

Women and Mental Health in Australia

Selected findings of the
Australian Longitudinal Study on Women's Health



Report prepared for the
Mental Health Division
of the
Australian Commonwealth Department of Health and Ageing

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Take-Home Message

The data presented in this report demonstrate that:

- Around 12% of women have been diagnosed with mental health conditions, but over 20% report indications of poor mental health. Women with poor mental health are high users of health services.
- Women with poor mental health tend to be:
 - Single
 - In financial difficulties
 - In poor physical health
 - Cigarette smokers
 - Sedentary
- Illicit drug use is common
 - It may be self limiting
 - Cannabis use precedes use of other illicit drugs and tobacco
 - Use is lower in non-urban areas
 - Use is weakly associate with poorer mental health but it is not yet possible from this study to determine any cause or effect relationship.
- Poor mental health seems to be part of a complex and reciprocally interacting set of factors. Cause and effect are not straightforward, as poor mental health causes and maintains social and personal problems, which in turn cause and maintain poor mental health.
- Most women with poor mental health:
 - Have not sought medical help and do not expect it to be useful
 - Do not consider that they have a medical disorder
 - Ascribe their distress to family and situational circumstances
 - Do not want drug treatment
 - Want to be listened to and understood
- Health services for poor mental health do not match the expectations and wishes of women with these conditions

Overview

Mental health has been identified as one of Australia’s National Health Priorities, in recognition of the considerable burden of morbidity associated with poor mental health. The World Health Organization has identified depression in particular as the second largest cause of disability-adjusted life years lost worldwide. The cost of depression, and of other mental health problems, is high in personal, social, health care and economic terms.

There is considerable evidence on the effects of clinically diagnosed depression at an individual level, and on effective forms of treatment for severe depression. There are also valuable initiatives at a policy level focusing on the issue of youth suicide, particularly among young rural men. This report argues that these are valuable directions that should be maintained, but that it may be more effective at a population level to develop policies and practices that involve identifying, treating and preventing milder but more widespread mental health problems, with the aim of avoiding these more extreme problems. While it is the case that 6% of the population will meet criteria for clinical depression at least once in any year, it is notable that *at any one time* around 20% of the population is experiencing sub-clinical depression or emotional distress at a level which interferes with work activities, family responsibilities, leisure pursuits and general quality of life. While the majority of Australians do not seek help for this mild to moderate distress, and the effects in terms of lost productivity and social dysfunction may be seen as relatively minor in most cases, the high prevalence of these minor conditions makes their combined impact significant. Further, mild to moderate depression of this nature is a strong precursor of clinical levels of depression, with all the economic, health-care and personal costs that that entails.

Thus, we argue that a population-level approach, that aims at prevention and early intervention, is compatible with existing policy directions such as the National Action Plan for Depression and the more general National Mental Health Strategy, and is also consistent with a cost-effective approach to maintaining good mental health in the entire community.

This report arose from a series of discussions between members of the Australian Longitudinal Study on Women’s Health (ALSWH) research team and members of the Mental Health Division of DoHA. These discussions resulted in the development of a series of policy-relevant questions which ALSWH is able to address. Reports were prepared in response to these questions, and these were discussed in further collaborative meetings before this final technical report, and the associated Summary Report, were prepared.

The questions which arose from the initial discussion were:

1. What are the patterns of consistency and change in mental health across time? In particular, who changes, what are the correlates and predictors of change, and what are the patterns of help-seeking associated with poor mental health?
2. What does depression look like from the perspective of women experiencing depression?
3. How might ALSWH data intersect with other data sources such as the National Health Survey and the National Survey of Mental Health and Wellbeing?

This technical report begins with a brief description of ALSWH, before providing details on the ways in which depression and other aspects of mental health have been assessed in the project, and some descriptive evidence on rates of a number of indicators of poor mental health. While depression is by no means the only mental health problem that has an impact on the health of the population, the remainder of the report is consistent with current policy concerns in focusing largely on depression. Data on anxiety, other psychiatric disorders, stress, disordered eating, and the psychological impact of distressing life events such as the

experience of abuse or of bereavement, are beyond the scope of this specific report but are available to DoHA when requested.

After providing this background information, the report goes on to address Question 1 above. It covers correlates and predictors of depression, including both cross-sectional and longitudinal analysis of data from the younger and mid-age cohorts of ALSWH. In particular, it focuses on identifying those women whose level of mental health has improved significantly between surveys, seeking to understand what might have prompted this change. Question 2 is addressed through a summary of research involving interviews with women experiencing poor mental health, and identifies clear mismatches between those women’s experiences and felt needs and their evaluations of the health services available to them. Finally, Question 3 is addressed through a discussion of the methods and measures used in a number of major Australian surveys with a mental health focus.

The report is written with the aim of providing policy-relevant data to the Department, and suggestions for further analysis or interpretation are welcomed by the research team.

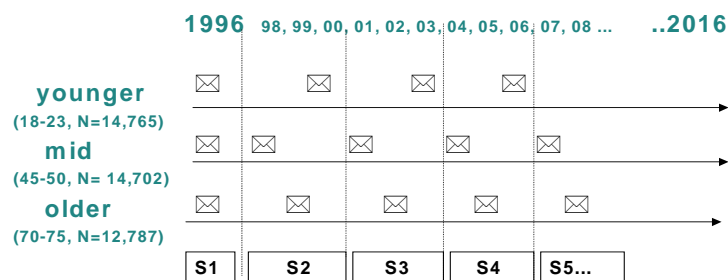
What is the Australian Longitudinal Study on Women’s Health?

The Australian Longitudinal Study on Women’s Health (ALSWH) – widely known as Women’s Health Australia - is a longitudinal population-based survey, which examines the health of over 40,000 Australian women, selected on a random basis with deliberate over-sampling of women in rural and remote areas. It provides an evidence base to the Commonwealth Department of Health and Ageing, for the development and evaluation of policy and practice in many areas of service delivery that affect women. Overviews of the survey, its rationale and methods, can be located on the Study’s website <http://www.newcastle.edu.au/centre/wha> and overview publications include a book targeted at the non-expert level (Lee, 2001) and several academic reports (e.g. Brown et al., 1996; 1998).

The study was designed to explore factors that influence health among women who are broadly representative of the entire Australian population. It goes beyond a narrow perspective that equates women’s health with reproductive and sexual health, and takes a comprehensive view of all aspects of health throughout women’s life spans.

Women in three age groups (aged 18-23 years, 45-50 years and 70-75 years in 1996) were selected from the Medicare database. Sampling was random within each age group, with women from rural and remote areas sampled at twice the rate of women in urban areas. This means that the numbers of rural women are large enough for statistical comparisons within and between regions. The study is designed to run for 20 years, with each age cohort surveyed once every three years. Figure 1 below shows the timeline for surveys, beginning with Survey 1 of all three cohorts in 1996.

Figure 1. Timeline for Main ALSWH Surveys



The age groups were selected in order to follow women through life stages which are likely to be critical to their health and well-being. When the study began, the Younger age group was in the early stages of transition from adolescence to adulthood, so that they can be tracked as they move into the work force, enter adult relationships, and become mothers. At Survey 1, the majority of these young women were living in their families of origin (51%) or in shared housing (24%). Almost half (48%) were students; 79% were single; and 92% had no children. By Survey 2, 48% were living with a partner (23% were married and 20% in long-term de facto relationships) although only 17% were mothers. Two-thirds (67%) had post-secondary educational qualifications and 59% were in full-time paid employment.

The Mid-age group was selected to examine menopausal transitions and the social and personal changes of middle age. At Survey 1, the majority (75%) were married; 37% had full-time employment and 31% part-time. While 91% were mothers, only 58% had children under 16 living with them. Middle age is a time of relative demographic stability, so the picture was relatively similar by Survey 3, with 78% married, 37% in full-time work and 23% in part-time work, although the number with children living at home had fallen to 37%.

The Older group were in their early 70s when selected, in order to recruit older women who are generally still active, involved members of the community. These women are being tracked to obtain information on predictors of continuing well-being and independence in older adult life. At Survey 1, the majority of older women (58%) were married, but widows increased from 36% to 41% of the sample by Survey 2. Over 80% of these women are pensioners, although 35% have superannuation or other private income.

The study assesses:

- Physical and emotional health (including health-related quality of life, major diseases and conditions, symptoms)
- Use of health services (GP, specialist and other visits, access, satisfaction)
- Health behaviours and risk factors (diet, exercise, smoking, alcohol, other drugs)
- Time use (including paid and unpaid work, family roles, and leisure)
- Sociodemographic factors (location, education, employment, family composition)
- Life stages and key events (such as childbirth, divorce, widowhood)

As well as the main surveys, participants are invited to participate in sub-studies which address specific issues or target specific groups. For example, a sample of Mid-age women with low levels of mental well-being participated in a telephone survey focusing on coping and help-seeking, while women who reported having diabetes, asthma or heart disease have provided additional information about their diagnosis, treatment and well-being.

Participants are also invited to consent to linkage of survey responses with unit records from the Medicare database. Under present legislation, individual signed consent is required for access to individual data, and approximately half the women have provided consent. This enables us to access information about type of service, characteristics of the provider, and out-of-pocket costs for every Medicare-eligible service. Aggregated unidentified data are also available for those who have not consented to access to individual records.

The project has been able to retain a very high proportion of the original participants. Among the Younger women, 72% responded to Survey 2 in 2000, a retention rate which compares well with other surveys of this highly mobile age group. Retention rates have been much higher among the Mid-age women; 92% and 85% of Mid-age women respectively responded to Survey 2 in 1998 and Survey 3 in 2001. Of the Older women, 91% responded to Survey 2 in 1999 and 83% to Survey 3 in 2002.

The maintenance of these cohorts will provide a valuable opportunity to examine associations over time between aspects of women's lives and their physical and emotional health. In this way, it can provide information that will assist the Commonwealth Department of Health and Ageing – as well as other Commonwealth and State Departments - to plan for the future and to develop policies which are most appropriate to Australian women of all ages.

These brief reports have been prepared on the basis of meetings between the research team, and staff of selected Sections and Divisions of the Commonwealth Department of Health and Ageing. Initial discussions, held in October and November 2002, addressed policy needs and their match with existing data. On this basis, specific topics were selected for the preparation of brief syntheses of existing research, supplemented by some new analysis of existing data.

Drafts were presented to these same staff in February/March 2003, and the final reports prepared on the basis of feedback from this process. Further analyses can be conducted on request.

Further information is available from Joy Eshpeter, email Joy.Eshpeter@health.gov.au or visit the website <http://www.newcastle.edu.au/centre/wha>

Measures of Mental Health in the Australian Longitudinal Study on Women’s Health

The Study aims for consistency across surveys, while recognising that the different age groups have different concerns, and while being open to changes in response to changing policy concerns, changing standards of best practice in assessment, and respondent issues such as missing data.

Table 1 lists the measures used, and the surveys in which these have been used. The SF-36 has been used consistently in every survey; this provides an internationally benchmarked “gold standard” measure of health-related quality of life, including both physical and mental-related components and subscales, for use in population-based research and evaluation. A number of other Australian surveys have used the SF-36 or the SF-12, a subset of the full scale¹. Other measures of depression (CESD, GADS) were introduced at Surveys 2 and 3 to reflect increasing policy interest and growing community concern about mental health issues. Measures of mental-health-related symptoms, diagnoses, and medication use provide an indication of the severity of mental health problems and the extent to which women with low SF-36 scores are obtaining medical assistance.

Measures of mental health in ALSWH have been chosen to be as brief as possible while still having acceptable levels of validity. The brief to survey a large national sample of Australian women for 20 years means that the primary method of data collection must be written, self-report and closed-response in nature. While some data described in this report are derived from open-ended telephone interviews, such a strategy is infeasible for the entire sample and standard clinical measures requiring interviewing or direct observation are impractical except for small subgroups. The main surveys must address a broad range of women’s health concerns, while being of acceptable length and complexity, and thus the inclusion of lengthy survey instruments on mental health is not possible. The Older cohort is a group that raises special concerns, and as they move into their eighties it is increasingly necessary to keep the surveys simple, brief, and clear.

The Study has had to change some measures; for example, the Center for Epidemiological Studies Depression scale (CESD) was found at Survey 2 to have extremely high levels of missing data among the Older cohort (although it was well answered by Mid-age and Younger women) and thus was replaced for Older Survey 3 with the Goldberg Anxiety and Depression Scale (GADS).

¹ SF-12 scores can be calculated from the SF-36, using existing databases.

Table 1. Mental Health Measures in ALSWH Surveys

Measure	Description	Surveys ²	Comments
SF-36	Health-related quality of life: 8 subscales - 4 physical health: General Health Bodily Pain Physical Functioning Role Physical -4 mental health: Mental Health Social Functioning Vitality Role Emotional - 2 component scales: Mental Components Summary (MCS) Physical Components Summary (PCS)	Y1, M1, O1, Y2, M2, M3 Y3, M3, O3... (planned for all surveys)	Internationally benchmarked “gold standard” for population studies. SF-12 can be derived. Weighted or integer scaling can be used (see Andrews 2002)
CESD-10	Center for Epidemiological Studies Depression scale (10 item version)	Y2, M2, O2 Y3, M3... (planned for all Y and M surveys)	Very high rates of missing data in Older cohort only – CESD dropped from Older cohort and maintained for Younger and Mid-age
GADS	Goldberg Anxiety & Depression Scale	O3 Y3 (anxiety only)	Replaced CESD in older cohort as missing data rates are much lower. Anxiety subscale used in Younger cohort as well as CESD.
Specific symptoms	Item about symptoms experienced never/rarely/sometimes/often in past 12 months, plus help-seeking for each item: Difficulty sleeping Depression	Y1, M1, O1 Y2, M2, O2 Y3, M3, O3 Y2, M2	Item developed for ALSWH

² Codes refer to age group and number of survey (e.g. Y1 indicates Survey 1 of the Younger group)

Measure	Description	Surveys ²	Comments
	Intense anxiety/panic attacks	Y3, M3 Y2, M2, O2 Y3, M3, O3	
Stress		Y1, M1, O1 Y2, M2, O2 Y3, M3, O3	Developed for ALSWH. Extensive validation work has been conducted with Younger cohort (Bell & Lee, 2002)
Medications	Item about use of medications in past 4 weeks: For “nerves” For sleeping difficulties For depression	M1, O1 Y2, M2, O2 Y3, M3, O3 M1, O1 Y2, M2, O2 Y3, M3, O3 Y2, M2, O2 Y3, M3, O3	
Diagnoses	Item about medical diagnoses: Postnatal depression Depression (other than postnatal) Anxiety disorder Other psychiatric disorder	Y2 Y2, M2, O2 Y3, M3, O3 Y2, M2, O2 Y3, M3, O3 M2	
Optimism	Measure of psychological resilience	Y2, M2, O2 Y3, M3, O3	Life Orientation Test (LOT)
Life not worth living	Single item	Y2, Y3, M3	Item developed for ALSWH
Self-harm	Single item	Y2 Y3, M3	Item developed for ALSWH

References for all standardised scales appear at the end of this report.

Prevalence of Poor Mental Health

Before moving on to an analysis of correlates and predictors of specific measures of poor mental health, and to a discussion of women’s experiences of poor mental health, this section provides descriptive data on levels of mental health problems, as indicated by a range of variables in the three age groups. Tables 2, 3 and 4 present data for the three age groups respectively, on several categorical measures of poor mental health.

Table 2. Prevalence of Selected Indicators of Poor Mental Health among Younger Cohort

Variable	Prevalence Survey 1 (1996)	Prevalence Survey 2 (2000)
SF-36 Mental Health subscale <53	21%	23%
CESD-10 score >12	*	18%
Difficulty sleeping “sometimes” or “often”	34%	29%
Depression “sometimes” or “often”	*	21%
Anxiety/panic attacks “sometimes” or “often”	*	9%
Medication for “nerves” in past 4 weeks	*	2%
Medication for “sleeping difficulties” in past 4 weeks	*	3%
Medication for “depression” in past 4 weeks	*	5%
Diagnosis of postnatal depression in past 4 years	*	2%
Diagnosis of depression (not postnatal) in past 4 years	*	12%
Diagnosis of anxiety disorder in past 4 years	*	6%
Life not worth living in past week	*	7%
Deliberate self-harm in past 6 months	*	4%

* Item not assessed on this occasion

Table 3. Prevalence of Selected Indicators of Poor Mental Health among Mid-Age Cohort

Variable	Prevalence Survey 1 (1996)	Prevalence Survey 2 (1998)	Prevalence Survey 3 (2001)
SF-36 Mental Health subscale <53	14%	15%	15%
CESD-10 score >12	*	15%	13%
Difficulty sleeping “sometimes” or “often”	47%	50%	46%
Depression “sometimes” or “often”	*	30%	23%
Anxiety/panic attacks “sometimes” or “often”	*	32%	10%#
Medication for “nerves” in past 4 weeks	6%	5%	7%
Medication for “sleeping difficulties” in past 4 weeks	7%	10%	9%
Medication for “depression” in past 4 weeks	*	7%	8%
Diagnosis of depression in past 2 years	*	10%	12%
Diagnosis of anxiety disorder in past 2 years	*	8%	7%
Life not worth living in past week	*	*	8%
Deliberate self-harm in past 6 months	*	*	0.5%

*Item not assessed on this occasion

#Wording changed from “Anxiety” to “Episodes of intense anxiety (e.g. panic attacks)”

Table 4. Prevalence of Selected Indicators of Poor Mental Health among Older Cohort

Variable	Prevalence Survey 1 (1996)	Prevalence Survey 2 (1999)
SF-36 Mental Health subscale <53	11%	9%
Difficulty sleeping “sometimes” or “often”	49%	*
Anxiety/panic attacks “sometimes” or “often”	*	7%
Medication for “nerves” in past 4 weeks	11%	8%
Medication for “sleeping difficulties” in past 4 weeks	18%	15%
Medication for “depression” in past 4 weeks	*	5%
Diagnosis of depression in past 3 years	*	7%
Diagnosis of anxiety disorder in past 3 years	*	6%

* Item not assessed on this occasion

A related aspect of the study is the ability to explore whether women who report specific mental-health-related symptoms have sought help for those symptoms, and the extent to which they were satisfied by the help that was provided. Table 5 presents descriptive data from Survey 2, showing that, of those who report having experienced a specific mental-health-related symptom “sometimes” or “often” in the previous year, the majority have not sought any form of help. Of those who did seek help, around 60% of Younger women and 80% of Mid-age women report being satisfied with the help they received.

