K	23108 (79.0)	4262 (14.6)	1864 (6.4)	22679 (75.1)	5170 (17.1)	2333 (7.7)
	50-70K	10676 (80.4)	1929 (14.5)	680 (5.1)	9958 (76.2)	2251 (17.2)	853 (6.5)
	>70K	27520 (82.6)	4549 (13.7)	1259 (3.8)	21538 (78.5)	4432 (16.2)	1470 (5.4)
	Rather not answer	10529 (79.5)	1762 (13.3)	946 (7.2)	18994 (77.4)	3726 (15.2)	1821 (7.4)
	Invalid	95 (67.9)	29 (20.7)	16 (11.4)	166 (64.3)	55 (21.3)	37 (14.3)
	Missing	2449 (73.4)	528 (16.3)	273 (8.4)	4214 (72.7)	977 (16.9)	602 (10.4)
Highest qualification	No school certificate	7521 (70.9)	1808 (17.1)	1276 (12.0)	9107 (66.6)	2584 (18.9)	1991 (14.6)
	School certificate	12482 (77.1)	2419 (15.0)	1282 (7.9)	25920 (76.5)	5322 (15.7)	2633 (7.8)
	Higher school certificate	8514 (78.6)	1592 (14.7)	731 (6.8)	9370 (75.0)	2101 (16.8)	1020 (8.2)

	Trade or apprenticeship	16179 (78.5)	3012 (14.6)	1410 (6.8)	3863 (74.5)	884 (17.0)	440 (8.5)
	Certificate or diploma	17572 (79.9)	3162 (14.4)	1252 (5.7)	21881 (75.0)	5039 (17.3)	2274 (7.8)
	University degree or higher	24026 (81.6)	4059 (13.8)	1376 (4.7)	22541 (77.0)	4946 (16.9)	1798 (6.1)
	Missing	1134 (76.6)	219 (14.8)	128 (8.6)	1017 (71.8)	230 (16.2)	169 (11.9)
Housing							
	House	67958 (79.5)	12283 (14.4)	5267 (6.2)	72399 (75.3)	16126 (16.8)	7596 (7.9)
	Flat/unit/apartment	8553 (74.3)	1807 (15.7)	1148 (10.0)	9486 (71.8)	2350 (17.8)	1384 (10.5)
	House on a farm	6953 (79.0)	1349 (15.3)	500 (5.7)	7542 (76.6)	1611 (16.4)	696 (7.1)
	Retirement village/nursing home/hostel	1809 (78.9)	339 (14.8)	145 (6.3)	2315 (75.8)	502 (16.4)	237 (7.8)
	Mobile/other	1329 (67.9)	351 (18.0)	278 (14.2)	1340 (66.3)	371 (18.4)	311 (15.4)
	Invalid	213 (79.2)	27 (10.0)	29 (10.8)	218 (72.7)	52 (17.3)	30 (10.0)
	Missing	613 (75.1)	115 (14.1)	88 (10.8)	399 (70.7)	94 (16.7)	71 (12.6)
Current situation?							
	Single/never married	4337 (67.7)	1237 (19.3)	831 (13.0)	4697 (67.7)	1378 (19.9)	861 (12.4)
	Married	67736 (80.8)	11538 (13.8)	4523 (5.4)	63513 (77.2)	13141 (16.0)	5599 (6.8)
	De facto/partner	4831 (76.7)	1045 (16.6)	420 (6.7)	5094 (72.0)	1356 (19.2)	626 (8.9)
	Widowed	3702 (78.9)	655 (14.0)	338 (7.2)	9676 (75.5)	2071 (16.2)	1067 (8.3)
	Divorced	4191 (69.3)	1071 (17.7)	783 (13.0)	8097 (68.0)	2305 (19.4)	1504 (12.6)
	Separated	1892 (65.0)	562 (19.3)	456 (15.7)	2342 (62.3)	791 (21.0)	626 (16.7)
	Missing	739 (73.5)	163 (16.2)	104 (10.3)	280 (72.5)	64 (16.6)	42 (10.9)
Current work status?							
	Paid	45835 (79.6)	8729 (15.2)	3003 (5.2)	46110 (74.8)	11080 (18.0)	4427 (7.2)
	Retired	37320 (81.5)	5926 (12.9)	2569 (5.6)	36445 (79.5)	6481 (14.1)	2911 (6.4)
	Disabled/sick	1260 (37.2)	834 (24.6)	1291 (38.1)	1061 (32.5)	882 (27.0)	1321 (40.5)
	Unemployed	1150 (62.0)	372 (20.1)	332 (17.9)	1412 (56.7)	580 (23.3)	497 (20.0)
	Home/family	381 (69.0)	114 (20.7)	57 (10.3)	6204 (73.5)	1464 (17.4)	771 (9.1)
	Other	1482 (74.8)	296 (14.9)	203 (10.3)	2467 (70.8)	619 (17.8)	398 (11.4)
	Missing	0	0	0	0	0	0
Country of birth (SACC)							
	Australia	64609 (78.9)	11969 (14.6)	5325 (6.5)	72642 (75.6)	15882 (16.5)	7585 (7.9)
	New Zealand and Pacific	2033 (80.4)	353 (14.0)	144 (5.7)	2248 (77.4)	465 (16.0)	191 (6.6)
	North-West Europe	12246 (81.3)	2037 (13.5)	780 (5.2)	11203 (76.2)	2459 (16.7)	1035 (7.0)
	Southern and Eastern Europe	2629 (72.4)	588 (16.2)	414 (11.4)	1739 (59.6)	679 (23.3)	498 (17.1)
	North Africa and Middle East	644 (58.9)	228 (20.8)	222 (20.3)	387 (50.8)	169 (22.2)	206 (27.0)
	South-East Asia	1058 (73.7)	242 (16.9)	135 (9.4)	1400 (70.1)	372 (18.6)	226 (11.3)

