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HEALTH SERIES

Mental Health & Wellbeing in the ACT

Results of the Personality and Total Health (PATH) Through Life Project

Ageing Research Unit
Centre for Mental Health Research
& Epidemiology Branch, Health Directorate

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Contents

Foreword

Mental illness is a leading cause of chronic disease in Australia, contributing 13% of the total disease burden. Poor mental health adversely affects the overall functioning, quality of life and physical health of the individual which in turn impacts on the well-being of family members, friends, economic productivity and contributions to society in general. The effects of poor mental health are broad reaching and understanding those factors that impact on mental health is key to developing programs designed to prevent and intervene early in the course of mental illness.

The report, *Mental Health and Wellbeing in the ACT,* is a collaborative work of the Centre for Mental Health Research at the Australian National University and ACT Health. The work was undertaken to make available the results from the Personality and Total Health (PATH) Through Life Project to the community and also to inform government decision making. To this end the report focuses both on mental health status and the implications for government program and policy development.

The findings from the PATH as presented herein, profiles the mental health of the people in the ACT and surrounding region. Vulnerable population groups are highlighted as are vulnerable life stages and domains in life such as work and relationships. The report reveals vulnerabilities in the community and points towards protective factors that can promote mental health and wellbeing. Attention is also drawn to the association between mental health and physical health showing that the two are closely linked. The findings in this report add to a mounting body of evidence showing that mental health is shaped not only by individual factors but also by the social and economic quality of our day to day lives. Together these findings give further impetus for governments to develop and implement progressive action towards preventing and treating mental illness and promoting a healthy and flourishing community.

The translation of research into health policy and practice is a challenge that both ACT Health and the Centre for Mental Health Research are committed to. This partnership has provided an opportunity for this translation to occur with policy makers and researchers working together to build knowledge and exchange information to support evidence for informed decision making in relation to mental health.

Dr Paul Kelly
Chief Health Officer

Overview

'Mental Health and Wellbeing in the ACT' aims to provide a snapshot of the mental health and wellbeing of people in the Canberra District. This report is the result of a collaboration between ACT Health and the Ageing Research Unit in the Centre for Mental Health Research at the Australian National University.

This report describes a subset of results from the Personality and Total Health (PATH) Through Life project* which has been studying residents of Canberra and Queanbeyan for the past 12 years. Results presented here are predominantly based on the most recent survey, in which there was a total of 6,382 participants, divided between the age groups 28-32 (Wave 3), 48-52 (Wave 3) and 64-68 (Wave 2), and are referred to as the 20s, 40s and 60s cohorts, respectively (see Figure 1.1).

After describing characteristics of the sample of participants in terms of depression and anxiety disorders, the remainder of the report focuses on mental health impairment as the key measure of psychological distress. Fifteen factors with potential associations with mental health are investigated, falling into four broad categories: social and economic context, psychological factors, risk factors and health, and service use and medication. The report concludes by exploring policy and program implications, and by suggesting valuable directions for future research.

Main Findings

Mental Health

The 20s cohort had the highest rates of **depression**, **anxiety** and functional **impairment** due to poor mental health. Females typically reported slightly higher rates of depression and anxiety, and the incidence of both disorders appears to decline with age. Financial hardship, unemployment, withdrawal from the labour force, reduced educational attainment and a marital status of separated, widowed or divorced were all associated with increased likelihood of depression or anxiety.

* Note. Key PATH areas such as cognitive decline, brain ageing, genetics, and dementia are not covered here, but details can be found through the appended publication list.

Suicide ideation is common in the Canberra community, with 6.1 per cent of adults in the PATH sample reporting suicidal thoughts and 0.5 per cent reporting **suicide attempts** at the most recent survey. These rates were lower than those reported four years previously (8.2 per cent for ideation and 0.8 per cent for attempts at Wave 1). While these prevalence rates decreased, over one quarter of those reporting serious suicidality at baseline still experienced it four years later. Men in the 60s cohort were 65 per cent more likely to report suicidal thoughts than their female counterparts. Employment was protective against suicide, as suicide ideators without work were nearly nine times more likely to attempt than ideators who worked. It was also found that suicidality is distinct from depression, though the factors are substantially correlated, indicating that one may have serious suicidal ideation without the presence of a depressive disorder.

Social and Economic Context

The experience of certain **stressful life events** (serious illness, injury or assault to oneself; serious problem with a close friend, neighbour or relative) in the past six months was associated with higher likelihood of mental health impairment.

Work stress is related to poorer mental health in middle aged adults. Those with high job insecurity and high job strain were more than twice as likely to experience depression and anxiety as those working under less adverse conditions.

Across all age cohorts, **financial hardship** is strongly and independently associated with depression, above the effects of other measures of socio-economic position and demographic characteristics.

Carers are more likely to experience financial hardship and poorer physical and mental health compared to their non-caregiving peers. **Caregiving** is a time-intensive role, with carers reporting less positive support, greater conflict with family/spouse and higher levels of psychological distress.

There appears to be an optimal level of **volunteering** for maintaining wellbeing, as those reporting moderate

levels of volunteer work reported higher levels of wellbeing than those who did not volunteer and those who engaged in more than 15 hours of volunteer work per week.

Psychological Factors

High **resilience**, **mastery**, **life satisfaction** and use of certain **coping styles** (positive reframing; humour) were each associated with lower likelihood of mental health impairment. On the other hand, other coping styles (venting; substance use; self-blame; self-distraction; behavioural disengagement) were associated with higher likelihood of mental health impairment.

Risk Factors and Health

Alcohol consumption was widespread in the Canberra community. The highest proportion of persons drinking at hazardous or harmful levels was in the midlife cohort among females (9.6 per cent). There were complex patterns of association between the level of alcohol consumption (abstinence/occasional and hazardous/harmful) and increased likelihood of moderate to severe mental health impairment among the midlife and old age cohorts.

One in five persons in the 20s cohort are current **smokers**, with a higher rate for males. Current smokers in the 40s and 60s cohorts were substantially more likely to report moderate to severe mental health impairment than their non-smoking peers.

Marijuana was the most commonly reported **illicit drug** consumed. Among the 28-32 year-olds, ecstasy was also common, where 1 in 10 had consumed it in the past 12 months. Higher rates of illicit drug use in the previous year were reported by young persons experiencing moderate to severe mental health impairment.

The majority of Canberra residents were **overweight or obese**. Persons who were obese were more likely to report moderate-severe mental health impairment in all age cohorts.

Higher levels of **physical activity** were associated with better mental health. Moderate to severe mental health impairment was over-represented among persons with none-mild levels of physical activity.

Certain **medical conditions** were associated with mental health impairment depending on age cohort:

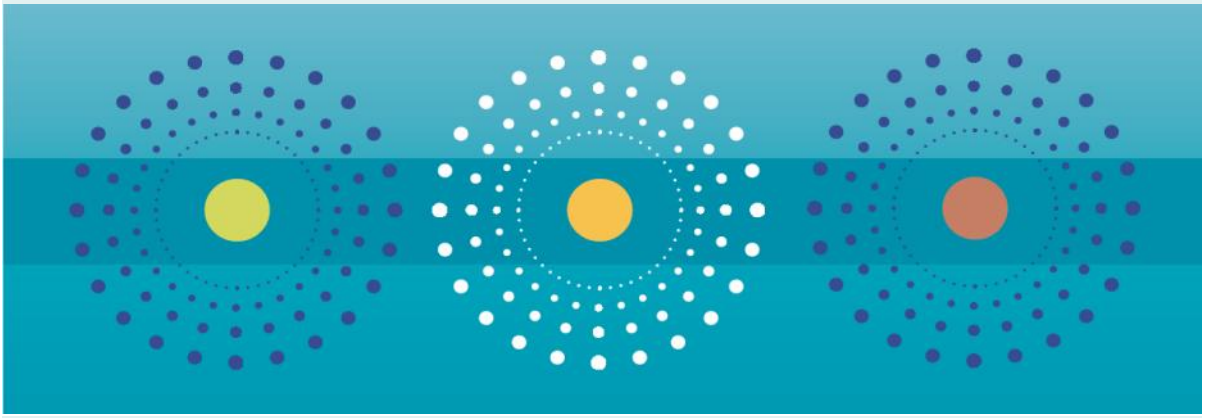
- 20s: heart trouble
- 40s: arthritis, eye disease, respiratory trouble
- 60s: heart trouble, arthritis, epilepsy, eye disease, respiratory trouble.

Service Use and Medication

During the six months before and after Wave 2 of the PATH survey, respondents experiencing moderate to severe mental health impairment in the 20s and 40s cohorts were more likely to **visit a GP** at least once in this 12-month period.

Different **medication use** patterns were apparent across age cohorts. There was a significant association between use of medications (used for depression, anxiety, pain and sleep problems) and mental health impairment.

PATH Study



1 PATH OVERVIEW

PATH Study Overview

This publication presents summary results from the Personality And Total Health (PATH) Through Life Project. The PATH Project is a community survey of 7,485 people initially aged 20-24 years, 40-44 years and 60-64 years (hereafter referred to as 20s, 40s and 60s cohorts, respectively), living in the Australian Capital Territory (ACT) and the neighbouring town of Queanbeyan. Participants in the PATH project were randomly selected from the Australian electoral role. The PATH project, run by the Centre for Mental Health Research at ANU, plans to study each cohort every four years for 20 years.

Some of the aims of the project are:

- to delineate the course of depression, anxiety, substance use and cognitive ability with increasing age across the adult life span
- to identify environmental and genetic risks and protective factors influencing individual differences in the course of these characteristics
- to investigate interrelationships over time between the domains of depression and anxiety, substance use, and cognitive ability and dementia.

These broad aims relate to clinical outcomes that constitute a major burden of disease within the Australian community, and continue to provide the core direction for the project. Additional specific aims incorporated into each wave focus on the mental health related impact of various personal, social and lifestyle transitions and events experienced by the different age cohorts. These include: (in) fertility and pregnancy, changes in family structure, relationship formation and separation, menopause, and retirement.

Data Collection

Each Wave of data collection takes place over three and a half years, with the younger, midlife and older cohorts interviewed over consecutive years.

Interviewers travel around Australia to conduct follow-up interviews with those who have moved away from the ACT/Queanbeyan area, while those currently living overseas are asked to complete an interview by mail or email.

In 2006, Prof. Kaarin Anstey led a successful NHMRC Project grant application with Prof. Helen Christensen, Prof. Andrew Mackinnon, Dr Peter Butterworth and Prof. Simon Easteal, which provided funding for a third wave of data collection. Interviewing for Wave 3 has now been completed for all age cohorts.

The data presented in this report have been drawn from the 20s and 40s cohorts at Waves 1, 2 and 3, and the 60s cohort at Waves 1 and 2 (Wave 3 is currently in process). Figure 1.1 shows the number of participants in each cohort with dates of assessment.

The PATH Interview

PATH interviews are conducted in participants' homes by trained interviewers. To provide a high level of confidentiality, the participant completes most of the interview (eg self-reported health, substance use, personality and psychosocial measures) using a computer with a touch-sensitive screen. However a number of physical (eg forced expiratory volume, grip strength) and cognitive tests (eg memory, reaction time) are administered by the interviewer. Cheek swabs were collected at the baseline interview for the extraction of DNA for genetic analysis. Each Wave of the PATH Project and the associated sub-studies has been approved by the Australian National University's Human Research Ethics Committee.

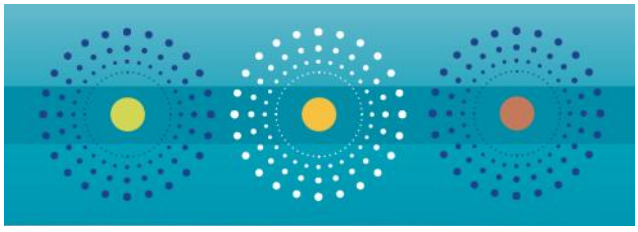


Figure 1.1 Overview of the PATH Through Life Study Design

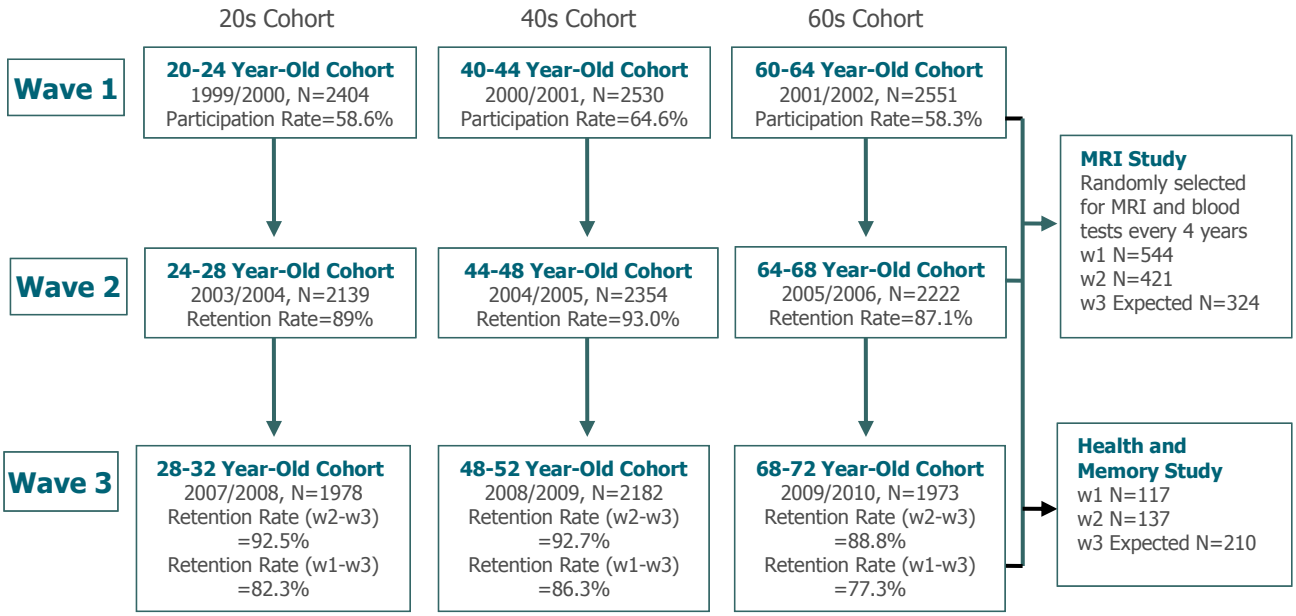


Table 2.1 Wave 1 PATH Sample Comparisons to ACT/Queanbeyan Census Data (2001) for the 20s Cohort

20s Cohort	Males		Females	
(%)	PATH	Census	PATH	Census
Registered marital status				
Married	6.1	4.5	11.5	9.2
Employment status				
Employed (full- or part-time)	85.8	78.7	84.3	79.0
Unemployed	6.7	8.8	4.8	4.9
Not in labour force	7.4	12.5	10.9	16.2
Education completed				
Post-school qualifications	51.6	37.5	59.3	44.2
Undertaking current study				
Full- or part-time	48.4	39.6	42.9	41.4
Full-time	57.1	67.0	58.0	69.0
Part-time	42.9	33.0	42.0	31.0

Note. Some PATH variables do not sum to 100% due to a small amount of missing data.

2 PATH SAMPLE COMPARISONS

Sample Comparisons with Census Data

Tables 2.1 to 2.3 present information on the demographic profile of the persons who participated in the PATH survey at Wave 1, as well as comparative data relating to the 2001 Australian Census data for citizens who lived in Canberra and Queanbeyan aged 20-24 years, 40-44 years and 60-64 years (Australian Bureau of Statistics -Usual Residents Profile, 2001).

PATH participants were generally similar to the target population, however, PATH respondents tended to be slightly more likely to be employed full or part-time, and to be currently undertaking study than the local population. These findings are consistent with epidemiological research worldwide.

Table 2.2 Wave 1 PATH Sample Comparisons to ACT/Queanbeyan Census Data (2001) for the 40s Cohort

40s Cohort	Males		Females	
(%)	PATH	Census	PATH	Census
Registered marital status				
Married	74.2	67.6	68.8	65.6
Separated	3.5	4.9	5.8	5.9
Divorced	5.5	9.6	9.0	14.0
Widowed	0.5	0.3	1.0	1.1
Never married	8.9	17.5	6.7	13.4
Employment status				
Employed (full- or part-time)	94.8	90.5	85.7	80.8
Unemployed	2.0	3.1	2.6	2.4
Not in labour force	3.2	6.5	11.7	16.9
ASCO job classification				
Managers and administrators	30.3	19.2	12.7	11.8
Professionals	27.3	29.0	31.8	29.7
Associate professionals	18.3	16.1	17.4	14.4
Tradespersons & related	10.2	12.6	1.1	1.5
Advanced clerical & service	0.7	0.6	5.8	6.0
Intermediate clerical etc	4.2	9.4	21.1	25.0
Intermediate production/transport	4.2	6.1	0.6	0.9
Elementary clerical-sales/service	2.6	3.5	7.2	7.5
Labourers and related	2.2	3.6	2.3	3.2
Education completed				
Post-school qualifications	78.7	70.0	73.0	60.6
Undertaking current study				
Full- or part-time	15.1	9.1	15.4	10.9
Full-time	10.6	15.9	13.6	18.9
Part-time	89.4	84.1	86.4	81.1

Table 2.3 Wave 1 PATH Sample Comparisons to ACT/Queanbeyan Census Data (2001) for the 60s Cohort

60s Cohort	Males		Females	
	PATH	Census	PATH	Census
Registered marital status				
Married	82.8	79.9	66.7	66.6
Separated	2.7	3.6	2.7	3.4
Divorced	6.6	9.5	12.5	14.7
Widowed	1.8	2.9	12.9	11.8
Never married	2.2	4.1	3.2	3.4
Employment status				
Employed (full- or part-time)	49.2	49.4	31.9	31.1
Unemployed	1.3	2.3	0.6	0.6
Not in labour force	49.5	48.3	67.5	68.2
ASCO job classification				
Managers and administrators	25.7	12.6	6.9	6.6
Professionals	24.4	28.1	28.1	28.0
Associate professionals	19.2	14.5	16.5	12.1
Tradespersons & related	8.4	12.5	1.6	2.0
Advanced clerical & service	1.0	1.3	6.7	10.4
Intermediate clerical etc	7.1	8.3	25.3	24.5
Intermediate production/transport	6.0	9.0	0.7	0.7
Elementary clerical-sales/service	5.0	7.6	10.6	11.0
Labourers and related	3.3	6.2	3.5	4.6
Education completed				
Post-school qualifications	76.3	64.2	63.0	45.4
Undertaking current study				
Full- or part-time	2.9	2.1	2.8	2.4
Full-time	13.5	19.1	15.2	11.6
Part-time	86.5	80.9	84.8	88.4

Note. Some PATH variables do not sum to 100% due to a small amount of missing data.

3 PATH MEASURES

Almost all of the measures used for this report were taken from the Wave 2 and 3 PATH interviews.

Demographic Measures

Education

Years of education was derived from answers to questions regarding years of school completed and highest level of post-school educational attainment.

Employment status

Participants were asked to identify their current employment status. Options included full-time, part-time, unemployed (looking for work), or not in the labour force.

Gender

Respondents identified as male or female.

Marital and Relationship Status

Current marital status was derived from answers to questions regarding current relationship and marital status.

Financial Hardship

Respondents who identified experiencing any of the four markers of financial hardship during the last year – either they had to sell their possessions, go without meals, were unable to heat their home or had to ask for help from a welfare organisation due to a shortage of money — were classified as experiencing financial hardship.

Income Source

Respondents identified their main source of income from a list of possible options.

Mental Health Measures

Depressive Disorders

The PATH study used the Patient Health Questionnaire to measure the prevalence of depressive symptoms (PHQ-9; Spitzer, Kroenke & Williams, 1999). This measure explores depressive symptoms during the previous two weeks to determine whether respondents have experienced clinical levels of depressive symptoms and may meet the DSM-IV criteria for major depressive episode or other depressive syndromes such as dysthymia or depressive disorder not otherwise specified. It is important to note that this measure may also capture persons experiencing significant depression within the context of bipolar, schizoaffective disorder or grief.

Anxiety Disorders

The Brief Patient Health Questionnaire Panic disorder scale and the Generalised Anxiety Disorder module of the Patient Health Questionnaire (GAD-7) were used to assess whether during the previous four weeks respondents experienced clinical levels of anxiety symptoms which met the DSM-IV criteria for Panic Disorder. The GAD-7 subscale was also used to assess the presence of clinical levels of anxiety which may indicate the presence of other anxiety disorders such as generalised anxiety disorder, social anxiety, post traumatic stress disorder or anxiety disorder not otherwise specified.

Mental Health Impairment

The mental component summary score from the SF-12 (Ware, Kosinski & Keller, 1996) was used as a measure of mental health related quality of life. The full standardised scale consists of 12 questions, with higher scores indicating better mental and physical health. In this report, respondents are classified as experiencing either *none-mild* (scores 40+) or *moderate-severe* (scores 0-39) mental health impairment, with categories based on the distribution from US norms.

Social and Economic Measures

Stressful Life Events

Participants were asked whether any of the 12 categories of life events or problems from Brugha and Cragg's (1990) List of Threatening Experiences questionnaire had happened to them in the past six months. These common life events were highly likely to be threatening, such as bereavement or being sacked from a job.

PATH MEASURES

Personality and Psychological Measures

Mastery

Pearlin et al.'s (1981) Mastery scale consists of seven items which measure participants' feeling of being in control of their life and problems. Respondents rate each item on a four-point scale, hence total scores range from 7 (low mastery) to 28 (high mastery).

Resilience*

The 25-item Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003) was used as a measure of participants' ability to cope with stress and adversity by assessing adaptability, relationships, tenacity, goal-achievement and faith. Respondents rate each item on a five-point scale, hence total scores range from 0 (low resilience) to 100 (high resilience).

Coping Styles*

Carver's (1997) Brief COPE scale was used to identify respondents' main coping styles or the way in which they deal with and manage stress in their lives. The coping styles scale assesses 15 coping styles using 2 questions for each style and respondents indicate the amount they use a given style on a four-point scale (not at all; a little bit; a medium amount, a lot).

Life Satisfaction

The PATH study used Diener et al.'s (1985) Satisfaction with Life scale which lists five statements relating to life satisfaction. Respondents indicate their level of agreement on a seven-point scale, hence total scores range from 5 (extremely dissatisfied) to 35 (extremely satisfied).

Risk Factor Measures

Alcohol Use

Alcohol consumption was estimated using three items from the Alcohol Use Disorders Identification Test (Babor et al., 2001), and divided into five alcohol consumption pattern groups based on National Health and Medical Research Council guidelines (2001).

Illicit Drug Use

Participants were asked to identify if they had ever tried marijuana, ecstasy or amphetamines. If they responded yes to any of the above, they were asked to identify if they had used these during the last 12 months.

Tobacco Smoking

Participants were asked to identify if they were current smokers, had previously been regular smokers or never smoked.

Body Mass Index

Body Mass Index (BMI) scores were calculated as respondents' self-reported weight (in kg) divided by their self-reported height (in m) squared.

Physical Activity

Physical activity was assessed by asking participants to report the average number of hours and minutes per week they spent on each of the following levels of activity: mildly energetic (eg walking), moderately energetic (eg dancing, cycling), and vigorously energetic activity (eg running, playing squash). Respondents were then categorised as undertaking *vigorous* physical activity (1.5 hours or more per week of vigorous intensity activity), *moderate* physical activity (1.5 hours or more per week of moderate intensity activity, but less than 1.5 hours of vigorous intensity activity per week), and *none-mild* physical activity (less than 1.5 hours of moderate or vigorous intensity activity). These activity categories were based on the UK Whitehall II study (Marmot et al., 1991).

Medical Conditions

Participants were asked if they currently have heart trouble, cancer, arthritis, thyroid disorder, epilepsy, eye disease (cataracts, glaucoma or other eye disease), respiratory trouble (asthma, chronic bronchitis or emphysema) or diabetes.

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* Note. Due to data availability for these measures, only results from the 20s and 40s cohorts are presented in this report.

4 PATH DEMOGRAPHIC PROFILE

PATH Demographic Profile

The following chapter provides a brief description of the demographic characteristics of the PATH sample at the time of the most recent survey, when respondents in the 20s, 40s and 60s cohorts were aged between 28-32, 48-52 and 64-68 years, respectively. See Tables 4.1 to 4.3, and Appendix A for more details.

Region of Birth

The majority of PATH respondents were born in Australia. Around 11 per cent of the youngest age cohort, 21 per cent of the midlife cohort, and 33 per cent of the older cohort were born overseas. The most common region of birth outside of Australia was Europe (including Great Britain), followed by Asia (see table 4.1).

English as a Second Language

Most PATH respondents spoke English as their first language (see Table A1). A higher proportion of older persons reported English as a second language. Over 12 per cent of the old age cohort, 9.2 per cent of the midlife and 6.1 per cent of the youngest age cohort spoke English a second language.

Marital Status

The majority of participants were in a marriage or de facto relationship at the time of the most recent survey. A higher proportion of persons were currently separated or divorced from a partner in the older age cohorts (13.0 and 11.9 per cent of the 40s and 60s cohorts, respectively) compared to the youngest cohort (3.4 per cent).

Females were more likely than males to be in a de facto relationship in the 20s cohort, while the reverse was true for the midlife and more markedly for the 60s cohort (87.3 per cent of males compared to 66.8 per cent of females in a de facto relationship).

Sexual Orientation

The majority of respondents reported their sexual orientation as heterosexual (>96 per cent). Approximately 2 per cent of the young and midlife participants, and 1 per cent of the older age participants identified as homosexual. Approximately 2 per cent of the young, 1 per cent of the midlife, and less that 1 per cent of the older age cohort identified as bisexual. Less than 1 per cent of all respondents identified that they were unsure of their sexual orientation.

Table 4.1 Region of Birth by Gender within Age Cohort

Region of Birth	20s Cohort			40s Cohort			60s Cohort		
(%)	Total	Male	Female	Total	Male	Female	Total	Male	Female
Australia	89.5	89.7	89.3	79.0	78.9	79.2	67.4	64.4	70.6
New Zealand	0.6	0.5	0.7	2.0	1.5	2.4	1.4	0.9	1.9
Oceania /Pacific Island	0.9	0.8	1.0	0.3	0.3	0.2	0.3	0.4	0.2
Europe & UK	3.4	3.5	3.4	11.9	13.2	10.9	24.9	28.2	21.2
Asia	3.6	3.3	3.8	4.0	3.7	4.2	3.5	3.3	3.6
North America	0.6	0.6	0.5	0.9	0.8	1.0	1.1	1.3	0.9
South America	0.3	0.5	0.1	0.4	0.4	0.4	0.2	0.1	0.3
Africa	0.8	0.7	0.9	0.9	1.1	0.8	0.8	0.9	0.7
Other/ refused	0.4	0.5	0.3	0.5	0.2	0.8	0.5	0.4	0.6
Total Persons	2135	1012	1126	2352	1102	1250	2221	1147	1074

Labour Force Participation

At the time of the most recent survey, the majority of the young and midlife cohorts were employed full -time, and the majority of the oldest cohort were not in the labour force. More females than males worked part-time with the exception of the oldest cohort where more males work part-time than females. The proportion of respondents who identified as unemployed was very low, at 2 per cent or less for all age cohorts.

Education

Overall the PATH participants were highly educated, with approximately half of the sample reporting more than 15 years of education. The highest rates of educational attainment were among the youngest cohort. Approximately 3 per cent of the younger age cohort, 10 per cent of the midlife cohort and 24 per cent of the older age cohort reported less than 12 years of education.

Income Source

Not surprisingly, a wage or salary was the most commonly reported source of income among the young and midlife cohorts. The majority of the older cohort identified superannuation or annuity (44.2 per cent) and government benefits/allowances (26 per cent) as their main sources of income.

Gender differences were present and consistent between cohorts, with more females reporting that they relied on government benefits/allowances or received no income compared to male peers. Males were more likely to own a business or share in a partnership, whereas more females relied on investments as their main source of income than males.

Financial Hardship

The experience of financial hardship was more common in the youngest cohort (8.5 per cent) and among females. PATH researchers have observed that the experience of financial hardship appears to decline with time, however further research is required to clearly establish whether this reflects increased prosperity, or if it indicates a reduced response rate among the most disadvantaged participants over time.