Table 5. Mental Health Related Symptoms: Percentage reporting they had experienced the symptom, sought help for that symptom, and been satisfied with the help
(all percentages are of entire sample)

Age Group	Symptom	Experienced sometimes/often	Sought help	Satisfied
Younger	Difficulty sleeping	28.6%	5.9%	4.3%
	Depression	20.7%	10.0%	7.8%
	Intense anxiety/ Panic attacks	8.9%	5.1%	3.8%
Mid-Age	Difficulty sleeping	50.2%	15.8%	12.4%
	Depression	29.5%	16.2%	13.2%
	Anxiety	32.0%	15.3%	12.5%
Older	Anxiety/ Panic attacks	6.5%	3.0%	*

* Older women were not asked to rate their satisfaction with help received, in order to reduce respondent burden

Correlates, Consistency and Change in Mental Health

ALSWH data provide an opportunity to examine the correlates of poor mental health among both the Younger cohort and the Mid-age cohort, as well as to explore characteristics of those women who remain depressed over time with those who move from low to high mental health. This section concentrates on three measures of mental health. One is based on scores on the Mental Health subscale of the SF-36 (referred to here as MH), and takes a score of less than 53 on this scale as a indicator of possible clinical depression – overall, 15% of Mid-age women and 23% of Younger women met this criterion for poor mental health at Survey 2. The others are self-report of having “ever” been diagnosed by a doctor for depression or for anxiety – overall, 17% of Mid-age and 14% of Younger women met this criterion for depression, while 13% of Mid-age and 6% of Younger women met the criterion for anxiety.

These three measures are quite strongly related to each other. Of those with “high” MH, 87% (Mid-age) and 90% (Younger) also reported never having received a diagnosis of depression at any time, while 90% (Mid-age) and 96% (Younger) had never been diagnosed with anxiety. Of those with “low” MH, however, only 44% (Mid-age) and 29% (Younger) had ever been diagnosed with depression while only 35% (Mid-age) and 46% (Younger) had ever been diagnosed with anxiety. It is possible that some low scores may be explained by transitory factors such as fatigue or physical malaise, but when Mid-age women with low MH scores were interviewed by telephone, over 96% did identify a recent period of emotional distress in their lives³. Thus, the data suggest that a great deal of mental ill-health may go undetected and untreated.

Health Service Use by Women with Poor Mental Health

As an initial stage of this analysis, health service use data from Younger women who met criteria for poor mental health – defined in three different ways, as having been diagnosed with depression, been diagnosed with anxiety, and having MH less than 53 – were analysed.

Figures 2, 3 and 4 show that young women who fit any of the two main criteria for “poor” mental health – as well as those who have been diagnosed with anxiety - have higher health service use than those who do not – they are more likely to have attended their GP frequently in the previous year, more likely to have seen a specialist, and more likely to have been admitted to hospital. The effects are statistically significant in all three sets of data, but the graphs show that the effect is somewhat smaller for the “low mental health” classification (Figure 4) than for the two diagnosed conditions.

Interestingly, there are only minor differences between women with and without these mental health characteristics in their preferences for a female GP or in their continuity of care. Slightly more Younger women with these characteristics than without prefer to see a female GP “all of the time”, but the differences are small. Just under 50% of Younger women always go to the same practice, and around 30% usually see the same GP.

Mid-aged and older women with poor mental health are also likely to be high users of health services; for example, 47% of mid-aged women with depression compared with 27% without depression are high users of GP services (for older women the corresponding numbers are 55% compared to 32%). Women with diagnoses of depression or anxiety also prefer to see female GPs.

³ This interview study is described in detail in the next section of this report

Figure 2. Health service use in previous year, GP gender preference and continuity of care (Younger Women, Survey 2) according to presence or absence of diagnosed depression

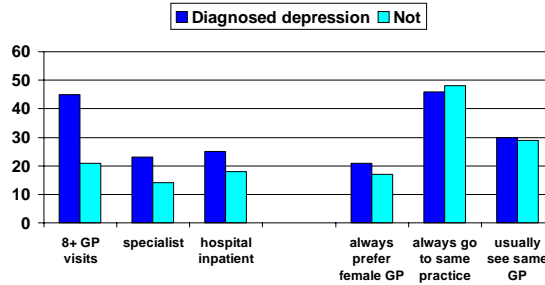


Figure 3. Health service use in previous year, GP gender preference and continuity of care (Younger Women, Survey 2) according to presence or absence of diagnosed anxiety

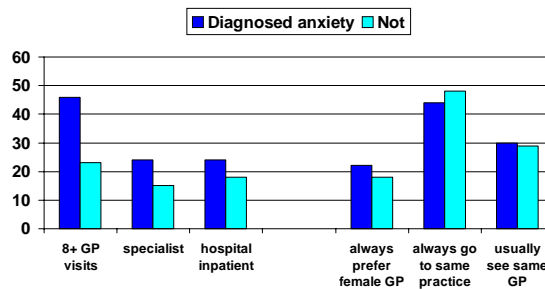
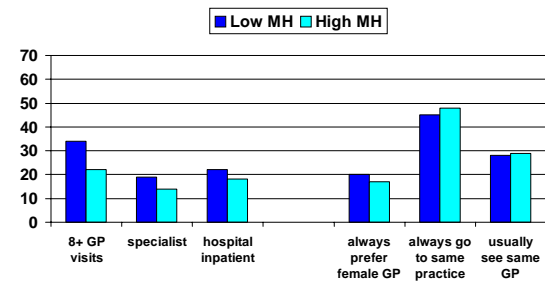


Figure 4. Health service use in previous year, GP gender preference and continuity of care (Younger Women, Survey 2) according to level of SF-36 mental health subscale



Further analysis of data from women with and without mental health problems explored these women’s perceptions of their most recent visit to a GP. Women answered a series of questions about their overall satisfaction and sense that the GP was responsive to their needs, as well as whether they incurred any out-of pocket costs. Figures 5, 6 and 7 show the pattern of responses when the women were categorized on each of the three criteria – diagnosis of depression, diagnosis of anxiety, and MH score below 53. The data show that Younger women with diagnosed depression or anxiety tended to rate their GP visit slightly more positively than those without such a diagnosis, and were also more likely to be bulk billed (Figures 5 and 6). Those with low mental health (Figure 7) were also more likely to be bulk billed, but rated their GP visit considerably more negatively than did other women.

Figure 5. Evaluation of most recent GP visit (Younger Women, Survey 2) according to presence or absence of diagnosed depression (% rating aspect as “excellent” or “very good”)

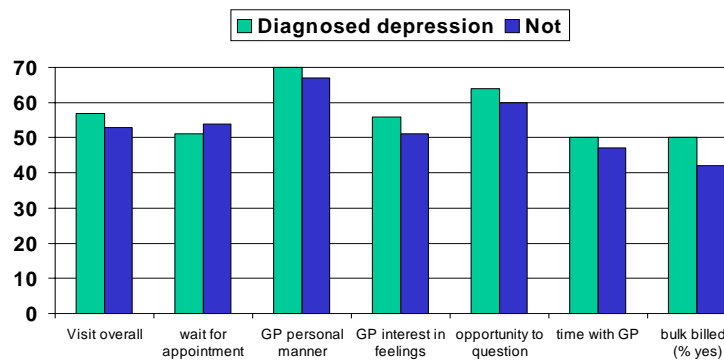


Figure 6. Evaluation of most recent GP visit (Younger Women, Survey 2) according to presence or absence of diagnosed anxiety (% rating aspect as “excellent” or “very good”)

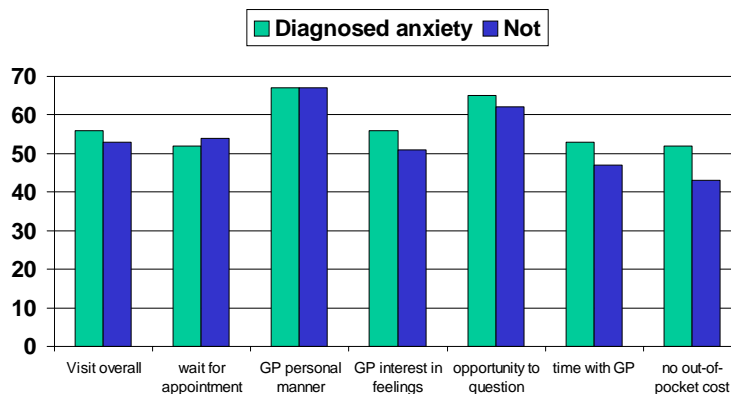
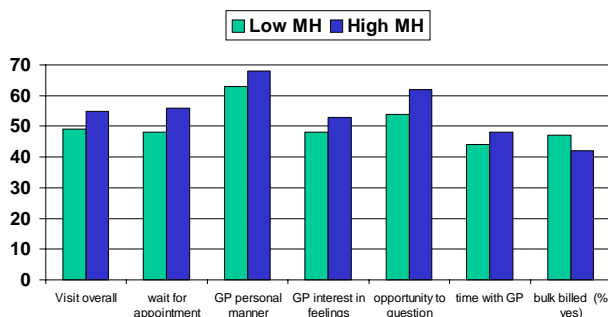


Figure 7. Evaluation of most recent GP visit (Younger Women, Survey 2) according to level of mental health (% rating aspect as “excellent” or “very good”)



The data suggest that women with poor mental health, however defined, make higher use of health services than other women. However, those with a definite diagnosis appear more satisfied with their GPs’ responsiveness to their needs than the larger group comprising all those with low mental health scores. This suggests that women who experience poor mental health, but do not meet criteria for a medical diagnosis, comprise a group that is particularly likely to be dissatisfied with health services. It may be that medical practitioners feel ill-equipped to deal with emotional problems that do not meet clinical criteria, or that they perceive these women to be over-reacting to moderate levels of distress; alternatively, it may be that women with low mental health scores simply evaluated most of their interactions negatively and the ratings reflect a general propensity to be discontented.

In understanding these data on service use among women with poor mental health, and interpreting the analyses below, it is useful to bear in mind that women with poor mental health are generally characterised by poor physical health as well. SF-36 physical component scale scores (PCS) are significantly lower than average for women with poor mental health, regardless of how that is defined. Among the Younger cohort, PCS scores averaged 46.9 for those with diagnosed depression, 46.8 for those with diagnosed anxiety disorder, and 47.6 for those with low MH scores. All three of these means are significantly lower than the mean for those without these characteristics, which is 50.3. Physical illness may be a cause of depression; it may help to maintain depression by reducing women’s opportunities to participate in meaningful and enjoyable social roles; and it may be a result of depression, as depressed people are characterised by poor sleep, poor diet, lack of physical activity, and lack of general self-care which may predispose towards physical illness.

Cross-Sectional Correlates of Depression: SF-36 Mental Health Subscale

Analysis of correlates of depression was conducted for the Younger and Mid-aged women (see Appendix for more detail). The first set of analyses for Mid-aged women explored the relationships between score on the Mental Health subscale of the SF-36 (MH) at Survey 2, and a selection of other demographic, socioeconomic, and health-related variables, also at Survey 2. Figure 8 summarizes the results of a regression analysis, in which the mean MH scores are shown for each category of each statistically significant predictor, after adjustment for all other explanatory variables at Survey 2. Although no definitive guidelines for clinical significance of SF-36 subscale scores exist, normative data from the 1995 Australian National

Health Survey (Australian Bureau of Statistics, 1997) show that the presence of one serious physical condition such as cancer, diabetes, hypertension, arthritis is associated with a reduction of two points in MCS.

This figure, based on Table A3, shows that, among the Mid-age women, lower MH scores (indicating poorer levels of mental health) were found among those women who were not currently married or in de facto relationships. Women who reported more symptoms and who visited the GP more often were also likely to have much lower MH scores. Cigarette smoking, drinking and being physically inactive tended to be associated with poor mental health (smoking and drinking were combined into one variable because they are closely associated but smoking is more strongly correlated with low MH). Being overweight or obese was associated with slightly higher MH scores. Respondents who reported that it was impossible or always difficult to manage on their income had lower mental health scores than others, but employment status and educational level did not predict mental health scores. Living in a small rural centre was associated with better mental health than living in an urban area, but the trend for area of residence was small and inconsistent. There was also a small effect for having been born outside Australia.

For many of these women, poor mental health may be part of a potentially longstanding pattern of lack of meaningful social roles and experience of ill health. The causal relationships among these variables are likely to be complex, with deficiencies in each domain (personal relationships, economic circumstances, physical health, and mental health) likely to cause and to maintain deficiencies in the other domains. It is important to bear in mind in considering this and the following analyses that one characteristic of depression is that people who are depressed generally have a negative perspective of most aspects of their lives, and thus there may be a bias towards more negative reporting of the more subjective items (such as difficulty managing on income). However, this caveat is less important when considering the more objective variables, such as smoking status or country of birth.

Figure 9, based on Table A4, provides the results of a similar analysis focusing on Survey 2 data from the Younger cohort. Although there are obvious demographic differences between the cohorts, and there are some differences in the types of questions asked, the overall pattern of results is similar. Lower mental health was associated with not being married or in a de facto relationship (the majority of these young women were single, rather than divorced or widowed), and with being a cigarette smoker and being physically inactive. Younger women with poor mental health are likely to have more GP visits, more reported symptoms, and more major diagnosed illnesses than others. The relationship with their own income and with their parents’ SES is small but generally indicates that women with lower mental health are likely to have poorer financial circumstances, and again the relationship with area of residence is small.

Even among these younger women, a general pattern of poor physical health, unhealthy lifestyle, and poor mental health is apparent.

Figure 8. Correlates of MH score at Survey 2: Adjusted means for analysis of covariance model with the Mid-age cohort (for details see Table A3).

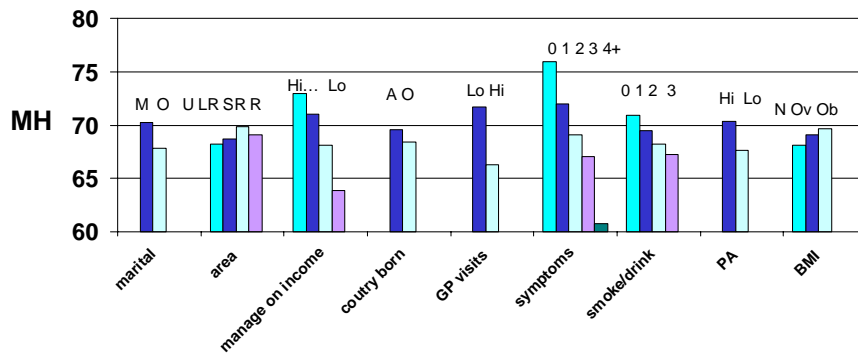
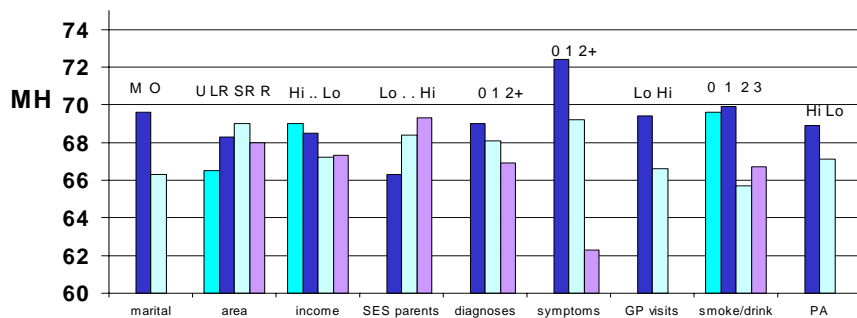


Figure 9. Correlates of MH score at Survey 2: Adjusted means for analysis of covariance model with the Younger cohort (for details see Table A4).