	North-East Asia	952 (72.4)	231 (17.6)	132 (10.0)	1047 (66.1)	336 (21.2)	200 (12.6)
	Southern and Central Asia	764 (77.6)	140 (14.2)	80 (8.1)	466 (72.0)	120 (18.6)	61 (9.4)
	Americas	953 (76.9)	210 (17.0)	77 (6.2)	1107 (71.5)	299 (19.3)	142 (9.2)
	Sub-Saharan Africa	825 (82.8)	129 (12.9)	43 (4.3)	754 (75.0)	174 (17.3)	78 (7.8)
	Missing	715 (74.3)	144 (15.0)	103 (10.7)	706 (73.5)	151 (15.7)	103 (10.7)
Language other than English spoken at home							
	No	79680 (79.4)	14441 (14.4)	6236 (6.2)	86735 (75.8)	18824 (16.5)	8817 (7.7)
	Yes	7746 (71.8)	1830 (17.0)	1219 (11.3)	6964 (64.8)	2282 (21.2)	1508 (14.0)
	Invalid	2 (100)	0	0	0	0	0
Provide Regular Care							
	No	78602 (79.5)	14132 (14.3)	6196 (6.3)	79461 (76.3)	16794 (16.1)	7856 (7.6)
	Yes	6658 (71.1)	1704 (18.2)	1001 (10.7)	11315 (67.3)	3510 (20.9)	2000 (11.9)
	Missing	2168 (75.8)	435 (15.2)	258 (9.0)	2923 (69.7)	802 (19.1)	496 (11.2)
Regular assistance due to illness/ disability							
	No	82330 (80.6)	14268 (14.0)	5500 (5.4)	87624 (77.0)	18330 (16.1)	7901 (7.0)
	Yes	2079 (42.9)	1264 (26.1)	1506 (31.1)	2762 (43.9)	1772 (28.1)	1763 (28.0)
	Invalid	1 (100)	0	0	0	0	0
	Missing	3018 (71.8)	739 (17.6)	449 (10.7)	3313 (66.6)	1004 (20.2)	661 (13.3)