Home Tenure

At the time of the most recent survey, most respondents were living in a home they were either in the process of purchasing or owned outright. A

Table 4.2 Home Tenure Among the PATH Sample at Most Recent Survey

Home Tenure (%)	20s Cohort (2007/08)			40s Cohort (2008/09)			60s Cohort (2005/06)		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Home buyer/ mortgagee	49.4	45.8	52.6	50.3	52.5	48.3	7.2	7.1	7.3
Home owner (outright)	4.8	4.8	4.7	35.6	32.8	38.1	83.9	84.8	82.9
Private rental	25.3	25.3	25.2	7.1	7.6	6.6	2.3	2.6	1.9
Public rental	3.1	2.8	3.4	3.2	2.2	4.1	4.1	3.3	4.9
Parents/ relatives residence	9.6	12.7	6.8	1.5	1.8	1.1	1.0	0.9	1.1
Rented group accommodation	5.2	6.9	3.7	0.2	0.4	0.1	0.0	0.0	0.1
Other	2.7	1.7	3.6	2.1	2.6	1.7	1.6	1.3	1.9
Total Persons	1976	918	1058	2177	1033	1144	2218	1146	1072

substantial proportion of the youngest cohort (aged 28-32 years at Wave 3 survey) reported living in private rental accommodation (25.3 per cent) and nearly 10 per cent lived at the residence of a parent or relative. The proportion of persons living in public or government rental accommodation was highest among the older age cohort (4.1 per cent).

Region of Residence

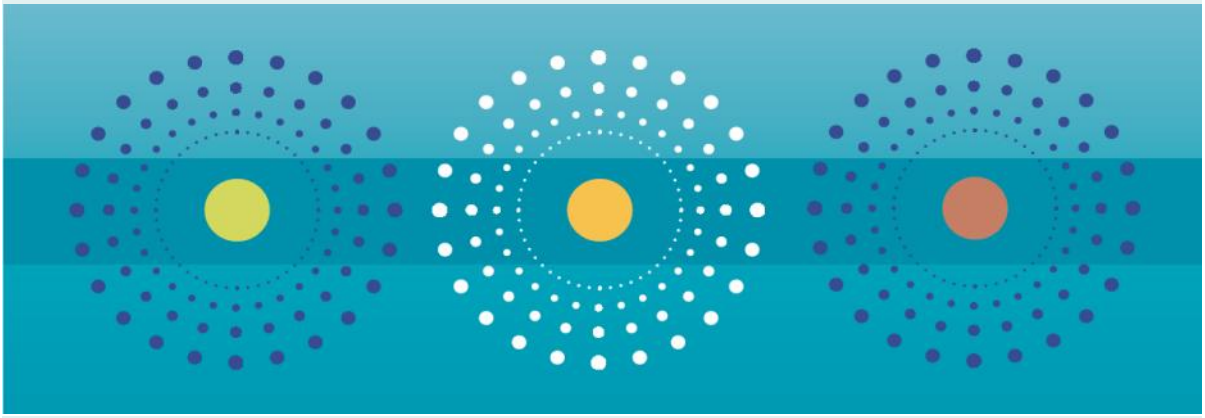
The PATH survey sampled the residents of Canberra and Queanbeyan but, due to the size of the relative populations, ACT residents represent the majority of survey respondents. At Wave 1, Canberra/ACT residents represented 94.4 per cent of respondents in the 20s cohort, 95.1 per cent of the 40s cohort and 94.6 per cent of the 60s cohort.

Over time, a proportion of survey respondents moved home, including some who have moved interstate or overseas. Where possible, contact was maintained with these respondents. At Wave 3, an estimated 76 per cent of respondents were still resident in the ACT. To examine potential differences, data on financial hardship and depression (replicating the major analysis reported in Box 8, Chapter 10) were re-analysed. Estimates of the prevalence of financial hardship and depression did not differ between those respondents residing in Canberra/ACT and those living elsewhere. Further, the relationship between the experience of hardship and depression was similar for Canberra respondents and those residing elsewhere.

Table 4.3 Demographic Characteristics of the PATH Sample

Demographic	20s Cohort			40s Cohort			60s Cohort		
Variable (%)	Total	Male	Female	Total	Male	Female	Total	Male	Female
Current Relationship Status									
Married / De Facto	68.3	66.2	70.1	77.5	80.7	74.7	77.4	87.3	66.8
Separated	1.6	1.8	1.3	3.5	2.8	4.2	2.0	1.9	2.0
Divorced	1.8	1.7	1.9	9.5	7.6	11.2	9.9	6.8	13.1
Widowed	0.1	0.0	0.1	1.4	0.8	1.9	8.5	2.2	15.2
Never married	28.3	30.2	26.6	8.0	8.1	8.0	2.3	1.7	2.9
Total Persons	1978	920	1058	2176	1034	1142	2220	1164	1074
Sexual Orientation									
Heterosexual	96.1	96.8	95.4	96.8	97.0	96.6	97.9	97.7	98.0
Homosexual	1.7	2.0	1.4	2.0	1.8	2.1	1.0	1.3	0.7
Bisexual	1.8	0.9	2.7	1.1	1.0	1.1	0.5	0.5	0.4
Don't know	0.4	0.3	0.5	0.2	0.2	0.2	0.7	0.4	0.9
Total Persons	2134	1012	1122	2349	1101	1248	2220	1146	1075
Years of Education									
>12 years	2.7	1.8	3.4	10.1	6.9	13.1	24.5	18.6	30.8
12-15 years	42.8	48.8	37.6	40.0	41.5	38.7	37.3	35.3	39.3
>15 years	54.5	49.3	59.0	49.8	51.6	48.2	38.3	46.1	29.9
Total Persons	1974	920	1054	2178	1034	1144	2222	1147	1075
Employment Status									
Full-time	77.1	89.8	66.2	75.7	89.0	63.8	8.9	12.9	4.6
Part-time	13.1	5.0	20.1	16.0	5.4	25.6	17.3	19.5	15.0
Unemployed	2.0	2.3	1.8	1.6	1.5	1.7	0.1	0.2	0.1
Not in the labour force	7.7	2.9	11.9	6.7	4.2	9.0	73.7	67.5	80.4
Total Persons	1978	920	1058	2179	1034	1145	2221	1147	1074
Income Source									
Wage or salary	84.5	87.7	81.7	81.8	81.6	81.9	10.4	12.1	8.7
Government benefit	5.7	2.6	8.3	2.8	2.2	3.4	26.0	23.2	29.0
Child support	0.3	0.0	0.6	0.1	0.0	0.1	0.0	0.0	0.0
Superannuation	0.0	0.0	0.0	1.6	1.1	2.0	44.2	47.5	40.7
Own business or partnership	5.3	7.0	3.8	8.4	11.3	5.7	3.6	4.8	2.3
Investments	0.6	0.5	0.7	2.5	2.0	3.0	12.3	10.3	14.5
Other income	1.3	1.2	1.3	1.1	1.1	1.0	2.8	1.9	3.6
No income	2.4	1.0	3.6	1.8	0.7	2.9	0.7	0.3	1.1
Total Persons	1971	919	1055	2177	1034	1143	2214	1144	1070
Financial Hardship									
No	91.5	92.3	90.9	94.6	95.6	93.7	97..8	98.5	97.0
Yes	8.5	7.7	9.1	5.4	4.4	6.3	2.2	1.5	3.0
Total Persons	1971	917	1053	2175	1034	1146	2214	1143	1071

Mental Health Epidemiology



5 Depressive Disorders

Mental Health Epidemiology

This section describes and reports on prevalence rates and a range of factors associated with clinical depression and anxiety, in which symptomology is at a level consistent with a mental disorder. It is important to note that these findings are from an observational study and do not imply causality. The causes of mental disorders are complex and multi-factorial; and have been the subject of much research. The literature indicates that mental health aetiology can involve the interaction of a variety of differing individual susceptibilities, environmental exposures and encompass a range of genetic, developmental, biochemical, endocrine, nutritional and psychosocial factors. Moreover, these factors and interactions are not deterministic, but rather indicate risk factors that effect probabilities of a disorder. It is beyond the scope of this report to explore causality. The relationships presented in the following chapters reflect correlations only.

Depressive Disorders

Depressive mood disorders are among the most prevalent mental disorders. Depression is the common term used to refer to a depressive mood disorder that is characterised by a group of symptoms that reflect a sad and or irritable mood that exceeds normal sadness or grief. Common symptoms of depression include: low mood, loss of interest or pleasure, feelings of guilt or low self worth, disturbed sleep or appetite, low energy and poor concentration. These problems can be chronic or recurrent and can lead to significant levels of impairment in an individual's ability to take care of themselves and their responsibilities.

Depression is a major public health concern. The World Health Organisation (2001) has projected depression to become the second leading cause of disability and economic burden in the coming decade. Depression is consistently associated with a substantial burden of disability, increased utilisation of health services, and lost work productivity. However, many depressive disorders are treatable and preventable.

Depression can occur in persons of all ages, gender, and backgrounds; although the experience of depression can vary across the lifespan and across population groups. Depression is often a recurrent disorder, with the age of first onset typically occurring during mid-late adolescence (APA, 2004). Depression can also coexist with many other mental health conditions as well as physical illnesses. There are several types of uniploar depressive disorders: major depression, dysthymia (also known as minor depression), postnatal depression and depression not otherwise specified. The experience of depression can also be present in the context of other mental illnesses such as bipolar disorder (formerly known as manic depression), and schizoaffective disorders.

Prevalence of Depression

The PATH study showed that a substantial proportion of Canberra and Queanbeyan residents had clinical levels of depression. Rates of depression were highest in the youngest cohort. At the time of the most recent survey, 9.4 per cent of 28-32 year-old participants had experienced symptoms consistent with a depressive disorder during the previous fortnight.

Depression rates are lower at older ages, with 6.8 per cent of midlife, and 5 per cent of the old age cohort presenting with depression (see table 5.1). This pattern was evident for both males and females (see figure 5.1 and Appendix B for more information). Women typically experienced slightly higher rates of major depression than men (with the exception of the oldest age cohort) and males reported higher rates of other depressive syndromes (such as dysthymia and depression not otherwise specified). However, further analysis showed that these gender differences were not statistically significant. Major depression was the most common clinical depressive disorder, except among the oldest cohort where higher rates of 'other depressive disorders' were reported.
A high proportion of persons of all age cohorts (4.9

per cent - 8.9 per cent) reported depression symptoms that did not meet the diagnosis of a depressive disorder. Although these sub-clinical symptoms of low mood do not reach the threshold to support a clinical diagnosis, they may still cause the persons considerable distress and be a risk factor for future clinical depression.

The prevalence rates reported in PATH study are consistent with the findings of other population based studies; such as the European ODIN study that reported a prevalence of depressive disorders of 8.56 per cent (Ayuso-Mateos et al, 2001), and the US National co-morbidity Survey that reported 12 month prevalence of 6.6 per cent (95 per cent CI, 5.9-7.3 per cent) (Kessler, Chiu, Demler, & Walters, 2005). In a nationally representative Australian study using the WMH-CIDI-3 to provide ICD-10 diagnoses, the 12 month prevalence of depressive disorders in Australians aged 16 and older was 5.4 per cent (ABS, 2007).

Demographic Associations of Depression

The prevalence of depression was associated with marital status, education, employment status, and financial hardship. These relationships varied slightly between age cohorts. See Appendix B for more details.

Marital status

The highest rates of depressive disorders were found among those who were separated, divorced or widowed, and among those who had never married.

Education

Years of education were associated with depression. The proportion of persons experiencing depression was highest among those with less than 12 years of education, and lowest among those with greater than 15 years of education.

Employment status

Generally, a higher proportion of persons who were unemployed or out of the labour force reported depression than those who worked full or part-time. The relationship between employment status and depression was most notable in the youngest age cohort where 33.3 per cent of persons who were unemployed and 14.5 per cent of those who were out of the labour force reported clinical levels of depression. An exception to the aforementioned relationship was the oldest age cohort where no statistical association was found between

Table 5.1 Prevalence of Depressive Disorders Over a Two Week Period by Gender and Age Cohort

Depression (%)	20s Cohort (2007/08)			40s Cohort (2008/09)			60s Cohort (2005/06)		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
No Depression	81.7	84.0	79.6	85.8	87.7	84.2	90.1	90.7	89.3
Sub-clinical Depression	8.9	6.2	11.2	7.4	5.8	8.9	4.9	4.5	5.4
Depressive Disorder (Total)	9.4	9.7	9.2	6.8	6.5	7.0	5.0	4.7	5.2
Major Depression	5.1	5.2	3.5	3.3	3.7	3.3	1.9	2.6	3.5
Other Depression	4.3	4.5	5.7	3.5	2.8	3.7	3.1	2.1	1.7
Total Persons	1968	915	1053	2167	1030	1137	2182	1134	1048

Depressive Disorders

employment status and depression.

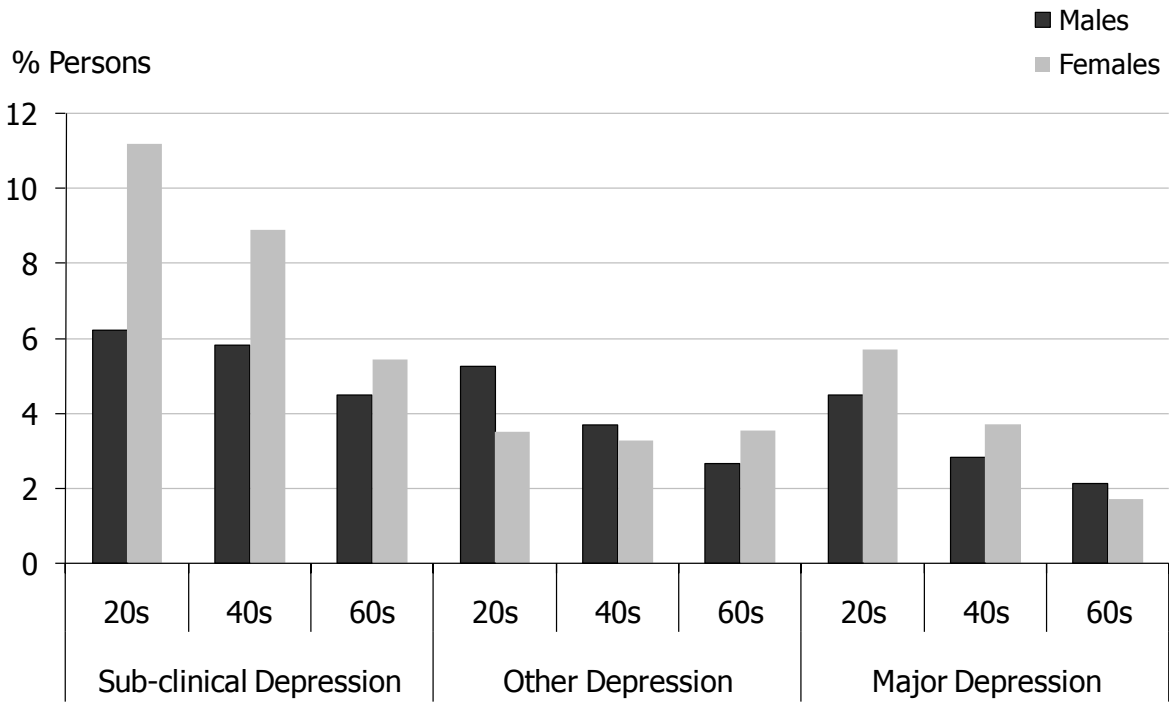
Financial hardship

A strong relationship was found between the experience of financial hardship and the experience of depression. During the past year, 7.5 per cent of the PATH participants experienced at least one of the markers of financial hardship — either they had to sell their possessions, go without meals, were unable to heat their home, or had to ask for help from a welfare organisation due to a shortage of money. This relationship was most notable in the youngest age cohort where 22.4 per cent of respondents who reported financial hardship also reported depression. Regression analysis found that persons who experienced financial hardship were between 2.2 and 3.8 times more likely to experience depression than those who had not experienced financial hardship in the previous year. See Table B5 and PATH investigates Box 8 (Chapter 10) for more information.

Key Findings: Depression

- At the most recent survey, 9.4 per cent of 28-32 year-olds, 6.8 per cent of 48-52 year-olds and 5 per cent of 64-68 year-olds reported symptoms consistent with a depressive disorder during the previous fortnight.
- Females typically reported slightly higher rates of depression; and the incidence of depression appear to decline with age.
- Financial hardship, unemployment, withdrawal from the labour force, reduced educational attainment and a marital status of separated, widowed or divorced, were all associated with increased likelihoods of depression.

Figure 5.1 Prevalence of Depression by Age Cohort and Gender At Most Recent Survey



Special Issues

The following section contains information on population groups that require special attention or more research in relation to depression. It also takes a closer look at suicidality, its risk factors and its relation to depression.

Age and Common Mental Conditions

Results of the PATH survey show that the prevalence of anxiety and depression appear to decline with age. This is a commonly reported pattern in the research literature. However, although there is some evidence that ageing is associated with an intrinsic reduction in susceptibility to anxiety and depression (Jorm, 2000), it has been suggested that many studies may have underestimated the prevalence of anxiety and depression in the elderly. It is argued that the lower anxiety and depression prevalence rates observed in older populations may reflect measurement error, owing to differences in the way older individuals report anxiety and depression, and by many studies limiting participation to community dwelling older adults, who may have lower rates of these common mental disorders than those living in institutions (Stein & Lang, 2002). This is an area of epidemiology that requires further research.

Box 1. **PATH Investigates: The Preponderance of Depression and Anxiety in Women**

Research evidence shows that women experience higher levels of depression and anxiety than men do, however, the reasons for these gender differences remain unclear. PATH researchers have examined possible explanations. Initially they hypothesised that item bias in the scales used to measure depression and anxiety might be responsible for gender differences in overall levels of symptomology, however, this hypothesis was not supported. Following on from this work, a second paper examined potential psychosocial risk factors (mediators) for the preponderance of depression and anxiety in women. This research found that women across three age groups were more exposed to negative interpersonal events and childhood adversity than men were, and that these factors were associated with their greater psychological distress. Women were also found to more often possess harmful personality characteristics and coping styles than men, such as low levels of mastery, as well as high levels of behavioural inhibition, negative rumination and neuroticism. They also were more likely to have poor physical health and low participation in physical activity.

Leach, L. S., Christensen, H., & Mackinnon, A. J. (2008). Gender differences in the endorsement of symptoms for depression and anxiety: Are gender biased items responsible? *Journal of Nervous and Mental Disease*, 196, 128-135.

Leach, L. S., Christensen, H., Mackinnon, A. J., Windsor, T. D., & Butterworth, P. (2008). Gender differences in depression and anxiety across the adult lifespan: The role of psychosocial mediators. *Social Psychiatry and Psychiatric Epidemiology, 43*, 983-998.

Depressive Disorders

Box 2. **PATH Investigates: Suicidal Ideation and Attempts**

There is currently a lack of epidemiological data on suicidal behaviour in the field of suicidology, and more specifically in the Australian context. PATH is an important study for examining suicidality because it addresses the issue across the adult life course.

Analyses of PATH data have shown that men aged 60-64 were 65 per cent more likely to report suicidal thoughts than their female counterparts and being underemployed also dramatically increased the likelihood of experiencing suicidal ideation within this age group. However, perception of mastery over one's life was highly protective against suicidal ideation among younger and middle-aged adults.

PATH researchers have also conducted investigations to find out what distinguishes those who have suicidal ideation, from those who go on to attempt suicide. This distinction is critical for the targeting of prevention programs, yet there has been little research that has allowed for this distinction to be made. Again, differences were found across age and gender. Unemployment was found to be particularly important during middle age, where suicide ideators without work were nearly nine times more likely to attempt than those who worked. Further, male ideators with a physical illness were nearly four times more likely to report a suicide attempt. Another key finding was that depression and anxiety did not distinguish between those who reported ideation, and ideators who also attempted.

Fairweather, A. K., Anstey, K. J., Rodgers, B., & Butterworth, P. (2006). Factors distinguishing suicide attempters from suicide ideators in a community sample: Social issues and physical health problems. *Psychological Medicine*, *36*, 1235-46.

Fairweather, A. K., Anstey, K. J., Rodgers, B., Jorm, A. F., & Christensen, H. (2007). Age and gender differences among suicidal ideators: prevalence and correlates. *Journal of Nervous and Mental Disease*, *195*, 130-136.

Box 3. **PATH Investigates: Suicidality, Age and Gender**

In a longitudinal study, PATH researchers investigated the 12-month prevalence rates and predictors of suicidal behaviour, focusing on age and gender differences. Participants were 6,666 adults aged 20-29, 40-49 and 60-69 years. While prevalence of suicidal ideation and suicide attempt at follow-up decreased significantly (8.2 per cent to 6.1 per cent, and 0.8 per cent to 0.5 per cent, respectively), over one quarter of those reporting serious suicidality at baseline still experienced it four years later.

Factors associated with suicidality varied with age and gender (see Table below). Females aged 20-29 years who had never married were approximately four times more likely to be suicidal than females who had been married. Similarly, having been diagnosed with a physical illness at follow-up tripled the odds of serious suicidality in these young females. For males aged 40-49 years, not being in the labour force increased the odds of serious suicidality fourfold compared to their equivalently-aged and employed counterparts. Depressed/anxious females aged 60-69 years were nearly 30 per cent more likely to be seriously suicidal. In conclusion, there are age and gender differences in the risk factors for suicidality, with life circumstances, depression and anxiety contributing substantially to the onset of serious suicidality.

Predictors of serious suicidality at follow-up among participants reporting no suicidality at baseline (N = 5, 460)

Cohort	Predictor	Odds Ratio (95% CI)
	Females	
20s	Never married	4.17*** (3.11, 5.23)
	Physical medical condition	3.18*** (2.09, 4.26)
	Depression and anxiety	1.09* (1.00, 1.18)
60s	Depression and anxiety	1.28* (1.04, 1.52)
	Males	
40s	Not in labour force	4.08** (1.68, 6.48)
	Depression and anxiety	1.14* (1.02, 1.26)

* p<0.05, ** p<0.01, *** p<0.001

Fairweather-Schmidt, A. K., Anstey, K. J., Salim, A., & Rodgers, B. (2010). Baseline factors predictive of serious suicidality at follow-up: findings focusing on age and gender from a community-based study. *BMC Psychiatry, 10,* 41.

Depressive Disorders

Box 4. **PATH Investigates: Suicidalilty and Depression**

Suicidal behaviour is often considered in the context of depression. In a recent study, PATH researchers examined whether it is justifiable to regard suicidality as a symptom of depression or whether it is a distinct entity. They also examined whether the construct underlying suicidality is stable across the lifespan and between genders.

Using a community-based sample of 7485 people aged 20-24, 40-44 or 60-64 years, the researchers found that the data fit a two-factor model of depression and suicidality better than a single-factor model, with no significant difference in the model fit according to gender or age group.

These analyses established that suicidality is distinguishable from depression, although the factors are substantially correlated. Further, the results suggested that the underlying relationship between suicidality and depression does not vary considerably between genders or across cohorts aged 20-24, 40-44 and 60-64 years.

This research highlights the need for suicidality to be reconceptualised as a separate syndrome, and suggests the need to assess individuals for suicidal symptoms independently from depression. For example, it would be highly informative to modify questionnaires so that all respondents are presented with items about suicidal symptoms regardless of their responses to questions about depression. Moreover, if these results are replicated, suicidality may need to be identified as an individual syndrome in diagnostic and classification manuals.

Fairweather-Schmidt, A.K., Anstey, K.J., Mackinnon, A. (2009) Is suicidality distinguishable from depression? Evidence from a community-based sample. *Australian and New Zealand Journal of Psychiatry, 43*, 208-215.

Box 5. **PATH Investigates: Cardiovascular Risk Factors, Life Events and Depression**

In the vascular theory of late-life depression, cardiovascular risk factors such as diabetes, smoking, alcohol, body mass index, cholesterol medication and hypertension are implicated as causes of depression. In addition to a direct effect on depression risk, these cardiovascular risk factors have been viewed as increasing vulnerability to depression. Thus, compared to healthy individuals, those with these risk factors may be more likely to be depressed after experiencing negative life events.

In a recent study, PATH researchers evaluated cardiovascular risk factors and life events as predictors of depressive symptoms in a mid-life and an early late-life cohort to determine whether they had independent or interacting effects, and whether there were age differences in the effects.

Cohorts aged 40 to 44 years (n = 2530) and 60 to 64 years (n = 2551) at baseline (Wave 1) were followed up after 4 years (Wave 2) as part of the PATH Through Life Study based in Canberra and Queanbeyan, Australia. At baseline, those with high levels of depressive symptoms were more likely to report smoking, using cholesterol-lowering medications, hypertension, diabetes, past stroke, and higher body mass index. Predictors of depressive symptoms at Wave 2 in the cohort of 40- to 44-year-old persons included Wave 1 depressive symptoms, diabetes, and negative life events at Wave 2. In the cohort of 60- to 64-year-old individuals, Wave 1 depression, stroke, smoking, low education, and Wave 2 negative life events predicted depressive symptoms. There was no evidence of interactions between cardiovascular risk factors and negative life events.

In conclusion, negative life events and cardiovascular risk factors were found to be independent sets of risk factors for depressive symptoms, suggesting both psychosocial and biological causal pathways for depression, with different effects in the 40- to 44-year-old and 60- to 64-year-old cohorts. Thus, different subgroups in the population may require different approaches to prevention of depression at different stages in the life course.

Anstey, K. J., Burns, R., Butterworth, P., Windsor, T. D., Christensen, H., & Sachdev, P. (2009). Cardiovascular risk factors and life events as antecedents of depressive symptoms in middle and early-old age: Path Through Life Study. *Psychosomatic Medicine, 71*, 937-943.

6 Anxiety Disorders

Anxiety Disorders

Anxiety is a psychological and physiological state that causes unpleasant feelings of nervousness, fear, apprehension, and worry. It is normal for persons to experience some anxiety when they confront something challenging, are stressed, or encounter a threat or danger. The term anxiety disorder describes a group of several conditions where the primary feature is abnormal or inappropriate anxiety. Anxiety disorders reflect something much more than the normal feelings of anxiety that accompany a challenging situation. They require specific symptoms to be present over a period of time; and these symptoms are accompanied by changes in thoughts, emotions, and behaviour. These symptoms must also cause substantial distress and impairment in an individual's ability to function in daily life.

There are several types of anxiety disorders and people will often have symptoms of more than one. Common anxiety disorders include: generalised anxiety disorders, agoraphobia, panic disorders, social phobias, specific phobias (such as arachnophobia and claustrophobia), obsessive compulsive disorder, acute stress disorder, and post traumatic stress disorder.

Anxiety disorders occur across all human cultures and can affect people of all ages, gender and backgrounds (Weissman et al., 1997). The course of anxiety disorders varies between the particular disorder and between individuals. Anxiety disorders often begin in young adulthood and if untreated, often persist into old age. Anxiety disorders often occur along side other mental or physical illnesses. It is particularly common for anxiety disorders to co-occur with depressive mood disorders or substance abuse (Kessler Chiu, Demler, & Walters, 2005). Substance use, such as drinking alcohol, may mask anxiety symptoms. The research literature suggests that the association between substance abuse and anxiety appears to be largely non-causal, reflecting adverse factors that increase individual susceptibility to both anxiety disorders and substance use (New Zealand Ministry of Health, 2008).

Key Findings: Anxiety

- At the most recent survey, 9.4 per cent of 28-32 year-olds, 5.8 per cent of 48-52 year-olds and 3.2 per cent of 64-68 year-old Canberra region residents reported clinical levels of anxiety symptoms in the past month.
- Anxiety disorders were more common among females and the younger cohort.
- Anxiety was associated with marital status, employment status, financial hardship and years of education. The demographic characteristics associations with anxiety were similar to those associated with depressive disorders.

Prevalence of Anxiety

The PATH study showed that anxiety disorders were common. At the time of the most recent survey, 9.4 per cent of 28-32 year-olds reported symptoms consistent with an anxiety disorder within the previous month. This makes the prevalence of anxiety disorders equally as common as depressive disorders for this age group. In the midlife and older cohorts, anxiety was less prevalent than depression. At the most recent survey, approximately 6 per cent of 48-52 year-olds and 3 per cent of 64-68 year-olds reported clinical levels of anxiety during the previous month. Compared to the results of the previous PATH survey, fewer incidents of anxiety disorders were reported at the four year follow up (current survey), suggesting that the prevalence of anxiety disorders may decline over time.

Females reported higher rates of anxiety disorders than males. This difference was most notable in the youngest age cohort where females reported double the proportion of anxiety disorders than males (12.2 per cent of women, 6.1 per cent of males). Panic disorder was less commonly reported than 'other anxiety' disorders; a category that included generalised anxiety, post traumatic stress disorder,

agoraphobia and anxiety disorder not otherwise specified.