Notes for these figures: Marital status: M= married or de facto; O= others

Area: U = urban; LR = large rural; SR = small rural; R = remote

Manage on income: Hi = “it is easy”; Lo = “it is impossible”

Country born: A = Australia; O = other

Smoke/drink: 0 = non-smoker, non- or low-risk drinker; 1 = non-smoker, high-risk drinker; 2 = smoker, non- or low-risk drinker; 3 = smoker, high-risk drinker

PA = Physical Activity

BMI: N = normal; Ov = overweight; Ob = obese

Cross-Sectional Correlates of Depression: Diagnosis of Depression

Given the problems inherent in relying on self-report data, even a well validated measure such as the MH subscale of the SF-36, the analyses reported in the previous section were repeated, this time comparing women who reported having received a diagnosis of depression with those who did not. While there are also likely to be problems with the interpretation of this single item, similar patterns of results would suggest some robustness to the underlying findings. Logistic regression analysis was used to compare two groups of women, first in the Mid-age cohort and then in the Younger cohort.

Figure 10, based on Table A5, shows the results of a logistic regression examining correlates of receiving a diagnosis of depression among the Mid-age cohort, while Figure 11 (based on Table A6) shows the same analysis for the Younger cohort. The data presented are odds ratios. An odds ratio higher than 1.0 indicates that women in that category have an increased likelihood of having a diagnosis of depression.

Among the Mid-age women, correlates of having a diagnosis of depression are similar to correlates of poor MH: diagnosed depression is more likely among those women who are not currently married, who have difficulty managing on their available income, who smoke or drink, and who have many diagnoses and symptoms and visit their GP often. Area of residence (degree of rurality), country of birth, education, employment status, and number of children were not significantly related to a diagnosis of depression.

There is a similar pattern among the Younger women: a diagnosis of depression is most likely among those who are not married or in de facto relationships, and those with major diagnosed illness, high levels of symptoms reporting, and frequent GP visits. Having used illicit drugs in the past 12 months was also associated with depression, but having used illicit drugs less recently than that was not. A number of other variables were included in the analysis but found to be unrelated to diagnosis of depression in the younger cohort. These were educational level; employment status; having a child or children; country of birth; area of residence (degree of rurality); living arrangements (with parents or independently); alcohol use; and level of physical activity.

Figure 10. Odds ratios associated with diagnosis of depression at Survey 2: Mid-age cohort (for details see Table A5).

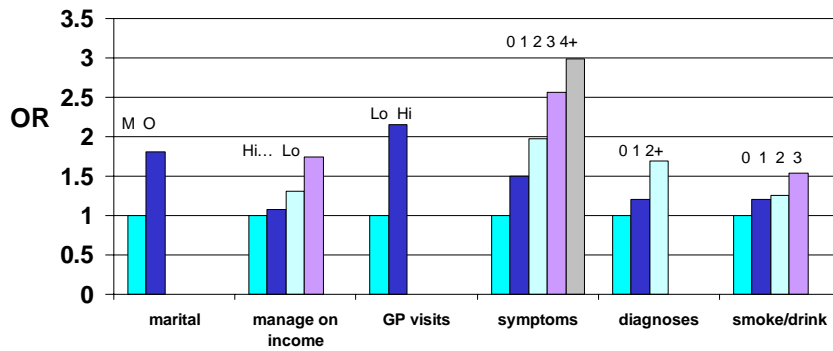
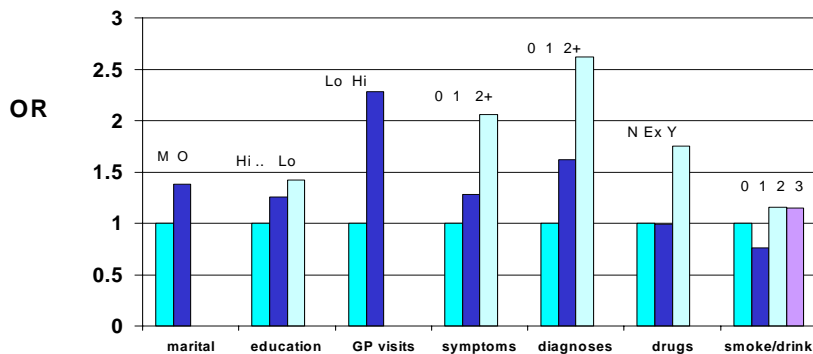


Figure 11. Odds ratios associated with diagnosis of depression at Survey 2: Younger cohort (for details see Table A6).



Notes for these figures: OR = odds ratio

Marital status: M= married or de facto; O= others

Manage on income: Hi = “it is easy”; Lo = “it is impossible”

Smoke/drink: 0 = non-smoker, non- or low-risk drinker; 1 = non-smoker, high-risk drinker; 2 = smoker, non- or low-risk drinker; 3 = smoker, high-risk drinker

Drugs (used recreational drugs): N = never; Ex = previously; Y = in past year

Cross-Sectional Correlates of Anxiety: Diagnosis of Anxiety

While research, policy and intervention frequently focus on depression, other mental health problems also contribute to the burden of morbidity. Anxiety disorders are common among all age groups (see Tables 2, 3 and 4) and there is a suggestion that clinical anxiety may be a precursor of depression. Therefore, the analyses described in the previous section were repeated, this time comparing women who reported having received a diagnosis of anxiety depression with those who did not. Logistic regression analysis was again used to compare two groups of women, first in the Mid-age cohort and then in the Younger cohort.

Figure 12, based on Table A7, shows the results of a logistic regression examining correlates of receiving a diagnosis of depression among the Mid-age cohort, while Figure 13 (based in Table A8) shows the same analysis for the Younger cohort. The data presented are odds ratios. An odds ratio higher than 1.0 indicates that women in that category have an increased likelihood of having a diagnosis of anxiety

Among the Mid-age women, correlates of having a diagnosis of anxiety were almost identical to having a diagnosis of depression: diagnosed anxiety is more likely among those women who are not currently married, who have difficulty managing on their available income, and who have many diagnoses and symptoms and visit their GP often. Cigarette smoking was not a significant factor in this analysis, although it was for depression. A high body mass index (obesity) was associated with *reduced* levels of anxiety. Area of residence (degree of rurality), country of birth, education, employment status, and number of children were not significantly related to a diagnosis of depression.

The pattern for the Younger women is slightly different: marital status and ability to manage on income are not associated with anxiety (while they were associated with depression), and area of residence was associated with anxiety – the more remote a woman’s location, the less likely she was to be diagnosed with anxiety. As for depression, anxiety was associated with major diagnosed illness, high levels of symptoms reporting, frequent GP visits, smoking, and use of illicit drugs.

Figure 12. Odds ratios associated with diagnosis of anxiety at Survey 2: Mid-age cohort (for details see Table A7).

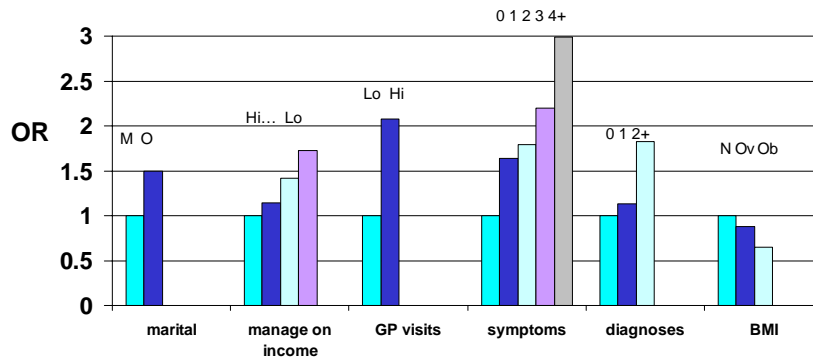
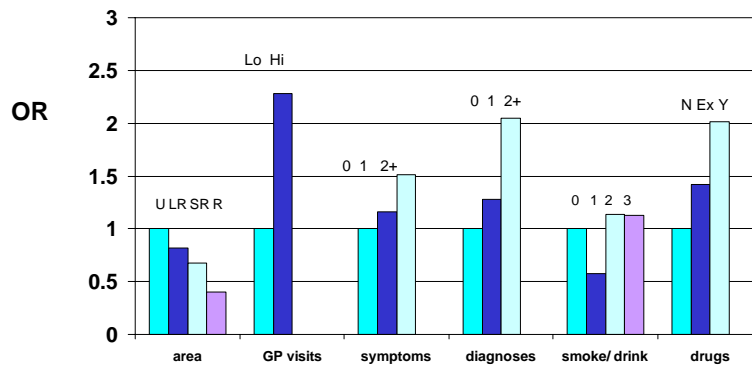


Figure 13. Odds ratios associated with diagnosis of anxiety at Survey 2: Younger cohort (for details see Table A8).



Notes for these figures: OR = odds ratio

Marital status: M= married or de facto; O= others

Area: U = urban; LR = large rural; SR = small rural; R = remote

Manage on income: Hi = “it is easy”; Lo = “it is impossible”

Country born: A = Australia; O = other

BMI: N = normal; Ov = overweight; Ob = obese

Smoke: N = never; Ex = ex-smoker; S = current smoker

Drugs (used recreational drugs): N = never; Ex = previously; Y = in past year

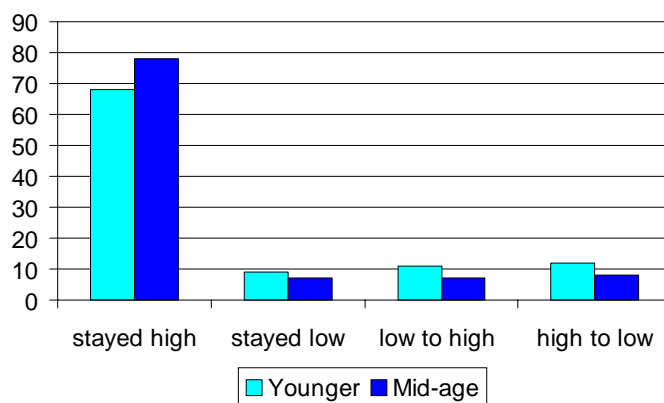
Longitudinal Analysis: Predictors of Stability and Change in SF-36 Mental Health Subscale

Since MH data were available at both Survey 1 and Survey 2, it was possible to look at the degree of stability and change in this variable. At Survey 1, 14% of Mid-age women scored low on MH, while at Survey 2, 15% scored low. For the Younger women, 21% scored low at Survey 1 and 23% at Survey 2.

These data would suggest a strong degree of consistency, but examination of individuals shows changes in both directions. Among the Mid-age women, 7% scored low on both occasions and 78% scored high, but at the same time 8% moved from a high score to a low score and 7% from a low score to a high score. Among the Younger women, 9% scored low on both occasions and 68% scored high, but 12% moved from a high score to a low score and 11% from a low score to a high score.

Figure 14 shows the percentage of women in the Mid-age and Younger cohorts who showed each pattern of stability or change between Surveys 1 and 2: for both age groups, about half of those who had low MH at Survey 1 remained low at Survey 2 (“stayed low”) while the other half scored above the threshold at Survey 2 (“low to high”). However, an approximately equal number scored high at Survey 1 and had moved to low by Survey 2 (“high to low”).

Figure 14. Transitions between high and low MH scores at Surveys 1 and 2: Mid-age and Younger cohorts.



Preliminary analysis including Survey 3 data for the Mid-age women shows that there is considerable movement in and out of the “low MH” category. Figure 15 shows that 73% of the Mid-age women scored 53 or above at all of Surveys 1, 2 and 3 (“stayed high”), while only 4% scored in the “low MH” range at all three surveys (“stayed low”). The other 23% - almost a quarter of all Mid-age women - showed various patterns of change: 16% scored in the “high” category twice and in the “low” category once, while 7% scored “low” twice and “high” once.

Figure 15. Transitions between high and low MH scores at Surveys 1, 2 and 3: Mid-age cohort.

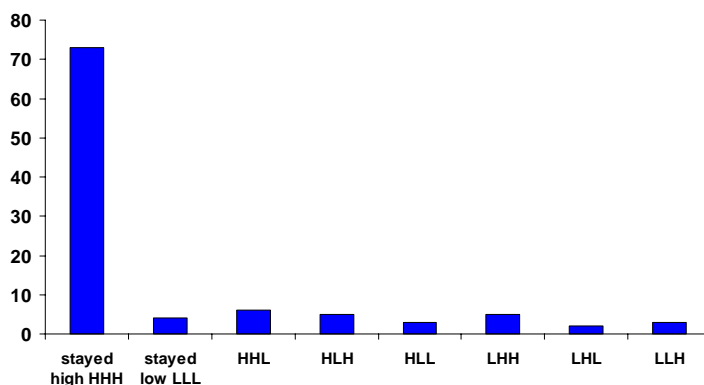


Figure 16, based on Table A9, shows the results of a regression analysis that examines relationships between predictors and change in MH between Surveys 1 and 2 for the Mid-age cohort, while Figure 17 shows the same analysis conducted for the Younger cohort (based on Table A10).

The negative figures for MH change among the Mid-age women (Figure 16) show that MH tended to be slightly lower at Survey 2 than at Survey 1. The decrease in MH was greater for those who reported more difficulty managing on their income, those who smoked and were inactive, those reporting many symptoms, and those who had frequent GP visits. Women of acceptable weight showed the greatest decreases in MH. Marital status, educational level, number of children, country of birth, and language spoken at home were not associated with change in MH for the Mid-age cohort.

The decrease in MH from Survey 1 to Survey 3 and from Survey 2 to Survey 3 was greater for those who reported more difficulty managing on their income, those who smoked and were inactive, those reporting many symptoms, and those who had frequent GP visits as was found for change from Survey 1 to Survey 2 presented in Figure 16 (see Tables A12 and A13).

Among the Younger women (Figure 17), the adjusted means are again negative but quite small. Greater decreases in MH were found for those who were not married or in de facto relationships; not in paid work or study; smokers; physically inactive; and who reported many symptoms; and had many GP visits. Area of residence had a small and inconsistent relationship with change in MH. Those whose parents were in the lowest SES tertile showed a significant drop in MH. Motherhood, educational level, country of birth, and language spoken at home were not associated with change in MH for the Younger cohort.

These data, across the board, support a view of depression or emotional distress as intertwined with poor physical health and unhealthy behaviours such as cigarette smoking and lack of physical activity. They suggest that interventions to improve women's health may need to take into account these interacting patterns. A whole-of-person approach, in which both physical and emotional well-being are considered, appears to be indicated by these data.

Figure 16. Correlates of change in MH score (Survey 1 - Survey 2): Adjusted means for analysis of covariance model with the Mid-age cohort.

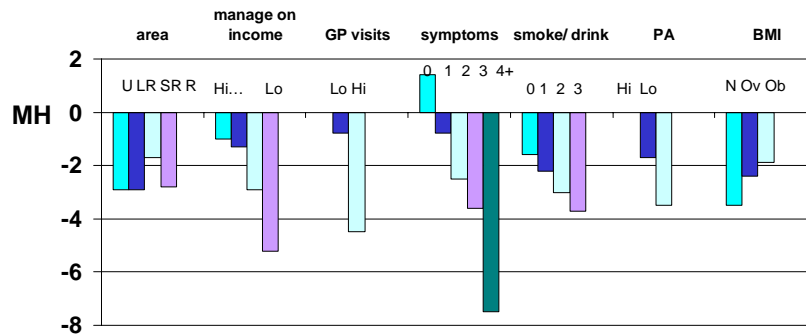
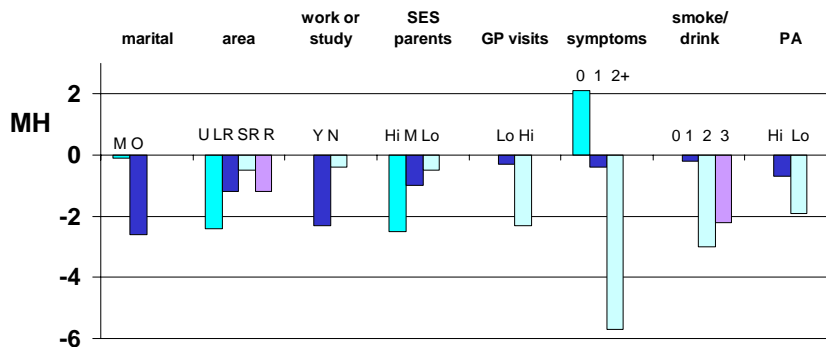


Figure 17. Correlates of change in MH score (Survey 1 - Survey 2): Adjusted means for analysis of covariance model with the Younger cohort.