A2.2 Summary table of Co morbid conditions by K-10 scores

	MALE N = 111154			FEMALE N = 125130		
	Low 10-15 87428 (78.7)	Med 16-21 16271 (14.6)	High/V. High 22-50 7455 (6.7)	Low 10-15 93699 (74.9)	Med 16-21 21106 (16.9)	High/V. High 22-50 10325 (8.3)
Has a doctor ever told you that you have?						
Skin cancer						
Yes	25358 (80.0)	4524 (14.3)	1801 (5.7)	21667 (77.0)	4554 (16.2)	1927 (6.9)
No	62070 (78.1)	11747 (14.8)	5654 (7.1)	72032 (74.3)	16552 (17.1)	8398 (8.7)
Melanoma						
Yes	5755 (77.8)	1109 (15.0)	531 (7.2)	3929 (73.9)	911 (17.1)	476 (9.0)
No	81673 (78.7)	15162 (14.6)	6924 (6.7)	89770 (74.9)	20195 (16.9)	9849 (8.2)
Other cancer						
Yes	4934 (76.2)	1051 (16.2)	490 (7.6)	5506 (70.3)	1466 (18.7)	865 (11.0)
No	82494 (78.8)	15220 (14.5)	6965 (6.7)	88193 (75.2)	19640 (16.7)	9460 (8.1)
Heart disease						
Yes	12879 (75.3)	2754 (16.1)	1473 (8.6)	6526 (69.9)	1818 (19.5)	989 (10.6)
No	74549 (79.3)	13517 (14.4)	5982 (6.4)	87173 (75.3)	19282 (16.7)	9336 (8.1)
Stroke						
Yes	2530 (68.0)	711 (19.1)	478 (12.9)	1830 (65.1)	567 (20.2)	415 (14.8)
No	84898 (79.0)	15560 (14.5)	6977 (6.5)	91869 (75.1)	20539 (16.8)	9910 (8.1)
Diabetes						
Yes	8326 (72.8)	1883 (16.5)	1221 (10.7)	5650 (67.3)	1643 (19.6)	1100 (13.1)
No	79102 (79.3)	14388 (14.4)	6234 (6.3)	88049 (75.4)	19463 (16.7)	9225 (7.9)
Blood clot						
Yes	2736 (73.3)	616 (16.5)	379 (10.2)	4507 (69.5)	1254 (19.3)	725 (11.2)
No	84692 (78.8)	15655 (14.6)	7076 (6.6)	89192 (75.2)	19852 (16.7)	9600 (8.1)
Parkinson's disease						
Yes	448 (59.7)	179 (23.8)	124 (16.5)	343 (61.7)	133 (23.9)	80 (14.4)
No	86980 (78.8)	16092 (14.6)	7331 (6.6)	93356 (74.9)	20973 (16.8)	10245 (8.2)
Prostate cancer						
Yes	5119 (78.7)	970 (14.9)	415 (6.4)			
No	82309 (78.7)	15301 (14.6)	7040 (6.7)			
Enlarged prostate						
Yes	14042 (77.9)	2784 (15.5)	1196 (6.6)			
No	73386 (78.8)	13487 (14.5)	6259 (6.7)			

High blood pressure							
	Yes	32232 (77.1)	6348 (15.2)	3204 (7.7)			
	No	55196 (79.6)	9923 (14.3)	4251 (6.1)			
Breast cancer							
	Yes				5043 (76.8)	1078 (16.4)	444 (6.8)
	No				88656 (74.8)	20028 (16.9)	9881 (8.3)
High blood pressure when pregnant							
	Yes				11100 (71.5)	2941 (18.9)	1483 (9.6)
	No				82599 (75.4)	18165 (16.6)	8842 (8.1)
High blood pressure when NOT pregnant							
	Yes				29935 (74.0)	7960 (17.2)	3598 (8.9)
	No				63764 (75.3)	14146 (16.7)	6727 (8.0)
Depression or Anxiety^{^~}							
	Yes	6367 (46.4)	3967 (28.9)	3400 (24.8)	12584 (50.0)	7062 (28.1)	5506 (21.9)
	No	68930 (84.1)	10018 (12.2)	3045 (3.7)	68649 (82.3)	11237 (13.5)	3494 (4.2)
	Missing	12130 (78.6)	2286 (14.8)	1010 (6.6)	12466 (75.1)	2807 (16.9)	1325 (8.0)
Asthma or hayfever[§]							
	Yes	1588 (73.1)	420 (19.4)	164 (7.6)	2389 (69.1)	703 (20.3)	367 (10.6)
	No	10542 (79.5)	1866 (14.1)	846 (6.4)	10077 (76.7)	2104 (16.0)	958 (7.3)
	Missing	75298 (78.7)	13985 (14.6)	6445 (6.7)	81233 (74.9)	18299 (16.9)	9000 (8.3)
Asthma[^]							
	Yes	6715 (73.2)	1633 (17.8)	825 (9.0)	10035 (67.5)	3022 (20.3)	1815 (12.2)
	No	68583 (79.2)	12352 (14.3)	5520 (6.5)	71198 (76.0)	15277 (16.3)	7185 (7.7)
	Missing	12130 (78.6)	2286 (14.8)	1010 (6.6)	12466 (75.1)	2807 (16.9)	1325 (8.0)
Hayfever[^]							
	Yes	8489 (74.8)	1948 (17.2)	911 (8.0)	14082 (71.2)	3856 (19.5)	1833 (9.3)
	No	66809 (79.2)	12037 (14.3)	5534 (6.6)	67151 (75.7)	14443 (16.3)	7167 (8.1)
	Missing	12130 (78.6)	2286 (14.8)	1010 (6.6)	12466 (75.1)	2807 (16.9)	1325 (8.0)
None of these							
	Yes	17906 (84.8)	2491 (11.8)	715 (3.4)	21915 (82.7)	3446 (13.0)	1126 (4.3)
	No	69492 (77.2)	13774 (15.3)	6736 (7.5)	71760 (72.8)	17655 (17.9)	9199 (9.3)
	Invalid	4 (100)	0	0	5 (83.3)	1 (16.7)	0
	Missing	26 (72.2)	6 (16.7)	5 (11.1)	19 (82.8)	4 (17.4)	0

§ Question was only asked in version 1

^ Question was only asking in version 2 onwards.