The prevalence rates identified in the PATH survey are consistent with those reported in other population based studies for panic disorder. However the rates observed in the PATH study for total and other anxiety disorders are lower than those observed elsewhere. The US National Co-morbidity Survey records the 12 month prevalence of panic disorder at 2.7 per cent and a total anxiety disorder prevalence of 19.1 per cent (Kessler, Chiu, Demler, & Walters, 2005). The National Survey of Mental Health and Wellbeing reports a 12 month prevalence of anxiety disorder of 14.4 per cent and panic disorder of 2.6 per cent of Australians aged 16 and over (ABS; 2007). The under-representation of total and other anxiety disorders in the PATH sample is likely due to the different assessment measures used and the shorter time period investigated for symptoms (4 weeks compared to 12 months).

Demographic Associations with Anxiety

Results indicated that the demographic factors associated with anxiety disorders varied across the life course. As noted, anxiety was more common among younger than older adults. The demographic characteristics associated with anxiety disorders were similar to those factors associated with depressive disorders; marital status, education, financial hardship and employment status. Statistics are provided in Appendix B.

Marital Status

The highest proportion of anxiety disorders were observed among those whose marital status was separated, widowed or divorce. Being never married was also statistically associated with anxiety disorders for the young and midlife cohorts.

Education

A greater proportion of persons who had less than 12 years of education reported anxiety disorders than those who had higher education levels. Increased years of education decreased the likelihood of reporting anxiety disorders.

Employment Status

A relationship was observed between employment status and anxiety disorders within the young and midlife cohorts, but not among the old age cohort. At the time of the most recent survey, those in the young and midlife age cohorts who were not in the labour force were two to three times more likely to report anxiety disorders than their full-time working peers.

Table 6.1 Prevalence of Anxiety by Gender and Age Cohort at Most Recent Survey

Anxiety (%)	20s Cohort			40s Cohort			60s Cohort		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
No Clinical Anxiety	90.6	93.9	87.7	94.2	95.2	93.3	96.9	97.2	96.5
Anxiety Disorder Total	9.4	6.1	12.2	5.8	4.8	6.8	3.1	2.8	3.5
Panic Disorder	3.6	2.1	4.8	2.1	1.1	3.1	0.9	0.8	0.9
Other Anxiety Disorders	5.8	4.0	7.4	3.7	3.7	3.7	2.3	2.0	2.5
Total Persons	1969	917	1052	2170	1029	1141	2196	1136	1060

Anxiety Disorders

Financial Hardship

Anxiety disorders were statistically associated with the experience of financial hardship during the previous year. Those who identified an experience of hardship were between 1.1 and 2.8 times more likely to report anxiety disorders.

Box 6. **PATH Investigates: The Effect of the Canberra Bushfires on Neurocognitive Functioning**

Since trauma experiences are generally random and unpredictable, it is very difficult for researchers to have access to such pre-trauma measures. In the PATH Through Life project, 2404 participants aged 20 to 24 years were interviewed for this longitudinal study in 1999 and 2139 (89.0 per cent) were then re-interviewed after the Canberra bushfires that occurred in January 2003. Neurocognitive measures (working memory, immediate and delayed recall, processing speed and verbal intelligence) were obtained from these trauma-exposed participants both before and after the trauma. Researchers found that PATH participants who screened positive for post traumatic stress disorder (PTSD) had significantly poorer neurocognitive skills prior to the trauma experience, but that, in the main, their measures of these skills did not decline significantly as a result of their being exposed to this trauma or experiencing PTSD symptoms. It was concluded from this study that having poorer neurocognitive skills following exposure to trauma may not be the result of the trauma experience and related PTSD symptoms. Instead, having poorer neurocognitive abilities is likely to be a risk factor for developing PTSD.

Parslow R.A., Jorm A.F. (2007). Pre-trauma and post-trauma neurocognitive functioning and PTSD symptoms in a community sample of 1599 young adults. *American Journal Psychiatry, 164*, 509-515.

7 Mental Health Impairment

Many mental health conditions have profound adverse social, occupational and economic consequences that can negatively affect quality of life. Quality of life is an increasingly important outcome considered by patients, clinicians and policymakers alike (Sanderson & Andrews, 2002).

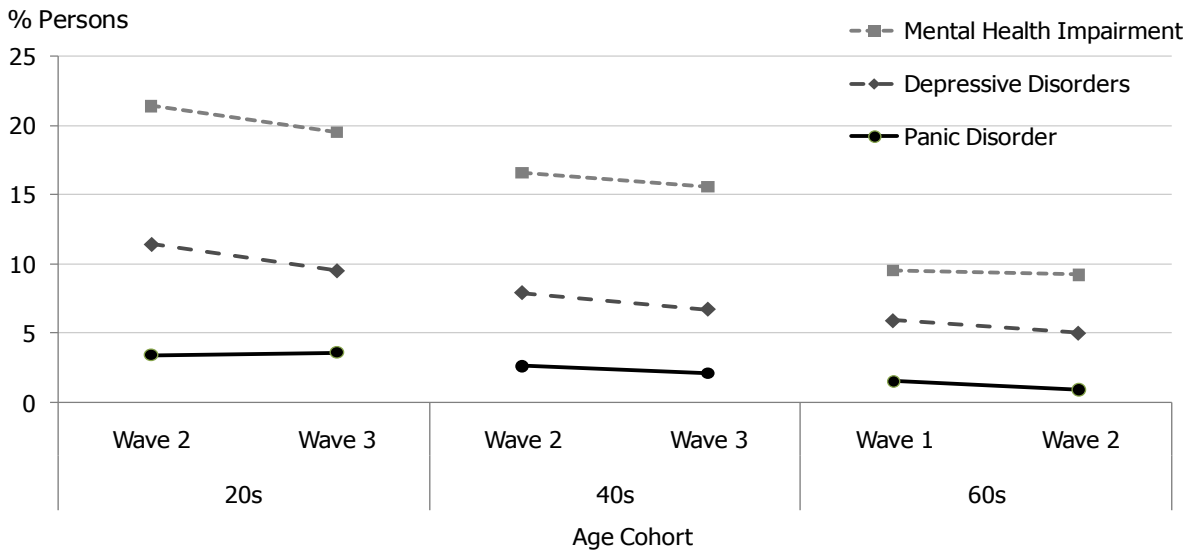
The PATH project used the mental component summary score from the SF-12 (Ware, Kosinski & Keller, 1996) as a measure of mental health related quality of life. It is a standardised scale, with categories based on the distribution from US norms. This general measure captures an individual's vitality, social functioning, emotional wellbeing and role limitations due to emotional problems and mental health. It does not target a specific age or mental health condition. For the remainder of this report, mental health impairment will be adopted as the key outcome measure.

Results from the PATH sample showed that the majority of persons had none to mild levels of mental health impairment, indicating they had little to no limitation in their quality of life due to emotional problems and mental health. However, as can be seen in Figure 7.1, the proportion of persons reporting a moderate to severe mental health impairment was markedly higher than the proportion reporting depression or panic disorder, suggesting that mental health impairment may more sensitively reflect the psychological distress in a population. The PATH findings are consistent with the National Health Survey (ABS, 2008) which found that over a one month period, 34 per cent of Australian adults experience moderate to very high levels of psychological distress, while longer term rates of both depression (9 per cent of females, 6 per cent of males) and anxiety-related problems (4 per cent of females, 3 per cent of males) were considerably lower.

Key Findings: Mental Health Impairment

- The highest rates of functional impairment due to poor mental health were observed among the youngest age cohort.
- At the time of the most recent survey, 19.5 per cent of 28-32 year-olds, 15.6 per cent of 48-52 year-olds and 9.2 per cent of 64-68 year-olds experienced moderate to severe levels of mental health impairment.

Figure 7.1 Prevalence of Moderate to Severe Mental Health Impairment, Depressive Disorders and Panic Disorder by Age Cohort at 4 year Follow Up



Mental Health Impairment

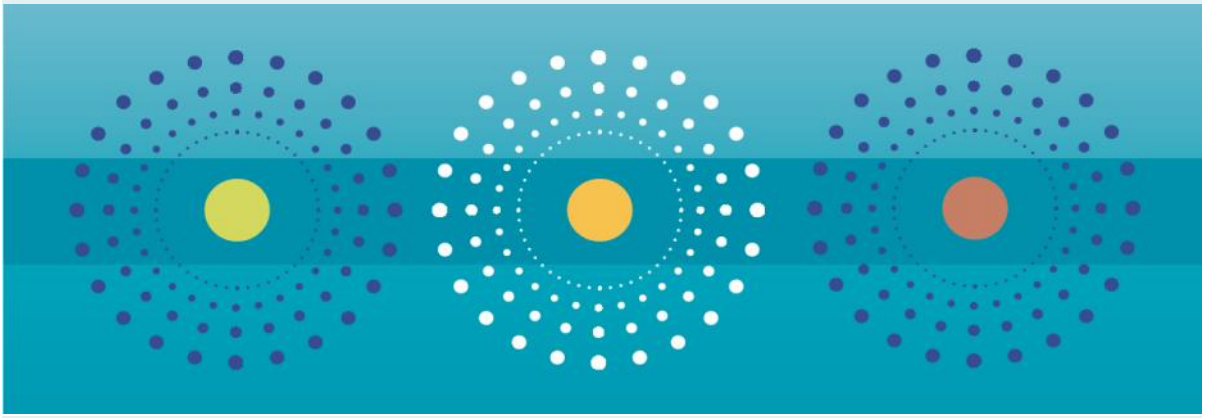
Table 7.1 Prevalence of Mental Health Impairment by Gender and Age Cohort at Most Recent Survey

Mental Health Impairment (%)	20s Cohort			40s Cohort			60s Cohort		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
None-mild	80.5	84.3	77.1	84.4	86.4	82.7	90.8	93.0	88.5
Moderate-severe	19.5	15.7	22.9	15.6	13.6	17.3	9.2	3.6	5.6
Total Persons	1976	919	1057	2176	1033	1143	2179	1128	1051

Research suggests that, like depression and anxiety, mental health impairment reflects psychological distress. Indeed, similar patterns of prevalence rates were observed between panic, depressive disorders and mental health impairment: the highest rates were found in the 20s cohort (19.5 per cent at most recent survey; see Table 7.1), followed by the 40s and 60s cohorts, and slight decreases between the two waves (4 years) were seen in each age group.

As was the case for clinical anxiety and depression, rates of moderate to severe mental health impairment were higher among females in all age cohorts. For example, among the 20s cohort, 22.9% of females had experienced mental health impairment in the past four weeks, compared to 15.7% of males.

Social and Economic Context



8 Stressful Life Events

This chapter discusses the effects of social and economic context on mental wellbeing.

Stressful Life Events

At some time in a person's life, it is inevitable that a stress–causing event will occur. This event may trigger or exacerbate mental health impairment, or conversely, the event's occurrence may have been influenced by pre-existing problems.

Stressful Life Events in the PATH Sample

In the PATH survey, participants were asked whether any of the 12 categories of life events or problems from Brugha and Cragg's (1990) List of Threatening Experiences questionnaire had happened to them in the past six months. These common life events were highly likely to be threatening, such as bereavement or being sacked from a job. See Figure 8.1 for the proportion of respondents experiencing each of the life events.

The most common event experienced was the death of a close family friend or relative, reported by 19.8,

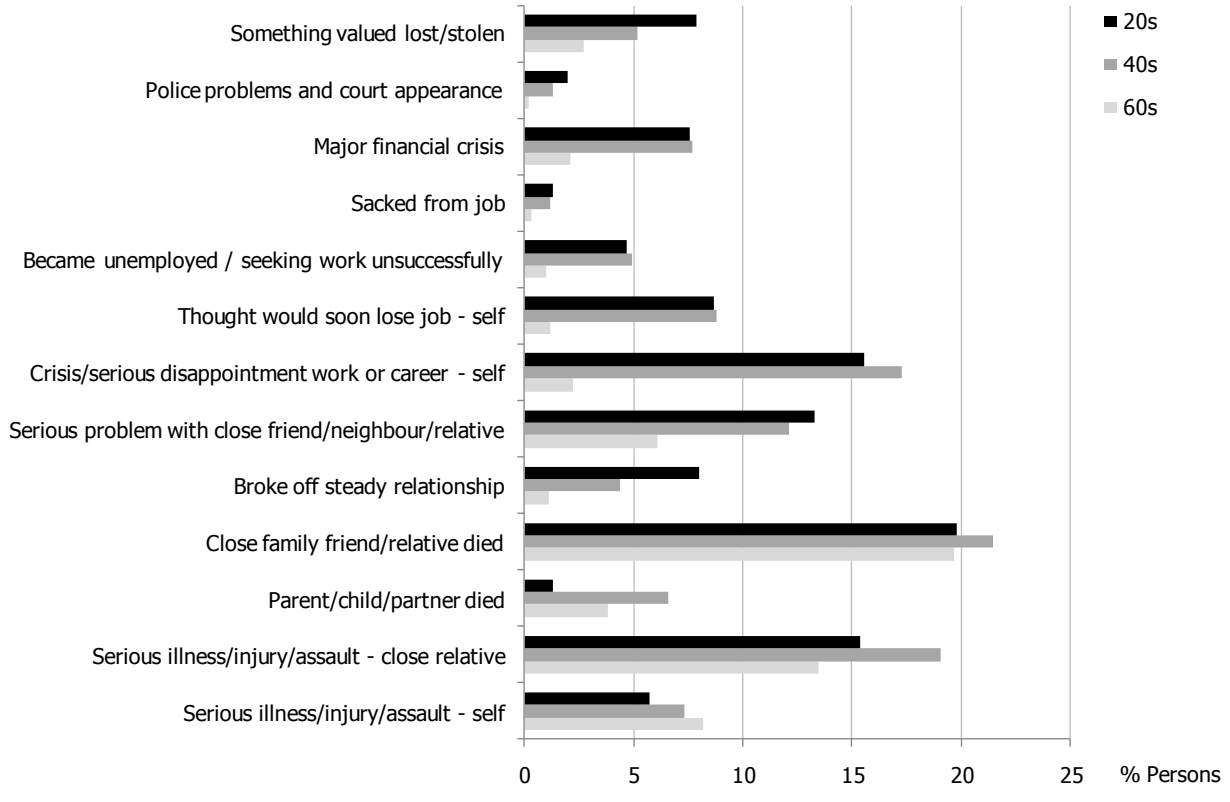
Key Findings: Stressful Life Events

In the 20s, 40s and 60s cohorts, common stressful life events reported were:

- death of a close family friend or relative (19.8, 21.5 and 19.7 per cent, respectively)
- serious illness, injury or assault of a close relative (15.4, 19.1 and 13.5 per cent, respectively).

Work-related stressful life events were common among the 28-32 and 48-52 year-olds.

Figure 8.1 Rates of Stressful Life Events in the Past Six Months for Each Cohort at Most Recent Survey



Stressful Life Events

21.5 and 19.7 per cent of respondents in the 20s, 40s and 60s cohorts, respectively. Another common event in all age cohorts was the serious illness, injury or assault of a close relative (rates of 15.4, 19.1 and 13.5 per cent, respectively).

Other events showed greatly differing rates depending on age cohort. For example, a crisis or serious disappointment with one's own work or career was common among the youngest and midlife cohorts (15.6 and 17.3 per cent, respectively), but not in the oldest cohort (2.2 per cent). This is not surprising since it is likely that many of the 64-68 year-olds would have been retired or nearing the end of their careers. Supporting this notion, rates of many job-related events were lower in the 60s cohort than in the younger cohorts. The oldest cohort was also less likely to report having experienced a major financial crisis in the past six months (2.1 per cent compared to 7.6 and 7.7 per cent of the 20s and 40s cohorts, respectively).

Stressful Life Events and Mental Health

As expected, many of the stressful life events were associated with higher rates of moderate to severe mental health impairment. This was true for all cohorts in the case of serious illness, injury or assault to oneself, where experiencing this event was associated with approximately double the odds of mental health impairment for the 20s cohort and approximately four times greater odds for the 40s and 60s cohorts (see Appendix C).

The other stressful life event which was associated with mental health impairment in all age cohorts was experiencing a serious problem with a close friend, neighbour or relative. This event was associated with approximately double the odds of moderate to severe mental health impairment in all age cohorts, hinting at the importance of close social relationships for mental wellbeing.

Key Findings: Stressful Life Events and Mental Health

In all age cohorts, the life events associated with greater rates of mental health impairment were:

- serious illness, injury or assault to oneself
- serious problem with a close friend, neighbour or relative.

Work-related stressful life events were associated with mental health impairment among the 28-32 and 48-52 year-olds.

Financial crisis was associated with mental health impairment in the midlife and oldest cohorts.

Other life events were only associated with mental health impairment in certain age cohorts. For example, in the youngest in midlife cohorts, having thought that one would soon lose one's job, and having had a crisis or serious disappointment at work or in one's career were each associated with approximately twice the likelihood of mental health impairment.

In both the midlife and oldest cohort, having experienced a major financial crisis was associated with significantly poorer mental health outcomes. It is interesting that this effect was statistically significant in the 60s cohort, in spite of the small number of respondents reporting financial hardship.

It is interesting to note that neither the death of a parent, child or partner, or of a close family friend or relative, was significantly associated with mental health impairment, in spite of the great emotional toll these events would take. Thus, while the accumulation of stressors is known to be a risk factor for mental health problems, an individual stressful life event may not necessarily act as a trigger. Furthermore, in some cases, the experience of mental health impairment or related problems may influence the occurrence and reporting of certain stressful life events.

9 Work Stress

Box 7. **PATH Investigates: Job Strain and Insecurity**

For over two decades, researchers have investigated the effects of job demands and job control on wellbeing. In this context, job control refers to employees' ability to make decisions about how and when they perform their work as well as the extent to which their job entails using and developing their skills. Job demands, on the other hand, encompasses the amount and pace of work. The combination of high job demands and low control ("job strain") has been linked to a broad range of mental and physical health problems.

With increasing globalisation and competition, work conditions are becoming more insecure, with a growth in casual employment, and more employees in temporary or short term contract work. Unlike job demands and control, less research has thus far examined the health impact of job insecurity.

Using PATH data, the National Centre for Epidemiology and Population Health (NCEPH) examined the extent to which job strain and job insecurity are associated with mental health (depression and anxiety) and physical health. Their sample consisted of 1188 employed professionals, aged 40-44 years, 55 per cent male.

In this relatively privileged socioeconomic group, adverse job conditions were found to be common, with 23 per cent of the sample reporting high job strain, while 7.3 per cent and 23 per cent reported high and moderate job insecurity, respectively. Strong associations were found between job strain and health, and job insecurity and health. This was particularly true for mental health, and could not be explained by effects of gender, education, marital status, employment status, major life events or negative affectivity (personality trait).

When the investigators examined the effects of job strain and insecurity independent of one another, they found that each adverse job condition remained strongly associated with depression and anxiety. Respondents with high job insecurity were more than three times more likely than those with more job security to report poor self-rated health, depression and anxiety. Similarly, those with high job strain were more than twice as likely as those under less job strain to be experiencing depression and more than three times more likely to be experiencing anxiety.

In conclusion, insecure employment and high job strain showed independent, consistent, and strong associations with physical and mental health in the midlife cohort of the PATH sample. These adverse job conditions are becoming more common, particularly insecure employment, and their influence are an important focus for future public health research.

D'Souza, R. M., Stradzins, L., Lim, L., Broom, D., & Rodgers, B. (2003). Work and health in a contemporary society: Demands, control and insecurity. *Journal of Epidemiology and Community Health, 57*, 849-854.

10 Financial Hardship

Socio-economic Circumstance and Common Mental Conditions

The relationships evident in the PATH survey between mental health and unemployment, financial hardship and educational attainment reflect the over-representation of depression and anxiety in the lower socio-economic strata. This relationship between socio-economic disadvantage and increased likelihood of common mental conditions is a robust finding that has been well documented in the literature and is also clearly evident in data from the Canberra region. This relationship is complex and multi-directional in nature. Further research is needed to increase our understanding of the social arrangements of society and their implications for individual mental health and wellbeing. See Box 8 for details of the relationship between financial hardship and depression.

Box 8. **PATH Investigates: Financial Hardship and Depression**

A person's socio-economic circumstance can influence their likelihood of developing a mental disorder. PATH researchers have investigated material hardship among three age cohorts (20-24, 40-44 and 60-64 years) living in the Canberra and Queanbeyan area. It was found that in a 12-month period 7.5 per cent of respondents had experienced at least one of the markers of deprivation- either they had to sell their possessions, go without meals, were unable to heat their home, or had to ask for help from a welfare organisation due to a shortage of money. This rate is considerably lower than the national average (13.6 per cent; Butterworth et al, 2004).

On a national scale, the Canberra community shows a relatively advantaged socio-economic profile. The Canberran population has considerably higher levels than the national average of educational attainment, income and workforce participation (ABS, 2007). However, this prosperity is not shared evenly among all residents. Around 13 per cent of Canberra households are in the bottom national income quintile and a number of suburbs and local areas across Canberra have a disadvantaged socio-economic profile (Butterworth, Rodgers & Windsor, 2009). Moreover, the town of Queanbeyan does not share Canberra's socio-economic advantage and is closer to the national average on a variety of socio-economic measures (ABS, 2001).

PATH researchers found that the experience of financial hardship was associated with age. Around 14 per cent of those aged 24-28 years experienced hardship and this declined to just over 2 per cent of the oldest cohort. It is expected that the experience of financial hardship will have significant personal consequences, directly causing suffering and stress for the survey respondents and their families.

Results of the study also confirmed that financial hardship was strongly and independently associated with depression, above the effects of other measures of socio-economic position and demographic characteristics. No evidence was found to suggest that the relationship between hardship and depression varied with age. The association between hardship and depression suggests that addressing deprivation may be an effective strategy to moderate socio-economic inequalities in mental health.

Butterworth, P., Rogders, B., Windsor, T. D. (2009). Financial hardship, socio-economic position and depression: Results from the PATH Through Life Survey. *Social Science & Medicine*, *69*, 229-237.

11 Caregiving

Box 9. **PATH Investigates: Caregiving and Mental Health**

Carers provide support and assistance to people in the community who are unable to adequately care for themselves due to disability, medical conditions or age-related frailty. Carers are a population group which require specific attention as it is well documented that caregiving is associated with considerable costs, both financially and personally. A number of large population-level Australian studies have found that the role of a carer has adverse effects on one's physical and mental wellbeing. Caregivers report significantly more psychological distress, poorer wellbeing, and greater rates of clinical psychiatric disorders compared to non-carers (see references within Butterworth et al., 2010). Even after adjusting for factors that may be associated with becoming a carer, such as demographic characteristics and financial hardship, carers still demonstrate an increased risk of mental health problems and lower levels of vitality compared to the general population.

PATH Through Life researchers have explored the nature of the relationship between caregiving and mental health among older carers in the Canberra district and surrounds. They examined 2,222 participants who were aged 64 to 69 in 2005. This age cohort was of interest due to the high prevalence of caregiving during this life period. Of the survey respondents, 21.6 per cent identified themselves providing care to a person with a disability, medical condition or to a person who was elderly. This included 5.8 per cent who identified as primary caregivers.

Data on the duration of time spent caring provided an indication of the intensity of the caregiving role. Around 18 per cent of all carers provided 15 hours or more care per week and 47 per cent of carers had been caring for five years or more. These rates were substantially higher for those who identified as primary carers, with 38.9 per cent spending more than 30 hours caregiving per week and 53.5 per cent had been doing so for five years or more. Carers were found to be more likely to be women, to report physical impairment, to be reliant on welfare payments, to have experienced financial hardship and reported greater responsibility for household tasks and financial management compared with non-caregivers. Caregivers also reported less positive support and more conflict with their family or partner, though not with friends. Compared to non-caregivers, the odds of caregivers' experiencing clinically significant anxiety and depression were 50 per cent greater. A lack of positive support, and greater conflict with family/spouse was found to reflect caregivers poorer mental health relative to non-caregivers.

Butterworth, P., Pymont, C., Rodgers, B., Windsor, T., & Anstey, K. (2010). Factors that explain the poorer mental health of caregivers: results from a community survey of older Australians. The *Australian and New Zealand Journal of Psychiatry, 44*, 616-24.

12 Volunteering

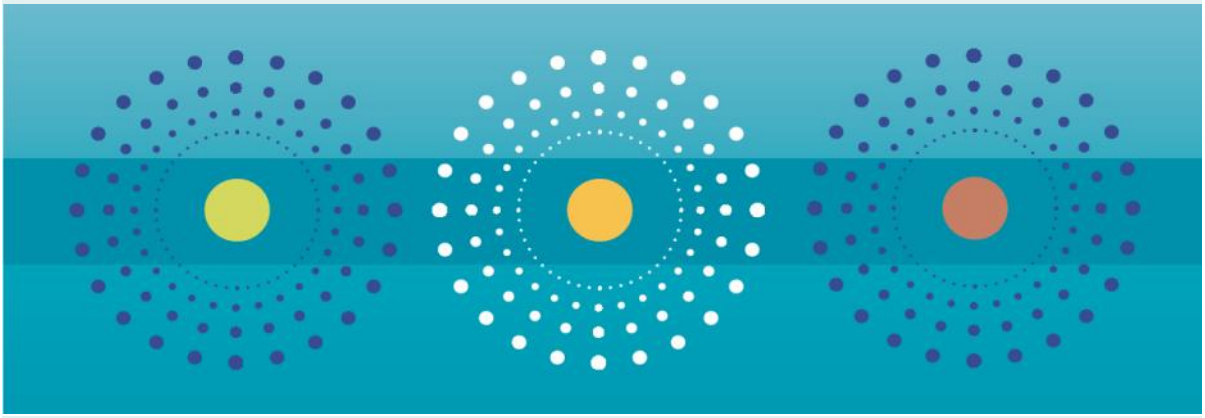
Box 10. **PATH Investigates: Volunteering and Mental Health**

Data from the second wave of the PATH project was used to investigate relationships between time spent volunteering and levels of psychological well-being among persons aged 64–68 years. Participants who reported taking part in moderate levels of volunteer work reported higher levels of wellbeing than both those who did not volunteer, and those who engaged in more than around 15 hours of voluntary work per week. The results suggest that taking part in volunteer activity in later life not only has broader social benefits, but is also associated with benefits to the individual who volunteers. However, there appears to be an optimal level of volunteering for maintaining wellbeing.

Windsor, T. D., Anstey, K. J., & Rodgers, B. (2008). Volunteering and psychological wellbeing among young-old adults: How much is too much? *The Gerontologist, 48*, 59-70.

Psychological Factors

13 Mastery
14 Resilience
15 Coping Styles
16 Life Satisfaction



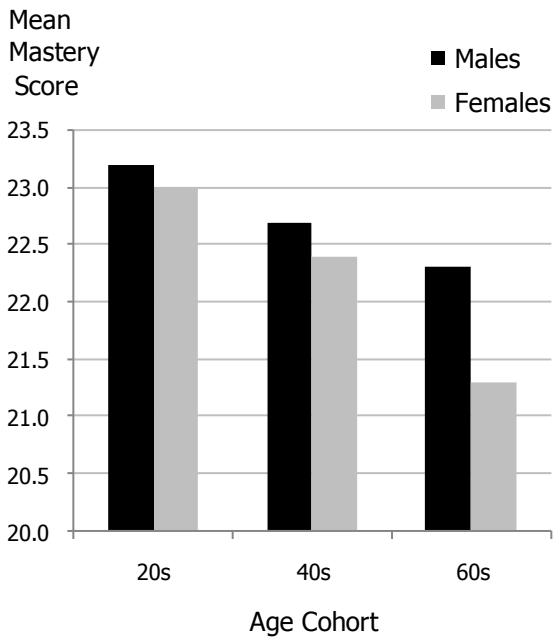
13 Mastery

In times of stress, personal resources such as a sense of mastery and resilience are important for maintaining health and wellbeing. The following chapter will briefly examine the psychological resources of coping response styles, mastery, and resilience, and how these characteristics influence mental health.

Mastery

Mastery, is defined here to be an individual's general sense of control over their life and problems. Mastery is closely related to constructs such as human agency, self-efficacy and locus of control. People who have a high sense of mastery tend to believe their actions will be able to change their environment and experience. Conversely, persons who have low perceptions of mastery may generally feel they have little or no control over things that happen to them, and that there is little that they can do to change many of the important things in their life.

Figure 13.1 Average Mastery Score at Most Recent Survey



Key Findings: Mastery

- The majority of persons reported relatively high levels of mastery.
- Males aged 64-68 years old had significantly higher levels of mastery than their female peers.
- High mastery scores were significantly associated with lower rates of mental health impairment in all age cohorts.

Mastery in the PATH Sample

In the PATH project, mastery was measured on a scale ranging from 7 (low sense of mastery) to 28 (high sense of mastery). As shown in Figure 13.1, mastery scores were relatively high in all age groups, with an apparent tendency to lower with each increasing age cohort. Males typically held a higher sense of mastery over their life and problems, than females. The apparent difference between genders is statistically significant in the 60s age cohort, where males reported a considerably higher sense of mastery than their female peers.