Notes for these figures: Marital status: M= married or de facto; O= others
 Area: U = urban; LR = large rural; SR = small rural; R = remote
 Manage on income: Hi = “it is easy”; Lo = “it is impossible”
 Country born: A = Australia; O = other
 Smoke/drink: 0 = non-smoker, non- or low-risk drinker; 1 = non-smoker, high-risk drinker; 2 = smoker, non- or low-risk drinker; 3 = smoker, high-risk drinker
 Work or study: Y = work, study or both; N = neither work nor study
 PA: Physical Activity

Correlates, Consistency and Change: What the Data Say

These analyses demonstrate that there is considerable change in depression, as measured by the MH subscale of the SF-36, across time. While the majority of women in both Mid-age and Younger cohorts were not depressed on either Survey 1 or Survey 2, a significant minority met our criterion for depression on at least one occasion. The cross-sectional and longitudinal analyses were consistent in showing that depressed women tended to be those who also reported many symptoms of physical illness. They were more likely than the others to be unmarried (and not in de facto relationships), to have financial problems, and to lead unhealthy lives, with higher levels of smoking, sedentariness and illicit drug use.

The data point to a complex and multifaceted interaction of factors. Within this pattern, causality is difficult to determine. While physical illness and life problems can lead to depression, it is also the case that depression tends to exacerbate the subjective experience of symptoms and to make it more difficult for people to change their life circumstances.

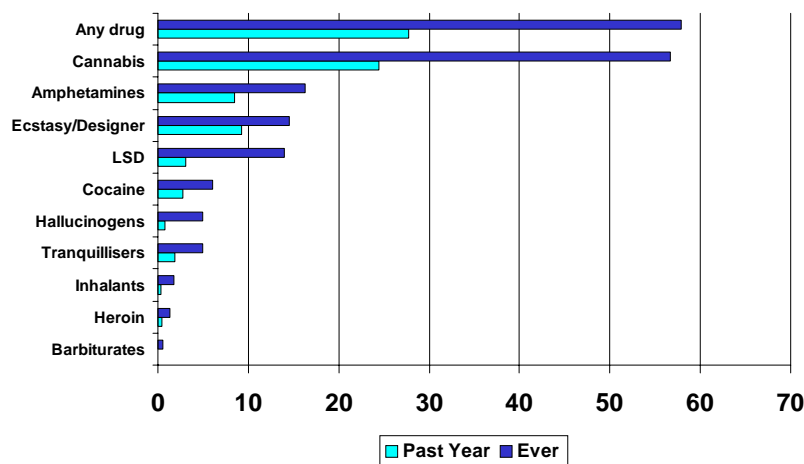
This analysis appears to provide a rather pessimistic picture: depression as part of a complex interplay of variables, many of which are not amenable to straightforward intervention. The next section of this report, however, focuses on the women’s subjective experiences of poor mental health. It paints a picture of depressed women as active agents, searching for solutions to their difficulties, and provides some suggestions for potentially valuable interventions that might alleviate depression.

Recreational Use of Illicit Drugs⁴

There is increasing concern, both in Australia and internationally, regarding the relationship between recreational drug use and mental health. The analyses reported in the previous section have shown strong relationships between smoking (and to a less extent alcohol consumption) and measures of poor mental health, among both the Mid-age and the Younger cohorts.

Survey 2 of the Younger cohort included questions about the use of a range of illicit drugs for recreational purposes. For each of the most commonly used illicit drugs available in Australia, women were asked whether they had ever used it, whether they had used it in the previous 12 months, and their age at first use (see Appendix for more detail). Figure 18, based on Table A14, shows that 59% of the Younger women reported ever having used any illicit drug, and that cannabis was by far the most commonly reported drug. Almost all women who had used any drug had used cannabis.

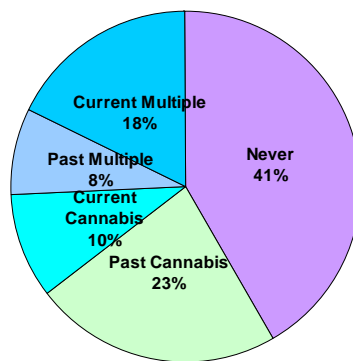
Figure 18: Reported use of illicit drugs in the past year and “ever”: Younger cohort, Survey 2 (for details see Table A14).



Women were classified into five groups: those who reported never having used any drug (41%); those who had used cannabis only, and not in the previous 12 months (23%); those who had used cannabis only, including in the previous 12 months (10%); multiple drug users, not in the previous 12 months (8%); and multiple drug users, including the previous 12 months (18%). Figure 19, based on Table A15, shows that there are more ex-users (31%) than current users (28%), suggesting that for many young women illicit drug use may be a relatively short-term behaviour pattern which is associated with a particular stage of young adulthood.

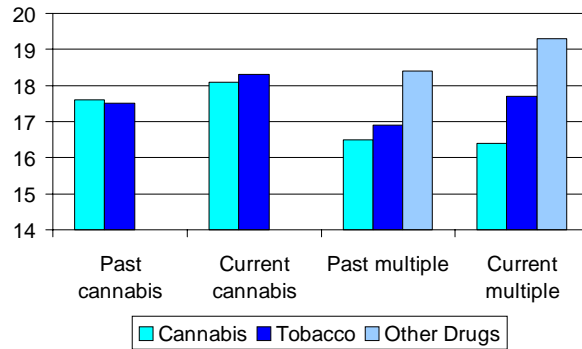
⁴ This work is based on an unpublished manuscript ‘Prevalence of illicit drug use in young Australian women, patterns of use and associated risk factors’ by Turner C, Russell A and Brown W.

Figure 19. Classification of illicit drug use: Younger cohort, Survey 2 (for details see Table A15).



The data on age at first use of drugs, summarised in Figure 20 (based on Table A15), are of interest. Among the two “cannabis only” groups, first cannabis use occurs at approximately the same age as first use of tobacco. By contrast, the two “multiple” drug use groups are characterised by early adoption of cannabis, at around 16 to 17 years of age, around six to twelve months earlier than adoption of cigarette smoking. On average, first use of any drug other than cannabis occurs some years later than first use of cannabis. This provides some support for the “gateway” model of cannabis use, in that it suggests that other drugs are almost exclusively used by women who are already using cannabis. It is, however, important to consider the issue of access to these drugs, in particular the possibility that young women find it easier to obtain cannabis than tobacco.

Figure 20. Reported age at first use of cannabis, tobacco and other drugs: Younger cohort, Survey 2 (for details see Table A15).



Analysis of the correlates of illicit drug use suggests that drug users have some of the same characteristics of women with poor mental health. Figure 21, based on Table A16, shows that current users of cannabis (and no other illicit drugs) are likely to be unmarried, smokers and binge drinkers, who are more likely than others to have been diagnosed with depression. Figure 22, based on Table A16, shows that current users of multiple drugs show similar patterns of odds ratios. A wide range of other demographic and health-related variables, however, did not show significant effects. Current drug users did not differ from others, for example, on education, employment, area of residence, physical symptoms and diagnoses, use of prescription drugs, or health service use.

Figure 21. Odds ratios associated with current use of cannabis only at Survey 2: Younger cohort (for details see Table A16).

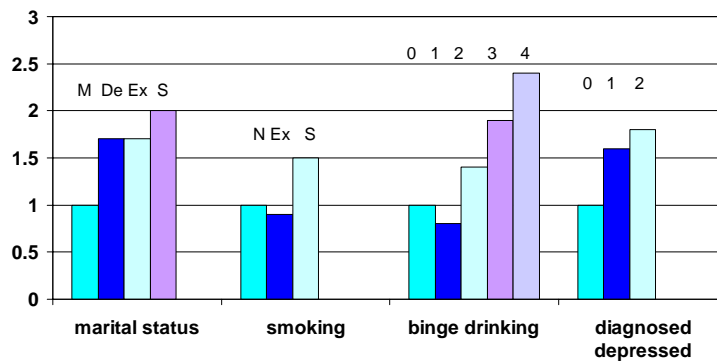
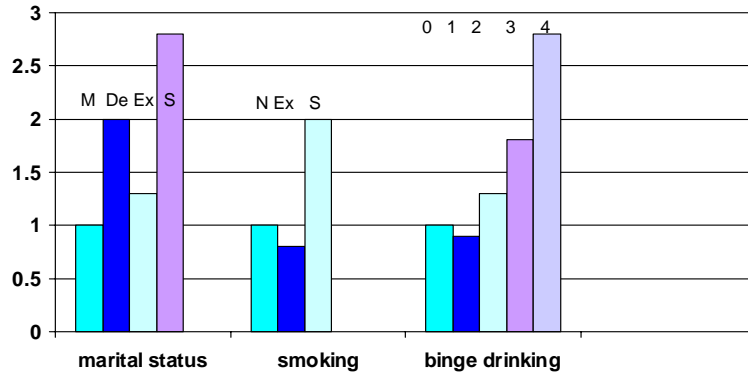


Figure 22. Odds ratios associated with current use of multiple drugs at Survey 2: Younger cohort (for details see Table A16).



Emotional Distress from the Inside: What distressed women say⁵

How women make sense of the experience of emotional distress provides valuable information for the development of appropriate and acceptable services. Distressed women’s experiences, their thoughts and feelings, and the way they talk about depression and help-seeking provide an insight often overlooked from a medical or epidemiological perspective.

“Something crucial is missing. My view is that to really understand a human experience, it must be appreciated *from the subjective point of view of the person undergoing it...* Underneath the rate, correlations and presumed causes of behaviour are real human beings who are trying to make sense of their lives.” (Karp, 1996).

A substudy, conducted as part of a PhD by Sue Outram, provides an insight into the subjective experiences of women with poor mental health and complements the statistical analyses already outlined. 400 Mid-age women living in New South Wales who scored below 53 on the Mental Health subscale (MH) of the SF-36 were interviewed by phone.

The interviews covered the women’s feelings, what they saw as the causes of their psychological distress, reasons for any improvement, and their perceived strengths for coping with emotional distress. 96% of the interviewees recalled a period in the last twelve months when they had been particularly upset, suggesting that a low score on the MH was a sensitive identifier of women with psychological distress.

Description of Feelings

The women used numerous terms to describe their feelings. Being “worried” was the most common feeling, with 25% of women using that word, while 18% said they felt “low” or “down” and 16% described one of the emotions they felt as “anger”.

Interviewees rarely used medical labels for their feelings, and only 22% spontaneously used the word “depressed”. Many did not perceive their experience as a medical illness, despite saying this period was the worst they had felt in their lives. One explained how important it was for her feelings to be accepted by her GP and that she “*didn’t want a label, to be put in a basket.*” Others, however, took comfort in thinking of their distress in medical terms. One woman stated: “*I’m happy to take medication because it (depression) is a form of sickness.*”

- Not all women who meet criteria for distress will identify their feelings as depression, and many will not regard medical intervention as appropriate.

Perceived Causes of Distress

Understanding how women make sense of the causes of their emotional distress is important in providing acceptable and appropriate interventions. While medical experts generally favour biological or psychological explanations, the women in this survey were most likely to perceive the causes of their distress as social or family based.

Most women surveyed had no problem in identifying what they saw as the cause of their distress: by far the most common group of causes were difficulties with family, including

⁵ This work is a summary of sections of Outram, S (2001). *An Exploration Of Psychological Distress In Midlife Australian Women*. Unpublished Doctoral Thesis, University of Newcastle.

partners, children, parents, and in-laws, mentioned by 81% of the women. The popular concept of “empty nest syndrome”, a sense of loss of meaning of life experienced by mothers when their children leave home, was almost entirely absent. Far more common was a high level of worry about children and their wellbeing, which continued well after children had left home. One woman with three adult sons explained, “*they come home to mum, tell me their problems, the littlest things and I stop sleeping, I panic.*”

Other commonly identified causes were poor physical health (34%); problems at work (27%); financial difficulties (13%); and other practical or relationship problems (18%). Difficulties at work included job stress, harassment, overwork, retrenchment and understaffing, but it was more common for women to be distressed about husbands’ work difficulties than their own. Many described circumstances involving many difficulties, often describing combinations of family problems, work or financial problems, and their own ill health. Very few (3%) identified emotional disorders such as anxiety or depression as the cause of their distress.

Half the women interviewed volunteered secondary causes for their distress. The perceived secondary reasons were similar to the general causes, with the addition of the general category of “hormones”, including premenstrual and menopausal symptoms (13%). Many women reported early traumatic childhood experiences of abuse or neglect, but these women did not generally describe it as the cause of their present emotional difficulties.

- Most emotionally distressed women ascribe their feelings to current family, work, financial or relationship problems, or to ill health. Medical or hormonal explanations are uncommon or secondary, and even those women with traumatic childhoods do not believe these to be the cause of their present distress.

Almost all the women interviewed perceived themselves as having strengths for coping with adversity. Perseverance, stubbornness and independence were considered important. The second most common characteristic was a sense of being connected to family, despite the fact that family was also perceived as the most common *cause* of distress. Most women saw themselves as active agents in dealing with their distress.

Almost three-quarters of the interviewees reported feeling better than they had been when they had completed the ALSWH survey around six months previously. Despite improvements in their mental health many did not feel themselves “cured” or “well” and some felt it was probably a “well” period before another period of depression. Most commonly, women felt that it was a change in life circumstances which had improved their feelings. A change in attitude was the second most common attribution for improvement. Women described learning to live with the situation or trying to be positive.

- Those who had improved in mental health ascribed this to their own efforts or to family support, but most feared that improvements were only temporary and expected their depression to return.

Only 8% saw professional assistance as responsible for their recovery from this particular episode of psychological distress and only 12% attributed their improvement to medication. This is despite 66% having sought professional help for that particular period of depression.

Summary

Women with poor mental health:

- generally do not label their problem as “depression”
- generally do not consider it a medical problem
- generally attribute it to family, health or work problems and not to biological or psychological factors
- generally attribute improvements to inner resources and to family support
- generally expect their problems to recur
- generally do not see professional assistance as useful

Seeking Help – Distressed Women’s Experiences⁶

Where and from whom do women experiencing emotional distress seek help, and how do women perceive the help they are given? These questions were also explored in the telephone interviews with depressed women. Most initially sought informal help from family and friends. This was as well as, or instead of, formal consultations with mental health professionals. Only 5% said they had not talked to anyone about their feelings, and most had spoken to more than one category of person.

Informal help

“Talking to someone” was the most common form of informal help, with 77% of women interviewed having spoken to at least one person in their social network about their feelings. Most (68%) spoke to their friends - almost always women - while 63% talked to their partners and 53% to other relatives.

Those who did not talk to friends and family had various reasons. Some described previous incidents where their trust and confidentiality had been broken:

“A friend didn’t keep confidences... information came back to my husband. There’s no one you can trust or confide in.”

Others felt that friends would not understand or be able to help.

“You can’t talk to anyone who hasn’t been through this themselves...”

Some felt that personal matters such as depression were “*better kept within the family.*”

The fact that the majority of women *did* talk to friends rather than family members may reflect the demographic impacts of migration, geographic mobility, small family sizes, and increased family breakdown that reduce the availability of kinship networks. It is notable that 20% of women said they did not have relatives in Australia, and 12% did not have any relatives at all.

63% of all the women interviewed spoke to their partners about their depression, but many were doubtful about the helpfulness of doing so:

“He tries very hard to help but he can’t. I’ve become awfully aware of the differences between men and women. They don’t think they are being heartless but they really have no idea.”

Female relatives were generally considered much more helpful:

“My daughters are my best friends and my sister is the best counsellor you could ever get.”

Those who did not talk to relatives about their difficulties had a range of reasons. A third said they were not close enough emotionally, while a quarter did not want to worry their family::

“It was such a burden on them so I’m inclined not to talk to them about it now.”

- Informal support, generally from female friends, was used by most women. It usually involved supportive listening and was considered helpful.

Professional help

Two-thirds of the women interviewed had talked to a health professional about their most recent period of depression. Most (52%) visited their general practitioner.

⁶ This work is a summary of sections of Outram, S (2001). *An Exploration Of Psychological Distress In Midlife Australian Women*. Unpublished Doctoral Thesis, University of Newcastle.

General Practitioners

Women had very definite ideas about the type of help they did and did not want from their GP. GPs are usually the first professional contact for mental health care, and are often the gateway to specialist psychiatric care.

Most GPs appeared to provide a combination of treatments for depression. 69% of women reported being 'listened to'. Over half were given medication; 12% reported 'referral'. 'Other' responses from GPs, such as helping one woman with an apprehended violence order, and giving praise and encouragement, were also seen as helpful. Therapy was seldom reported, only 6 women reported counselling, while 2 reported relaxation or stress reduction.

Time spent in consultation had the biggest impact on satisfaction:

"(They) just want to shove you in and shove you out – like a sausage maker. If you haven't finished then they make you another appointment and tell you to come back."

A lack of interest in emotional health was highlighted by several women many complaining that their doctor was only interested in physical symptoms.

"GPs can't get you out [the] door quickly enough when it comes to emotions."

Interpersonal skills and a sense of caring are at the heart of satisfaction with GPs. Good communication skills were also linked to an ability to explain causes and treatments of the condition, talents many GPs were said not to have. Access was a problem in rural areas, with long waits for appointments and not enough doctors being common complaints.