~ Created by collapsing depression and anxiety into one variable.

A2.3 Summary table of Recent Treatment by K-10 scores

	MALE N = 111154			FEMALE N = 125130			
	Low 10-15 87428 (78.7)	Med 16-21 16271 (14.6)	High/V. High 22-50 7455 (6.7)	Low 10-15 93699 (74.9)	Med 16-21 21106 (16.9)	High/V. High 22-50 10325 (8.3)	
In the last month have you been treated for:							
Cancer	Yes	2563 (72.3)	637 (18.0)	346 (9.8)	1835 (69.5)	542 (20.5)	265 (10.0)
	No	84865 (78.9)	15634 (14.5)	7109 (6.6)	91864 (75.0)	20564 (16.8)	10060 (8.2)
Heart attack/angina	Yes	2385 (66.1)	712 (19.6)	509 (14.1)	1044 (60.5)	415 (24.1)	266 (15.4)
	No	85043 (79.1)	15559 (14.5)	6946 (6.5)	92655 (75.1)	20691 (16.8)	10059 (8.2)
Other heart disease	Yes	2514 (69.1)	686 (18.9)	437 (12.0)	1561 (64.5)	553 (22.8)	307 (12.7)
	No	84914 (79.0)	15585 (14.5)	7018 (6.5)	92138 (75.1)	20553 (16.8)	10018 (8.2)
High blood pressure	Yes	20520 (76.3)	4149 (15.4)	2226 (8.3)	21069 (73.4)	4959 (17.3)	2669 (9.3)
	No	66908 (79.4)	12122 (14.4)	5229 (6.2)	72630 (75.3)	16147 (16.7)	7656 (7.9)
High blood cholesterol	Yes	13648 (75.1)	2935 (16.2)	1595 (8.8)	12350 (72.3)	3080 (18.0)	1642 (9.6)
	No	73780 (79.4)	13336 (14.3)	5860 (6.3)	81349 (75.3)	18026 (16.7)	8683 (8.0)
Blood clotting problems	Yes	1484 (69.1)	382 (17.8)	283 (13.2)	1209 (63.2)	434 (22.7)	271 (14.2)
	No	85944 (78.8)	15889 (14.6)	7172 (6.6)	92490 (75.1)	20672 (16.8)	10054 (8.2)
Asthma	Yes	2774 (68.6)	788 (19.5)	483 (11.9)	4116 (62.8)	1430 (21.8)	1013 (15.4)
	No	84654 (79.0)	15483 (14.5)	6972 (6.5)	89583 (75.6)	19676 (16.6)	9312 (7.9)
Hayfever^	Yes	277 (66.1)	103 (24.6)	39 (9.3)	481 (62.4)	183 (23.7)	107 (13.9)
	No	11853 (79.0)	2183 (14.6)	971 (6.5)	11985 (75.7)	2624 (16.6)	1218 (7.7)
	Missing	75298 (78.7)	13985 (14.6)	6445 (6.7)	81233 (74.9)	18299 (16.9)	9000 (8.3)

Osteoarthritis	Yes	3664 (66.7)	1131 (20.6)	701 (12.8)	7796 (65.3)	2589 (21.7)	1554 (13.0)
	No	83764 (79.3)	15140 (14.3)	6754 (6.4)	85903 (75.9)	18517 (16.4)	8771 (7.8)
Thyroid problems	Yes	12515 (71.1)	314 (18.4)	181 (10.6)	6659 (69.7)	1862 (19.5)	1039 (10.9)
	No	86213 (78.8)	15957 (14.6)	7274 (6.7)	87040 (75.3)	19244 (16.7)	9286 (8.0)
Osteoporosis or low bone density	Yes	1579 (69.7)	427 (18.9)	259 (11.4)	7114 (70.8)	1925 (19.1)	1016 (10.1)
	No	85849 (78.8)	15844 (14.6)	7196 (6.6)	86585 (75.2)	19181 (16.7)	9309 (8.1)
Depression or Anxiety ~	Yes	2220 (32.2)	2062 (29.9)	2615 (37.9)	4453 (36.1)	3707 (30.0)	4184 (33.9)
	No	85208 (81.7)	14209 (13.6)	4840 (4.6)	89246 (79.1)	17399 (15.4)	6141 (5.4)
None of these	Yes	43841 (84.0)	6422 (12.3)	1914 (3.7)	44108 (81.1)	7779 (14.3)	2485 (4.6)
	No	43496 (73.9)	9835 (16.7)	5536 (9.4)	49509 (70.1)	13311 (18.8)	7832 (11.1)
	Invalid	4 (80.0)	1 (20.0)	0	6 (85.7)	1 (14.3)	0
	Missing	87 (82.9)	13 (12.4)	5 (4.8)	76 (76.8)	15 (15.2)	8 (8.1)

^ Question only asked from version 2 onwards.