Mastery and Mental Health

Results of the PATH sample found that higher levels of mastery were significantly associated with lower levels of mental health impairment in all age groups (see Appendix D for details). This finding is consistent with the broader literature. Mastery has been identified as an important personal resource that can mediate the effects of adversity on mental health. Research indicates that people who have a high sense of mastery tend to be better equipped to cope with difficult situations like financial problems (Mirowsky & Ross, 1999). Higher levels of mastery and other related factors such as personal control and self-efficacy, can reduce the impact of stressful situations by increasing the likelihood that an individual will engage in healthy coping behaviours (Ross & Mirowsky, 1999).

Mastery

The benefit of a higher sense of mastery appears to be particularly important in later life. Mastery has been found to predict reoccurrence of depression in older adults (Steunenber, Beekman, Deeg, Kerkhof et al., 2010). Yet research shows that one's feelings of mastery tend to decline with age (Wolinsky, Wyrwich, Babu, Kroenke, & Tierney, 2003).

14 Resilience

Resilience

Resilience can be viewed as the personal qualities that enable one to thrive in the face of adversity (Connor & Davidson, 2003). It is the positive capacity to 'bounce back' or deal with stressful or challenging situations.

There are a number of reasons why some people are more resilient to stress than others. The capacity for resilience is shaped by many factors including: age, individual characteristics (including biology), health and wellbeing, life history and experiences, and available social and community support (Davydov, Stewart, Richie, & Chaudieu, 2010). The individual qualities such as a sense of mastery and coping response styles (discussed in other chapters) also contribute to ones resilience.

Table 14.1 Rates of Resilience by Age Cohort, Gender and Mental Health Impairment at Most Recent Survey

	Resilience		
	Mean	SD	N
20s Cohort			
Gender			
Male	71.7	12.6	871
Female	71.5	12.5	1021
Mental Health Impairment			
None/Mild	73.7	11.2	1520
Moderate/Severe	62.8	13.7	370
Total Persons	71.6	12.5	1892
40s Cohort			
Gender			
Male	71.0	13.3	977
Female	71.8	13.4	1085
Mental Health Impairment			
None/Mild	73.0	12.6	1745
Moderate/Severe	62.5	14.0	313
Total Persons	71.4	13.4	2062

Note. SD refers to standard deviation.

Key Findings: Resilience

- Respondents had relatively high resilience scores, with no significant difference with age group or gender.
- High resilience scores were significantly associated with lower rates of moderate to severe mental health impairment in both the 20s and 40s age cohorts.

It is important to note that resilience is not a fixed trait. Resilience involves behaviors, thoughts and actions that can be learnt, and it therefore has the potential to develop and increase. Building resilience does not stop stressful events happening to a person but it can limit the negative impact these events have on our lives.

Resilience in the PATH Sample

The PATH project measured resilience using the Connor-Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003). This 25-item scale measures participants' ability to cope with stress and adversity by assessing adaptability, relationships, tenacity, goal -achievement and faith. Participants rate each item on a five-point scale, hence total scores range from 0 (low resilience) to 100 (high resilience). Note that due to data availability, only results from the 20s and 40s cohorts are presented here.

As shown in Table 14.1, the average resilience scores of PATH participants were relatively high in both age cohorts, with no obvious difference in average scores between the 20s (71.58) and 40s (71.42) age cohorts. Similarly, the distribution of resilience scores did not differ between males and females.

Resilience and Mental Health

Studies have shown that resilience can buffer people from developing mental illnesses such as depression,

anxiety or post traumatic stress (Davydov et al., 2010). For example, studies have shown that people who have higher resilience scores are less likely to develop post traumatic stress disorder than the general population (Vaishnavi, Connor & Davidson, 2007).

Results of the PATH project confirmed that high resilience was significantly associated with a lower rate of mental health impairment in both age cohorts. In the 40s cohort, for example, this is reflected in the difference between the average resilience score for those experiencing no/mild mental health impairment (73.0) compared to the average for those experiencing moderate/severe mental health impairment (62.5) (see Appendix D for details).

15 Coping Styles

Coping Response Styles

During periods of life change and stress, coping styles play an important role in individual wellbeing. Coping styles represent the general pattern of response we use to deal with stressors in our lives. Some coping styles can assist us to overcome our difficulties through active attempts to resolve the problem or to seek social support, while others, such as denial or substance use, can have a negative impact on our wellbeing.

Coping Styles in the PATH Sample

The PATH project assessed the coping response styles of participants using the Brief COPE scale (Carver, 1997). This scale describes a range of methods people might use to respond to stressful experiences in their lives. Participants indicate the amount they use a given coping style (not at all; a little bit; a medium amount; a lot). The 14 coping styles measured were: active coping, planning, positive reframing, acceptance, humour, emotional support, instrumental support, religion, self-distraction, denial, venting, substance use, behavioural disengagement and self-blame (see Table 15 for a description of these).

As shown in Figures 15.1 and 15.2, respondents in both the 20s and 40s cohorts reported using a number of different coping styles, with almost no difference in the order of popularity of the styles between cohorts. For example, the most common coping styles used were the positive responses of planning and active coping, while the least common were the negative coping response styles of behavioural disengagement and denial.

While usage of the two most common coping styles showed no gender differences, there were differences for many of the other coping styles. Females in both cohorts were more likely than males to report using religion, emotional and instrumental support, self-distraction, venting and self-blame, while in the 40s cohort, they were also more likely than males to use positive reframing. Males, on the other hand, were more likely than females to use humour in both cohorts and to use acceptance and substance use in the 20s cohort only.

Table 15.1 Examples of Coping Style Questions from the Brief COPE

Coping Style	Example responses to stressors
Positive reframing	I look for something good in what has happened.
Humor	I make fun of the situation.
Venting	I express my negative feelings.
Substance use	I use alcohol or drugs to make myself feel better
Self-blame	I criticise myself.
Self-distraction	I turn to work or other activities to take my mind off things.
Behavioural Disengagement	I give up trying to deal with it.
Active coping	I take action to try to make the situation better.
Instrumental support	I get help and advice from other people.
Acceptance	I learn to live with it.
Emotional support	I get comfort and understanding from someone.
Planning	I try to come up with a strategy about what to do.
Denial	I refuse to believe that it had happened.
Religion	I try to find comfort in my religion or spiritual beliefs.

Coping Styles and Mental Health

Failure to cope and deal adaptively to stress can contribute to psychological distress and mental illness. The development of successful coping response behaviours are likely to reduce stress and strain, enabling a person to resolve difficulties and maintain psychological health.

Coping Styles

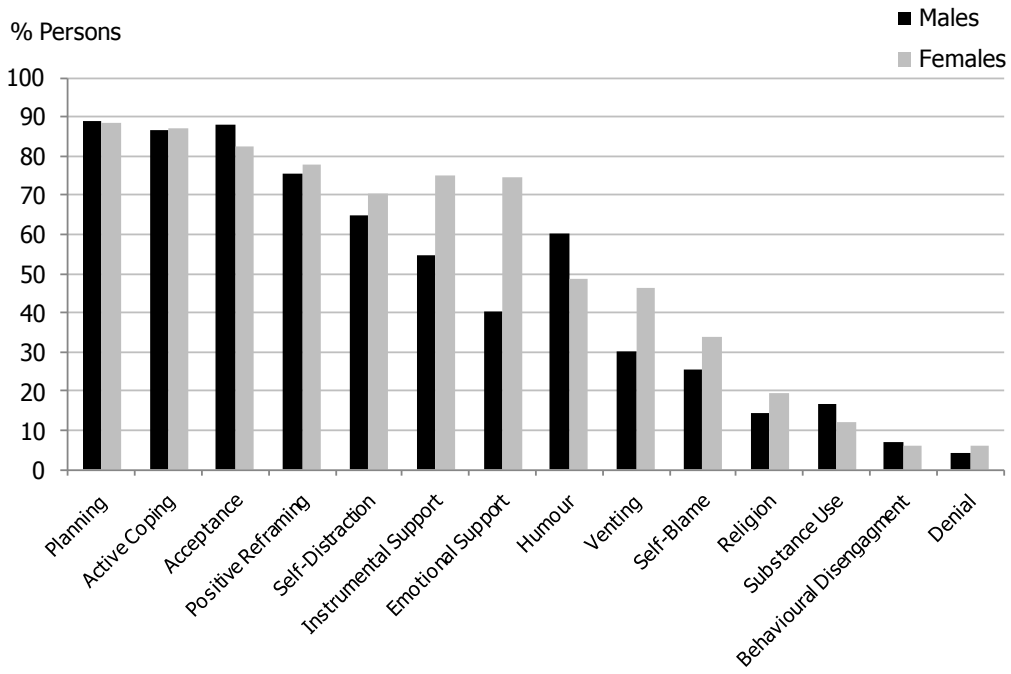
Result from the PATH project found that certain coping styles were associated with lower odds of moderate to severe mental health impairment (see Appendix D). In both the 20s and 40s cohorts, users of positive reframing or humour were less likely to experience mental health impairment. These effects seemed stronger for the 28-32 year-olds, where, for example, 14.9 per cent of users of positive reframing experienced moderate to severe mental health impairment, compared to 34.8 per cent of persons who used it little or not at all.

Other coping styles were associated with higher odds of mental health impairment. In both cohorts, persons reporting substance use or self-blame as coping styles were more likely to experience mental health impairment. Again, the association appeared stronger in the 20s cohort, where 37.1 per cent of persons using substances to cope experienced mental health impairment, compared to 16.6 per cent of persons using this style little to not at all. Indeed, the odds of mental health impairment for those using substances to cope with stress were approximately 1.9 times higher than non-users of this coping style in the 20s cohort and 1.6 times higher in the 40s cohort. While the foregoing coping styles were consistently associated with either higher or lower odds of mental health impairment in both age cohorts, others showed

Key Findings: Coping Styles

- Respondents in the 20s and 40s cohorts use a variety of coping styles and there is little difference in the order of popularity of these styles between cohorts.
- There were gender differences in the usage of many coping styles, with females more likely than males to use religion, emotional and instrumental support, self-distraction, venting, self-blame and (in 40s cohort) positive reframing, while males were more likely than females to use humour, and (in 20s cohort) acceptance and substance use.

Figure 15.1 Coping Styles Within the 20s Cohort at Most Recent Survey



Coping Style Used a Medium Amount / a Lot

Coping Styles

associations only in one cohort. Specifically, those using venting as a coping style were more likely to experience mental health impairment in the 20s cohort only, while self-distraction and behavioural disengagement emerged as associates of poorer mental health only in the 40s cohort. In fact, behavioural disengagement showed the strongest association of any coping style, with 40.6 per cent of users of this style experiencing moderate to severe mental health impairment, compared to 13.9 per cent of non-users. Further analyses showed that persons using behavioural disengagement as a coping style were up to 3.5 times more likely to experience mental health impairment than those not using this style.

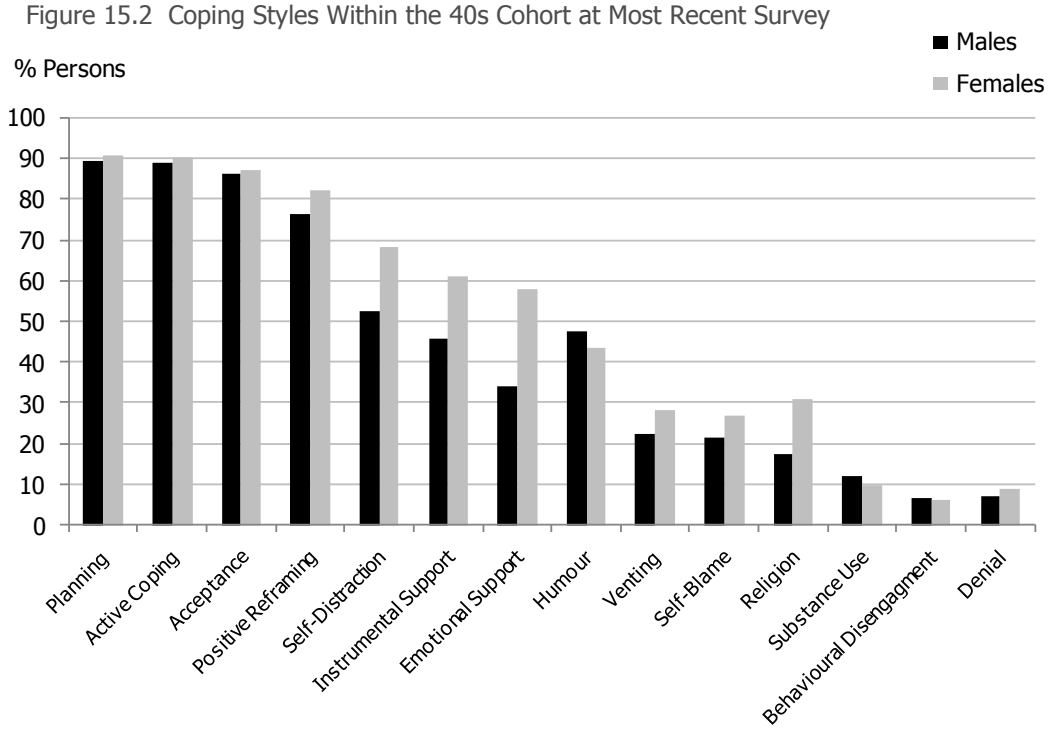
Studies have found that less effective coping styles can compromise daily functioning and avoidant coping styles (such as disengagement, denial and substance use) have been linked with increased likelihoods of anxiety and depression (Christensen & Kessing, 2005). In the treatment setting, an individual's coping style has also been found to relate to medication compliance, with persons who use low levels of acceptance and high levels of denial being more likely to be non-adherent to medication (Christensen & Kessing, 2005).

Key Findings: Coping Styles and Mental Health

Certain coping styles were associated with moderate to severe mental health impairment. Relative to those not using these styles:

- persons using positive reframing and humour a moderate to large amount were less likely to experience mental health impairment
- persons using venting, substance use, self-blame, self-distraction or behavioural disengagement a moderate to large amount were more likely to experience mental health impairment.

Figure 15.2 Coping Styles Within the 40s Cohort at Most Recent Survey



16 Life Satisfaction

Life Satisfaction

Life satisfaction reflects a person's happiness and contentment with their past and current life situation. As such, it is an important key to understanding the overall positive or negative evaluation a person makes of their life, placing less emphasis on the short -term periods of happiness or sadness which are part of everyone's experience.

Life Satisfaction in the PATH Sample

The PATH questionnaire included Diener et al.'s (1985) Satisfaction with Life Scale. This scale lists five statements relating to life satisfaction, to which participants indicate their level of agreement on a seven-point scale. Thus, total scores range from 5 (extremely dissatisfied) to 35 (extremely satisfied).

As shown in Table 16.1, life satisfaction was relatively high in all age cohorts, with the vast majority of respondents reporting satisfaction with their lives. The greatest proportion of satisfied respondents were in the 20s (80.3 per cent) and 60s (80.2 per cent) age cohorts. Respondents in the 40s cohort appeared less satisfied with their lives (76.4 per cent satisfied) than their younger and older counterparts.

An interesting pattern of gender differences appeared with life satisfaction in the 20s and 60s cohorts. In the youngest cohort, a significantly greater proportion of females reported satisfaction with their lives than did males (82.5 per cent compared to 77.8 per cent). In contrast, in the oldest cohort, the reverse pattern was true: males were more likely to report satisfaction with their lives than were females (82.7 per cent compared to 77.5 per cent). There was no gender difference in life satisfaction in the 40s cohort.

Key Findings: Life Satisfaction

- The vast majority of respondents were satisfied with their lives, with higher rates in the youngest (80.3 per cent) and oldest (80.2 per cent) cohorts than in the midlife cohort (76.4 per cent).
- Females aged 28-32 years were more likely than males to report satisfaction with their lives (82.5 per cent compared to 77.8 per cent), while the reverse was true for 64-68 year-olds (82.7 per cent of males compared to 77.5 per cent of females).
- Life satisfaction was significantly associated with lower rates of mental health impairment.

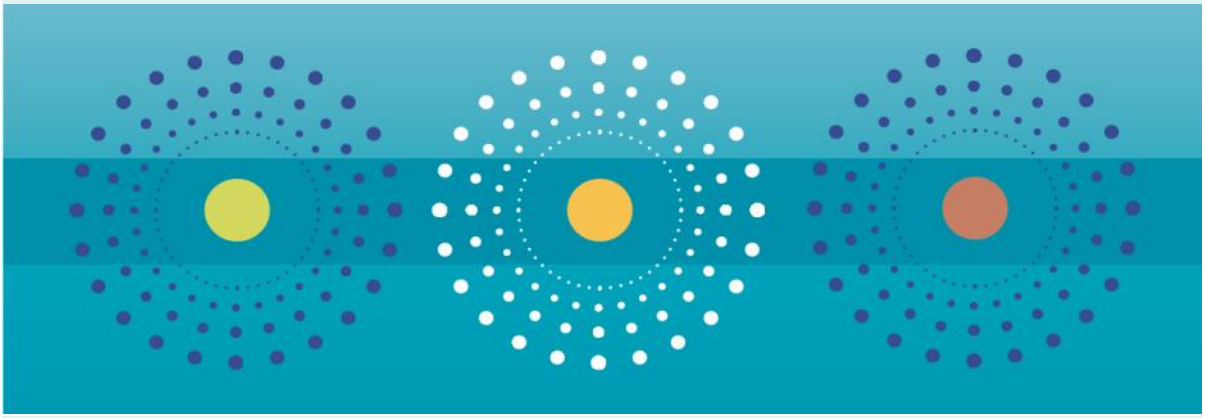
Life Satisfaction and Mental Health

As expected, life satisfaction was significantly associated with a lower rate of mental health impairment in all age cohorts. Respondents reporting satisfaction with their lives were between one tenth and one quarter as likely to have moderate to severe mental health impairment as those who were neutral or reported dissatisfaction. This difference was most marked in the 20s cohort, where 12.2 per cent of those satisfied with their lives experienced mental health impairment, compared to 49.4 per cent of those who were neutral or dissatisfied (see Appendix D for details).

Table 16.1 Rates at Most Recent Survey of Life Satisfaction by Age Cohort and Gender

Life Satisfaction (%)	20s Cohort			40s Cohort			60s Cohort		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Neutral/Dissatisfied	19.7	22.2	17.5	23.6	24.1	23.1	19.8	17.3	22.5
Satisfied	80.3	77.8	82.5	76.4	75.9	76.9	80.2	82.7	77.5
Total Persons	1972	917	1055	2163	1025	1138	2188	1128	1060

Risk Factors and Health



17 Substance Use

Healthy behaviours and lifestyle choices are important factors for developing and maintaining good health. Engaging in risky health behaviours increases an individual's chances of experiencing ill physical and mental health. The risk factors that will be discussed in this section include, alcohol and tobacco use, illicit drug use, low levels of physical activity and excess body weight.

Alcohol

Alcohol is the most widely used mood altering recreational drug in Australia (Phizer,2005). Alcohol, specifically ethanol, is a central nervous system depressant. Its consumption in moderation can lead to feelings of relaxation, disinhibition and euphoria. When consumed appropriately, alcohol has been shown to have some health benefits (Anstey, 2009). However, alcohol also has a darker side. Alcohol is an addictive drug, and its misuse is associated with a variety of adverse consequences that can lead to significant harm to the individual and society (British Medical Association, 2008).

Alcohol consumption has been causally linked to a substantial array of dose related problems including over 60 different medical conditions, reduced life expectancy, accidents, reduced workplace productivity, drink driving, violence and other forms of crime (Babor et al., 2003; Collins & Lapsey, 2008). Alcohol use is widespread in Australia, and high risk use is a serious problem with growing health and economic burden, with an estimated cost of $36 billion annually (Laslett et al., 2010).

Alcohol Use in the PATH Sample

PATH respondents were classified into five alcohol consumption pattern groups based on National Health and Medical Research Council guidelines (2001), see Table 17.1.

Approximately half of all PATH respondents were light drinkers; indicating that per week males drank up to 14 standard drinks, and females drank up to 7 standard drinks (see Figure 17.1). The highest proportion of persons who drank alcohol at levels that are considered hazardous and or harmful to long term health, were those in the midlife cohort (8.2 per cent), followed by those in the youngest age cohort (7.9 per cent), and older age cohort (5 per cent).

Key Findings: Alcohol Use

- The majority of all persons reported consuming alcohol at light to moderate levels.
- At the most recent survey, 7.6 per cent of 28-32 year-olds, 8.2 per cent of 48-52 year-olds and 5 per cent of 64-68 year-olds reported a pattern of weekly alcohol use that was hazardous or harmful.
- The highest proportion of persons drinking at hazardous or harmful levels were females in the midlife cohort (9.6 per cent).
- Alcohol use patterns were associated with increased likelihoods of moderate to severe mental health impairment among the midlife and old age cohort. Alcohol use patterns were also associated with depressive disorders.

Significant differences in drinking patterns were observed between genders. These gender differences appear to be complex and vary between age groups. Typically females had a higher representation than males in nearly all alcohol use pattern classification groups. The exception being that males appear to be more likely to be light drinkers in all age cohorts, and more likely to be hazardous/harmful drinkers in the 60s cohort.

The high rate of hazardous drinking observed among females of the midlife cohort is noteworthy. Almost 10 per cent of females aged 48-52 years were consuming alcohol at hazardous or harmful levels compared to 6.6 per cent of their male counterparts. A similar proportion of females during midlife years were found to be reporting high risk alcohol consumption in the 2007-08 National Health Survey

(ABS, 2009). In this nation wide study, 12.6 per cent of females aged 45-54 consumed alcohol at risky and high risk levels (a level considered to be greater than 14 standard drinks per week).

Alcohol Use and Mental Health

In a given 12 month period it is estimated that 3.7 per cent of Australians meet the diagnostic criteria for an Alcohol Use Disorder (ABS, 2008). Research shows that persons diagnosed with an alcohol use disorder are more likely to suffer from other mental health problems than the general population. For example, alcohol dependence is known to commonly co-occur with anxiety and depressive disorders. Persons suffering these mental health concerns are at particular risk of experiencing problems related to alcohol, especially where a person drinks to relieve anxiety or to change their mood. However, alcohol misuse itself is known to contribute to the cause of a number of mental health conditions such as alcohol induced psychosis, alcohol dependence syndrome and alcohol-related dementia.

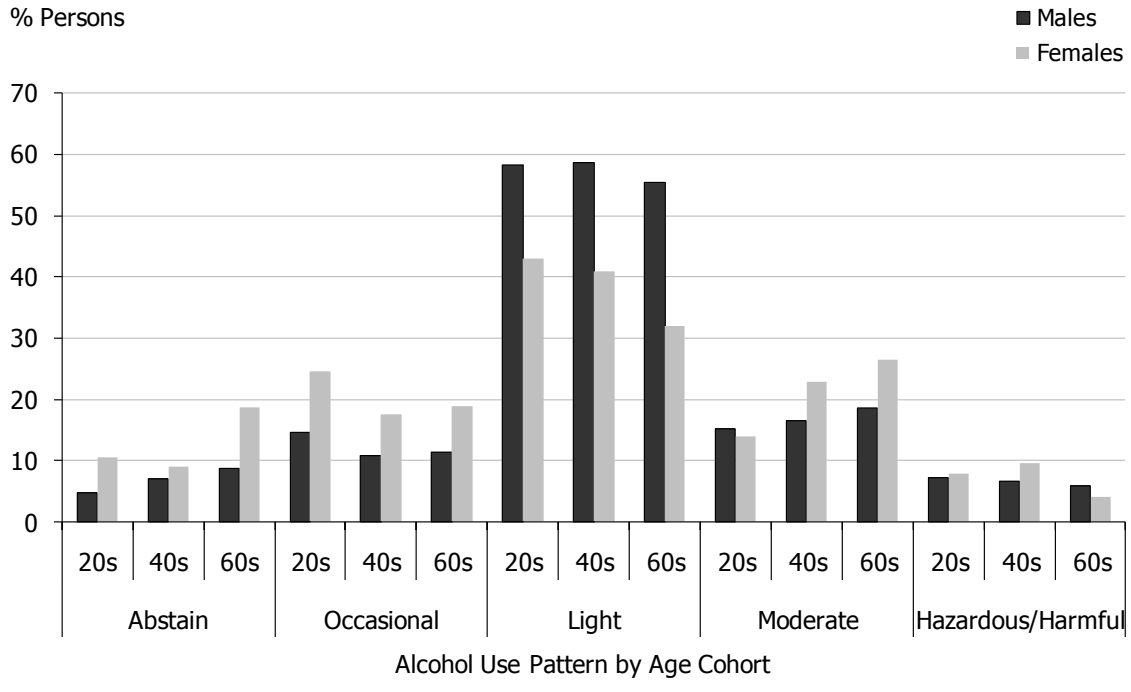
Table 17.1 Alcohol Use Classification and Corresponding Standard Drink Consumption Rate

Category	Standard Drink Consumption*
Abstain	Had not drunk in past year
Occasional	Drink monthly or less
Light	Males- up to 14 drinks per week Females- up to 7 drinks per week
Moderate	Males- up to 28 drinks per week Females- up to 14 drinks per week
Hazardous/ Harmful	Males- more than 28 drinks per week Females- more than 14 drinks per week

*Australian standard drink contains 10gm of alcohol
Note. Categories based on NHRMC guidelines (2001)

Results of the PATH project found that alcohol consumption categories were statistically associated with increased likelihoods of moderate to severe mental health impairments in the midlife and older age cohorts (see Appendix E). For example, among

Figure 17.1 Alcohol Use Category by Gender at Most Recent Survey



Substance Use

the 40s cohort, almost 23 per cent of those who reported drinking at hazardous or harmful levels also reported moderate to severe mental health impairment. Further analysis conducted showed these hazardous/harmful drinkers were 1.8 times more likely to experience moderate to severe mental health impairments compared to their peers in midlife who were light to moderate drinkers.

Interestingly, no statistical relationship was found for alcohol use pattern and moderate to severe mental health impairment among the 20s age cohort. However, alcohol use was statistically related to depressive disorders among this age cohort (see Appendix E). Here, 15 per cent of all hazardous/harmful drinkers reported a depressive disorder. This rate is considerably higher than the depression prevalence rate for all persons in the 20s cohort (9.4 per cent).

Tobacco Smoking

Smoking is well known as a leading cause of illness and death in Australia. Fortunately the number of people smoking tobacco has generally declined in Australia over the last few decades (ABS, 2006c). However the rate of smoking is not uniform across the Australian population, and persons in disadvantaged population groups often have much higher rates of smoking (Scollo & Winstanley, 2008). The Australian Bureau of Statistics (2006c) Snapshot of tobacco use in Australia contrasted the smoking rates between areas of Australia considered to be the most socioeconomically advantaged and disadvantaged (as measured by the first and fifth quintiles of the Index of Relative Socio -Economic Disadvantage). After adjusting for age differences, 33 per cent of men and 28 per cent of women in areas of Australia considered to be among the most disadvantaged reported being daily smokers, compared to 16 per cent of men and 11 per cent of women in the most socio-economically advantaged areas.

Smoking is a major factor driving the poorer health status among economically disadvantaged population groups. Smoking can also perpetuate intergenerational poverty. Over long periods of time, the combination of the high financial cost of tobacco products and the financial burden of tobacco related ill health works against the accumulation of household savings and assets, contributing to financial stress and a cycle of economic disadvantage (Scollo & Winstanley, 2008). The experience of financial stress and hardship also creates social conditions which may make it more difficult to quit smoking. Moreover, mothers who smoke during pregnancy may pose various health

Table 17.2 Tobacco Smoking Status and Average Consumption Rate Per Day at Most Recent Survey

Smoking Status (%)	20s Cohort			40s Cohort			60s Cohort		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Never Smoked	58.7	60.7	57	54.4	54.5	54.4	53.3	42.3	64.9
Past Smoker	20.4	15.9	24.3	32.1	31.5	32.6	38.7	49.4	27.4
Current Smoker	20.9	23.5	18.7	13.5	14.1	13.0	8.0	8.3	7.7
Total Persons	1978	920	1058	2174	1032	1142	2204	1137	1067

risks to the developing child; effects which can have lasting implications into adulthood. Additionally, being exposed to high levels of smoking by parents and peers powerfully models smoking and this perpetuates continued use within neighbourhoods and across generations (Scollo & Winstanley, 2008).

Persons living with mental illness have some of the highest rates of tobacco smoking in Australia. It is estimated that around 17 per cent of the Australian population are current smokers, but for people with a mental health condition the rate of smoking is higher at about 32 per cent. For some illnesses, like schizophrenia, the rate of smoking is as high as 62 per cent (Lawrence, Mitrou & Zubrick,2009). Smoking is consistently found to be more common among people with severe mental illness than with less severe mental illness.