Some women did not feel that it was their GP's job to treat psychological distress. These women described this as a speciality area and felt that "ordinary" GPs "were not qualified" or that they "did not have time for this special area."

"The doctor was so awful...(I) wanted sleeping tablets...wanted a referral to a good counsellor. She questioned me for half an hour and told me not to let it get me down."

The majority who voiced dissatisfaction suggested changes in GPs' training to improve their ability to help with mental health concerns.

"I'd like doctors to have more answers rather than just hand out drugs or pass people on to grief counsellors."

Psychiatrists

Nine per cent had visited a psychiatrist in the past 12 months, although 14% had seen a psychiatrist before that. With only four exceptions, who had had good experiences, interviewees were extremely negative about psychiatrists, whom they described as unable to communicate, not interested, not listening, not comfortable to be with, and unable to create a rapport. There were also recurring comments about psychiatrists being "strange" and inappropriate. One woman found "he irritated me; he was condescending." Another woman who had seen three different psychiatrists said: "they all needed more help than I did."

Some women's perceptions of psychiatrists prevented them from communicating adequately. One woman who was seeing a psychiatrist found that "it made me feel ashamed that I could not work it out myself." She explained: "I come from a background where you don't go to psychiatrists. Therapy isn't believed in. I believe in it for others but I can't see how you could get relief by just talking to someone."

A common complaint about psychiatrists was that they did not explain the aims or possible outcomes of the therapy when consulted.

"All they worried about was medication. If I said nothing, they just checked the drugs... Just wanted to give me pills... not involve me in the process."

Medication

Prescribed medications were of concern to many of the interviewees. There was a distrust of psychotropic medicines and a desire for non-drug help. Women were concerned about addiction, unpleasant side-effects, medicines not being 'natural', or *masking* rather than *treating* the problem. 36% had been prescribed medications for depression in the last 12 months, and 16% said this was the only action their GP had taken.

Medication as a first line of treatment for depression was seen as poor care. As one woman said: *"[My] last GP wanted to hand out pills...not interested in emotional problems."* Caring was more likely to be indicated by listening, and perhaps referring on. Many women reported either not adhering to the instructions for taking the medication or not taking them at all.

A few women reported positive experiences of taking prescribed drugs:

"I don't know how I would have coped without them."

Others were more ambivalent:

"I don't like tablets but Prothiadon helps me get through the day...has helped straighten out the jumble."

However, the majority had very negative perceptions of medications. Two themes emerged here, a general dislike of taking medications, and a specific dislike of psychotropic medicines, which covered up problems instead of curing them:

"Only offered sleeping tablets but I wanted to understand why I felt like this."

"I took them for three or four months. I was with the pixies...flushed them down the toilet. It dulls the pain but doesn't solve the problem. In some ways it was worse, you knew in the back of your mind it was counterproductive and you had to solve it."

These comments do not support an image of depressed middle-aged women as passive recipients of medicines. These women shop around for doctors who will provide what they want, and when medicine is prescribed they do not necessarily take it. The majority voiced their unhappiness with the professional treatment of their distress, and insisted on better treatment. One woman explained: *"I said 'listen to me, don't just prescribe tablets'."* Many described changing doctors when they were dissatisfied, although this was more difficult for rural women.

Non-medical professionals

Opposition to prescribed drugs also was associated with decisions to seek help from non-medical mental health professionals. 11% of women had accessed help from psychologists. Women tended to view psychologists, who were seen as *"very human people"*, far more favourably than psychiatrists. However, some had no choice between psychiatrists and psychologists, because of the lack of Medicare cover for psychologists.

Complementary therapists, including naturopaths, therapeutic masseurs, chiropractors, and herbalists, were sought by 15% of interviewees. The type of help given was very diverse, ranging from acupuncture to herbal preparations. The goal of holistic care, the integration of the mind and body, was seen as important:

"Doctors don't look beyond the initial problem. They don't look into why you feel the way you feel."

Other non-medical professionals seen included counsellors (17%), ministers of religion (8%), and social workers/welfare officers (6%). These people were generally regarded as helpful, although rural women voiced dissatisfaction with the length of time they had to wait to talk to a

social worker or welfare officer. The Lifeline telephone line was also widely used. These women explained how they liked not having to wait, as well as the anonymity of the phone.

Perceived barriers to accessing professional help

Lack of anonymity and fears about confidentiality were two important perceived barriers. Some women were of the view that asking for help was inappropriate.

“I’m not the sort of person to talk about private things.”

The belief that one could (or should) cope alone is intertwined with a desire for privacy, embarrassment about disclosure, and fears of negative reactions.

It was also difficult for those who worked in the mental health, medical or welfare fields to seek help from professionals.

“Because I work at the hospital, I felt embarrassed with colleagues and in a small town people look at you as weak if you need counselling.”

Those in rural areas voiced more discontent with professional help, particularly GPs, than urban women did, citing a fear of lack of confidentiality, lack of privacy, and a sense of stigma. Practical barriers were also mentioned, with rural women explaining how they had less choice of GPs, and describing the length of time they had to travel to mental health professionals.

“The one time I did want to go, no one was available. I live in a small town. A private counsellor costs \$75 per hour. I can’t afford that. I’m not a person to run to the doctor. No one in our family does, but if you’ve got something you need them.”

Summary

Women with poor mental health sought help:

- informally, predominantly from *female* members of their social network
- formally, predominantly from their GP
- increasingly from outside the traditional medical mental health field, for example from complementary therapists and self-help groups
- generally with the aim of understanding what was happening to them and why they were depressed

Women with poor mental health generally perceive:

- help from friends and relations as more helpful than from partners
- practical help and relaxation techniques as more beneficial than other types of help, despite being less available
- being prescribed medication by mental health professionals without also being talked to and understood as poor care
- themselves as active agents, not patients, in their help-seeking
- GPs as not experienced enough in treating mental health problems
- medical professionals as not interested in emotional symptoms
- psychiatrists as unhelpful and peculiar
- psychologists as helpful but difficult to access, with lack of Medicare coverage a barrier
- fear of ‘stigma’ and worry about being a burden as the main barriers to accessing informal help
- fear of lack of privacy and the need for self reliance as the main barriers to accessing professional help

Rural women with mental health problems described notably more barriers to accessing help than urban women.

Intersections with Other Data Sources

ALSWH provides one source of data on mental health, and can usefully be seen in conjunction with other surveys. Table 6 outlines major Australian surveys which have had a substantial mental health emphasis. It outlines the measures used, the sampling frame, and the sample size. References to all published scales appear at the end of this section. Several of these surveys (most notably the National Health Survey) have been repeated on a number of occasions, and details are provided for all surveys since 1988. This repetition does enable researchers to explore general population trends on significant variables, but it is important to distinguish the conduct of repeated cross-sectional surveys from a true longitudinal design. Surveys such as NHS collect similar data on several occasions, but do not sample the same individuals and do not permit any analysis of how individuals have changed and what factors might be associated with this change. ALSWH is a “true” longitudinal survey, in which the same individuals are tracked across time and longitudinal analysis is possible.

Table 6. Sources of Data on Mental Health: Major Australian Surveys

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
1997 National Survey of Mental Health and Well-being in Adults (SMHWP) (Adult Component)	ABS In collaboration with: Commonwealth Department of Health and Family Services (Now Department of Health and Ageing (DoHA))	CIDI 2.1 ⇒ Composite International Diagnostic Interview (endorsed by WHO)	Standardised interview used to assess mental disorders according to the definition and criteria of ICD-10 and DSM-IV	10,641 respondents (78% response rate), aged over 18 years of age, from a representative sample of residents of private dwellings (1 respondent per household) in all States and Territories. (Excluding institutions and dwellings in remote/sparsely populated areas) Survey conducted using Census and Statistics Act (1905).
		GHQ-12 ⇒ General Health Questionnaire	Symptom checklist: including self-reported mental health status to determine minor psychiatric disturbances.	
		SF-12 ⇒ Medical Outcomes Study 12-Item Short form Survey	Self-assessed well-being: •Mental Component Summary (MCS) •Physical Component Summary (PCS) (Short form of SF-36)	
		K10 ⇒ Kessler Psychological Distress Scale-10	10-item scale of current psychological distress: low; moderate; high; very high. Based on negative emotional states in the past 4 weeks	

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
1997 National Survey of Mental Health and Well-Being (SMHWB) (Child and Adolescent component)	ABS In collaboration with: Commonwealth Department of Health and Ageing (DoHA)			4,500 children and young people (participation rate 86%), aged 4-17, recruited through a random selection of households in rural and urban areas. (Excludes homeless and those in institutions).
		CHQ ⇒ Child Health Questionnaire	Assess degree of disability	Completed by parents of children aged 6-17
		DISC-IV ⇒ Diagnostic Interview Schedule for Children, version IV (Similar to DSM-III-R)	Identify more than 30 mental disorders that occur in children and adolescents	Face to face interview with parents of all children aged 6-17
		CBC ⇒ Child Behavior Checklist Scale	Identify mental health problems	Information obtained from parents of all children and adolescents
		Youth Self-Report	Identify mental health problems	Information obtained from adolescents aged 13-17
		CHQ ⇒ Child Health Questionnaire (Adolescent version)	Assess degree of disability	
		Health Risk Behavior Questionnaire	Information about health risk behaviour	

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
<p>1998 National Survey of Low Prevalence Mental Disorders (Psychotic Illness component)</p>	<p>ABS In collaboration with: Commonwealth Department of Health and Ageing (DoHA)</p>	<p>DIP ⇒ Diagnostic Interview for Psychosis (Developed specifically for this survey) (Based on: DSM-III-R and ICD-10)</p>	<p>Semi-structured interview including:</p> <ul style="list-style-type: none"> •CIDI •Psychosis Screening Questionnaire (PSQ) •World Health Organization Disability Assessment Schedule (WHO/DAS) •Operational criteria for Psychosis (OPCRIT) 90-item checklist •World Health Organization Schedules for Clinical Assessment in Neuropsychiatry (SCAN) 	<ul style="list-style-type: none"> •Census of 3,800 participants, aged 18-64 years, from 4 screening areas – ACT, QLD, VIC, and WA urban areas – including all institutions and service providers, in order to identify those with psychotic disorders •In-depth interview with 980 respondents identified as having psychotic disorders by the above census

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
1993 to present Longitudinal Survey of Immigrants to Australia (LSIA)	The Department of Immigration and Multicultural Affairs (DIMA)	GHQ-12 ⇒ General Health Questionnaire	Symptom checklist: including self-reported mental health status determining minor psychiatric disturbances	PA (Primary Applicant) immigrants and their spouses interviewed 3 times: 6 months, 18 months and 42 months after arrival in Australia <ul style="list-style-type: none"> •LSIA1: PA who arrived Sept 1993-Aug 1995 (3,618 participants) •LSIA2: PAs who arrived Sept 1999-Aug 2000 (still in progress)
2001 Australian National Health Survey (NHS)	ABS	K10 ⇒ Kessler Psychological Distress Scale-10	10-item scale of current psychological distress: low; moderate; high; very high. Based on negative emotional states in the past 4 weeks	26,900 participants, across all age groups, representing a random sub-sample of the usual residents of 17,918 private and non-private dwellings from all States and Territories (Excludes homeless and those in institutions)
		Special social survey (Based on: ICD-10, ICD-9)	Including: <ul style="list-style-type: none"> •Indicators of health status •Health-related actions taken •Health risk factors •Supplementary women’s health items •Demographic and socio-economic characteristics 	

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
1995 Australian National Health Survey (NHS)	ABS	SF-36 ⇒ Medical Outcomes Study 36-Item Short form Survey	Self-reported Quality of life scale comprising of: -8 dimensions on physical & mental health -2 component scales: •Mental Component Summary (MCS) •Physical Component Summary (PCS)	53,828 participants, across all age groups, representing a random sub-sample of the usual residents of 24,000 private and non-private dwellings from all States and Territories (Excludes homeless and those in institutions).
		Special social survey (Based on: ICD-9)	Including: •Indicators of health status •Health-related actions taken •Health risk factors •Supplementary women’s health items •Demographic and socio-economic characteristics	
1989-90 Australian National Health Survey (NHS)	ABS	Special social survey (Based on: ICD-9)	Including: •Indicators of health status •Health-related actions taken •Health risk factors •Supplementary women’s health items •Demographic and socio-economic characteristics	54,241 participants, across all age groups, representing a random sub-sample of the usual residents of 22,200 private and non-private dwellings from all States and Territories (Excludes homeless and those in institutions).

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
1998 Survey of Disability, Ageing and Carers (SDAC)	ABS	Special social survey (Based on: ICD-10 and ICDH)	Including: <ul style="list-style-type: none"> •Disability status & conditions •Severity of restriction: profound, severe, moderate, mild •Need for & receipt of care • Socio-demographic factors •Availability of training & support for carers •Impact on carers 	<ul style="list-style-type: none"> •37,000 participants - Household component: all usual residents of 15,700 private & non-private dwellings (Excludes some remote or sparsely populated areas) •5,700 participants - Cared Accommodation component from 800 Cared Accommodation Establishments - mailback forms completed by staff member Dwellings randomly selected from rural and urban areas across all States and Territories
		SF-12 ⇒ Medical Outcomes Study 12-Item Short form Survey	Self-assessed well-being: <ul style="list-style-type: none"> •Mental Component Summary (MCS) •Physical Component Summary (PCS) (Short form of SF-36) 	Completed by those participants with a disability who were interviewed in person (not by proxy)

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
<p>1993 Survey of Disability, Ageing and Carers (SDAC)</p>	<p>ABS</p>	<p>Special social survey (Based on: DSM-IV, ICD-9 and ICIDH)</p>	<p>Including:</p> <ul style="list-style-type: none"> •Disability status & conditions •Severity of restriction: profound, severe, moderate, mild •Need for & receipt of care • Socio-demographic factors •Availability of training & support for carers •Impact on carers 	<ul style="list-style-type: none"> •42,060 participants - Household component: all usual residents of 15,717 private & non-private dwellings (Excludes some remote or sparsely populated areas) •4,816 participants - Cared Accommodation component from 512 Cared Accommodation Establishments - mailback forms completed by staff member <p>Participants randomly selected from rural and urban areas across all States and Territories</p>

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
1996 to present Australian Longitudinal Study on Women’s Health (ALSWH)	Commonwealth Department of Health and Ageing (DoHA)	SF-36 ⇒ Medical Outcomes Study 36-Item Short form Survey	Self-reported Quality of life scale comprising of: -8 dimensions on physical & mental health -2 component scales: •Mental Component Summary (MCS) •Physical Component Summary (PCS)	3 age cohorts •Younger cohort: 14,792 participants aged 18-23 years in 1996 •Mid cohort 14,200 participants aged 45-50 years in 1996 •Old cohort 12,624 participants aged 70-75 years in 1996 Participants randomly selected from Medicare database Each cohort surveyed every 3 years for 20 years
		CESD-10 ⇒ The Center for Epidemiologic Studies Depression Scale (10 item version)	Self-report screening measure for depression	
		GADS ⇒ Goldberg Anxiety & Depression Scale	Comprises: •Goldberg Depression Scale •Goldberg Anxiety Scale	
		Specific symptoms and Help-seeking (Questions developed specifically for ALSWH)	Item in survey about symptoms experienced never/rarely/sometimes/ often in past 12 months, plus help-seeking for each item: •Difficulty sleeping •Depression •Intense anxiety/panic attacks	
Cont...	Cont...			Cont...