~ Version 2 onwards, depression and anxiety were asked as separate questions. To make version 2 align with version 1, depression and anxiety were collapsed.

A2.4 Odds Ratios of association between demographic characteristics and high/very high K-10 scores

		Male		Female	
		OR unadjusted #†	OR adjusted##‡	OR unadjusted #†	OR adjusted##‡
Age	45-49†	1		1	
	50-54	0.96 (0.87, 1.07)		0.89 (0.83, 0.97)	
	55-59	0.87 (0.78, 0.96)		0.74 (0.68, 0.80)	
	60-64	0.70 (0.62, 0.78)		0.57 (0.52, 0.62)	
	65-69	0.52 (0.46, 0.59)		0.41 (0.37, 0.46)	
	70-74	0.48 (0.42, 0.55)		0.38 (0.33, 0.44)	
	75-79	0.47 (0.40, 0.55)		0.45 (0.38, 0.52)	
	80-84	0.51 (0.44, 0.60)		0.53 (0.45, 0.61)	
	85+	0.67 (0.53, 0.84)		0.83 (0.70, 0.98)	
ARIA+	Major City†	1	1	1	1
	Inner regional	1.05 (0.98, 1.12)	1.04 (0.97, 1.11)	0.97 (0.91, 1.03)	0.95 (0.90, 1.01)
	Outer regional	1.06 (0.97, 1.16)	1.04 (0.96, 1.14)	0.94 (0.88, 1.02)	0.93 (0.86, 1.00)
	Remote/very remote	1.27 (1.03, 1.56)	1.20 (0.97, 1.48)	1.11 (0.92, 1.33)	1.05 (0.88, 1.26)
Income	=>70K†	1	1	1	1
	0-20K	3.81 (3.47, 4.17)	7.14 (6.46, 7.90)	2.75 (2.53, 2.99)	4.66 (4.26, 5.10)
	20-50K	1.74 (1.58, 1.92)	2.63 (2.39, 2.91)	1.48 (1.36, 1.62)	1.93 (1.77, 2.11)
	50-70K	1.38 (1.21, 1.56)	1.59 (1.40, 1.80)	1.23 (1.10, 1.38)	1.37 (1.22, 1.53)
	Rather not answer	1.97 (1.76, 2.21)	2.87 (2.56, 3.20)	1.42 (1.30, 1.56)	1.97 (1.79, 2.16)
Highest Qualification	No School Certificate†	1	1	1	1
	School Certificate	0.63 (0.56, 0.70)	0.59 (0.53, 0.66)	0.50 (0.46, 0.54)	0.46 (0.42, 0.49)
	Higher School Certificate	0.53 (0.47, 0.60)	0.46 (0.41, 0.52)	0.52 (0.47, 0.58)	0.44 (0.39, 0.49)
	Trade or Apprenticeship	0.53 (0.48, 0.59)	0.48 (0.44, 0.54)	0.54 (0.47, 0.63)	0.48 (0.42, 0.56)
	Certificate/diploma	0.44 (0.39, 0.49)	0.38 (0.34, 0.43)	0.49 (0.45, 0.54)	0.40 (0.36, 0.43)
	University or higher degree	0.36 (0.32, 0.39)	0.30 (0.27, 0.33)	0.38 (0.35, 0.42)	0.29 (0.27, 0.32)
Housing	House†	1	1	1	1
	Flat/unit/apartment	1.69 (1.55, 1.84)	1.78 (1.63, 1.94)	1.37 (1.26, 1.48)	1.50 (1.38, 1.62)
	House on a farm	0.91 (0.81, 1.03)	0.88 (0.77, 0.99)	0.89 (0.80, 0.98)	0.85 (0.76, 0.94)
	Retirement village/nursing home/hostel	1.01 (0.81, 1.27)	1.56 (1.24, 1.96)	0.99 (0.83, 1.18)	1.71 (1.42, 2.06)
	Mobile/other	2.50 (2.11, 2.96)	2.66 (2.24, 3.16)	2.13 (1.81, 2.50)	2.33 (1.98, 2.74)