Tobacco Smoking in the PATH Sample

PATH respondents were asked to identify if they were current smokers, had previously been regular smokers or never smoked. Despite the Canberra area demonstrating relatively high economic advantage, the proportion of persons smoking was still relatively high (see Table 17.2). The greatest proportion of current smokers were those in the 20s age cohort. Here, one in five persons (20.9 per cent) identified as a regular smoker and the average number of cigarettes reportedly smoked per day was 12.4 (see Appendix E).

A higher proportion of males were current smokers in all age groups and the average number of cigarettes smoked per day peaked in the 40s cohort.

Tobacco Smoking and Mental Health

As expected, smoking was over-represented among those with significant mental health impairment. Among all age cohorts, the rate of smoking for those with a moderate to severe mental health impairment was around 6 per cent higher than the rate of smoking for their respective age cohort.

Key Findings: Tobacco Use

- At the most recent survey, 20.9 per cent of 28-32 year-olds, 13.5 per cent of 48-52 year-olds and 8 per cent of 64-68 year-olds reported being current smokers.
- The rate of smoking was higher among males.
- Smoking was over-represented among persons with significant levels of mental health impairment.
- Current smokers in the 40s and 60s cohort were substantially more likely to report moderate to severe mental health impairment than their non smoking peers.

After adjusting for alcohol consumption, current smokers in the 20s age cohort were not identified as at increased risk for significant mental health impairment. However this was not the case for the midlife and older age cohorts. Here, current smokers were at significantly higher risk of moderate to severe mental health impairment than their non-smoking peers. In the 40s cohort, for example, current smokers were 1.6 times more likely to report moderate to severe mental health impairment than their non-smoking peers.

Illicit Drug Use

The use and misuse of licit and illicit drugs is an issue of significant public concern with harmful implications to both the individual and the wider community.

The National Drug Strategy Household Survey (2007) reported that over 6.6 million Australians (38.1 per cent) have used an illicit drug; and 3.1 million (18.2 per cent) have used an illicit drug other than marijuana in their lifetime. Over the previous 12 months before the survey, more than 2 million Australians (13.4 per cent) had used an illicit drug. The most common illicit drug used in Australia is marijuana.

Substance Use

Illicit Drug Use in the PATH Sample

The PATH study examined the prevalence of marijuana, ecstasy and amphetamine use in the Canberra area (see Table 17.3). Consistent with national drug strategy findings, marijuana was the most commonly tried and recently used illicit drug, among all age cohorts. In fact, a higher proportion of persons in the young and midlife cohort had tried marijuana in their life time than those who had not.

Three quarters of all 28-32 year-olds reported having tried marijuana; and 16.4 per cent reported that they had used marijuana in the previous year. Among the midlife cohort (those aged 48-52 years), more than half (51.2 per cent) had tried marijuana during their life time, although considerably fewer persons in this age range had used marijuana in the pervious year (5.6 per cent). The lowest rates of marijuana use were reported by those aged 64-68 years, with less than 8 per cent having tried it during their lifetime.

Australia has the highest rate of ecstasy use per capita than any other country (UNODC, 2010). Among the PATH sample, one third of all participants aged 28-32 years had tried ecstasy (33.3 per cent) and 10.9 per cent reported having used it during the last year.

The proportion of persons in the 20s cohort who had tried amphetamines was almost 27 per cent, and 6.1 per cent reported using it during the past year. Amphetamine and ecstasy use was considerable less common among older persons, with less than 1 per cent of all persons in the 40s and 60s age cohorts reporting having used these drugs in the previous year.

Key Findings: Illicit Dug Use

- Marijuana was the most commonly reported illicit drug consumed.
- One in ten 28-32 year-olds consumed ecstasy in the previous 12 months.
- Higher rates of illicit drug use in the previous year were reported by young persons experiencing moderate to severe mental health impairment.

Table 17.3 Prevalence of Illicit Drug Use by Age Cohort At Most Recent Survey

Prevalence of Drug Use	20s Cohort		40s Cohort		60s Cohort	
	%	Total N	%	Total N	%	Total N
Illicit Drugs Ever Tried:						
Marijuana	75.0	1973	51.2	2175	7.8	2221
Ecstasy	33.3	1978	2.6	2179	0.3	2221
Amphetamines	26.9	1978	5.1	2179	1.1	2211
Used during last 12 months:						
Marijuana	16.4	1973	5.6	2175	0.1	2218
Ecstasy	10.9	1978	0.2	2179	< 0.1	2221
Amphetamines	6.1	1978	0.4	2179	< 0.1	2221

Substance Use

Illicit Drug Use and Mental Health

The complete psychological and neurological repercussions of illicit drug use are not fully understood and require more research. There is evidence that illicit drug use can have detrimental effects on one's mental health. Regular cannabis use has been shown to predict an increased risk of schizophrenia or psychotic disorders (Degenhardt, Calabria, Hall & Lynskey, 2008). Illicit use has also been shown in some studies to be associated with changes in mood, particularly anxiety and depression, psychological distress and memory impairment (Martin-Santos et al, 2009). A pattern of drug use that substantially impairs one's ability to meet their responsibilities or function in daily life, is indicative of a substance use disorder. In a twelve month period approximately 1.4 per cent of Australian adults meet the criteria for an illicit substance use disorder (ABS, 2008).

For 28-32 year-olds in the PATH sample, the rate of moderate-severe mental health impairment was approximately 19 per cent, however for persons in this age group who used an illicit drug in the previous year, the rate of moderate to severe mental health impairment was higher at approximately 22 per cent for persons who used marijuana or ecstasy, and 24 per cent of persons who used amphetamines.

18 Excess Body Weight

Excess Body Weight

Excess body weight and obesity are recognised as worldwide public health concerns reaching epidemic proportions (Shay, Shober, & Seibert, 2009). Persons carrying excessive body weight are at increased risk of a variety of weight-related diseases and premature death. These weight-related conditions can impair one's ability to physically function in every day life and can negatively affect one's wellbeing and quality of life. The cost of obesity related disease and injury in Australia is estimated to be in excess of $21 billion annually (Access Economics, 2006).

Obesity is defined as the accumulation of excess body fat (Ogden et al., 2007). Using the most common form of obesity measure, the Body Mass Index (BMI), an obese adult would be defined as an individual whose weight was in excess of 30kg per square meter of height (see Table 18.1 for BMI classification ranges).

A large range of factors influence the body mass outcomes of given individuals and populations.

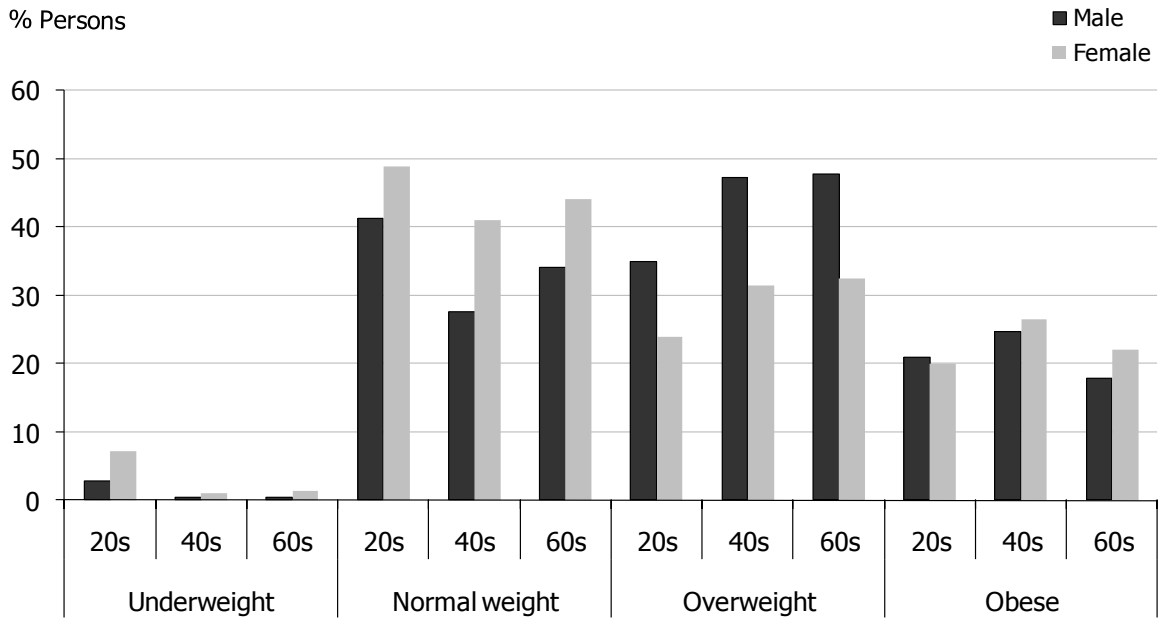
Table 18.1 Body Mass Index Weight Classifications

Weight Classification	BMI Score
Underweight	<18.5
Normal weight	18.5–24.9
Overweight	25–29-9
Obese	≥30

Obesity has been found to be linked to genetic, perinatal, socioeconomic and other lifestyle factors, but it is primarily due to an energy imbalance; wherein an individual consumes more energy from food and drink than they expend (Shay et al., 2009).

The National Health Survey conducted in 2007-08 found that 61.4 per cent of Australians (aged 18-75 years) were overweight or obese (ABS, 2009). This reflected 36.6 per cent of adults within the overweight BMI range and 24.8 per cent considered obese. Nationally, males were slightly more likely to be obese (25.6 per cent) than females (24 per cent). The proportion of overweight and obese Australian adults has increased markedly in recent years.

Figure 18.1 Body Mass Index Weight Classification by Age Cohort and Gender at Most Recent Survey



Body Mass Index Classification by Age Cohort and Gender

Excess Body Weight

Excess Body Weight in the PATH Sample

Results from the PATH sample were consistent with the national data. A substantial proportion of PATH respondents were either overweight or obese; with 49.6 per cent of the 28-32 year-olds, 64.6 per cent of 48-52 year-olds and 60.3 per cent of 64-68 year-olds reporting BMI scores within the combined overweight or obese weight range.

A higher proportion of males were overweight or obese than females, particularly in the 40s age cohort. Few persons were considered underweight in the midlife or older cohort. However, 7.2 per cent of females in the 20s age cohort were considered underweight.

Excess Body Weight and Mental Health

Obesity is one of the most common medical conditions reported among persons with severe and persistent mental illness (Citrome & Vreeland, 2010). The relationship between obesity and mental health is complex, multidirectional and multifactorial and has not received adequate research attention (Allison et al., 2009).

There is evidence that symptoms of some mental disorders may play a role in weight gain. For example, in depressive disorders, symptoms including changes in appetite may lead to weight gain, while in binge eating disorders, frequent consumption of excessive amounts of food in one sitting is a key feature of the disorder. Over time symptoms such as these can contribute to the development of obesity. Moreover, some medications used to treat mental illness can also contribute to the development of obesity as weight gain is a common side effect.

Socio-demographic factors associated with severe and persistent mental health conditions such as reduced income and lower educational attainment may also contribute to a sedentary and unhealthy lifestyle and play a role in weight gain. Conversely, being overweight or obese itself may contribute to mental disorders. Western society stigmatizes those who are overweight or obese and a person who is overweight or obese may internalize negative attitudes from society regarding their condition which may result in self-rejection, increased psychological distress and thereby increase their vulnerability to some mental health conditions (Needham et al., 2010).

Key Findings: Excess Body Weight

- A substantial proportion of persons were either overweight or obese; 49.6 per cent of the 28-32 year-olds, 64.6 per cent of 48-52 year-olds and 60.3 per cent of 64-68 year-olds.
- Persons who were obese were more likely to report moderate-severe mental health impairment in all age cohorts.

Results of the PATH sample found that BMI weight classifications were associated with mental health impairment. Persons who were obese were more likely to report moderate-severe mental health impairment in all age cohorts. For example, 24.9% of 28-32 year-olds within the obese weight range reported moderate-severe mental health impairment compared to 17.8% in the normal weight range (see Appendix E).

The link between excess body weight and depression and anxiety has previously been investigated by Jorm et al. (2003) using PATH data. Rather than a direct relationship, they found that the poorer mental health of obese participants could in fact be largely explained by their higher likelihood of physical ill health.

19 Physical Activity

Physical Activity

There is strong evidence that engaging in regular exercise is good for both physical and mental health. Research shows that regular exercise can improve one's mood, increase one's ability to cope and enhance psychological wellbeing (Richardson et al., 2005). Regular exercise has also been found to reduce the likelihood of depression; and evidence is emerging in support of the use of exercise therapy in the treatment of some mental disorders (Teycheene & Salmon, 2008).

Physical Activity in the PATH Sample

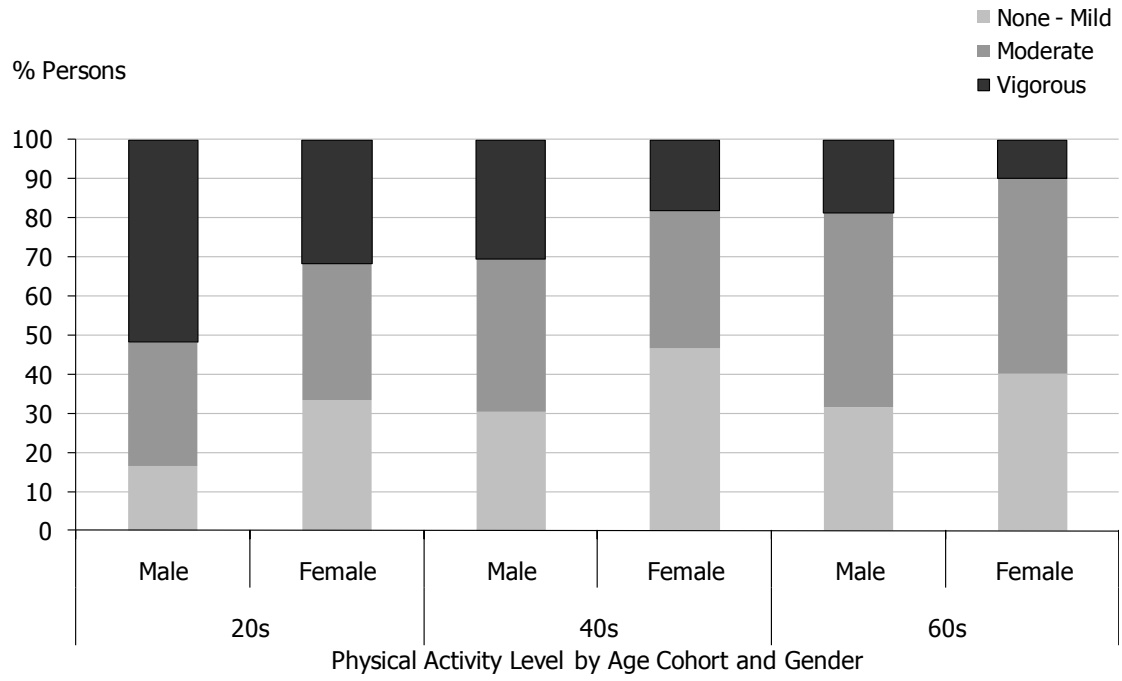
In the PATH study physical activity was assessed by asking participants to report the average number of hours and minutes per week they spent on each of the following levels of activity: mildly energetic (eg walking), moderately energetic (eg dancing, cycling), and vigorously energetic activity (eg running, playing squash). Based on these answers, respondents' physical activity was then categorised as undertaking *none-mild, moderate* or *vigorous* levels of physical activity (see Table 19.1).

Table 19.1 Physical Activity Level Description

Physical Activity Level	Description
Vigorous	1.5 hours or more of vigorous energetic activity per week such as running or playing squash.
Moderate	1.5 hours or more per week of moderate intensity activity such as dancing or cycling, but less than 1.5 hours of vigorous intensity activity per week.
None - Mild	Less than 1.5 hours of moderate or vigorous intensity activity.

At the most recent survey, 40.9 per cent of the 20s age cohort reported that they were vigorously active; meaning they engaged in 1.5 hours or more of vigorous intensity activity such as running each week. Those in the 60s cohort were also relatively active. Here, 50 per cent of all persons reported physical activity levels within the moderate range. The least

Figure 19.1 Physical Activity Level by Age Cohort and Gender at Most Recent Survey



physically active persons were females in the 40s age cohorts, where 46.7 per cent scored in the none-mild physical activity range. Typically, a higher proportion of males engaged in vigorous or moderate levels of physical activity than females (see Figure 19.1 and Appendix E11).

Physical Activity and Mental Health

Results from the PATH sample showed that across all age groups, higher levels of physical activity were associated with better mental health.

Mental health impairment was over-represented among those less physically active. This was most notable in the 20s age cohort where the rate of moderate to severe mental health impairment is around 19 per cent. This rate increases by 8 per cent for those in the none-mild range of physical activity (27 per cent). In contrast, their peers who were vigorously active showed a reduced rate of moderate to severe mental health impairment at 13 per cent.

Persons in all age cohorts who engaged in moderate or none-mild levels of exercise were several times more likely to suffer moderate to severe mental health impairments than their vigorously active peers (see Appendix E).

Key Findings: Physical Activity Levels

- Higher levels of physical activity were associated with better mental health.
- Moderate to severe mental health impairment was over-represented among persons with none-mild levels of physical activity.

20 Medical Conditions

Medical Conditions

The ability to maintain good health and wellbeing throughout the lifespan is central to experiencing high quality of life. The significant disease burden and mortality associated with medical conditions is a major concern worldwide. In Australia, the current leading cause of disease and injury burden is cancer, while cardiovascular disease has the greatest level of mortality (AIHW, 2010). Compounding the damaging physical effects of medical conditions are their associations with mental health problems such as depression and anxiety.

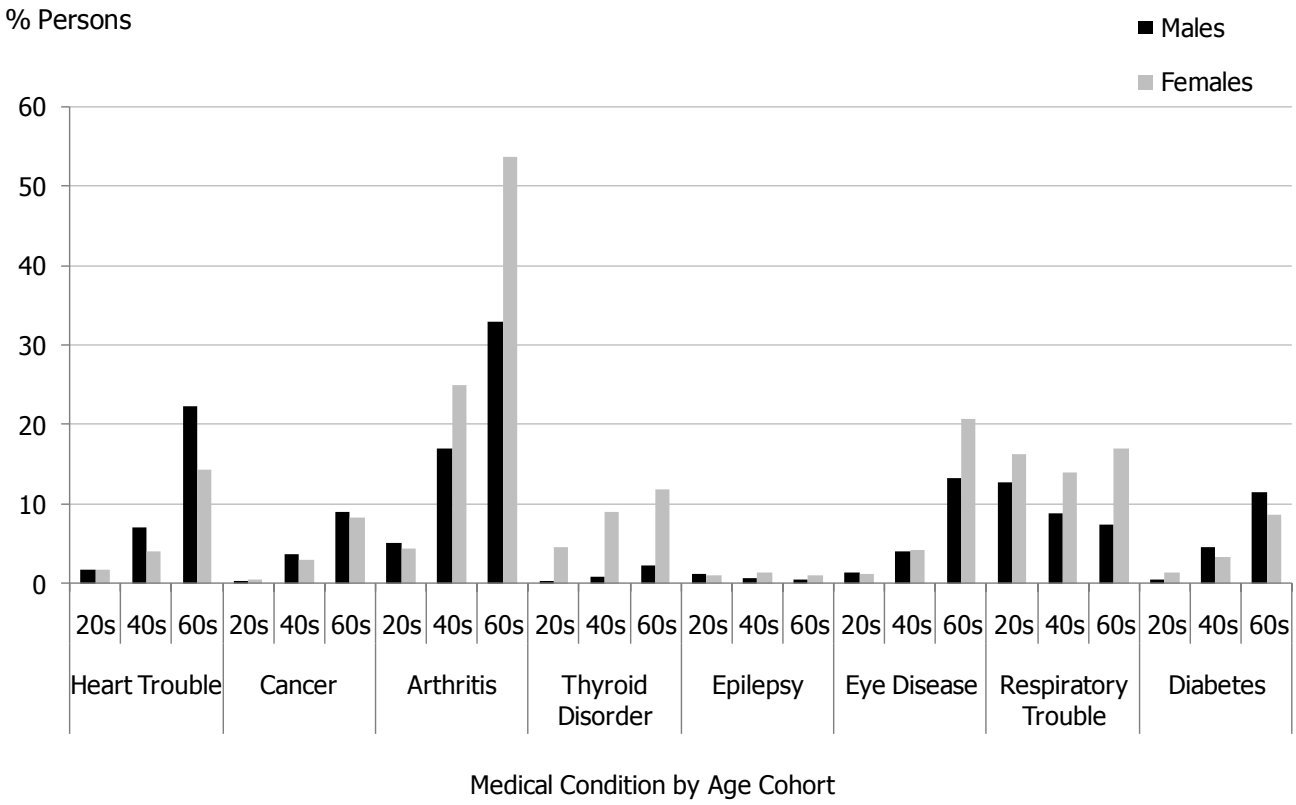
This section reports and describes the prevalence rates of common medical conditions and associations with mental health impairment.

Medical Conditions in the PATH Sample

The PATH questionnaire gathers self-report data on a variety of medical conditions. Specifically, participants were asked if they currently have heart trouble, cancer, arthritis, thyroid disorder, epilepsy, eye disease (cataracts, glaucoma or other eye disease), a respiratory trouble (asthma, chronic bronchitis or emphysema) or diabetes.

As shown in Figure 20.1, the most common medical condition among those investigated in the PATH study was respiratory trouble among 28-32 year-olds (14.6 per cent) and arthritis among 48-52 year-olds (21.1 per cent) and 64-68 year-olds (43.0 per cent), consistent with 2007-08 National Health Survey findings (ABS, 2009). Other common conditions in the oldest cohort were heart trouble (18.4 per cent) and eye disease (16.8 per cent). Not surprisingly, the rates

Figure 20.1 Prevalence of Medical Conditions by Age Cohort and Gender at Most Recent Survey



Medical Conditions

of medical conditions appear to increase with age for both males and females, except for epilepsy and respiratory trouble.

There were gender differences in the prevalence of the medical conditions studied. In all age cohorts, thyroid and respiratory trouble were more common in females than in males. This female bias was also seen for arthritis in the midlife and oldest cohorts and eye disease in the oldest cohort. On the other hand, respondents reporting heart trouble or diabetes in the midlife cohort were more likely to be male, while in the oldest cohort, the only medical condition showing a significant male bias was heart trouble. See Appendix E for details.

The prevalence rates reported in PATH study and their trends with age and gender are generally consistent with the findings of Australian population studies such as the 2004-05 and 2007-08 National Health Surveys (ABS, 2006b; ABS, 2009). For example, asthma (included in PATH's respiratory trouble variable) was reported to be more common in young adults and in females, with an overall prevalence of 9 per cent. Arthritis, on the other hand, was reported to increase with age, with a prevalence of 48 per cent at ages over 65 years. Consistent with the PATH study, females were more likely to have arthritis than males.

Cardiovascular disease was also reported to increase in prevalence with age. Unlike in the PATH study results, the proportion of females with cardiovascular disease was reported to exceed the proportion of males with this disease at ages under 75 years. However, it should be noted that this trend was mediated by the type of heart trouble, with males being more likely than females to have angina and ischaemic heart diseases and diseases of arteries, arterioles and capillaries.

Diabetes was another condition previously reported to increase with age. In line with PATH study findings, males have been reported to be more likely to report diabetes than females. The prevalence in persons over 65 years was reported as 13 per cent, consistent with PATH findings for the 64 -68 year-olds when taking into account the younger age range of this cohort of PATH respondents.

Key Findings: Medical Conditions

- At the most recent survey, the most common medical condition varied with age. Respiratory trouble was most common among 28-32 year-olds (14.6 per cent), while 21.1 per cent of 48-52 year-olds and 43.0 per cent of 64-68 year-old Canberra region residents reported arthritis.
- Thyroid and respiratory trouble were more common among females than males in all age cohorts, while midlife and older males were more likely to report diabetes and heart trouble than females. Arthritis was more common in females than males in these age cohorts, as was eye disease in the oldest cohort.

Cancer has previously been reported to be most prevalent among persons over 65 years old, consistent with PATH findings. The male bias found in the National Health Survey 2004-5, however, was not found in the PATH sample. The overall cancer rate in the oldest PATH cohort (8.6 per cent) is also somewhat higher than 6 per cent, as found in the National Health Survey 2007-08 for persons over 65 years old.

Medical Conditions and Mental Health

Certain medical conditions were statistically associated with a higher rate of mental health impairment. Among the youngest cohort, it appeared that those reporting heart trouble were more likely to have moderate or severe mental health impairment than those without heart trouble. In the midlife and oldest cohorts, those reporting eye disease and respiratory problems appeared to be more likely to experience mental health impairment. Specifically, among those reporting eye disease, 25.1

Medical Conditions

per cent of the midlife cohort and 12.6 per cent of the oldest cohort had mental health impairment (compared to 15.1 per cent and 8.6 per cent of those without eye disease, respectively). Similarly, among those reporting respiratory problems, 21.2 per cent of the midlife cohort and 15.3 per cent of the oldest cohort had mental health impairment (compared to 14.8 per cent and 8.5 per cent without respiratory problems, respectively).

Regression analysis confirmed other strong associations between medical conditions and mental health impairment (see Appendix E). In the midlife cohort, respondents reporting arthritis were between 1.2 and 2.1 times more likely to have mental health impairment. In the oldest cohort, the odds of mental health impairment were between 1.4 and 2.8 for those reporting heart trouble, between 1.4 and 2.6 for those reporting thyroid disorder and between 2.1 and 19.1 for those reporting epilepsy. See Appendix E for details.

The PATH findings that certain medical conditions are associated with mental health impairment are widely supported by previous studies. For example, the 2007 National Survey of Mental Health and Wellbeing (ABS, 2008) found that Australians with cardiovascular disease were more likely to report medium or high levels of psychological distress, fair or poor mental health and depression. This study also found that mental disorders were 1.6 times more likely among people with a chronic physical condition such as diabetes, asthma, heart disease, cancer or arthritis.

International studies have echoed the finding that chronic medical conditions are associated with serious psychological distress (Shih & Simon, 2008), depressive symptoms (Mills, 2001) and major depression (Patten, 2005). Consistent with PATH findings, heart trouble was found to be one of the most highly associated medical conditions impacting depressive symptoms among older Americans (55-93 years old) (Mills, 2001).

Key Findings: Medical Conditions and Mental Health

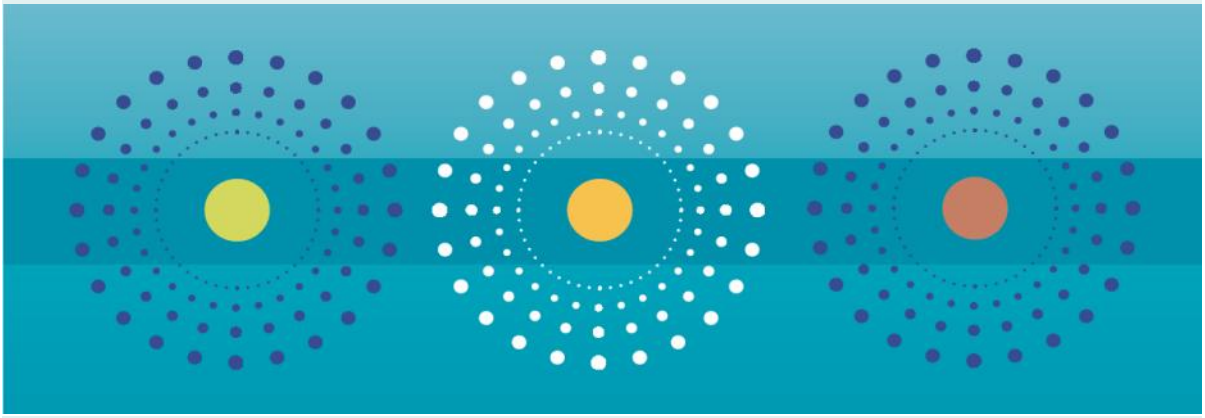
Certain medical conditions were associated with mental health impairment.

- The likelihood of experiencing mental health impairment was greater for 28-32 year-olds who reported heart trouble.
- For 48-52 year-olds and 64-68 year-olds reporting respiratory trouble or eye disease, there was a greater likelihood of having mental health impairment.
- The odds of mental health impairment were significantly higher for persons reporting arthritis in midlife or older.
- Persons in the oldest cohort reporting heart trouble or epilepsy had a significantly greater likelihood of mental health impairment.

In the research literature, the association between rheumatoid arthritis and depression is well documented. The PATH findings provide further evidence for this link. Similarly, the association found here between epilepsy and depression is well supported by previous research, and is consistent with the observation that the two disorders have many common elements and appear to be closely related (Zyss, 2009).