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
Cont...	Cont...	Stress	Item in survey	Cont...
1996 to present Australian Longitudinal Study on Women’s Health (ALSWH)	Commonwealth Department of Health and Ageing (DoHA)	(Questions developed specifically for ALSWH)		3 age cohorts •Younger cohort: 14,792 participants aged 18-23 years in 1996 •Mid cohort 14,200 participants aged 45-50 years in 1996 •Old cohort 12,624 participants aged 70-75 years in 1996 Participants randomly selected from Medicare database Each cohort surveyed every 3 years for 20 years
		Medications	Item in survey about use of medications in past 4 weeks: •For “nerves” •For sleeping difficulties •For depression	
		Diagnoses	Item in survey asking about medical diagnoses: •Postnatal depression •Depression (other than postnatal) •Anxiety disorder •Other psychiatric disorder	
		Optimism: approach to life	Item in survey: Measure of psychological resilience	
		Life not worth living and Self-harm	Single item in survey	
		(Questions modified from ABS 1989-1990 NHS)		
		(Questions modified from Scheier et al. 1994)		
		(Questions modified from Beck et al. 1974)		

SURVEY	MANAGING BODY	TYPE OF MEASURE	DESCRIPTION	SAMPLE
1999 to present PATH Through Life Project, longitudinal study	ANU (NCEPH and the Division of Molecular Medicine at the John Curtin School of Medical Research)	K10 ⇒ Kessler Psychological Distress Scale-10	10-item scale of current psychological distress: low; moderate; high; very high. Based on negative emotional states in the past 4 weeks	3 age cohorts • 2,500 participants aged 20-24 years in 1999 • 2,500 participants aged 40-44 years in 1999 • 2,500 participants aged 60-64 years in 1999 Participants randomly selected from the Electoral Rolls of Canberra and Queanbeyan Each cohort surveyed every 4 years for 20 years
	In collaboration with: CSIRO Division of Human Nutrition	SF-12 ⇒ Medical Outcomes Study 12-Item Short form Survey	Self-assessed well-being: Short form of SF-36 specifically assessing Mental Component Summary (MCS)	
	The National Centre for Epidemiology and Population Health	GADS ⇒ Goldberg Anxiety & Depression Scale	Comprises:: • Goldberg Depression Scale • Goldberg Anxiety Scale	

Acronyms and Abbreviations

ABS	Australian Bureau of Statistics
ALSWH	Australian Longitudinal Study on Women’s Health
ANU	Australian National University
CIDI	Composite International Diagnostic Interview
DoHA	Commonwealth Department of Health and Ageing
DSM-III-R	Diagnostic and Statistical Manual of Mental Disorders – Third Edition – Revised
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition
GHQ	General Health Questionnaire
ICD-9	WHO International Classification of Disease – 9th Edition
ICD-10	WHO International Classification of Disease – 10th Edition
ICIDH	WHO (1980) International Classification of Impairments, Disabilities and Handicaps
NCEPH	National Centre for Epidemiology and Population Health
NHS	National Health Survey
WHO	World Health Organization

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APPENDIX

Measures, statistical methods and tables used for ‘correlates, consistency and change in Mental Health’ section

Measures

All measures for the Younger and Mid-aged cohorts from Survey 1 (S1; 1996 for all cohorts), Survey 2 (S2; Mid-age cohort-1998, Younger cohort-2000) and Survey 3 (S3; Mid-age cohort only-2001) were the same unless otherwise stated. Categories, frequencies and percentage missing for each categorical variable used in analysis are presented in Table A1 (Mid-age women, S2), Table A2 (Younger women, S2) and Table A11 (Mid-age women, S3).

Mental Health

Scores on the Mental Health subscale of the SF-36 (referred to here as MH) were classified as ‘low MH’ if they were less than 53 and ‘high MH’ if they were 53 or more. The change from S1 to S2 (and from S2 to S3 and from S1 to S3 for the Mid-Age cohort) was defined in two ways- using categories of high and low MH, and as a continuous measure. For the categorical form, change was classified as ‘stayed high’; ‘changed from high to low’; ‘changed from low to high’; ‘stayed low’. For the continuous form, change was calculated as MH at S2 minus MH at S1.

Women were asked ‘Have you ever been told by a doctor that you have?’ - ‘depression’ (both cohorts), ‘an anxiety disorder’ (Younger cohort) or ‘anxiety’ (Mid-age cohort). Response options were ‘yes in the last 4 years’ or ‘yes, more than 4 years ago’ for the Younger cohort and ‘yes in the last 2 years’ or ‘yes, more than 2 years ago’ for the Mid-age cohort. For each cohort the two response options were combined and women were classified as ‘ever’ or ‘never’ been diagnosed by a doctor as having depression or anxiety.

Sociodemographic characteristics

Area of residence (based on postcode in survey) was classified as ‘urban areas’; ‘large rural centres’; ‘small rural centres/other rural’; ‘remote areas’, based on population density and distance to large population centres (Department of Primary Industries and Energy, Department of Human Services and Health, 1994).

Marital status was classified as ‘married/defacto’ and ‘other’. ‘Other’ included ‘separated’, ‘divorced’, ‘widowed’, ‘never married’.

Country of birth was classified as ‘Australia’; ‘Other’.

Mid-age women were asked ‘How do you manage on the income you have available?’. Response were classified as ‘impossible/difficult all of the time’; ‘difficult some of the time’; ‘not too bad’; ‘easy’. Younger women were asked their average weekly income. Response options were: no income; \$1-119, \$120-\$299; \$300-\$499; \$500-\$699; \$700-\$999; \$1000-\$1499; \$1500 or more; don’t know; don’t want to answer. Response options were combined due to small numbers as ‘\$700 or more’; ‘\$500-\$699’; ‘\$120-\$499’; ‘\$1-\$119, no income, don’t know or don’t want to answer’.

Inclusion of ‘don’t know’ and ‘don’t want to answer’ in the lowest category did not change the point estimates but enabled us to retain more participant in the analyses.

Women were asked ‘What is the highest qualification you have completed?’. For the Younger cohort highest educational qualification was classified as ‘no formal qualifications, Year 10/Year12’; ‘trade, apprentice, certificate or diploma’; ‘university degree’; only Survey 2 data were used in the analysis as many of the Younger women were still full-time or part-time students at Survey 1. For the Mid-age cohort highest educational qualification was classified as ‘no formal qualifications’; ‘Year 10, Year12’; ‘trade, apprentice, certificate or diploma’; ‘university degree’.

For the Younger cohort work status was classified as ‘no work’; ‘work only/work-study’ and study status was classified ‘no study’; ‘study only, work-study’ based on responses to items about time spent working or studying. Living with family of origin was classified ‘do not live with parents’ or ‘live with parents’ for the Younger cohort.

Socioeconomic status of parents was calculated as the unweighted sum of the items: main occupation-Mother, main occupation-Father, highest educational qualifications-Mother and highest educational qualifications-Father. Codes for main occupation of Mother and Father were ‘0=No paid job, don't know, not applicable, missing’, ‘1=Elementary clerical/ labourer’, ‘2=Intermediate clerical/ transport/ production’, ‘3=Associate-professional/ trade/ advanced clerical’, ‘4=Manager/professional’. Codes for highest educational qualification of Mother and Father were ‘0=Don't know, not applicable’, ‘1= No formal, Year 10’, ‘2= Year 12’, ‘3=Trade, apprenticeship, certificate, diploma’, ‘4=University degree’. The total score for socioeconomic status of parents was then classified into three approximately equal sized groups ‘low’ (≤ 8), ‘medium’ (9-12); ‘high’ (≥ 13).

At Survey 2 women in the Mid-age cohort were asked about their main employment status. Employment status was classified ‘full-time work’; ‘part-time work’; ‘no paid work’. Those with no paid work included women who were students, unemployed, retired, unable to work due to sickness or injury or did work without pay (e.g. in a family business), unpaid voluntary work or home duties.

At Survey 3 for the Mid-age cohort, hours work per week (including full-time, part-time and casual paid work, and work without pay) were aggregated and classified as ‘None’, ‘1-34 hours’, ‘35 to 40 hours’ or ‘41 hours or more’.

Health behaviours

At Survey 2 the Younger cohort were asked about use of illicit drugs. Illicit drug use was classified as ‘never used illicit drugs’; ‘used illicit drugs over 12 months ago’; ‘used illicit drugs in the last 12 months’.

Women in the Younger cohort were asked how many times they had consulted a general practitioner (GP) in the last 12 months and how many times they had consulted specialist doctor in the last 12 months for ‘pap tests, contraception, routine pregnancy checks’ and ‘all other reasons’ separately. For GP and specialist visits separately, the number of visits for ‘pap tests, contraception, routine pregnancy checks’ and ‘all other reasons’ were combined. Women in the Mid-age cohort were asked how many times they had consulted a family doctor and how many times they had consulted a specialist doctor in the last 12 months. For both cohorts the number of GP visits was classified as ‘0-4 times’ or ‘5 or more times’ and the number of specialist visits was classified as ‘None’ or ‘1 or more’.

For Younger women parity was defined as the number of live births they had had and was classified as ‘none’ or ‘one or more’. For Mid-age women parity was defined as the number of times they had given birth to a child and was classified as ‘none’, ‘one’, or ‘two or more’.

Standard questions were asked about smoking and alcohol drinking behaviour. Smoking status was categorized as ‘never smoked’; ‘ex-smoker’; ‘smoker, less than 10 per day’; ‘smoker, 10-19 per day’; ‘smoker, 20 or more per day’. Women who had never smoked or were ex-smokers were categorized together as ‘current non-smokers’. Alcohol binge status was categorized as ‘non/rare drinker’; ‘low risk without binge’; ‘low risk with binge’; ‘intermediate/high risk’; ‘very high risk binge’. Smoking status and alcohol binge status were combined and some categories were collapsed due to small numbers. Smoking/drinking status was classified as ‘non-smoker—non-low risk (without binge) drinker’; ‘non-smoker—low-high risk (with binge) drinker’; ‘current smoker—non-low risk (without binge) drinker’; ‘current smoker—low-high risk (with binge) drinker’. The alcohol binge drinking questions were not asked at Survey 3 for the Mid-age cohort and smoking status was classified as ‘never smoked’; ‘ex-smoker’; ‘current smoker’.

Women were asked about the duration of time spent walking and doing moderate and vigorous physical activities during the last week. Responses to these questions were used to derive a physical activity score, by multiplying the total time in minutes for each category of activity by a generic MET value which represents the energy expenditure of activities in that category, then summing the resulting MET.mins for the three categories of walking, moderate and vigorous activity. The MET values for walking (3.5), moderate (4.0) and vigorous (7.5) activities were based on published values of these types of activities (14). For the purpose of categorization, the MET.mins equivalent of moderate activity for 30 minutes, 5 times per week (4 METs x 150 mins=600 MET.mins) was used as the threshold for categorizing women as ‘active’ (≥ 600 MET.mins) or ‘inactive’ (< 600 MET.mins).

Women were asked to report their height and weight, from which Body Mass Index (BMI) was calculated ($\text{weight (kg) / height}^2$ (m^2)). For Mid-age women BMI was classified as ‘underweight/acceptable weight’ (BMI $<$ 25); ‘overweight’ (BMI 25-29.99); ‘obese/very obese’ (BMI 30 or more). For Younger women BMI was classified as ‘underweight’ (BMI $<$ 20); ‘acceptable weight’ (BMI 20-24.99); ‘overweight’ (BMI 25-29.99); ‘obese/very obese’ (BMI 30 or more).

Self-rated health

Women were asked ‘Have you ever been told by a doctor that you have?’ (followed by a list of diagnoses). There were 16 conditions (excluding depression, anxiety and other psychiatric disorder) for the Mid-age cohort and 18 conditions (excluding depression (not postnatal), postnatal depression and anxiety) for the Younger cohort. The total number of diagnoses was categorized as: 0, 1, 2 or more.

Women were asked to report the frequency of symptoms (from a prescribed list) experienced in last 12 months. Response options were ‘never’; ‘rarely’, ‘sometimes’ or ‘often’ for each symptom. A symptom score was defined as the number symptoms that the participant reported to have ‘often’. For the Mid-age cohort there were 24 symptoms (excluding difficulty sleeping, depression and anxiety) and the number of symptoms was classified as 0, 1, 2, 3, 4 or more. For the Younger cohort there were 15 symptoms (excluding difficulty sleeping, depression and episodes of intense

anxiety (e.g. panic attack)) and the number of symptoms was classified as 0, 1, 2 or more.

Statistical methods

All statistical analyses were performed using SAS Version 8.02 and were conducted separately for the Mid-age and Younger cohorts. Tests of association between change in MH categories, MH categories at Survey 1, MH categories at Survey 2 and ‘diagnosed by a doctor as having depression’, and ‘diagnosed by a doctor as having anxiety’ were conducted using the Chi-square statistic in the SAS frequency procedure.

The glogit option in the SAS logistic procedure was used to perform binary logistic regression analyses to examining the relationship between the dependent variable ‘diagnosed by a doctor as having depression’ and each explanatory variable (including sociodemographic characteristics, health behaviours and self-rated health). The ‘never’ and ‘ever’ responses served as the reference and risk categories, respectively. All explanatory variables were treated as having nominal categories with reference and risk categories as denoted in the tables. For the binomial logistic regression models the SAS logistic forward selection procedure was used to select explanatory variables for inclusion with a significance level of 0.005 required for inclusion in the model. To minimize missing data after the forward selection of variables the final model was run containing only those variables which had been selected. This procedure was also used to examine the relationship between the dependent variable ‘diagnosed by a doctor as having anxiety’ and the explanatory variables.

The SAS REG procedure was used to perform multiple regression with MH at Survey 2 (treated as a continuous variable) the dependent variable and all explanatory variables as the covariates. The SAS REG procedure was also used to perform multiple regression with change in MH (treated as a continuous variable) as the dependent variable, MH at Survey 1 and all explanatory variables as the covariates. All explanatory variables in each model were treated as ordinal except for MH at Survey 1 (treated as a continuous variable) and employment status for the Younger cohort (treated as a nominal variable using indicator variable coding). A forward selection procedure was used to select explanatory variables for inclusion in the models with a significance level of 0.005 required for inclusion in the model. Once a final model was selected the LSMEANS option in the SAS GLM procedure was used to produce adjusted means and 95% confidence intervals. Multiple pair-wise comparisons between mean change in MH adjusting for all other covariates was conducted for each variable selected in the final model. A significance level of 0.005 for each pair-wise comparison was set. No other adjustment was made for multiple comparisons.

Tables

Table A1. Mid-age women: Variables used in Figures 8, 10, 12 and 16. Results for women who completed Survey 1 (S1) and Survey 2 (S2), N=11648. Variables other than mental health (MH) are from Survey 2 unless they were not expected to change over time (for example, country of birth).

Variable	Categories	N	%	% missing
Mental Health				
MH S1 - two categories	High MH (53 or more)	9933	85.9%	
	Low MH (less than 53)	1629	14.1%	0.7%
MH S2 - two categories	High MH (53 or more)	9841	84.8%	
	Low MH (less than 53)	1768	15.2%	0.3%
MH change from S1 to S2	Stayed high	8947	77.6%	
	Changed from high to low	954	8.3%	
	Changed from low to high	837	7.3%	
	Stayed low	787	6.8%	1.1%
Dr diagnosed depression	Never	9631	82.7%	0.0%
	Ever	2017	17.3%	
Dr diagnosed anxiety	Never	10089	86.6%	
	Ever	1559	13.4%	0.0%
Sociodemographic				
Marital status	Married/defacto	9580	82.8%	
	Never married, separated, widowed, divorced	1988	17.2%	0.7%
Education	University degree	1677	14.5%	
	Trade/apprentice/certificate/diploma	2301	19.9%	
	Year 10/12	5616	48.6%	
	No formal qualifications	1955	16.9%	0.8%
Employment status	Full-time work	4397	38.4%	
	Part-time work	2288	20.0%	
	No paid work	4772	41.7%	1.6%
Country of birth	Australia	8850	76.8%	
	Other	2672	23.2%	1.1%
Area of residence	Urban area	4258	37.0%	
	Large rural centre	1607	14.0%	
	Small rural centre/other rural	5006	43.5%	
	Remote areas	648	5.6%	1.1%

Variable	Categories	N	%	% missing
Manage on income	Easy	1746	15.2%	
	Not too bad	4645	40.4%	
	Difficult some of the time	3378	29.4%	
	Impossible/difficult all the time	1730	15.0%	1.3%
Health Behaviours				
GP visits	Zero to four times	8580	74.2%	0.8%
	Five or more times	2978	25.8%	
Specialist visits	None	6793	60.0%	2.7%
	One or more times	4536	40.0%	
Parity	No births	895	8.1%	
	One or two births	5261	47.5%	
	Three or more births	4911	44.4%	5.0%
Smoking and Alcohol	Non-smoker—non-low risk (without binge) drinker	8368	73.1%	
	Non-smoker—low-high risk (with binge) drinker	1132	9.9%	
	Current smoker—non-low risk (without binge) drinker	1397	12.2%	
	Current smoker—low-high risk (with binge) drinker	551	4.8%	1.7%
PA category	Active (MET.mins >=600)	5728	51.0%	
	Inactive (MET.mins <600)	5498	49.0%	3.6%
BMI category	Underweight/acceptable	5184	48.9%	
	Overweight	3265	30.8%	
	Obese/very obese	2153	20.3%	9.0%
Self-reported health				
Number of diagnoses (excluding symptoms related to mental health)	None	4599	39.5%	
	One	3894	33.4%	
	Two or more	3155	27.1%	0.0%
Number of symptoms (excluding symptoms related to mental health)	None	3429	30.9%	
	One	2381	21.4%	
	Two	1779	16.0%	
	Three	1306	11.8%	
	Four or more	2216	19.9%	4.6%

Table A2. Younger women: Variables used in Figures 9, 11, 13 and 17. Results for women who completed Survey 1 and Survey 2, N=9600. Variables other than MH and country of birth were from Survey 2.