Relationship Status	Married†	1	1	1	1
	Single	2.61 (2.35, 2.89)	2.42 (2.18, 2.68)	1.94 (1.76, 2.15)	1.90 (1.72, 2.10)
	Partner	1.24 (1.08, 1.42)	1.11 (0.97, 1.27)	1.32 (1.18, 1.48)	1.17 (1.04, 1.31)
	Widowed	1.36 (1.18, 1.58)	1.88 (1.61, 2.20)	1.25 (1.14, 1.37)	1.91 (1.73, 2.11)
	Divorced	2.59 (2.33, 2.88)	2.54 (2.29, 2.83)	1.97 (1.82, 2.14)	2.02 (1.86, 2.18)
	Separated	3.23 (2.82, 3.70)	3.06 (2.67, 3.52)	2.72 (2.42, 3.07)	2.55 (2.27, 2.87)
	Work Status	Paid†	1	1	1
Retired		1.08 (1.01, 1.16)	1.89 (1.72, 2.07)	0.88 (0.83, 0.94)	1.41 (1.30, 1.53)
Disabled/sick		11.18 (10.09, 13.39)	12.21 (11.00, 13.55)	8.84 (8.00, 9.76)	9.86 (8.91, 10.91)
Unemployed		3.99 (3.39, 4.69)	4.40 (3.73, 5.18)	3.22 (2.82, 3.69)	3.62 (3.16, 4.14)
Home/family		2.06 (1.44, 2.97)	2.40 (1.66, 3.45)	1.30 (1.17, 1.45)	1.48 (1.33, 1.65)
Other		2.08 (1.71, 2.53)	2.88 (2.36, 3.52)	1.66 (1.44, 1.92)	2.08 (1.80, 2.41)
Country of Birth	Australia†	1	1	1	1
	New Zealand and Pacific	0.87 (0.70, 1.09)	0.84 (0.67, 1.05)	0.81 (0.67, 0.99)	0.78 (0.64, 0.95)
	North-West Europe	0.78 (0.71, 0.86)	0.84 (0.76, 0.93)	0.88 (0.81, 0.97)	0.93 (0.85, 1.01)
	Southern and Eastern Europe	1.84 (1.60, 2.11)	2.06 (1.79, 2.37)	2.39 (2.10, 2.72)	2.66 (2.33, 3.03)
	North Africa and Middle East	3.74 (3.08, 4.54)	3.75 (3.08, 4.56)	4.30 (3.48, 5.32)	4.16 (3.36, 5.15)
	South-East Asia	1.47 (1.16, 1.86)	1.39 (1.09, 1.75)	1.48 (1.23, 1.78)	1.37 (1.14, 1.65)
	North-East Asia	1.66 (1.32, 2.10)	1.61 (1.27, 2.03)	1.70 (1.40, 2.07)	1.58 (1.31, 1.93)
	Southern and Central Asia	1.27 (0.94, 1.72)	1.22 (0.90, 1.65)	1.22 (0.86, 1.72)	1.22 (0.86, 1.72)
	Americas	0.94 (0.69, 1.27)	0.91 (0.67, 1.23)	1.17 (0.93, 1.47)	1.12 (0.89, 1.41)
	Sub-Saharan Africa	0.64 (0.43, 0.96)	0.61 (0.41, 0.92)	0.97 (0.72, 1.32)	0.92 (0.67, 1.24)
Language at home	English†	1	1	1	1
	Other	1.93 (1.77, 2.10)	1.91 (1.76, 2.08)	1.94 (1.80, 2.10)	1.90 (1.76, 2.06)
Regular Assistance due to illness/disability	No†	1	1	1	1
	Yes	7.83 (7.18, 8.55)	9.69 (8.85, 10.62)	5.22 (4.83, 5.64)	7.08 (6.52, 7.70)

Odds ratio of being depressed (K10 score \geq 22). Fitted using a logistic regression.

* Adjusted for age

† Reference category

‡ Confidence intervals set at 99%

A2.5 Odds Ratios of associations between co morbid conditions and high/very high K-10 scores