Service Use and Mental Health

21 GP Visits
22 Medication Use



21 GP Visits

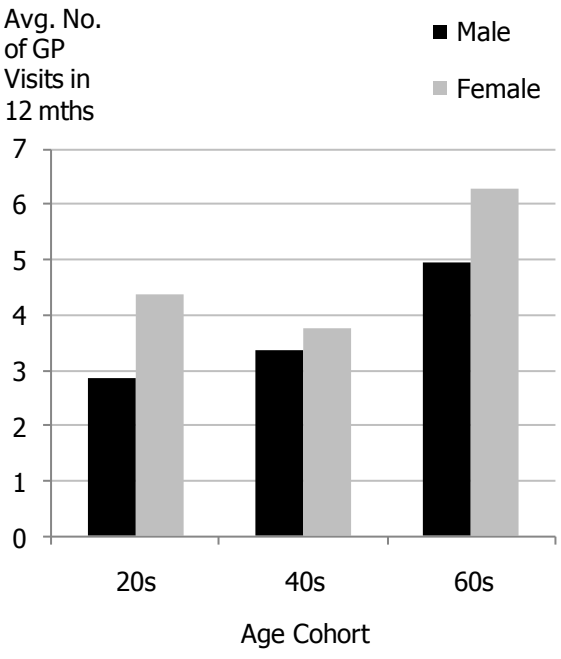
GP Visits

Regular health checks with a general practitioner (GP) are vital in allowing the detection of current or potential future medical or psychological problems. With early detection, the ability to manage preventative strategies or treatment options is greatly enhanced, promoting a better prognosis. In addition, the successful prevention or treatment of such conditions ultimately places less burden on the health care system.

With the consent of respondents, PATH was granted access to Medicare data regarding the number of GP visits six months before and six months after the survey at Wave 2.

On average, respondents in the oldest cohort visited a GP almost twice as often as those in the midlife and youngest cohort (6 annual visits compared to 3.3). Moreover, 94.4 per cent of the 64-68 year-olds visited a GP at least once within the 12-month period. The majority of respondents in the 20s and 40s cohorts also visited a GP within this period, though the rates were somewhat lower than for the 60s cohort, at 77.5 per cent and 80.8 per cent, respectively.

Figure 21.1 Average Number of GP Visits in the 6 Months Before and 6 Months After the PATH Survey for Each Age Cohort at Wave 2



Key Findings: GP Visits

During the six months before and six months after Wave 2 of the PATH survey:

- on average, respondents aged 64-68 years visited a GP almost twice as often as those in the youngest and midlife cohorts (6 annual visits compared to 3.3). Almost 95 per cent of the oldest cohort visited a GP at least once in this period, compared to 81 per cent of the 40s cohort and 78 per cent of the 20s cohort.
- females visited a GP more often than males, on average, particularly in the 20s and 60s cohorts
- respondents experiencing moderate to severe mental health impairment in the 20s and 40s cohorts were more likely to visit a GP at least once in this 12-month period.

There was an apparent gender difference in the number of GP visits, with females visiting a GP more often than males, on average. This was more marked in the youngest and oldest cohorts than in the midlife cohort. See Box 11 for further details.

The proportion of respondents visiting a GP at least once in the 12-month period was significantly higher among those experiencing moderate to severe mental health impairment in the 20s and 40s cohort, but not in the 60s cohort (see Appendix F). This may reflect the fact that, even among those not experiencing mental health impairment, very few in the 60s cohort did not visit a GP at least once over the course of the year. Overall, the results indicate that groups at higher risk for health and mental health problems are using GP services more than lower risk groups.

Box 11. **PATH Investigates: Gender and Health Service Use**

Past research suggests that women rate their physical health more poorly than men and, after controlling for level of health, are more likely to use health services. One proposed explanation for this difference is that women seek formal health care when they are in better health than men. While the reason remains unclear, research to date indicates that men and women take account of different factors when assessing their health status and when making decisions to visit the doctor.

In order to investigate the various factors which influence decisions to use health services, PATH researchers gained consent to collect data from the Health Insurance Commission for 4140 adults aged 40-44 years or 60-64 years regarding the number of visits they had made to a general practitioner (GP) in the six months preceding the PATH interview. In addition, during the interview, respondents provided information about their physical and mental health, and a range of factors that could potentially affect an individual's level of health service use. These factors included education level, marital status, level of household responsibility, support from family and friends, employment status and financial problems.

As in previous research, women were found to use primary medical services more than men. Contrary to the explanation above, however, there was no evidence that women using health services were in better health than men. Indeed, men and women who obtained no GP services reported similar levels of physical and mental health and, for both men and women, obtaining care was most strongly associated with health needs.

Apart from health needs, for men, marital status was a significant factor related to service use. Specifically, married, de facto, separated or divorced men were more likely than widowed or never married men to make GP visits. This suggests that men's help-seeking behaviours may be influenced by women with whom they are closely associated.

In contrast to men's service use, women's use was not associated with any of the hypothesised predisposing factors. Rather, it appears that women's higher level of service use may result from their experiencing poorer health, possibly as a result of their taking into account a wider range of health information. Given that women have a longer life-expectancy than men, and fewer, untreated, lifestyle-related health problems, it could be argued that women's self-ratings of their health are more informed than men's, allowing them to address potential medical problems at a preventative level. Thus, rather than taking the perspective that women are overusing health services, it would be wise to consider the negative impact of underuse, which could result in higher levels of preventable problems and shorter life expectancies.

Parlsow, R.A., Jorm, A.F., Christensen, H., Jacomb, P.A. & Rodgers, B. (2004). Gender differences in factors affecting use of health services: An analysis of a community sample of middle-aged and older Australians. *Social Science and Medicine, 59*, 2121-2129.

22 Medication Use

Medication Use

Used appropriately, medication can be of great therapeutic value in preventing, alleviating or curing various health and mental health problems or their related symptoms.

Medication Use in the PATH Sample

The PATH project gathered self-report information on a variety of medications which respondents used in the past month. Due to their links to mental health, in this report we focus on depression and anxiety medication, pain relievers and sleep medication.

In the discussion which follows, it is important to be aware that, in the PATH questionnaire, "medication" is not restricted to prescription medicine. For pain relievers, it includes Panadol, Aspirin and herbal remedies. For depression, anxiety and sleep medications, it includes vitamin supplements and herbal remedies.

The different age cohorts showed different patterns of medication usage (see Table 22.1). Of the four medications under consideration, pain relievers were the most widely used, with the majority of respondents in all age cohorts reporting usage in the past month. However, the rate of usage was lowest in the 64-68 year-olds (54.9 per cent) followed by the 48-52 year-olds (68.8 per cent) and the 28-32 year-olds (71.1 per cent). Similarly, respondents in the 60s cohort were less likely to be using depression or anxiety medication than those in the 20s and 40s cohorts. On the other hand, along with midlife cohort respondents, there was a tendency for those in the oldest cohort to be more likely to use sleep medication than the youngest cohort (13.5 per cent compared to 12.1 per cent) .

Table 22.1 Proportion of Respondents in Each Age Cohort Using Various Medication Types in the Past Month

Medication Type (%)	Age Cohort		
	20s	40s	60s
Depression Medication	8.9	9.5	5.9
Anxiety Medication	6.4	6.4	4.5
Pain Relievers	71.1	68.8	54.9
Sleep Medication	12.1	13.6	13.5

Key Findings: Medication Use

Different medication usage patterns were apparent across age cohorts. For example:

- at the most recent survey, the majority of respondents reported having used pain relievers in the past month, though usage was greatest among the 20s cohort (71.1 per cent), followed by the 40s and 60s cohorts (68.8 per cent and 54.9 per cent, respectively)
- along with pain relievers, the usage rates of depression and anxiety medications were also lower among 64-68 year-olds than among those in the midlife and youngest cohorts
- respondents aged 28-32 years were slightly less likely to have used use sleep medication in the past month than respondents in the 40s and 60s cohorts.

Medication Use and Mental Health

Not surprisingly, there was a significant association between use of medications and mental health impairment. For all age cohorts and each of the four medications studied here, respondents experiencing mental health impairment were considerably more likely to have used depression, anxiety, sleep or pain medication in the past month (see Figure 22.1 and Appendix F). This was most striking in relation to depression medication, where those taking it in the 20s cohort, for example, were between 4.5 and 9.7 times more likely to be experiencing mental health impairment than those not taking this medication.

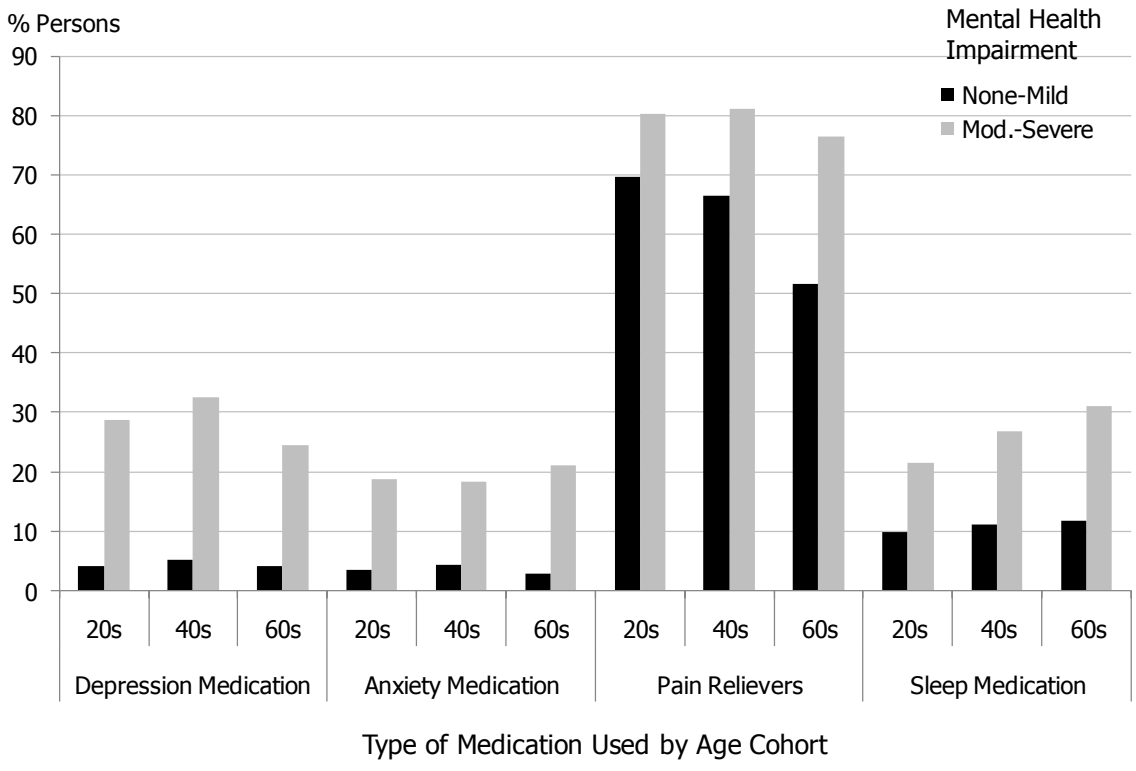
Medication Use

Another interesting pattern relates to sleep medication and mental health impairment. Among those without mental health impairment, usage of this medication was similar across cohorts. However, among those experiencing moderate to severe mental health impairment, there was a tendency for those aged 64-68 years to be more likely to be using sleep medication (31 per cent) than those in the midlife (26.8 per cent) and youngest cohorts (21.5 per cent). The oldest cohort members with mental health impairment were also slightly more likely to be using anxiety medication (21 per cent compared to 18.4 per cent and 18.8 per cent, respectively), but less likely to be using depression medication (24.5 per cent compared to 32.6 per cent and 28.7 per cent, respectively) than their counterparts in the midlife and youngest cohorts.

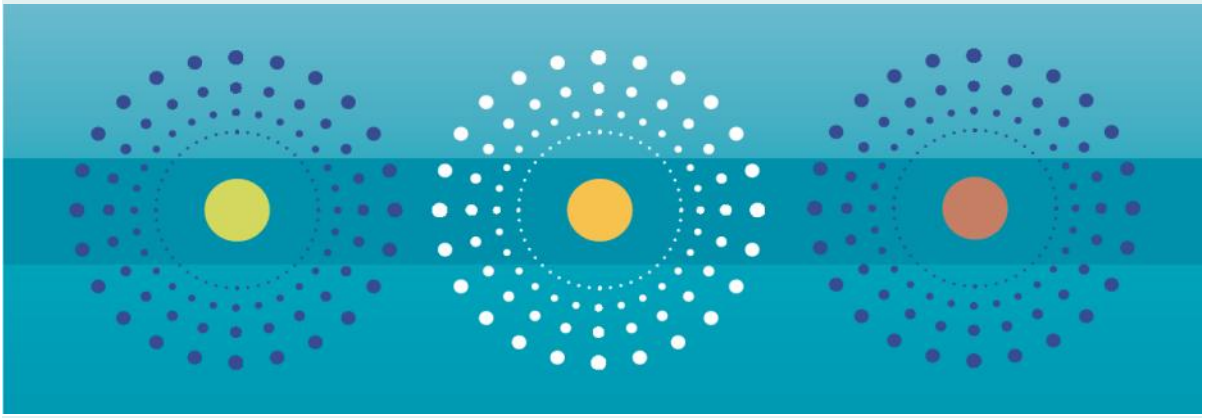
Key Findings: Medication Use and Mental Health

- Use of depression, anxiety, pain and sleep medication in the past month were each independently associated with moderate to severe mental health impairment in all age cohorts.
- Among those with mental health impairment, sleep medication was used more in the 60s cohort (31 per cent) than in the midlife (26.8 per cent) and youngest (21.5 per cent) cohorts.
- While use of anxiety medication was slightly lower in the 60s cohort than in the 20s and 40s cohorts, the pattern was reversed when considering those experiencing mental health impairment.

Figure 22.1 Type of Medication Used in the Past Month by Mental Health Impairment at Most Recent Survey



Implications for Policy and Program Development



Policy and Program IMPLICATIONS

Policy and Program Implications

Findings in this report provide valuable information from the PATH Through Life study on the mental health and associated factors of people living in the ACT and surrounding region. The report not only sheds light on the mental health and wellbeing of vulnerable population groups and vulnerable stages within the adult life-course, but also across different life domains such as relationships, work, finances and health. The report also reveals some of the factors that can build resilience in individuals thus providing some protection against poor mental health. Highlighted throughout this report is the primary influence of the social determinants of mental health and wellbeing. These determinants are the social and economic circumstances that shape people's lives and which are influenced by government policy and action. Furthermore, by highlighting the association between mental health and health risk behaviours, findings indicate that mental health itself is inextricably linked to general health outcomes of individuals thus demonstrating the complex interplay between mental health, social circumstances and wellbeing.

The following sections outline several important implications these findings have for government policy and program development in regards to mental health promotion, prevention and early intervention.

Targeting Vulnerable Populations and Stages Within the Life-course

Findings in the report draw attention to vulnerable groups and stages within the life-course. These include: younger adulthood – particularly in relation to being female, older people – particularly those who are carers of another with a disability, and also people in the workforce who are experiencing insecure employment and/or high job strain.

Vulnerabilities Within Younger and Older Cohorts

With a rate of 1 in 5 reporting symptoms of mental health impairment, the younger cohort (28 to 32 years) represents a vulnerable population in relation to mental health. Young women in particular were more likely to report clinical or sub-clinical levels of depression as well as anxiety disorders compared to other cohorts. In addition, study findings indicate that people aged 64 to 69 years who are caring for someone with a disability are also a vulnerable group as they showed a 50 per cent greater likelihood of reporting mental health symptoms when compared to non-carers in this age-group. Furthermore, older males who were underemployed were 65 per cent more likely to experience suicidal ideation than other cohorts.

Although it is unclear what the precise factors are that contribute to the higher prevalence of mental health impairment for these population groups, evidence shows that a key factor that can mitigate mental health impairment in the population is social connectedness. This may be particularly relevant to these population groups given their greater likelihood of social isolation due to caring demands (younger women and older carers) and being out of the workforce (older males) (Findlay & Cartwright, 2002; Hogg & Worth, 2009). These demands and barriers may in turn increase the likelihood of these population groups not identifying or being identified as experiencing lower levels of mental wellbeing.

Examples of government interventions that may improve identification and support might include:

- incorporating mental health promotions and early intervention programs within services utilised by young women such as women's health services, family centres and early childhood centres
- incorporating mental health promotion and early intervention within outreach services utilised by carers
- increasing public awareness of potential mental health vulnerabilities related to older

carers and at risk older males who are out of the workforce.

The ACT Government mental health strategy document, 'Building a Strong Foundation, A framework for Promoting Mental Health and Wellbeing in the ACT 2009-2014' (ACT Health, 2009a) and 'Managing the risk of suicide, a suicide prevention strategy for the ACT 2009-2014' (ACT Health, 2009b) articulates the Government's commitment to improving mental health and wellbeing through the implementation of social inclusion strategies and has already identified a number of government actions that will target these groups, including:

- exploring linkages with the Women's and Children's Hospital, particularly in the areas of mental health promotion and early intervention
- providing or funding programs and/or services for vulnerable families and evidenced-based parenting programs
- integrating prevention and early intervention activities with primary care and community service providers
- targeting suicide prevention through individual and community-based activities.

Workplace Mental Health

Data from the PATH survey indicate a correlation between work stress, specifically insecure employment and high job strain, with poorer physical and mental health in the midlife cohort of the sample. This is consistent with national and international literature. The costs of workplace mental health problems are enormous and include reduced productivity, low staff moral, increased recruitment and training costs due to high staff turnover, increased insurance premiums, and litigation costs (Leon, 2002). In Australia during 2003-04, claims for psychological injury accounted for 7 per cent of total workers' compensation claims, and nearly 27 per cent of total claim costs (Australian Government Comcare, 2010).

The financial and emotional burden for employees is devastating. In addition to huge economic losses, individuals experience losses in the areas of opportunities for promotion, loss of employment - including taking early retirement or quitting a job without having another job to go to along with increased physical and psychological health problems.

Findings from PATH indicate that, for 40-44 year-olds in the ACT, rates of depression and anxiety were 2-3 times higher for individuals reporting high job strain, that poor self-rated health, depression and anxiety were 3-4 times higher for those reporting high levels of job insecurity, and that there was a 14 fold increase in depression and a 13 fold increase in anxiety for individuals experiencing extremely high job pressure (D'Souza et al., 2003).

LaMontagne, Keegel and Vallance (2007) argue that there is great – and largely unrealised – potential for improving worker health and health behaviours through integrated job stress and workplace health promotion programs.

From a policy perspective, discussion to date has focused on the costs of work stress and mental health problems on employees and employers. There is an urgent need to move the focus to prevention.

LaMontage, Keegel and Vallance (2007) recommend a systems approach to job stress, arguing that such an approach is more effective than alternatives and 'has benefits to individuals, such as decreased stress and improved health, and organisations, particularly in terms of decreased absenteeism' (VicHealth, 2006). The Commonwealth of Australia (2002, 2010) asserts that such approaches 'have higher participation rates and ultimately are more effective at changing health behaviours'.

Policy and Program IMPLICATIONS

A systems approach to workplace mental health and wellbeing involves the integration of primary, secondary and tertiary interventions and includes modification of both individual and workplace variables (LaMontagne, Keegel, & Vallance, 2007).

Such an approach could be implemented via a mental health and wellbeing workplace promotion package along similar lines to Occupational Health and Safety Training. Training would provide employers and employees with an understanding of work-related influences on mental health and wellbeing, the importance of discussing mental health in relation to work, as well as guidelines and practical tips about how to explicitly incorporate mental health and wellbeing into existing OH&S agency policies.

Integrated Approaches to Improving Mental Health and Wellbeing

A social determinants approach to understanding and addressing mental health issues has long been held as fundamental to promoting mental health and wellbeing in the population (Marmot, 2005). Findings from the PATH survey reveal a strong association between the social determinants of mental health and wellbeing and the development of mental illness. Regression analysis found that 'persons who experienced financial hardships were between 2.2 and 3.8 times more likely to experience depression than those who had not experienced financial hardship in the previous year'. Similar correlations were found between employment status and depression. This was most apparent in the youngest age cohort, where '33.3 per cent of persons who were unemployed and 14.5 per cent of those who were out of the labour force reported clinical levels of depression'. Whilst it must be stressed that a causal relationship cannot be implied from these findings, they do none-the-less indicate that many of the determinants of mental health and wellbeing fall outside the health portfolio.

The '4th National Mental Health Plan' (Commonwealth of Australia, 2009) recognises the need to articulate the roles and responsibilities of other government areas that fall outside health departments in relation to improving mental health and wellbeing. This approach has been adopted in the ACT. The ACT Framework (ACT Health, 2009a) takes a whole-of-government approach to the promotion of mental health and wellbeing across the lifespan. It brings together the activities of a range of ACT government departments and community agencies who deliver services that influence mental health and wellbeing to guide investment in the development and implementation of activities to promote mental health and wellbeing in the ACT over the next five years.

The ACT Framework also identifies several core elements in its vision for mental health in the ACT to ensure a whole-of-community response to enhancing mental health and wellbeing. These elements are:

- promoting mental health and wellbeing is everybody's business
- preventing mental illness is a shared responsibility
- early intervention requires strong inter-sectoral cooperation.

Implementation of the Framework involves all relevant government departments and community agencies actively implementing actions to promote mental health and wellbeing. Examples of specific actions include implementing mental wellbeing promotion programs in schools, and workplaces. Such actions are particularly relevant to findings in this report. For instance, the finding that a 'greater proportion of persons who had less than 12 years of education reported anxiety disorders within the young and midlife cohort' and the correlation between anxiety disorders and employment. Other examples might involve government departments applying a 'mental health and wellbeing lens' to policy development to mitigate unintended negative impacts on mental health and promote the mental health needs of the community.

Policy and Program IMPLICATIONS

Promoting Positive Mental Health

The relationship between positive psychology and mental health has received relatively little attention in studies investigating factors associated with mental health. However, findings from the PATH study add to a steadily growing body of evidence on the factors that promote mental resilience and thus provide some protection against life's adversities. Findings from PATH identify several factors associated with positive mental health. These include individual coping styles, physical activity and volunteering. PATH participants who reported using certain cognitive styles such as positive reframing and humour were more likely to report higher levels of mental health and wellbeing whereas participants reporting negative coping styles such as avoidant coping were more likely to report lower levels of mental health and wellbeing. Similar findings were evident in relating to physical activity with higher levels of physical activity being associated with better mental health across all age groups, in particular for younger people. In regards to volunteering, older people who participated in volunteer work at a moderate level were also more likely to report higher levels of mental wellbeing.

Although causality cannot be inferred from these results, other studies support the notion that these factors may act not only as protective mechanisms for mental health and wellbeing but also as means of assisting the individual to achieve their full potential (Fledderus, Bohlmeijer, & Pieterse, 2010; Greenfield & Marks, 2004; Richardson et al., 2005, Pendedo & Dahn, 2005; Mejia, 2010). Findings from PATH thus add to the body of evidence implicating physical activity, positive coping styles and volunteering as effective prevention, early intervention and mental health promoting strategies that could be incorporated into program development and design.

The ACT Framework (p.19) supports the promotion of mental health as not just the absence of mental illness but also as a positive state, described by the World Health Organisations as '...a state of wellbeing in which the individual realizes his or her own abilities, can cope with the normal stressors of life, can work productively and fruitfully, and is able to make a contribution to his or her community' (World Health Organisation, 2001). Further integrating this definition and promoting this human state is integral to the efficacy of mental health promotions, prevention and early intervention programs. Examples of activities that promote the concept of positive psychology might include:

- promoting and supporting the inclusion of positive psychology and personal coping skills into primary and secondary schools' health and wellbeing curriculums
- promoting and supporting the inclusion of positive psychology and personal coping skills into mental health early intervention programs
- investing in further research into coping styles and other resilience building factors.

Mental Health as a Comorbid Factor with Other Health Risk Factors

The findings from PATH show associations between mental health impairment and other health risk behaviours and conditions. Hazardous/harmful drinkers were 1.8 times more likely to experience mental health impairment — particularly those in the mid-life and older cohort — and smoking was over-represented among persons with significant levels of mental health impairment. Illicit substance use was also more likely to be reported in people with moderate to high levels of mental health impairment. In addition, links were found between mental health and people with heart conditions, respiratory illness, arthritis or eye disease. Together this information adds to the growing body of evidence implicating the complex relationship between mental health and physical health in general and how some of these relationships may be reciprocal (Cerd, Sagdeo, & Galea, 2008; Kessler et al., 1997).

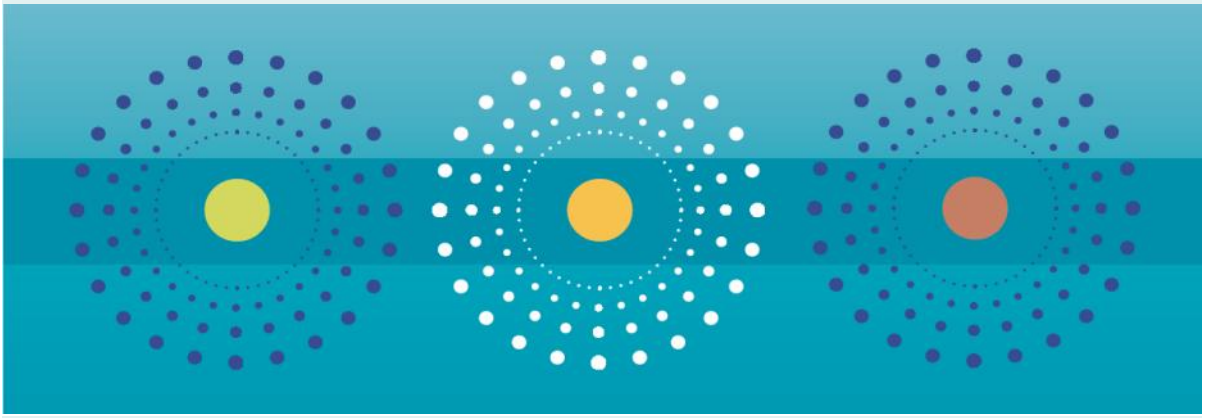
Policy and Program IMPLICATIONS

In terms of addressing these issues, the ACT Framework states that enhancing services to people with comorbidity issues is one of the key action areas of its vision (p.37). A number of specific actions to address the needs of people with mental health and substance use disorders are detailed within the Framework (p. 37-40). In appreciating the sometimes reciprocal nature of comorbidities, policy and program development might also benefit from taking into account the underlying mental wellbeing issues that contribute towards other health risk behaviours and how these may act as barriers to behavioural change in general.

Examples of other government strategies that address the links between mental and physical health might include:

- investing in research on the relationships between chronic disease and mental health
- promoting mental health literacy training among health workers
- developing and investing in health promotion and early intervention programs which incorporate a 'holistic' approach to mental and physical health improvement.

Future Research



Future Research

Future Research

This report provides an overview and an introduction to the PATH study and its participants. However, there are many ways in which more detailed and sophisticated analysis of PATH data can provide a strong and extremely relevant evidence base to inform ACT policies in areas such as health, ageing, and social inclusion. While this report is largely descriptive, future research can take advantage of the multi-wave longitudinal nature of the data to investigate the ACT population over time. Using longitudinal statistical models, it will be possible to identify factors associated with changing health and wellbeing, with a focus on risk and protective factors and circumstances particular to the ACT.

Research Directions

The following are suggested directions for further PATH data research, and for future research in general.

- It would be beneficial to place greater emphasis on examining access and types of services used by those with mental illness. Facilitated by greater data linkage, this research could consider personal characteristics and locational differences in access to primary care and specialist services, and potentially hospital care. This data would be complemented by information on medication use. By identifying areas of need, such research has the potential to inform better and more effective health service planning in the ACT.

- The PATH study is also an important vehicle to investigate inequalities in the experience of mental disorders in the ACT. For example, there are comprehensive PATH data on jobs and job quality. With this research, we can gain a better understanding of the employment factors associated with health and wellbeing, sickness absence and disability, which can be used by employers in the ACT to better design jobs.

- With an ageing population projected for the ACT, research using PATH data can also provide evidence to inform appropriate policy responses. For example, information on the mental health, wellbeing and circumstances of informal caregivers in the ACT can identify ways to better support caregivers in this important role.

- Australia has the world's highest consumption of ecstasy. Cross-sectional data suggest that ecstasy use is associated with depression, but there are few long-term data on the impact of ecstasy on mental health. The longitudinal relationship between changes in ecstasy consumption and mental health outcomes needs to be explored.

- There is a high prevalence of cannabis use, particularly in the 20s cohort of PATH. This data set provides an ideal opportunity to assess the implications of cannabis use on cognitive function and especially whether former users of cannabis return to "normal" levels of functioning when they cease using cannabis.