Variable	Categories	N	%	% missing
Mental Health				
MH S1 - two categories	High MH (53 or more)	7622	79.5	
	Low MH (less than 53)	1962	20.5	0.1%
MH S2 - two categories	High MH (53 or more)	7617	76.6	
	Low MH (less than 53)	1951	20.4	0.3%
MH change from S1 to S2	Stayed high	6513	68.2	
	Changed from high to low	1081	11.3	
	Changed from low to high	1093	11.4	
	Stayed low	866	9.1	0.4%
Dr diagnosed depression	Never	8175	86.1%	
	Ever	1323	13.9%	1.0%
Dr diagnosed anxiety	Never	8934	94.1%	
	Ever	564	5.9%	1.1%
Sociodemographic				
Marital status	Married, defacto	4311	45.1	
	Never married, separated, widowed, divorced	5241	54.9	0.4%
Education	University degree	3734	40.4	
	Trade, apprentice, certificate, diploma	2244	24.3	
	No formal, Year 10/12	3273	35.4	3.0%
Country of birth	Australia	8856	92.8	
	Other	683	7.2	0.5%
Live with family of origin	Do not live with parents	7001	74.5	
	Live with parents	2395	25.5	1.8%
Residence	Urban area	5583	60.5	
	Large rural centre	939	10.2	
	Small rural centre/other rural	2319	25.1	
	Remote areas	387	4.2	3.2%
Work	No work	1466	15.3	
	Work/ work-study	8096	84.7	0.4%
Study	No study	6869	71.8	
	Study/ work-study	2693	28.2	0.4%

Variable	Categories	N	% % missing	
Socioeconomic status of parents	Low	3221	35.0	
	Medium	3178	34.6	
	High	2797	30.4	4.2%
Income	\$700 or more/wk	1664	17.8	
	\$500-\$699/wk	2704	28.9	
	\$120-\$499/wk	3498	37.4	
	\$0-\$119/wk, don't know or want to answer	1496	16.0	2.5%
Health Behaviours				
GP visits (all gynaecological and other reasons)	None to Six	6058	68.4%	
	Seven or more	2801	31.6%	7.7%
Parenthood	Not parent	7801	81.3	
	Parent	1799	18.7	0.0%
Smoking and Alcohol	Non-smoker—non-low risk (without binge) drinker	4993	53.9%	
	Non-smoker—low-high risk (with binge) drinker	1774	19.1%	
	Current smoker—non-low risk (without binge) drinker	1312	14.2%	
	Current smoker—low-high risk (with binge) drinker	1192	12.9%	3.4%
PA category	Active (MET.mins >=600)	5193	55.1	
	Inactive (MET.mins <600)	4239	44.9	1.4%
BMI category	Underweight	1616	19.9	
	Underweight/Acceptable	4006	49.3	
	Overweight	1610	19.8	
	Obese/very obese	897	11.0	12.6%
Illicit drug use	Never used illicit drugs	4141	43.5	
	Used illicit drugs over 12 months ago	2897	30.5	
	Used illicit drugs in the last 12 months	2475	26.0	0.8%
Self-reported health				
Number of diagnoses (excluding symptoms related to mental health)	None	3235	34.1%	
	One	3291	34.7%	
	Two or more	2972	31.3%	1.1%
Number of symptoms (excluding symptoms related to mental health)	None	3625	37.8%	
	One	2585	27.0%	
	Two or more	3373	35.2%	0.2%

Table A3. Mid-age women: Adjusted means and 95% confidence intervals for MH at Survey 2. Results for each explanatory variable are adjusted for all other explanatory variables in the model. N=9320, 20.0% of women were excluded from the model due to missing at least one of the included items. Summary results are shown in Figure 8.

Explanatory variable		Adjusted mean MH at Survey 2 ^a	95% CI	Significant mean differences (p<0.005)
Marital status				
1	Married/defacto	70.2	(69.4, 70.9)	1&2 Different
2	Never married, separated, widowed, divorced	67.8	(66.8, 68.8)	
Area of residence				
1	Urban area	68.2	(67.4, 68.9)	Only 1& 3 different
2	Large rural centre	68.7	(67.6, 69.8)	
3	Small rural centre/other rural	69.9	(69.1, 70.7)	
4	Remote areas	69.1	(67.6, 70.6)	
Manage on income				
1	Easy	72.9	(71.8, 74.0)	All different
2	Not too bad	71.0	(70.1, 71.8)	
3	Difficult some of the time	68.1	(67.2, 69.0)	
4	Impossible/difficult all the time	63.9	(62.8, 64.9)	
Country of birth				
1	Australia	69.6	(68.9, 70.3)	1& 2 different
2	Other	68.4	(67.4, 69.3)	
Smoking and Alcohol				
1	Non-smoker—non-low risk (without binge) drinker	70.9	(70.3, 71.6)	Only 1&3, 1&4 different
2	Non-smoker—low-high risk (with binge) drinker	69.5	(68.3, 70.7)	
3	Current smoker—non-low risk (without binge) drinker	68.2	(67.1, 69.3)	
4	Current smoker—low-high risk (with binge) drinker	67.2	(65.7, 68.8)	
Physical activity				
1	Active (MET.mins >=600)	70.3	(69.5, 71.1)	1&2 different
2	Inactive (MET.mins <600)	67.6	(66.8, 68.4)	
BMI category				
1	Underweight/acceptable	68.1	(67.3, 68.9)	Only 1&2, 1&3 different
2	Overweight	69.1	(68.3, 70.0)	
3	Obese/very obese	69.7	(68.7, 70.7)	
GP visits				
0	Zero to four times	71.7	(70.9, 72.4)	0&1 different
1	Five or more times	66.3	(65.3, 67.2)	
Number of symptoms				
0	None	75.9	(74.9, 76.8)	All different
1	One	72.0	(71.0, 73.0)	
2	Two	69.1	(68.1, 70.2)	
3	Three	67.1	(65.9, 68.2)	
4	Four or more	60.8	(59.8, 61.8)	

^a Adjusted for other explanatory variables in the model

Table A4. Younger women: Adjusted means and 95% confidence intervals for MH at Survey 2. Results for each explanatory variable are adjusted for all other explanatory variables in the model. N=7560, 21% of women were excluded from the model due to missing at least one of the included items. Summary results are shown in Figure 9.

Explanatory variable		Adjusted mean MH at Survey 2 ^a	95% CI	Significant mean differences (p<0.005)
Marital status				
1	Married, defacto	69.60	(68.8, 70.3)	1&2
2	Never married, separated, widowed, divorced	66.30	(65.6, 67.1)	
Residence				
1	Urban area	66.50	(65.9, 67.1)	1&2, 1&3 only
2	Large rural centre	68.30	(67.1, 69.6)	
3	Small rural centre/other rural	69.00	(68.2, 69.8)	
4	Remote areas	68.00	(66.2, 69.9)	
Income				
1	\$700 or more/wk	69.00	(67.9, 70.0)	1&3 only
2	\$500-\$699/wk	68.50	(67.6, 69.3)	
3	\$120-\$499/wk	67.20	(66.4, 68.0)	
4	\$0-\$119/wk, don't know or want to answer	67.30	(66.2, 68.4)	
Smoking and Alcohol				
1	Non-smoker—non-low risk (without binge) drinker	69.6	(68.9, 70.3)	Only 1&3, 1&4 2&3, 2&4 different
2	Non-smoker—low-high risk (with binge) drinker	69.9	(69.0, 70.9)	
3	Current smoker—non-low risk (without binge) drinker	65.7	(64.6, 66.8)	
4	Current smoker—low-high risk (with binge) drinker	66.7	(65.5, 67.9)	
PA category				
1	Active (MET.mins >=600)	68.90	(68.1, 69.6)	1&2
2	Inactive (MET.mins <600)	67.10	(66.3, 67.9)	
Number of diagnoses				
0	None	69.00	(68.1, 69.8)	0&2 only
1	One	68.10	(67.2, 68.9)	
2	Two or more	66.90	(66.1, 67.7)	
Number of symptoms				
0	None	72.40	(71.6, 73.2)	All different
1	One	69.20	(68.3, 70.1)	
2	Two or more	62.30	(61.5, 63.1)	
Socioeconomic status of parents				
1	Low	66.30	(65.5, 67.1)	1&2, 1&3 only
2	Medium	68.40	(67.6, 69.2)	
3	High	69.30	(68.4, 70.2)	
GP visits (all gynaecological and other reasons)				
1	None to Six	69.40	(68.7, 70.1)	1&2
2	Seven or more	66.60	(65.7, 67.4)	

^a Adjusted for other explanatory variables in the model

Table A5. Mid-age women: Odds ratios and 95% confidence intervals for women who reported at Survey 2 having been diagnosed by a doctor with depression and explanatory variables at Survey 2. Odd ratios for each explanatory variable are adjusted for all other explanatory variables in the model. N=10689, 8.2% of women were excluded from the model due to missing at least one of the included items. Summary results are shown in Figure 10.

	Doctor diagnosed depression	
	OR	Ever diagnosed ^a 95% CI
Marital status		
Married/defacto ^b	1.00	-
Never married, separated, widowed, divorced	1.81	(1.59, 2.06)
Manage on income		
Easy ^b	1.00	-
Not too bad	1.08	(0.91, 1.29)
Difficult some of the time	1.31	(1.10, 1.57)
Impossible/difficult all the time	1.75	(1.44, 2.13)
Smoking and Alcohol		
Non-smoker—non-low risk (without binge) drinker ^b	1.00	-
Non-smoker—low-high risk (with binge) drinker	1.21	(1.01, 1.44)
Current smoker—non-low risk (without binge) drinker	1.26	(1.08, 1.47)
Current smoker—low-high risk (with binge) drinker	1.54	(1.23, 1.94)
GP visits		
Zero to four times ^b	1.00	-
Five or more times	2.15	(1.92, 2.41)
Number of diagnoses		
None ^b	1.00	-
One	1.21	(1.05, 1.38)
Two or more	1.69	(1.47, 1.93)
Number of symptoms		
None ^b	1.00	-
One	1.50	(1.26, 1.79)
Two	1.97	(1.65, 2.36)
Three	2.56	(2.12, 3.08)
Four or more	2.99	(2.54, 3.53)

^a Never diagnosed as having depression is the reference category

^b Reference category for explanatory variable

^c Bold denotes statistically significant OR

Table A6. Younger women: Odds ratios and 95% confidence intervals for women who reported at Survey 2 having been diagnosed by a doctor with depression and explanatory variables at Survey 2. Odds ratios for each explanatory variable are adjusted for all other explanatory variables in the model. N=8110, 16% of women were excluded from the model due to missing at least one of the included items. Summary results are shown in Figure 11.

	Doctor diagnosed depression	
	Ever diagnosed ^a	
	OR	95% CI
Marital status		
Married, defacto ^b	1.00	-
Never married, separated, widowed, divorced	1.38	(1.20, 1.59)
Education		
University degree	1.00	-
Trade, apprentice, certificate, diploma	1.26	(1.06, 1.51)
No formal, Year 10/12	1.42	(1.21, 1.67)
Smoking and Alcohol		
Non-smoker—non-low risk (without binge) drinker ^b	1.00	-
Non-smoker—low-high risk (with binge) drinker	0.76	(0.62, 0.93)
Current smoker—non-low risk (without binge) drinker	1.16	(0.95, 1.41)
Current smoker—low-high risk (with binge) drinker	1.15	(0.93, 1.41)
Illicit drug use		
Never used illicit drugs ^b	1.00	-
Used illicit drugs over 12 months ago	0.99	(0.83, 1.17)
Used illicit drugs in the last 12 months	1.75	(1.46, 2.09)
Number of diagnoses		
None ^b	1.00	-
One	1.62	(1.34, 1.95)
Two or more	2.62	(2.18, 3.14)
Number of symptoms		
None ^b	1.00	-
One	1.28	(1.07, 1.55)
Two or more	2.06	(1.75, 2.43)
GP visits (all gynaecological and other reasons)		
None to Six ^b	1.00	-
Seven or more	2.28	(1.99, 2.61)

^a Never diagnosed as having depression is the reference category

^b Reference category for explanatory variable

^c Bold denotes statistically significant OR

Table A7. Mid-age women: Odds ratios and 95% confidence intervals for women who reported at Survey 2 having been diagnosed by a doctor with anxiety and explanatory variables at Survey 2. Odd ratios for each explanatory variable are adjusted for all other explanatory variables in the model. N=9912, 14.9% of women were excluded from the model due to missing at least one of the included items. Summary results are shown in Figure 12.

	Doctor diagnosed anxiety	
	OR	95% CI
Ever diagnosed ^a		
Marital status		
Married/defacto ^b	1.00	-
Never married, separated, widowed, divorced	1.49	(1.29, 1.73)
Manage on income		
Easy ^b	1.00	-
Not too bad	1.14	(0.93, 1.39)
Difficult some of the time	1.42	(1.15, 1.74)
Impossible/difficult all the time	1.72	(1.37, 2.15)
GP visits		
Zero to four times ^b	1.00	-
Five or more times	2.08	(1.82, 2.37)
BMI category		
Underweight/acceptable ^b	1.00	-
Overweight	0.88	(0.76, 1.01)
Obese/very obese	0.65	(0.55, 0.77)
Number of diagnoses		
None ^b	1.00	-
One	1.13	(0.97, 1.33)
Two or more	1.82	(1.56, 2.12)
Number of symptoms		
None ^b	1.00	-
One	1.64	(1.34, 2.00)
Two	1.79	(1.45, 2.20)
Three	2.20	(1.77, 2.73)
Four or more	2.99	(2.48, 3.61)

^a Never diagnosed as having anxiety is the reference category

^b Reference category for explanatory variable

^c Bold denotes statistically significant OR

Table A8. Younger women: Odds ratios and 95% confidence intervals for women who reported at Survey 2 having been diagnosed by a doctor with anxiety and explanatory variables at Survey 2. Odd ratios for each explanatory variable are adjusted for all other explanatory variables in the model. N=8119, 15.4% of women were excluded from the model due to missing at least one of the included items. Summary results are shown in Figure 13.

	Doctor diagnosed anxiety	
	OR	95% CI
Residence		
Urban area ^b	1.00	-
Large rural centre	0.82	(0.59, 1.14)
Small rural centre/other rural	0.68	(0.53, 0.86)
Remote areas	0.40	(0.20, 0.78)
Smoking and Alcohol		
Non-smoker—non-low risk (without binge) drinker ^b	1.00	-
Non-smoker—low-high risk (with binge) drinker	0.58	(0.43, 0.78)
Current smoker—non-low risk (without binge) drinker	1.14	(0.87, 1.48)
Current smoker—low-high risk (with binge) drinker	1.13	(0.85, 1.50)
Illicit drug use		
Never used illicit drugs ^b	1.00	-
Used illicit drugs over 12 months ago	1.42	(1.11, 1.82)
Used illicit drugs in the last 12 months	2.01	(1.55, 2.61)
Number of diagnoses		
None ^b	1.00	-
One	1.28	(0.98, 1.68)
Two or more	2.05	(1.59, 2.64)
Number of symptoms		
None ^b	1.00	-
One	1.16	(0.89, 1.51)
Two or more	1.51	(1.20, 1.91)
GP visits (all gynaecological and other reasons)		
Zero to four times ^b	1.00	-
Five or more times	2.28	(1.88, 2.76)

^a Never diagnosed as having anxiety is the reference category

^b Reference category for explanatory variable

^c Bold denotes statistically significant OR

Table A9. Mid-age women: Adjusted means and 95% confidence intervals for change in MH (Survey 2 - Survey 1). Results for each explanatory variable are adjusted for MH at Survey 1 and all other explanatory variables in the model. N=9373, 20% of women were excluded from the model due to missing at least one of the included items. Summary results are shown in Figure 16.

Explanatory variable		Adjusted mean change in MH ^a	95% CI	Significant mean differences (p<0.005)
Area of residence				
1	Urban area	-2.9	(-3.6, -2.3)	Only 1&3 different
2	Large rural centre	-2.9	(-3.8, -2.1)	
3	Small rural centre/other rural	-1.7	(-2.4, -1.1)	
4	Remote areas	-2.8	(-4.1, -1.6)	
Manage on income				
1	Easy	-1.0	(-1.9, -0.2)	All except 1&2 different
2	Not too bad	-1.3	(-2.0, -0.7)	
3	Difficult some of the time	-2.9	(-3.6, -2.2)	
4	Impossible/difficult all the time	-5.2	(-6.1, -4.3)	
Smoking and Alcohol				
1	Non-smoker—non-low risk (without binge) drinker	-1.6	(-2.1, -1.1)	Only 1&3, 1&4 different
2	Non-smoker—low-high risk (with binge) drinker	-2.2	(-3.2, -1.2)	
3	Current smoker—non-low risk (without binge) drinker	-3.0	(-3.9, -2.1)	
4	Current smoker—low-high risk (with binge) drinker	-3.7	(-5.0, -2.3)	
Physical activity				
1	Active (MET.mins >=600)	-1.7	(-2.4, -1.1)	1&2 different
2	Inactive (MET.mins <600)	-3.5	(-4.1, -2.8)	
BMI category				
1	Underweight/acceptable	-3.5	(-4.1, -2.9)	Only 1&2, 1&3 different
2	Overweight	-2.4	(-3.1, -1.7)	
3	Obese/very obese	-1.9	(-2.7, -1.1)	
Number of symptoms				
0	None	1.4	(0.6, 2.1)	All except 3&4 different
1	One	-0.8	(-1.6, 0.0)	
2	Two	-2.5	(-3.4, -1.7)	
3	Three	-3.6	(-4.6, -2.7)	
4	Four or more	-7.5	(-8.3, -6.8)	
GP visits				
0	Zero to four times	-0.8	(-1.3, -0.2)	0&1 different
1	Five or more times	-4.5	(-5.2, -3.7)	

^a Adjusted for MH at Survey 1 and other explanatory variables in the model

Table A10. Younger women: Adjusted means and 95% confidence intervals for change in MH (Survey 2 - Survey 1). Results for each explanatory variable are adjusted for MH at Survey 1 and all other explanatory variables in the model. N=7773, 18.9% of women were excluded from the model due to missing at least one of the included items. Summary results are shown in Figure 17.