Ever been diagnosed

		Male			Female		
		OR unadjusted #†	OR adjusted##†	OR adjusted#†‡	OR unadjusted #†	OR adjusted##†	OR adjusted#†‡
Skin cancer	No†	1	1	1	1	1	1
	Yes	0.79 (0.74, 0.85)	0.88 (0.81, 0.94)	1.02 (0.94, 1.10)	0.77 (0.72, 0.83)	0.85 (0.79, 0.91)	0.97 (0.90, 1.04)
Melanoma	No†	1	1	1	1	1	1
	Yes	1.09 (0.97, 1.23)	1.22 (1.08, 1.37)	1.25 (1.10, 1.42)	1.10 (0.97, 1.24)	1.18 (1.04, 1.33)	1.19 (1.04, 1.36)
Other cancer	No†	1	1	1	1	1	1
	Yes	1.15 (1.01, 1.30)	1.33 (1.17, 1.51)	1.24 (1.08, 1.41)	1.41 (1.28, 1.55)	1.52 (1.38, 1.68)	1.39 (1.26, 1.55)
Heart disease	No†	1	1	1	1	1	1
	Yes	1.39 (1.28, 1.50)	1.78 (1.64, 1.93)	1.69 (1.55, 1.85)	1.37 (1.25, 1.49)	1.78 (1.62, 1.95)	1.64 (1.49, 1.81)
Stroke	No†	1	1	1	1	1	1
	Yes	2.12 (1.86, 2.41)	2.74 (2.40, 3.13)	2.21 (1.91, 2.55)	1.98 (1.73, 2.28)	2.60 (2.25, 2.99)	2.29 (1.96, 2.66)
Diabetes	No†	1	1	1	1	1	1
	Yes	1.79 (1.65, 1.95)	2.02 (1.86, 2.20)	1.63 (1.48, 1.78)	1.75 (1.60, 1.91)	1.98 (1.81, 2.16)	1.62 (1.47, 1.78)
Blood clot	No†	1	1	1	1	1	1
	Yes	1.60 (1.39, 1.85)	1.83 (1.59, 2.11)	1.67 (1.43, 1.94)	1.43 (1.29, 1.59)	1.62 (1.46, 1.80)	1.55 (1.38, 1.73)
Parkinson's disease	No†	1	1	1	1	1	1
	Yes	2.74 (2.12, 3.53)	3.46 (2.67, 4.48)	3.10 (2.32, 4.14)	1.86 (1.36, 2.54)	2.32 (1.69, 3.18)	2.01 (1.42, 2.85)
Prostate cancer	No†	1	1	1	1	1	1
	Yes	0.95 (0.83, 1.08)	1.23 (1.07, 1.41)	1.24 (1.07, 1.43)			
High blood pressure	No†	1	1	1	1	1	1
	Yes	1.27 (1.19, 1.35)	1.42 (1.33, 1.51)	1.35 (1.26, 1.44)			
Enlarged prostate	No†	1	1	1	1	1	1
	Yes	0.98 (0.91, 1.07)	1.27 (1.16, 1.38)	1.35 (1.23, 1.48)			

Breast cancer	No†				1		
	Yes				0.80 (0.70, 0.91)	0.89 (0.78, 1.01)	0.88 (0.77, 1.01)
High blood pressure when pregnant	No†				1		
	Yes				1.20 (1.12, 1.30)	1.21 (1.12, 1.30)	1.23 (1.14, 1.33)
High blood pressure when NOT pregnant	No†				1		
	Yes				1.13 (1.07, 1.19)	1.34 (1.26, 1.42)	1.28 (1.21, 1.37)
Depression or Anxiety^{^~}	No†	1	1	1	1	1	1
	Yes	8.36 (7.80, 8.96)	8.05 (7.51, 8.63)	7.76 (7.20, 8.37)	6.32 (5.95, 6.70)	6.10 (5.75, 6.47)	6.07 (5.69, 6.47)
Asthma or hayfever[§]	No†	1	1	1	1	1	1
	Yes	1.20 (0.95, 1.50)	1.17 (0.93, 1.48)	1.29 (1.01, 1.63)	1.50 (1.27, 1.77)	1.47 (1.24, 1.73)	1.54 (1.29, 1.83)
Asthma[^]	No†	1	1	1	1	1	1
	Yes	1.42 (1.29, 1.57)	1.40 (1.26, 1.54)	1.39 (1.25, 1.55)	1.67 (1.56, 1.80)	1.65 (1.54, 1.78)	1.63 (1.51, 1.76)
Hayfever[^]	No†	1	1	1	1	1	1
	Yes	1.24 (1.13, 1.36)	1.18 (1.07, 1.30)	1.33 (1.20, 1.47)	1.16 (1.08, 1.25)	1.13 (1.05, 1.21)	1.23 (1.14, 1.32)
None of these	No†	1	1	1	1	1	1
	Yes	0.44 (0.40, 0.49)	0.36 (0.33, 0.40)	0.37 (0.33, 0.41)	0.44 (0.40, 0.47)	0.39 (0.36, 0.42)	0.40 (0.36, 0.43)

Odds ratio of being depressed (K10 score ≥ 22). Fitted using a logistic regression

* Adjusted for age

¶ Adjusted for age, marital status, education, income and language

† Reference category

‡ Confidence intervals set at 99%

§ Question only asked at version 1

^ Question only asked from version 2 onwards

~ Created by collapsing depression and anxiety into one variable

A2.6 Odds Ratios of associations between current treatment for co morbid conditions and high/very high K-10 scores