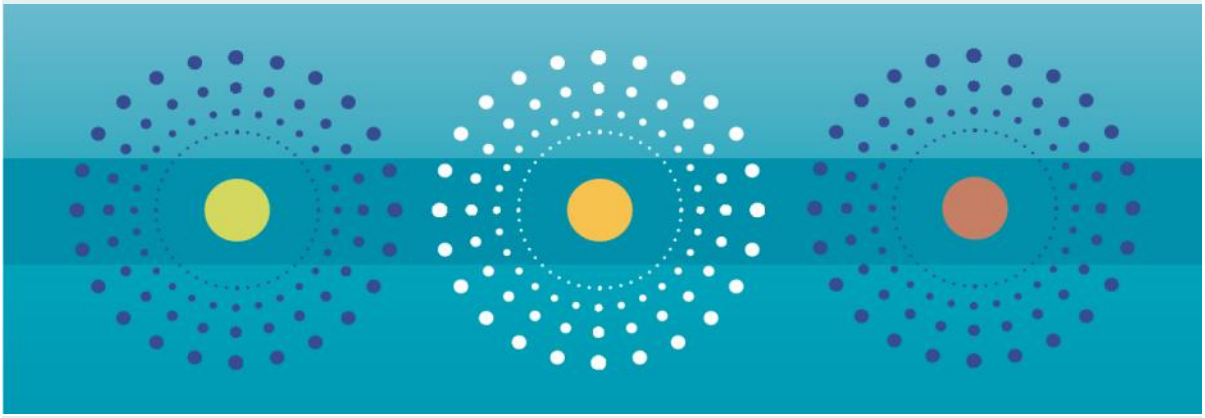
- Taking a longitudinal approach, it would be informative to identify the impact of lifestyle changes and changes in the availability of services on mental health and wellbeing.

- It is important to gain a better understanding of the effects of various life situations and transitions on health. For example, it would be valuable to examine the impact of parenting on the health and lifestyle of the midlife and younger cohorts, and the impact of retirement on the health and wellbeing of the baby boomer cohort.

Appendices

A PATH Study
B Mental Health
C Social and Economic
D Psychological Factors
E Risk Factors and Health
F Service Use

Note. Unless otherwise stated, results are at most recent survey (wave 3 for 20s and 40s cohorts, wave 2 for 60s cohort).

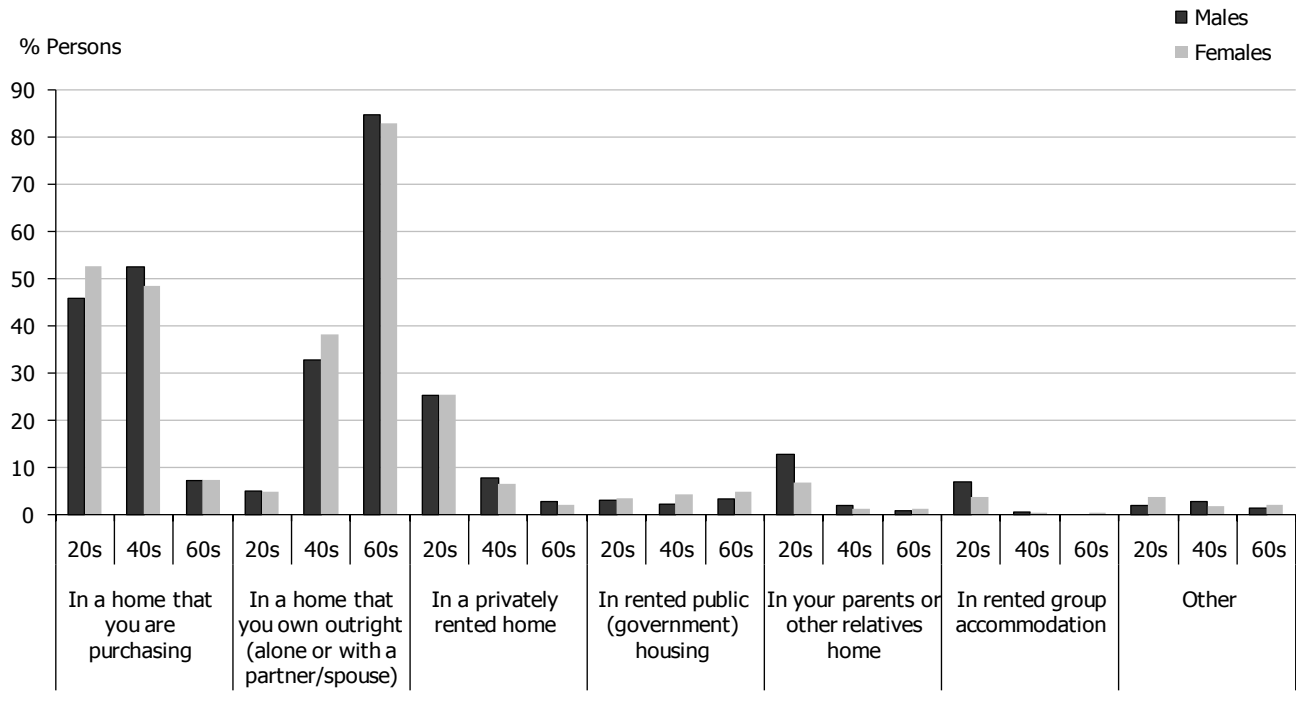


Appendix A PATH STUDY

Table A1. English as a Second Language by Age Cohort and Gender

English Language (%)	**20s Cohort**			**40s Cohort**			**60s Cohort**		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
First Language	93.9	94.1	93.8	90.8	90.7	90.9	87.4	84.8	90.1
Second Language	6.1	5.9	6.3	9.2	9.3	9.1	12.6	15.2	9.9
Total Persons (N)	2388	1156	1232	2528	1192	1336	2548	1315	1233

Figure A1. Home Tenure by Age Cohort and Gender



Home Tenure by Age Cohort

Appendix B MENTAL HEALTH

Figure B1. Prevalence of Depression by Age Cohort

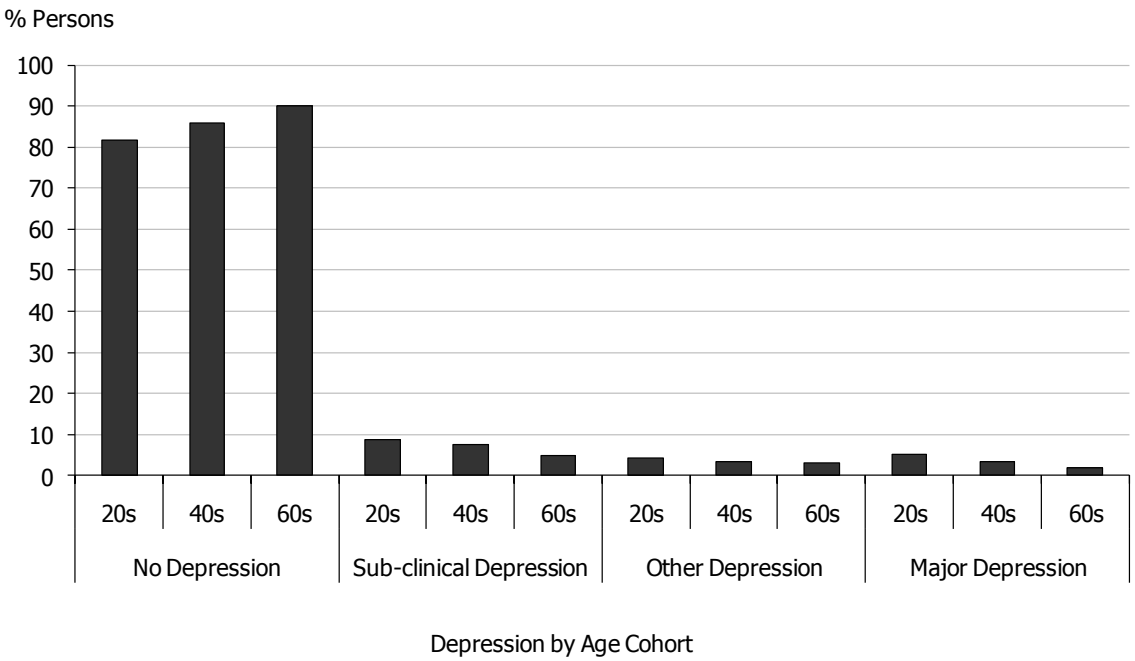


Table B1. Prevalence of Depression by Age Cohort Across Time

Depression Categories (%)	**20s Cohort**		**40s Cohort**		**60s Cohort**	
	Baseline (2003/04)	4 year Follow up	Baseline (2004/05)	4 year Follow up	Baseline (2001/02)	4 year Follow up
No Depression	76.1	81.7	84.0	85.8	88.8	90.1
Subsyndromal Depression	12.5	8.9	8.1	7.4	5.3	4.9
Other Depression	5.4	4.3	3.5	3.5	4.1	3.1
Major Depression	6.0	5.13	4.5	3.3	1.8	1.9
Total Persons (N)	2121	1968	2336	2167	2539	2182

Appendix B MENTAL HEALTH

Table B2. Associations between Marital Status and Depression: Cross Tabulation

Marital Status		No Depression	Depressive Disorder	Total	χ^2 (df)	*V*
20s Cohort					38.25(2)**	0.14**
Married or De facto	n	1256	90	1346		
	%	93.3	6.7	100		
Separated, divorced or widowed	n	56	9	65		
	%	86.2	13.8	100		
Never Married	n	470	87	557		
	%	84.4	15.6	100		
Total Persons	N	1782	186	1968		
	%	90.5	9.5	100		
40s Cohort					8.67(2)*	0.06*
Married or De facto	n	1578	99	1677		
	%	94.1	5.9	100		
Separated, divorced or widowed	n	280	31	311		
	%	90	10	100		
Never Married	n	158	16	174		
	%	90.8	9.2	100		
Total Persons	N	2016	146	2162		
	%	93.2	6.8	100		
60s Cohort					15.01(2)**	0.08
Married or De facto	n	1552	66	1618		
	%	95.9	4.1	100		
Separated, divorced or widowed	n	402	38	440		
	%	91.4	8.6	100		
Never Married	n	46	3	49		
	%	93.9	6.1	100		
Total Persons	N	2000	107	2107		
	%	94.9	5.1	100		

* $p < .05$, ** $p < .01$.

Appendix B MENTAL HEALTH

Table B3. Associations between Education and Depression: Cross Tabulation

Years of Education		No Depression	Depressive Disorder	Total	χ^2 (df)	*V*
20s Cohort					15.87 (3)**	0.09**
<12 years	n	43	9	52		
	%	82.7	17.3	100		
12-15 years	n	742	100	842		
	%	88.1	11.9	100		
>15 years	n	993	77	1070		
	%	92.8	7.2	100		
Total Persons	N	1778	186	1964		
	%	90.5	9.5	100		
40s Cohort					5.88 (2)*	.05*
<12 years	n	197	23	220		
	%	89.5	10.5	100		
12-15 years	n	809	59	868		
	%	93.2	6.8	100		
>15 years	n	1011	64	1075		
	%	94.0	6.0	100		
Total Persons	N	2017	146	2163		
	%	93.3	6.7	100		
60s Cohort					15.56 (2)**	0.08**
<12 years	n	484	42	526		
	%	92	8.0	100		
12-15 years	n	775	40	815		
	%	95.1	4.9	100		
>15 years	n	814	27	841		
	%	96.8	3.2	100		
Total Persons	N	2073	109	2182		
	%	95	5	100		

* $p < .05$, ** $p < .01$.

Appendix B MENTAL HEALTH

Table B4. Associations Between Employment Status and Depression: Cross Tabulation

Employment Status		No Depression	Depressive Disorder	Total	χ^2 (df)	*V*
20s Cohort					33.32(3)**	0.13**
Full-time Employment	n	1396	125	1521		
	%	91.8	8.2	100		
Part-time Employment	n	230	26	256		
	%	89.8	10.2	100		
Unemployed	n	26	13	39		
	%	66.7	33.3	100		
Not in labour force	n	130	22	152		
	%	85.5	14.5	100		
Total Persons	N	1782	186	1968		
	%	90.5	9.5	100		
40s Cohort					36.09(3)**	1.29**
Full-time Employment	n	1548	94	1642		
	%	94.3	5.7	100		
Part-time Employment	n	324	22	346		
	%	93.6	6.4	100		
Unemployed	n	30	3	33		
	%	90.9	9.1	100		
Not in labour force	n	117	27	144		
	%	81.3	18.8	100		
Total Persons	N	2019	146	2165		
	%	93.3	6.7	100		
60s Cohort					6.95(3)	.06
Full-time Employment	n	188	6	194		
	%	96.9	3.1	100		
Part-time Employment	n	368	11	379		
	%	97.1	2.9	100		
Unemployed	n	3	0	3		
	%	100	0.0	100		
Not in labour force	n	1514	92	1606		
	%	94.3	5.7	100		
Total Persons	N	2073	109	2182		
	%	95	5	100		

* $p < .05$, ** $p < .01$.

Appendix B MENTAL HEALTH

Table B5. Associations Between Financial Hardship and Depression: Cross Tabulation

Experience of Financial Hardship		No Depression	Depressive Disorder	Total	χ^2 (df)	*V*
20s Cohort					36.04(1)**	0.14**
No	n	1649	147	1796		
	%	91.8	8.2	100		
Yes	n	128	37	165		
	%	77.6	22.4	100		
Total Persons	N	1777	184	1961		
	%	90.6	9.4	100		
40s Cohort					21.72 (1)**	0.10
No	n	1920	125	2045		
	%	93.9	6.1	100		
Yes	n	96	20	116		
	%	82.8	17.2	100		
Total Persons	N	2016	145	2161		
	%	93.3	6.7	100		
60s Cohort					16.24 (1)**	0.09**
No	n	2031	99	2130		
	%	95.4	4.6	100		
Yes	n	37	8	45		
	%	82.2	17.8	100		
Total Persons	N	2068	107	2175		
	%	95.1	4.9	100		

* $p < .05$, ** $p < .01$.

Appendix B MENTAL HEALTH

Demographics	*B* (SE)	Wald	Odds Ratio	95% CI
20s Cohort (N = 1957)				
Financial Hardship	0.81(0.22)	13.44**	2.22	1.45 – 3.45
Years of Education	-0.12(0.04)	6.06*	0.89	0.81 – 0.97
Employment				
Full Time	-	17.21**	-	-
Employed Part-time	0.27 (0.24)	1.22	1.30	0.81 – 2.10
Unemployed	1.32 (0.37)	12.78**	3.74	1.81 – 7.72
Not in the Labour Force	0.66 (0.27)	5.94*	1.93	1.13 – 3.28
Marital Status				
Married or De Facto	-	29.13**	-	-
Separated, Divorced or Widowed	0.64 (0.38)	2.76	1.90	0.89 – 4.05
Never Married	0.90 (0.16)	28.79**	2.45	1.77 – 3.40
Gender	-0.95 (0.16)	0.32	0.91	0.65 – 1.26
40s Cohort (N = 2530)				
Financial Hardship	0.79 (0.29)	7.54**	2.20	1.25 – 3.89
Years of Education	-0.03 (0.40)	0.66	0.97	0.89 – 1.04
Employment				
Full Time	-	24.59**	-	-
Employed Part-time	0.11 (0.26)	0.19	1.11	0.67 – 1.85
Unemployed	-0.16 (0.74)	0.48	0.85	0.19 – 3.66
Not in the Labour Force	1.23 (0.25)	23.68**	3.45	2.09 – 5.68
Marital Status				
Married or De Facto	-	5.30	-	-
Separated, Divorced or Widowed	0.50 (0.23)	4.87	1.66	1.05 – 2.59
Never Married	0.33 (0.30)	1.25	1.39	0.78 – 2.50
Gender	-0.11 (0.18)	0.39	0.89	0.62 – 1.28
60s Cohort (N = 2095)				
Financial Hardship	1.31 (0.42)	9.76**	3.72	1.63 – 8.49
Years of Education	-0.14 (0.40)	12.10**	0.87	0.80 – 0.94
Employment				
Full Time	-	4.02		
Employed Part-time	0.17 (0.55)	0.92	1.18	0.40 – 3.49
Unemployed	-17.81 (22486.13)	0.00	0.00	-
Not in the Labour Force	0.67 (0.47)	2.02	1.96	0.78 – 4.96
Marital Status				
Married or De Facto	-	9.55**	-	-
Separated, Divorced or Widowed	0.71 (0.23)	9.43**	2.03	1.30 – 3.19
Never Married	0.45 (0.61)	0.52	1.56	0.47 – 5.23
Gender	-.29 (0.21)	1.74	0.75	0.49 – 1.15

* $p < .05$, ** $p < .01$.

Appendix B MENTAL HEALTH

Table B7. Association Between Demographics and Depression for the Total Sample at Wave 2: Binary Logistic Regression

Demographics	*B* (SE)	Wald	Odds Ratio	95% CI
Total PATH Participants W2 (N = 5753)				
Financial Hardship	1.13 (0.04)	66.36**	3.10	2.36 – 4.07
Years of Education	-0.12 (0.02)	22.87**	0.89	0.85 – 0.95
Employment Full Time		22.08**		
Employed Part-time	0.38 (0.15)	6.77**	1.47	1.10 – 1.96
Unemployed	0.54 (0.2.8)	3.75	1.72	0.99 – 2.99
Not in the Labour Force	0.70 (0.16)	19.70**	2.02	1.48 – 2.75
Marital Status Married or De Facto		16.16**		
Separated, Divorced or Widowed	0.45 (0.15)	9.38**	1.57	1.17 – 2.08
Never Married	0.56 (0.15)	14.83**	1.75	1.31 – 2.34
Gender	0.08 (0.11)	0.65	1.09	0.88 – 1.34
Age Cohort 20s	1.11 (0.19)	31.56**	3.05	2.07 – 4.51
40s	0.94 (0.17)	30.83**	2.56	1.83 – 3.57
60s	-	29.21**	-	-

* p <.05, ** p <.01.

Appendix B MENTAL HEALTH

Table B8. Prevalence of Anxiety by Age Cohort Across Time

Anxiety (%)	**20s Cohort**		**40s Cohort**		**60s Cohort**	
	Baseline	4 year Follow up	Baseline	4 year Follow up	Baseline	4 year Follow up
No Clinical Anxiety	89.8	90.6	92.8	94.2	98.5	96.9
Anxiety Disorder Total	10.2	9.4	7.2	5.8	1.5	3.1
Panic Disorder	3.4	3.6	2.6	2.1	1.5	0.9
Other Anxiety Disorders	6.8	5.8	4.6	3.7	N/A	N/A
Total Persons (N)	2129	1969	2340	2170	2551	2196

Appendix B MENTAL HEALTH

Table B9. Associations Between Marital Status and Anxiety: Cross Tabulation

Marital Status		No Anxiety	Anxiety Disorder	Total	χ^2 (df)	*V*
20s Cohort					7.6(2)*	0.06*
Married or De Facto	n	1236	110	1346		
	%	91.8	8.2	100		
Separated, divorced or widowed	n	59	9	68		
	%	86.8	13.2	100		
Never Married	n	489	66	555		
	%	88.1	11.9	100		
Total Persons	N	1784	185	1969		
	%	90.6	9.4	100		
40s Cohort					10.22(2)**	0.07**
Married or De Facto	n	1593	86	1679		
	%	94.9	5.1	100		
Separated, divorced or widowed	n	291	21	312		
	%	93.3	6.7	100		
Never Married	n	155	19	174		
	%	89.1	10.9	100		
Total Persons	N	2039	126	2165		
	%	94.2	5.8	100		
60s Cohort					8.13(2)**	0.06*
Married or De facto	n	1580	44	1624		
	%	97.3	2.7	100		
Separated, divorced or widowed	n	423	24	447		
	%	94.6	5.4	100		
Never Married	n	49	1	50		
	%	98	2.0	1.0		
Total Persons	N	2052	69	2121		
	%	96.7	3.3	100		

* $p < .05$, ** $p < .01$.

Appendix B MENTAL HEALTH

Table B10. Associations Between Education and Anxiety: Cross Tabulation

Years of Education		No Anxiety	Anxiety Disorder	Total	χ^2 (df)	*V*
20s Cohort					11.00(2)**	0.08**
Less than 12 Years	n	46	7	53		
	%	86.8	13.2	100		
12 to 15 Years	n	744	98	842		
	%	88.4	11.6	100		
15 Years Plus	n	991	79	1070		
	%	92.6	7.4	100		
Total Persons	N	1781	184	1965		
	%	90.6	9.4	100		
40s Cohort					0.51(2)	0.01
Less than 12 Years	n	206	15	221		
	%	93.2	6.8	100		
12 to 15 Years	n	820	48	868		
	%	94.5	5.5	100		
15 Years Plus	n	1014	63	1077		
	%	94.2	5.8	100		
Total Persons	N	2040	126	2166		
	%	94.2	5.8	100		
60s Cohort					18.13(2)**	0.09**
Less than 12 Years	n	501	30	531		
	%	94.4	5.6	100		
12 to 15 Years	n	793	26	819		
	%	96.8	3.2	100		
15 Years Plus	n	833	13	846		
	%	98.5	1.5	100		
Total Persons	N	2127	69	2196		
	%	96.9	3.1	100		

* $p < .05$, ** $p < .01$.

Appendix B MENTAL HEALTH

Table B11. Associations Between Financial Hardship and Anxiety: Cross Tabulation

Financial Hardship		No Anxiety	Anxiety Disorder	Total	χ^2 (df)	*V*
20s Cohort					37.05 (1)**	0.14**
No Hardship	n	1652	145	1797		
	%	91.9	8.1	100		
Yes Hardship	n	128	37	165		
	%	77.6	22.4	100		
Total Persons	N	1780	182	1962		
	%	90.7	9.3	100		
40s Cohort					33.17(1)**	0.12**
No Hardship	n	1942	105	2047		
	%	94.9	5.1	100		
Yes Hardship	n	96	21	117		
	%	82.1	17.9	100		
Total Persons	N	2038	126	2164		
	%	94.2	5.8	100		
60s Cohort					0.23(1)	0.01
No Hardship	n	2077	65	2142		
	%	97.0	3.0	100		
Yes Hardship	n	45	2	47		
	%	95.7	4.3	100		
Total Persons	N	2122	67	2189		
	%	96.9	3.1	100		

* $p < .05$, ** $p < .01$.

Appendix B MENTAL HEALTH

Table B12. Associations Between Employment Status and Anxiety: Cross Tabulation

Employment Status		No Anxiety	Anxiety Disorder	Total	χ^2 (df)	*V*
20s Cohort					22.9(3)**	0.11**
Full-time	n	1405	118	1523		
	%	92.3	7.7	100		
Part-time	n	222	35	257		
	%	86.4	13.6	100		
Unemployed	n	32	7	39		
	%	82.1	17.9	100		
Not in labour force	n	125	25	150		
	%	83.3	16.7	100		
Total Persons	N	1784	185	1969		
	%	90.6	9.4	100		
40s Cohort					46.02(3)**	0.15**
Full-time	n	1572	70	1642		
	%	95.7	4.3	100		
Part-time	n	320	28	348		
	%	92.0	8.0	100		
Unemployed	n	31	3	34		
	%	91.2	8.8	100		
Not in labour force	n	119	25	144		
	%	82.6	17.4	100		
Total Persons	N	2042	126	2168		
	%	94.2	5.8	100		
60s Cohort					6.75(3)	0.55
Full-time	n	193	2	195		
	%	99.0	1.0	100		
Part-time	n	372	7	379		
	%	98.2	1.8	100		
Unemployed	n	3	0	3		
	%	100	0	100		
Not in labour force	n	1559	60	1619		
	%	96.3	3.7	100		
Total Persons	N	2127	69	2196		
	%	96.9	3.1	100		

* $p < .05$, ** $p < .01$.

Appendix B MENTAL HEALTH

Table B13. Associations Between Demographics and Anxiety: Binary Logistic Regression

Demographics	*B* (SE)	Wald	Odds Ratio	95% CI
20s Cohort (N =1958)				
Financial Hardship	0.95 (0.22)	18.71**	2.58	1.68 - 3.96
Years of Education	-0.07 (0.05)	2.41	0.93	0.85 - 1.02
Employment		7.77		
Full Time				
Employed Part-time	0.37 (0.22)	2.90	1.45	0.95 - 2.23
Unemployed	0.64 (0.44)	2.06	1.89	0.79 - 4.52
Not in the Labour Force	0.58 (0.26)	5.09*	1.79	1.08 - 2.97
Marital Status		6.15*		
Married or De Facto				
Separated, Divorced or Widowed	0.35 (0.39)	0.81	1.42	0.66 - 3.05
Never Married	0.43 (0.18)	5.92*	1.53	1.09 - 2.16
Gender	0.72 (0.18)	16.11**	2.04	1.44 - 2.90
40s Cohort (N = 2157)				
Financial Hardship	1.03 (0.29)	12.71**	2.80	1.59 - 4.94
Years of Education	0.02 (0.04)	0.18	1.02	0.94 - 1.11
Employment		27.72**		
Full Time				
Employed Part-time	0.59 (0.25)	5.81*	1.81	1.12 - 2.93
Unemployed	0.46 (0.63)	0.53	1.58	0.46 - 5.44
Not in the Labour Force	1.39 (0.27)	26.90**	4.02	2.38 - 6.79
Marital Status		4.73		
Married or De Facto				
Separated, Divorced or Widowed	0.12 (0.27)	0.21	1.13	0.67 - 1.92
Never Married	0.62(0.29)	4.73*	1.86	1.06 - 3.26
Gender	0.14 (0.20)	0.49	1.15	0.78 - 1.71
60s Cohort (N =2109)				
Financial Hardship	0.10 (0.75)	0.02**	1.11	0.26 - 4.81
Years of Education	-0.17 (0.05)	11.98**	0.84	0.76 - 0.93
Employment	-	3.62	-	-
Full Time				
Employed Part-time	0.68 (0.81)	0.69	1.96	0.40 - 9.64
Unemployed	-16.32 (2.2 e+3)	0.00	0.00	-
Not in the Labour Force	1.15 (0.73)	2.50	3.17	0.76 - 3.29
Marital Status	-	4.87	-	-
Married or De Facto				
Separated, Divorced or Widowed	0.61 (0.28)	4.62*	1.84	1.06 - 3.22
Never Married	-0.31 (1.03)	0.09	0.73	0.10 - 5.48
Gender	-0.15 (0.27)	0.32	0.86	0.51 - 1.46

* p <.05, ** p <.01.

Appendix C SOCIAL & ECONOMIC CONTEXT

Table C1. Associations Between Stressful Life Events and Mental Health Impairment: Binary Logistic Regression

Stressful Life Events	*B* (SE)	Wald	Odds Ratio	95% CI
20s Cohort				
Serious illness/injury/assault - self	0.67 (0.31)	4.57*	1.96	1.06 - 3.62
Serious illness/injury/assault - close relative	0.38 (0.21)	3.41	1.46	0.98 - 2.19
Parent/child/partner died	-0.57 (0.91)	0.40	0.57	0.10 - 3.34
Close family friend/relative died	-0.13 (0.20)	0.38	0.88	0.59 - 1.31
Broke off steady relationship	0.05 (0.56)	0.01	1.06	0.35 - 3.17
Serious problem with close friend/neighbour/relative	0.83 (0.22)	14.36**	2.29	1.49 - 3.51
Crisis/serious disappointment with work or career - self	0.90 (0.21)	18.55**	2.47	1.64 - 3.72
Thought would soon lose job - self	0.60 (0.27)	4.84*	1.83	1.07 - 3.13
Though would soon lose job - partner	0.60 (0.31)	3.70	1.82	0.99 - 3.37
Crisis/serious disappointment with work or career - partner	-0.18 (0.24)	0.54	0.84	0.52 - 1.34
Separation due to marital difficulties	0.66 (0.53)	1.58	1.93	0.69 - 5.41
Became unemployed / seeking work unsuccessfully	0.10 (0.41)	0.06	1.11	0.49 - 2.49
Sacked from job	0.99 (0.85)	1.35	2.69	0.51 - 14.35
Major financial crisis	0.41 (0.29)	1.92	1.50	0.85 - 2.66
Police problems and court appearance	1.09 (0.50)	4.67*	2.96	1.11 - 7.92
Something valued lost/stolen	0.42 (0.28)	2.23	1.53	0.88 - 2.66
40s Cohort				
Serious illness/injury/assault - self	1.29 (0.23)	30.08**	3.62	2.29 - 5.74
Serious illness/injury/assault - close relative	0.41 (0.18)	4.88*	1.50	1.05 - 2.15
Parent/child/partner died	0.35 (0.29)	1.42	1.42	1.05 - 2.15
Close family friend/relative died	-0.04 (0.19)	0.04	0.96	0.67 - 1.39
Broke off steady relationship	-0.88 (0.94)	0.87	0.42	0.07 - 2.63
Serious problem with close friend/neighbour/relative	0.69 (0.22)	10.3**	2.00	1.31 - 3.06
Crisis/serious disappointment with work or career - self	0.56 (0.20)	7.74**	1.76	1.18 - 2.62
Thought would soon lose job - self	0.79 (0.26)	9.16**	2.21	1.32 - 3.70
Though would soon lose job - partner	0.12 (0.30)	0.15	1.12	0.62 - 2.04
Crisis/serious disappointment with work or career - partner	0.18 (0.22)	0.66	1.19	0.78 - 1.82
Separation due to marital difficulties	-1.24 (0.91)	1.84	0.29	0.05 - 1.73
Became unemployed / seeking work unsuccessfully	-0.61 (0.43)	1.97	0.55	0.23 - 1.27
Sacked from job	0.32 (0.73)	0.19	1.37	0.33 - 5.77
Major financial crisis	1.03 (0.27)	14.56**	2.79	1.65 - 4.73
Police problems and court appearance	0.13 (0.77)	0.03	1.14	0.25 - 5.14
Something valued lost/stolen	0.76 (0.32)	5.8*	2.14	1.15 - 3.98

* $p < .05$, ** $p < .01$.