Explanatory variable		Adjusted mean change in MH ^a	95% CI	Significant mean differences (p<0.005)
Marital status				
1	Married, defacto	-0.1	(-0.9, 0.6)	1&2 different
2	Never married, separated, widowed, divorced	-2.6	(-3.3, -1.8)	
Residence				
1	Urban area	-2.4	(-3.0, -1.8)	1&3 only
2	Large rural centre	-1.2	(-2.3, 0.0)	
3	Small rural centre/other rural	-0.5	(-1.3, 0.3)	
4	Remote areas	-1.2	(-2.9, 0.4)	
Work				
1	No work	-2.3	(-3.3, -1.3)	1&2 different
2	Work/ work-study	-0.4	(-1.0, 0.2)	
Smoking and Alcohol (4 levels)				
1	Non-smoker—non-low risk (without binge) drinker	0.0	(-0.7, 0.7)	Only 1&3, 1&4 2&3, 2&4 different
2	Non-smoker—low-high risk (with binge) drinker	-0.2	(-1.1, 0.8)	
3	Current smoker—non-low risk (without binge) drinker	-3.0	(-4.0, -2.0)	
4	Current smoker—low-high risk (with binge) drinker	-2.2	(-3.3, -1.1)	
PA category				
1	Active (MET.mins >=600)	-0.7	(-1.5, 0.0)	1&2 different
2	Inactive (MET.mins <600)	-1.9	(-2.7, -1.2)	
Number of symptoms				
0	None	2.1	(1.3, 2.9)	All different
1	One	-0.4	(-1.3, 0.4)	
2	Two or more	-5.7	(-6.5, -4.8)	
Socioeconomic status of parents				
1	Low	-2.5	(-3.3, -1.7)	1&2, 1&3 only
2	Medium	-1.0	(-1.8, -0.2)	
3	High	-0.5	(-1.3, 0.4)	
GP visits (all gynaecological and other reasons)				
1	None to Six	-0.3	(-1.0, 0.4)	1&2 different
2	Seven or more	-2.3	(-3.2, -1.5)	

^a Adjusted for MH at Survey 1 and other explanatory variables in the model

Table A11. Mid-age women: Variables used in analysis of change related to Survey 3. Results for women who completed Survey 1 (S1) and Survey 3 (S3), N=11202. Variables are from Survey 3 except for education, parity and country of birth.

Variable	Categories	N	%	% missing
Sociodemographic				
Marital status	Married/defacto	9079	81.5%	
	Never married, separated, widowed, divorced	2063	18.5%	0.5%
Education (S1)	University degree	1640	14.8%	
	Trade/apprentice/certificate/diploma	2216	19.9%	
	Year 10/12	5406	48.6%	
	No formal qualifications	1853	16.7%	0.8%
Hours worked	None	2324	21.3%	
	1 to 34	3972	36.4%	
	35 to 40	2192	20.1%	
	41 or more	2416	22.2%	2.7%
Country of birth (S1)	Australia	8583	77.5%	
	Other	2496	22.5%	1.1%
Area of residence	Urban area	4185	37.9%	
	Large rural centre	1515	13.7%	
	Small rural centre/other rural	4746	43.0%	
	Remote areas	585	5.3%	1.5%
Manage on income	Easy	1989	18.0%	
	Not too bad	4811	43.5%	
	Difficult some of the time	3012	27.2%	
	Impossible/difficult all the time	1247	11.3%	1.3%
Health Behaviours				
GP visits	Zero to four times	7940	71.1%	
	Five or more times	3225	28.9%	0.3%
Specialist visits	None	6268	56.2%	
	One or more times	4884	43.8%	
Parity (S1)	No births	869	8.1%	
	One or two births	5080	47.6%	
	Three or more births	4722	44.3%	4.7%
Smoker	Never smoked	6623	59.4%	
	Ex-smoker	2932	26.3%	
	Smoker	1593	14.3%	0.0%

Variable	Categories	N	%	% missing
PA category	Active (MET.mins >=600)	4782	44.8%	
	Inactive (MET.mins <600)	5890	55.2%	4.7%
BMI category	Underweight/acceptable	4546	44.5%	
	Overweight	3239	31.7%	
	Obese/very obese	2422	23.7%	8.9%
Self-rated health				
Number of diagnoses	None	5148	46.5%	
	One	3604	32.6%	
	Two or more	2320	21.0%	1.2%
Number of symptoms	None	3973	37.9%	
	One	2275	21.7%	
	Two	1623	15.5%	
	Three	1001	9.5%	
	Four or more	1616	15.4%	6.4%

Table A12. Mid-age women: Adjusted means and 95% confidence intervals for change in MH (Survey 3 - Survey 1). Results for each explanatory variable are adjusted for MH at Survey 1 and all other explanatory variables in the model. N=9179, 18.1% of women were excluded from the model due to missing at least one of the included items.

Explanatory variable	Adjusted mean change in MH ^a	95% CI	Significant mean differences (p<0.005)
Country of birth			
1 Australia	-2.4	(-2.9, -1.9)	1& 2 different
2 Other	-3.6	(-4.4, -2.8)	
Manage on income			
1 Easy	0.2	(-0.6, 1.0)	All different
2 Not too bad	-1.1	(-1.7, -0.4)	
3 Difficult some of the time	-2.8	(-3.5, -2.1)	
4 Impossible/difficult all the time	-8.3	(-9.3, -7.3)	
Smoking status			
1 Never smoked	-2.4	(-3.0, -1.8)	Only 1&3, 2&3 different
2 Ex-smoker	-2.4	(-3.1, -1.7)	
3 Smoker	-4.2	(-5.1, -3.3)	
Physical activity			
1 Active (MET.mins >=600)	-2.0	(-2.7, -1.4)	1&2 different
2 Inactive (MET.mins <600)	-4.0	(-4.6, -3.4)	
Number of symptoms			
0 None	0.4	(-0.3, 1.1)	All different except 2&3
1 One	-1.3	(-2.0, -0.5)	
2 Two	-1.8	(-2.7, -0.9)	
3 Three	-3.6	(-4.7, -2.6)	
4 Four or more	-8.8	(-9.7, -7.9)	
GP visits			
0 Zero to four times	-1.0	(-1.6, -0.5)	0&1 different
1 Five or more times	-5.0	(-5.7, -4.3)	

^a Adjusted for MH at Survey 1 and other control variables in the model

Table A13. Mid-age women: Adjusted means and 95% confidence intervals for change in MH (Survey 3 - Survey 2). Results for each explanatory variable are adjusted for MH at Survey 1 and all other explanatory variables in the model. N=9094, 12.6% of women were excluded from the model due to missing at least one of the included items.

Explanatory variable	Adjusted mean change in MH ^a	95% CI	Significant mean differences (p<0.005)
Manage on income			
1 Easy	0.4	(-0.3, 1.1)	All different
2 Not too bad	-0.9	(-1.4, -0.4)	
3 Difficult some of the time	-2.7	(-3.3, -2.1)	
4 Impossible/difficult all the time	-7.7	(-8.6, -6.8)	
Smoking status			
1 Never smoked	-2.1	(-2.6, -1.7)	Only 1&3, 2&3 different
2 Ex-smoker	-2.1	(-2.7, -1.5)	
3 Smoker	-3.9	(-4.7, -3.1)	
Physical activity			
1 Active (MET.mins-1 >=600)	-1.9	(-2.5, -1.4)	1&2 different
2 Inactive (MET.mins-1 <600)	-3.5	(-4.0, -3.0)	
Number of symptoms			
0 None	0.3	(-0.3, 0.9)	All different except 2&3
1 One	-1.1	(-1.8, -0.5)	
2 Two	-1.5	(-2.2, -0.7)	
3 Three	-3.4	(-4.3, -2.4)	
4 Four or more	-7.9	(-8.7, -7.1)	
GP visits			
0 Zero to four times	-0.9	(-1.4, -0.5)	0&1 different
1 Five or more times	-4.5	(-5.1, -3.9)	

^a Adjusted for MH at Survey 2 and other control variables in the model

Participants, instruments, statistical methods and tables used for 'recreational use of illicit drugs' section⁷

Participants

Questions about use of illicit drugs were included in Survey 2 for the Younger cohort. Of the n = 9 598 young women who completed Surveys 1 and 2, did not complete any questions on illicit drugs. Thus 9 512 women are included in the present analysis.

Instrument

Questions about illicit drug use were based on the 1998 National Drug Strategy Household Survey (AIHW 1998). Women were asked: *have you ever tried this?; at about what age did you first try this?; and have you used it in the last 12 months?* The drug classes were:

- a) Marijuana (cannabis, hash, grass, dope, pot, yandi)
- b) Analgesics (e.g., aspirin, paracetamol, mersyndol)
- c) Amphetamines (eg speed, uppers, methylamphetamine, MDA)
- d) LSD (acid, trips)
- e) Natural hallucinogens (eg magic mushrooms)
- f) Tranquillisers (eg tranks, sleepers, Mandrax, Serepax, Rohypnol)
- g) Cocaine (coke, crack, blow)
- h) Ecstasy/designer drugs (eg E, eccies, MDMA)
- i) Inhalants (eg glue, petrol, solvents)
- j) Heroin (smack, junk)
- k) Barbiturates (eg barbs, downers, purple hearts)
- l) Steroids

The ages reported for the first use of analgesics and steroids (items b and l) strongly suggested that women had included medicinal use in their consideration of these drugs. As this was not the intended meaning of the question, responses to each of the three items concerning these drugs were excluded from these analyses.

Women were classified *separately* for each of the remaining ten drugs as a 'life-time user' if they had reported ever using that drug and otherwise as a non-user. Life-time users were further classified as a 'current user' if they reported using that drug in the twelve months prior to the survey, and otherwise as a past user. Women were similarly classified as life-time, current and past users of *any* of these ten illicit drugs.

Patterns of drug use were determined by inspection of all the combinations of use reported among these ten drugs (ignoring whether the use was in the past or current). An arbitrary value of 10% of all drug users was set as a threshold for a separate pattern of use. Two major patterns were identified: (a) exclusive use of cannabis and (b) multiple drug use. Multiple drug use may or may not include cannabis use. Women with these two patterns of use were further categorised as current or past users. Exclusive cannabis users were categorised as current users if they had used cannabis in the last twelve months and otherwise as past users; multiple drug users were categorised as a current users if they had used at least one drug in the last twelve months.

⁷ This work is an extract from an unpublished manuscript '*Prevalence of illicit drug use in young Australian women, patterns of use and associated risk factors*' by Turner C, Russell A and Brown W.

The difference between the age of first using cannabis and the age of first using tobacco was calculated for women who had used both drugs (positive values indicate earlier initiation of cannabis). For women using more than one drug and where one of these drugs was cannabis, the difference between the age of first using cannabis and the age of first using any other drug was calculated (positive values indicate earlier initiation of cannabis). For current cannabis users, the duration of use was calculated as the difference between age at initiation and age at the time of the 2000 survey.

Statistical Analysis

All statistical analyses were performed in SAS (SAS, 1999). A significance level of 0.005 was taken for all statistical tests to reduce the effects of inflated type 1 errors due to multiple comparisons. Estimates of prevalence, mean ages and age differences were weighted for over-sampling of women from non-metropolitan areas. The generalized linear models procedure in SAS with the least squares means option was used to examine differences in means.

Multivariate modelling was performed using the SAS logistic procedure. Differences between women who had never used illicit drugs (reference category), and exclusive cannabis users (past and current) and multiple drug users (past and current) were modelled using the generalized (multinomial) logits option. Two sets of binary logistic regression analyses modelled current drug use; firstly amongst exclusive-cannabis users and secondly amongst multiple drug users. Possible explanatory factors that were considered in this modelling were: age in years, country of birth, occupation, qualifications, work/study situation, personal and household income, marital status, household composition, locality, tobacco smoking status, alcohol risk status, frequency of binge drinking, physical activity, history of sexual activity, history of pregnancy, use of prescription medications during the last 4 weeks (for nerves, to help sleep, for depression, for other reasons), doctor diagnosed depression, depression based on CESD10 score of 10 or more (Andresen et al. 1994), and lifetime experience of abuse (physical, severe physical, emotional and sexual) and social support (the sum of scores from an abbreviated form of the MOS social support index (Sherbourne & Stewart 1991)). Where 90 or more women had a missing value for any of these factors, a separate category for missing data was formed. Factors significantly associated with drug use in bivariate analyses were used for forward selection of variables for the final multivariate model.

Tables

Table A14. Prevalence of life-time and current use of illicit drugs: Younger cohort, Survey 2 (N=9 512). Summary results are shown in Figure 18

	Prevalence ¹	
	Life-time use	Current use
Cannabis	56.7	24.4
Amphetamines	16.3	8.5
Ecstasy/designer drugs	14.5	9.2
LSD	14.0	3.1
Cocaine	6.0	2.8
Hallucinogens	5.0	0.8
Tranquillisers	5.0	1.9
Inhalants	1.8	0.3
Heroin	1.3	0.4
Barbiturates	0.5	0.1
Any Illicit Drug	57.9	27.7

¹ Weighted for over-sampling from non-metropolitan locations

² p-value for crude difference in age of initiation between past and current users

Table A15. Patterns of illicit drug use: Younger Cohort, Survey 2 (N=9 512). Summary results are shown in Figures 19 and 20.

	Percent ¹ Overall	Percent ¹ of Drug Users	Mean age (years) ¹ of initiating cannabis use ⁴	Mean years ¹ of initiating tobacco smoking after initiating cannabis use ⁴	Mean years ¹ of initiating cannabis use before initiating any other drug ⁴	Mean years ¹ using cannabis ⁴
Never used any drug	42					
Exclusive cannabis user ² :	33	56				
- Past user	23	39	17.6 (17.5-17.7)	-0.1 (-0.3 - 0.1)		
- Current user	10	17	18.1 (18.0-18.3)	0.2 (-0.1 - 0.5)		6.5 (6.3-6.7)
Multiple drug user ³	25	44				
- Past user	8	13	16.5 (16.3-16.7)	0.4 (0.2 - 0.7)	1.9 (1.7-2.1)	
- Current user	18	31	16.4 (16.2-16.5)	1.3 (1.2 - 1.5)	2.9 (2.8-3.0)	8.2 (8.1-8.4)
Total	100	100				

¹ Weighted for over-sampling from non-metropolitan locations

² Only drug ever used is cannabis

³ Has used multiple drugs or a single drug other than cannabis

⁴ *p-value for crude difference < 0.0001*

Table A16. Adjusted odds ratios (OR) (95% confidence interval) for factors statistically significantly associated with current drug use among women who had only ever used cannabis (N=3 015) and among women who were multiple drug users (N=2 169): Younger Cohort, Survey 2. Summary results are shown in Figures 21 and 22.

	Exclusive cannabis users ¹		Multiple drug users ²	
	OR ³	(95% CI)	OR ³	(95% CI)
Marital Status				
Married	1		1	
De-facto	1.7	(1.3-2.2)	2.0	(1.5-2.7)
Separated, divorced or widowed	1.7	(0.9-3.2)	1.3	(0.7-2.5)
Never married	2.0	(1.6-2.5)	2.8	(2.1-3.8)
Missing				
Smoking status				
Never smoked	1		1	
Ex-smoker	0.9	(0.7-1.1)	0.8	(0.6-1.0)
Current smoker	1.5	(1.3-1.8)	2.0	(1.6-2.5)
Missing			2.3	(1.3-4.0)
Frequency of binge drinking				
Non-drinker	1		1	
Never binges	0.8	(0.5-1.4)	0.9	(0.5-1.6)
Less than once/month	1.4	(0.9-2.1)	1.3	(0.8-2.1)
About once/month	1.9	(1.2-2.9)	1.8	(1.1-2.9)
About once/week or more	2.4	(1.5-3.8)	2.8	(1.7-4.7)
Told by a doctor that you have depression				
Never	1			
More than 4 years ago	1.6	(0.9-2.6)		
During the last 4 years	1.8	(1.4-2.3)		

¹ 159 excluded due to missing data for one or more variable

² 29 excluded due to missing data for one or more variable

³ Adjusted for other variables in this column; p <0.0001 for all variables