		Current Treatment					
		OR unadjusted #‡	Male OR adjusted#**‡	OR adjusted#¶‡	OR unadjusted #‡	Female OR adjusted#**‡	OR adjusted#¶‡
Cancer	No†	1	1	1	1	1	1
	Yes	1.52 (1.31, 1.76)	1.83 (1.58, 2.13)	1.68 (1.43, 1.98)	1.24 (1.05, 1.47)	1.35 (1.14, 1.60)	1.25 (1.05, 1.50)
Heart attack/angina	No†	1	1	1	1	1	1
	Yes	2.38 (2.10, 2.70)	3.02 (2.65, 3.44)	2.50 (2.17, 2.88)	2.08 (1.75, 2.47)	2.83 (2.37, 3.37)	2.24 (1.84, 2.73)
Other heart disease	No†	1	1	1	1	1	1
	Yes	1.94 (1.69, 2.22)	2.31 (2.02, 2.65)	2.17 (1.88, 2.52)	1.64 (1.40, 1.93)	2.12 (1.80, 2.49)	1.92 (1.62, 2.29)
High blood pressure	No†	1	1	1	1	1	1
	Yes	1.36 (1.27, 1.46)	1.54 (1.44, 1.65)	1.46 (1.35, 1.57)	1.19 (1.12, 1.27)	1.44 (1.36, 1.54)	1.35 (1.26, 1.44)
High blood cholesterol	No†	1	1	1	1	1	1
	Yes	1.42 (1.32, 1.54)	1.53 (1.42, 1.65)	1.54 (1.42, 1.66)	1.22 (1.13, 1.31)	1.42 (1.32, 1.53)	1.33 (1.23, 1.44)
Blood clotting problems	No†	1	1	1	1	1	1
	Yes	2.15 (1.82, 2.54)	2.60 (2.20, 3.08)	2.28 (1.90, 2.73)	1.88 (1.59, 2.23)	2.26 (1.90, 2.68)	1.99 (1.66, 2.39)
Asthma	No†	1	1	1	1	1	1
	Yes	1.93 (1.70, 2.20)	2.03 (1.78, 2.31)	1.83 (1.59, 2.10)	2.14 (1.95, 2.35)	2.24 (2.04, 2.45)	2.03 (1.83, 2.24)
Hayfever^	No†	1	1	1	1	1	1
	Yes	1.47 (0.95, 2.29)	1.50 (0.96, 2.33)	1.81 (1.15, 2.86)	1.92 (1.45, 2.54)	1.89 (1.43, 2.51)	1.82 (1.35, 2.44)
Osteoarthritis	No†	1	1	1	1	1	1
	Yes	2.12 (1.90, 2.37)	2.53 (2.27, 2.83)	2.11 (1.87, 2.37)	1.77 (1.64, 1.91)	2.23 (2.06, 2.41)	1.95 (1.80, 2.13)
Thyroid problems	No†	1	1	1	1	1	1
	Yes	1.64 (1.33, 2.01)	1.81 (1.47, 2.22)	1.72 (1.38, 2.14)	1.39 (1.28, 1.52)	1.50 (1.37, 1.64)	1.43 (1.30, 1.58)

Osteoporosis or low bone density	No†	1	1	1	1	1	1
	Yes	1.80 (1.52, 2.14)	2.25 (1.89, 2.69)	1.90 (1.57, 2.30)	1.28 (1.17, 1.40)	1.66 (1.51, 1.82)	1.54 (1.39, 1.70)
Depression or anxiety	No†	1	1	1	1	1	1
	Yes	12.40 (11.52, 13.35)	12.13 (11.26, 13.07)	10.73 (9.90, 11.63)	8.85 (8.34, 9.39)	8.70 (8.20, 9.24)	8.01 (7.51, 8.54)
None of these	No†	1	1	1	1	1	1
	Yes	0.37 (0.35, 0.40)	0.33 (0.31, 0.35)	0.36 (0.34, 0.39)	0.39 (0.36, 0.41)	0.33 (0.31, 0.35)	0.36 (0.34, 0.39)

Odds ratio of being depressed (K10 score ≥ 22). Fitted using a logistic regression

* Adjusted for age

¶ Adjusted for age, marital status, education, income and language

† Reference category

‡ Confidence intervals set at 99%

§ Question only asked at version 1

^ Question only asked from version 2 onwards

~ Created by collapsing depression and anxiety into one variable

This research was completed using data collected through the 45 and Up Study (www.45andUp.org.au). The 45 and Up Study is managed by the Sax Institute in collaboration with major partner Cancer Council New South Wales; and partners the National Heart Foundation (NSW Division); NSW Health; *beyondblue: the national depression initiative*; Ageing, Disability and Home Care, NSW Department of Human Services; and Uniting Care Ageing. We thank the many thousands of people participating in the 45 and Up Study.