Appendix C SOCIAL & ECONOMIC CONTEXT

Table C1 Cont'd. Associations Between Stressful Life Events and Mental Health Impairment: Binary Logistic Regression

Stressful Life Events	*B* (SE)	Wald	Odds Ratio	95% CI
60s Cohort				
Serious illness/injury/assault - self	1.29 (0.24)	28.74**	3.63	2.26 - 5.81
Serious illness/injury/assault - close relative	0.46 (0.24)	3.77	1.59	1.00 - 2.54
Parent/child/partner died	0.00 (0.51)	0.00	1.00	0.37 - 2.70
Close family friend/relative died	0.08 (0.23)	0.13	1.09	0.69 - 1.70
Broke off steady relationship	-1.73 (1.40)	1.52	0.18	0.01 - 2.77
Serious problem with close friend/neighbour/relative	0.65 (0.32)	4.07*	1.92	1.02 - 3.62
Crisis/serious disappointment with work or career - self	0.96 (0.52)	3.42	2.61	0.94 - 7.19
Thought would soon lose job - self	0.75 (0.84)	0.79	2.11	0.40 - 11.07
Though would soon lose job - partner	0.44 (1.17)	0.14	1.55	0.16 - 15.33
Crisis/serious disappointment with work or career - partner	-0.84 (0.84)	1.01	0.43	0.08 - 2.23
Major financial crisis	1.98 (0.48)	17.16**	7.25	2.84 - 18.53
Police problems and court appearance	1.00 (1.40)	0.51	2.71	0.17 - 42.40
Something valued lost/stolen	-0.36 (0.60)	0.36	0.70	0.22 - 2.27

* $p < .05$, ** $p < .01$.

Appendix C SOCIAL & ECONOMIC CONTEXT

Table C2. Association Between Demographics and Anxiety: Binary Logistic Regression

Demographics	*B* (SE)	Wald	Odds Ratio	95% CI
20s Cohort (N =1958)				
Financial Hardship	0.95 (0.22)	18.71**	2.58	1.68 - 3.96
Years of Education	-0.07 (0.05)	2.41	0.93	0.85 - 1.02
Employment		7.77		
Full Time				
Employed Part-time	0.37 (0.22)	2.90	1.45	0.95 - 2.23
Unemployed	0.64 (0.44)	2.06	1.89	0.79 - 4.52
Not in the Labour Force	0.58 (0.26)	5.09*	1.79	1.08 - 2.97
Marital Status		6.15*		
Married or De Facto				
Separated, Divorced or Widowed	0.35 (0.39)	0.81	1.42	0.66 - 3.05
Never Married	0.43 (0.18)	5.92*	1.53	1.09 - 2.16
Gender	0.72 (0.18)	16.11**	2.04	1.44 - 2.90
40s Cohort (N = 2157)				
Financial Hardship	1.03 (0.29)	12.71**	2.80	1.59 - 4.94
Years of Education	0.02 (0.04)	0.18	1.02	0.94 - 1.11
Employment		27.72**		
Full Time				
Employed Part-time	0.59 (0.25)	5.81*	1.81	1.12 - 2.93
Unemployed	0.46 (0.63)	0.53	1.58	0.46 - 5.44
Not in the Labour Force	1.39 (0.27)	26.90**	4.02	2.38 - 6.79
Marital Status		4.73		
Married or De Facto				
Separated, Divorced or Widowed	0.12 (0.27)	0.21	1.13	0.67 - 1.92
Never Married	0.62(0.29)	4.73*	1.86	1.06 - 3.26
Gender	0.14 (0.20)	0.49	1.15	0.78 - 1.71
60s Cohort (N =2109)				
Financial Hardship	0.10 (0.75)	0.02**	1.11	0.26 - 4.81
Years of Education	-0.17 (0.05)	11.98**	0.84	0.76 - 0.93
Employment	-	3.62	-	-
Full Time				
Employed Part-time	0.68 (0.81)	0.69	1.96	0.40 - 9.64
Unemployed	-16.32 (2.2 e+3)	0.00	0.00	-
Not in the Labour Force	1.15 (0.73)	2.50	3.17	0.76 - 3.29
Marital Status	-	4.87	-	-
Married or De Facto				
Separated, Divorced or Widowed	0.61 (0.28)	4.62*	1.84	1.06 - 3.22
Never Married	-0.31 (1.03)	0.09	0.73	0.10 - 5.48
Gender	-0.15 (0.27)	0.32	0.86	0.51 - 1.46

* p <.05, ** p <.01.

Appendix D PSYCHOLOGICAL FACTORS

Table D1. Mastery by Age Cohort, Gender and Mental Health Impairment Status: Descriptive Statistics

Mastery	Mean	SD	N
20s Cohort			
Gender			
Male	23.20	3.50	905
Female	23.00	3.56	1041
Mental Health Impairment			
None/Mild	23.78	3.26	1564
Moderate/Severe	20.26	3.18	381
Total Persons	23.09	3.53	1946
40s Cohort			
Gender			
Male	22.69	3.68	1026
Female	22.39	3.85	1131
Mental Health Impairment			
None/Mild	23.17	3.43	1825
Moderate/Severe	19.06	3.63	327
Total Persons	22.53	3.77	2157
60s Cohort			
Gender			
Male	22.31	3.43	1115
Female	21.29	3.34	1048
Mental Health Impairment			
None/Mild	22.13	3.283	1935
Moderate/Severe	18.82	3.116	191
Total Persons	21.81	3.43	2163

Table D2. Associations Between Mastery and Mental Health Impairment: Binary Logistic Regression

Mastery	*B* (SE)	Wald	Odds Ratio	95% CI
20s Cohort				
	-0.32 (0.02)	239.91**	0.73	0.70 - 0.76
40 Cohort				
	-0.32 (0.02)	250.70**	0.72	0.70 - 0.76
60s Cohort				
	-0.32 (0.03)	142.62**	0.73	0.69 - 0.77

* $p < .05$, ** $p < .01$.

Appendix D PSYCHOLOGICAL FACTORS

Table D3. Resilience by Age Cohort, Gender and Mental Health Impairment Status: Descriptive Statistics

Resilience	Mean	SD	N
20s Cohort			
Gender			
Male	71.7	12.6	871
Female	71.5	12.5	1021
Mental Health Impairment			
None/Mild	73.7	11.2	1520
Moderate/Severe	62.8	13.7	370
Total Persons	71.6	12.5	1892
40s Cohort			
Gender			
Male	71.0	13.3	977
Female	71.8	13.4	1085
Mental Health Impairment			
None/Mild	73.0	12.6	1745
Moderate/Severe	62.5	14.0	313
Total Persons	71.4	13.4	2062

Table D4. Association Between Resilience and Mental Health Impairment: Binary Logistic Regression

Resilience	*B* (SE)	Wald	Odds Ratio	95% CI
20s Cohort				
	-0.07 (0.01)	191.34**	0.93	0.92 - 0.94
40 Cohort				
	-0.06 (0.01)	144.07**	0.94	0.93 - 0.95

* $p < .05$, ** $p < .01$.

Appendix D PSYCHOLOGICAL FACTORS

Table D5. Coping Style Use by Gender and Age Cohort

	Proportion Using Medium/a Lot (%)				
Coping Style	**Male**	**Female**	**Total**	**χ^2 (df)**	**V**
20s Age Cohort					
Planning	89.0	88.5	88.7	0.15 (1)	0.01
Active Coping	86.6	87.1	86.9	0.08 (1)	0.01
Acceptance	87.9	82.2	84.9	12.48 (1)**	0.08**
Positive Reframing	75.4	77.7	76.6	1.40 (1)	0.03
Self-Distraction	64.7	70.4	67.7	7.43 (1)**	0.06**
Instrumental Support	54.6	75.1	65.6	92.29 (1)**	0.22**
Emotional Support	40.2	74.5	58.5	238.03 (1)**	0.35**
Humour	60.0	48.4	53.8	26.67 (1)**	0.12**
Venting	30.0	46.2	38.7	54.58 (1)**	0.17**
Self-Blame	25.5	33.8	30.0	16.13 (1)**	0.09**
Religion	14.3	19.6	17.1	9.43 (1)**	0.07**
Substance Use	16.5	12.1	14.2	7.92 (1)**	0.06**
Behavioural Disengagement	7.0	6.1	6.5	0.53 (1)	0.02
Denial	4.2	6.0	5.2	2.96 (1)	0.04
40s Age Cohort					
Planning	89.3	90.8	90.1	1.30 (1)	0.02
Active Coping	88.8	90.2	89.6	1.18 (1)	0.02
Acceptance	86.4	87.1	86.8	0.23 (1)	0.01
Positive Reframing	76.1	82.3	79.3	12.86 (1)**	0.08**
Self-Distraction	52.7	68.2	60.9	55.13 (1)**	0.16**
Instrumental Support	45.6	61.1	53.7	52.73 (1)**	0.16**
Emotional Support	34.2	57.7	46.5	120.87 (1)**	0.24**
Humour	47.6	43.4	45.4	3.91 (1)*	0.04*
Venting	22.2	28.0	25.3	9.73 (1)**	0.07**
Self-Blame	21.5	26.7	24.2	7.94 (1)**	0.06**
Religion	17.6	31.0	24.6	52.74 (1)**	0.16**
Substance Use	12.1	9.6	10.8	3.45 (1)	0.04
Behavioural Disengagement	6.5	6.3	6.4	0.03 (1)	0.01
Denial	6.9	8.8	7.9	2.88 (1)	0.04

* p <.05, ** p <.01.

Appendix D PSYCHOLOGICAL FACTORS

Table D6. Association Between Coping Styles and Mental Health Impairment: Cross Tabulation

Coping Styles		Mental Health Impairment		Total	χ^2 (df)	*V*
20s Cohort		**None — Mild**	**Mod.— Severe**			
Positive Reframing					89.97 (1)**	0.21**
Not At All / A Little	n	301	161	462		
	%	65.2	34.8	100		
Moderate / A Lot	n	1289	225	1514		
	%	85.1	14.9	100		
Humour					17.40 (1)**	0.09**
Not At All / A Little	n	698	215	913		
	%	76.5	23.5	100		
Moderate / A Lot	n	892	171	1063		
	%	83.9	16.1	100		
Venting					50.12 (1)**	0.16**
Not At All / A Little	n	1036	176	1212		
	%	85.5	14.5	100		
Moderate / A Lot	n	554	210	764		
	%	72.5	27.5	100		
Substance Use					64.35 (1)**	0.18**
Not At All / A Little	n	1414	282	1696		
	%	83.4	16.6	100		
Moderate / A Lot	n	176	104	280		
	%	62.9	37.1	100		
Self-Blame					190.26 (1)**	0.31**
Not At All / A Little	n	1225	159	1384		
	%	88.5	11.5	100		
Moderate / A Lot	n	365	227	592		
	%	61.7	38.3	100		
Total Persons	N	1590	386	1976		
	%	80.5	19.5	100		

* $p < .05$, ** $p < .01$.

Table D6 Cont'd. Association Between Coping Styles and Mental Health Impairment: Cross Tabulation

Coping Styles / 40s Cohort		Mental Health Impairment: None — Mild	Mental Health Impairment: Mod. — Severe	Total	χ^2 (df)	*V*
Positive Reframing					54.75 (1)**	0.16**
Not At All / A Little	n	330	121	451		
	%	73.2	26.8	100		
Moderate / A Lot	n	1507	218	1725		
	%	87.4	12.6	100		
Humour					7.96 (1)**	0.06**
Not At All / A Little	n	980	209	1189		
	%	82.4	17.6	100		
Moderate / A Lot	n	857	130	987		
	%	86.8	13.2	100		
Self-Distraction					8.86 (1)**	0.06**
Not At All / A Little	n	743	108	851		
	%	87.3	12.7	100		
Moderate / A Lot	n	1094	231	1325		
	%	82.6	17.4	100		
Substance Use					43.45 (1)**	0.14**
Not At All / A Little	n	1674	268	1942		
	%	86.2	13.8	100		
Moderate / A Lot	n	163	71	234		
	%	69.7	30.3	100		
Behavioural Disengagement					70.02 (1)**	0.18**
Not At All / A Little	n	1755	283	2038		
	%	86.1	13.9	100		
Moderate / A Lot	n	82	56	138		
	%	59.4	40.6	100		
Self-Blame					133.34 (1)**	0.25**
Not At All / A Little	n	1475	173	1648		
	%	89.5	10.5	100		
Moderate / A Lot	n	362	166	528		
	%	68.6	31.4	100		
Total Persons	N	1837	339	2176		
	%	84.4	15.6	100		

* p <.05, ** p <.01.

Appendix D PSYCHOLOGICAL FACTORS

Table D7. Association Between Coping Style and Mental Health Impairment: Binary Logistic Regression

Coping Style	*B* (SE)	Wald	Odds Ratio	95% CI
20s Cohort				
Active Coping	-0.37 (0.21)	3.12	0.69	0.46 - 1.04
Planning	-0.25 (0.22)	1.34	0.78	0.51 - 1.19
Positive Reframing	-0.62 (0.15)	16.43**	0.54	0.40 - 0.73
Acceptance	-0.22 (0.17)	1.73	0.80	0.58 - 1.12
Humour	-0.36 (0.14)	6.93**	0.70	0.54 - 0.91
Emotional Support	0.32 (0.17)	3.60	1.38	0.99 - 1.91
Instrumental Support	-0.30 (0.17)	2.95	0.74	0.53 - 1.04
Self-Distraction	0.02 (0.14)	0.02	1.02	0.77 - 1.35
Venting	0.57 (0.14)	17.74**	1.77	1.36 - 2.31
Substance Use	0.64 (0.16)	15.91**	1.89	1.38 - 2.58
Behavioural Disengage-ment	0.44 (0.23)	3.71	1.55	0.99 - 2.41
Self-Blame	1.10 (0.13)	67.35**	3.01	2.31 - 3.92
Religion	0.00 (0.17)	0.00	1.00	0.72 - 1.39
Denial	0.15 (0.26)	0.32	1.16	0.70 - 1.92
40s Cohort				
Active Coping	-0.22 (0.24)	0.81	0.81	0.51 - 1.29
Planning	-0.36 (0.25)	2.09	0.70	0.43 - 1.14
Positive Reframing	-0.63 (0.16)	15.31**	0.54	0.39 - 0.73
Acceptance	0.00 (0.19)	0.00	1.00	0.69 - 1.44
Humour	-0.44 (0.14)	10.39**	0.64	0.49 - 0.84
Emotional Support	0.25 (0.18)	2.01	1.28	0.91 - 1.82
Instrumental Support	-0.25 (0.17)	2.04	0.78	0.56 - 1.1
Self-Distraction	0.36 (0.14)	6.25*	1.43	1.08 - 1.88
Venting	0.22 (0.15)	2.21	1.25	0.93 - 1.67
Substance Use	0.49 (0.18)	7.67**	1.64	1.16 - 2.33
Behavioural Disengage-ment	0.82 (0.22)	13.51**	2.28	1.47 - 3.53
Self-Blame	1.02 (0.14)	54.35**	2.76	2.11 - 3.62
Religion	0.07 (0.16)	0.21	1.07	0.79 - 1.46
Denial	-0.03 (0.24)	0.02	0.97	0.61 - 1.55

* $p < .05$, ** $p < .01$.

Appendix D PSYCHOLOGICAL FACTORS

Table D8. Association Between Life Satisfaction and Mental Health Impairment: Cross Tabulation

Life Satisfaction		Mental Health Impairment		Total	χ^2 (df)	*V*
		None — Mild	Mod. — Severe			
20s Cohort					274.01 (1) **	0.37**
Neutral/Dissatisfied	n	197	192	389		
	%	50.6	49.4	100		
Satisfied	n	1388	193	1581		
	%	87.8	12.2	100		
Total Persons	N	1585	385	1970		
	%	80.5	19.5	100		
40s Cohort					220.05 (1)**	0.32**
Neutral/Dissatisfied	n	324	184	508		
	%	63.8	36.2	100		
Satisfied	n	1501	149	1650		
	%	91.0	9.0	100		
Total Persons	N	1825	333	2158		
	%	84.6	15.4	100		
60s Cohort					136.66 (1)**	0.25**
Neutral/Dissatisfied	n	328	100	428		
	%	76.6	23.4	100		
Satisfied	n	1628	92	1720		
	%	94.7	5.3	100		
Total Persons	N	1956	192	2148		
	%	91.1	8.9	100		

* p <.05, ** p <.01.

Table D9. Association Between Life Satisfaction and Mental Health Impairment: Binary Logistic Regression

	B (SE)	Wald	Odds Ratio	95% CI
20s Cohort				
	-2.04 (0.13)	242.25**	0.13	0.10 - 0.17
40s Cohort				
	-1.76 (0.13)	192.71**	0.17	0.13 - 0.22
60s Cohort				
	-1.66 (0.16)	111.20**	0.19	0.14 - 0.26

* p <.05, ** p <.01.

Appendix E RISK FACTORS & HEALTH

Table E1. Alcohol Use Category Among the PATH Sample

	20s Cohort (2007/08)			40s Cohort (2008/09)			60s Cohort (2005/06)		
Alcohol Use (%)	Total	Male	Female	Total	Male	Female	Total	Male	Female
Abstain	7.9	4.8	10.6	8.1	7.0	9.0	13.5	8.7	18.7
Occasional	19.9	14.7	24.5	14.4	10.8	17.5	15.1	11.4	18.9
Light	50.1	58.2	43.0	49.4	58.7	40.9	44.0	55.4	31.9
Medium	14.5	15.1	14.0	19.9	16.6	22.8	22.4	18.6	26.4
Hazardous/Harmful	7.6	7.3	7.9	8.2	6.6	9.6	5.0	5.9	4.1
Total Persons (N)	1972	920	1052	2174	1032	1142	2217	1145	1072

Appendix E RISK FACTORS & HEALTH

Table E2. Association Between Alcohol Consumption and Depression: Cross Tabulation

Alcohol Consumption Pattern		No Depression	Depressive Disorder	Total	χ^2 (df)	*V*
20s Cohort					14.33(4)**	0.08*
Abstain	n	138	16	154		
	%	89.6	10.4	100		
Occasional	n	344	48	392		
	%	87.8	12.2	100		
Light	n	909	74	983		
	%	92.5	7.5	100		
Medium	n	260	25	285		
	%	91.2	8.8	100		
Hazardous/Harmful	n	126	23	149		
	%	84.6	15.4	100		
Total Persons	N	1777	186	1963		
	%	100	100	100		
40s Cohort					31.65(4)**	0.12**
Abstain	n	149	25	174		
	%	85.6	14.4	100		
Occasional	n	277	31	308		
	%	89.9	10.1	100		
Light	n	1019	50	1069		
	%	95.3	4.7	100		
Medium	n	408	23	431		
	%	94.7	5.3	100		
Hazardous/Harmful	n	162	16	178		
	%	91.0	9.0	100		
Total Persons	N	2015	145	2160		
	%	93.3	6.7	100		
60s Cohort					18.43(4)**	0.09**
Abstain	n	265	25	290		
	%	91.4	8.6	100		
Occasional	n	302	23	325		
	%	92.9	7.1	100		
Light	n	930	38	968		
	%	96.1	3.9	100		
Medium	n	473	15	488		
	%	96.9	3.1	100		
Hazardous/Harmful	n	100	8	108		
	%	92.6	7.4	100		
Total Persons	N	2070	109	2179		
	%	95	5.0	100		

* $p < .05$, ** $p < .01$.

Appendix E RISK FACTORS & HEALTH

Table E3. Association Between Alcohol Consumption and Anxiety: Cross Tabulation

Alcohol Consumption Pattern		No Anxiety	Anxiety Disorder	Total	χ^2 (df)	*V*
20s Cohort					13.40(4)**	0.08**
Abstain	n	138	16	154		
	%	89.6	10.4	100		
Occasional	n	349	43	392		
	%	89.0	11.0	100		
Light	n	912	72	984		
	%	92.7	7.3	100		
Medium	n	254	31	285		
	%	89.1	10.9	100		
Hazardous/Harmful	n	126	23	149		
	%	84.6	15.4	100		
Total Persons	N	1779	185	1964		
	%	90.6	9.4	100		
40s Cohort					14.54(4)**	0.08**
Abstain	n	153	20	173		
	%	88.4	11.6	100		
Occasional	n	290	22	312		
	%	92.9	7.1	100		
Light	n	1019	49	1068		
	%	95.4	4.6	100		
Medium	n	409	23	432		
	%	94.7	5.3	100		
Hazardous/Harmful	n	167	11	178		
	%	93.8	6.2	100		
Total Persons	N	2038	125	2163		
	%	94.2	5.8	100		
60s Cohort					23.48(4)**	0.10**
Abstain	n	276	18	294		
	%	93.9	6.1	100		
Occasional	n	311	19	330		
	%	94.2	5.8	100		
Light	n	951	20	971		
	%	97.9	2.1	100		
Medium	n	482	8	490		
	%	98.4	1.6	100		
Hazardous/Harmful	n	104	4	108		
	%	96.3	3.7	100		
Total Persons	N	2124	69	2193		
	%	96.9	3.1	100		

* $p < .05$, ** $p < .01$.

Appendix E RISK FACTORS & HEALTH

Table E4. Association Between Alcohol Consumption and Mental Health Impairment: Cross Tabulation

Alcohol Consumption Pattern		Mental Health Impairment		Total	χ^2 (df)	*V*
		None — Mild	Mod. — Severe			
20s Cohort					2.49(2)	.040
Abstain/occasional	n	438	111	549		
	%	79.8	20.2	100		
Light/Moderate	n	1032	239	1271		
	%	81.2	18.8	100		
Hazardous/Harmful	n	114	36	150		
	%	76.0	24.0	100		
Total Persons	N	1584	386	1970		
	%	80.4	19.6	100		
40s Cohort					23.13(2)**	0.10**
Abstain/occasional	n	387	100	487		
	%	79.5	20.5	100		
Light/Moderate	n	1308	198	1506		
	%	86.9	13.1	100.0		
Hazardous/Harmful	n	138	41	179		
	%	77.1	22.9	100		
Total Persons	N	1833	339	2172		
	%	84.4	15.6	100		
60s Cohort					20.11(2)**	0.10**
Abstain/occasional	n	535	83	618		
	%	86.6	13.4	100		
Light/Moderate	n	1352	106	1458		
	%	92.7	7.3	100		
Hazardous/Harmful	n	90	11	101		
	%	89.1	10.9	100		
Total Persons	N	1977	200	2177		
	%	90.8	9.2	100		

* $p < .05$, ** $p < .01$.

Appendix E RISK FACTORS & HEALTH

Table E5. Cigarette Consumption by Age Cohort and Gender: Descriptive Statistics

Cigarette Consumption (%)	20s Cohort			40s Cohort			60s Cohort		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Average number of cigarettes per day (SD)	12.4 (7.0)	13.3 (7.3)	11.3 (6.4)	16.4 (9.5)	17.4 (10.3)	15.4 (8.6)	14.9 (8.4)	16.6 (8.9)	13.3 (7.6)
Total Persons (N)	342	180	162	259	129	130	145	71	74

Table E6. Association Between Smoking Status and Mental Health Impairment: Cross Tabulation

Smoking Status		Mental Health Impairment		Total	χ^2 (df)	V
		None — Mild	Mod. — Severe			
20s Cohort					12.57(2)**	.08**
Never Smoked	n	961	198	1159		
	%	82.9	17.1	100		
Past Smoker	n	318	85	403		
	%	78.9	21.1	100		
Current Smoker	n	311	103	414		
	%	75.1	24.9	100		
Total Persons	N	1590	386	1976		
	%	80.5	19.5	100		
40s Cohort					12.48(2)**	0.07**
Never Smoked	n	1009	172	1181		
	%	85.4	14.6	100		
Past Smoker	n	597	100	697		
	%	85.7	14.3	100		
Current Smoker	n	227	66	293		
	%	77.5	22.5	100		
Total Persons	N	1833	338	2171		
	%	84.4	15.6	100		
60s Cohort					25.44(2)**	0.11**
Never Smoked	n	1058	97	1155		
	%	91.6	8.4	100		
Past Smoker	n	769	69	838		
	%	91.8	8.2	100		
Current Smoker	n	136	34	170		
	%	80	20	100		
Total Persons	N	1963	200	2163		
	%	90.8	9.2	100		

* p <.05, ** p <.01.

Appendix E RISK FACTORS & HEALTH

Table E7. Association Between Substance Use and Mental Health Impairment: Binary Logistic Regression

Substance Use	*B (SE)*	Wald	Odds Ratio	95% CI
20s Cohort (N = 1970)				
Alcohol Consumption				
Light- moderate		1.23		
Abstain-occasional	0.11 (0.13)	0.74	1.11	0.86 - 1.43
Hazardous/harmful	0.17 (0.20)	0.71	1.19	0.792 - 1.79
Smoking status				
Never smoked		10.89**		
Past smoker	-0.45 (0.14)	10.30**	0.63	0.48 - 0.83
Current smoker	-0.20 (0.16)	1.44	0.23	0.58 - 1.13
40s Cohort (N = 2167)				
Alcohol Consumption				
Light- moderate		19.91**		
Abstain-occasional	0.52 (0.14)	14.75**	1.69	1.29 - 2.21
Hazardous/harmful	0.60 (0.20)	8.99**	1.82	1.23 - 2.69
Smoking status				
Never smoked		9.06*		
Past smoker	-0.02 (0.14)	0.04	0.97	0.74 - 1.27
Current smoker	0.46 (0.17)	7.65**	1.59	1.14 - 2.21
60s Cohort (N = 2161)				
Alcohol Consumption				
Light- moderate		18.80**		
Abstain-occasional	0.68 (0.15)	18.71**	1.97	1.45 - 2.68
Hazardous/harmful	0.37 (0.34)	1.20	1.45	0.74 - 2.82
Smoking status				
Never smoked		22.36**		
Past smoker	-1.01 (0.22)	20.82**	0.36	0.24 - 0.56
Current smoker	-0.96 (0.23)	17.40**	0.38	0.24 - 0.60

* $p < .05$, ** $p < .01$.

Appendix E RISK FACTORS & HEALTH

Table E8. Association Between BMI and Mental Health Impairment: Cross Tabulation

BMI Classification		Mental Health Impairment		Total	χ^2 (df)	*V*
		None — Mild	Mod. — Severe			
20s Cohort					9.236(3)*	0.07*
Underweight	n	79	19	98		
	%	80.6	19.4	100		
Normal weight	n	708	153	861		
	%	82.2	17.8	100		
Overweight	n	453	102	555		
	%	81.6	18.4	100		
Obese	n	293	97	390		
	%	75.1	24.9	100		
Total Persons	N	1533	371	1904		
	%	80.5	19.5	1.0		
40s Cohort					10.28(3)*	0.07*
Underweight	n	9	6	15		
	%	60.0	40.0	100		
Normal weight	n	636	108	744		
	%	85.5	14.5	100		
Overweight	n	713	121	834		
	%	85.5	14.5	100		
Obese	n	452	98	550		
	%	82.2	17.8	100		
Total Persons	N	1810	333	2143		
	%	84.5	15.5	100		
60s Cohort					22.98(3)**	0.10**
Underweight	n	11	6	17		
	%	64.7	35.3	100		
Normal weight	n	773	63	836		
	%	92.5	7.5	100		
Overweight	n	793	75	868		
	%	91.4	8.6	100		
Obese	n	373	54	427		
	%	87.4	12.6	100		
Total Persons	N	1950	198	2148		
	%	90.8	9.2	100		

* p <.05, ** p <.01.

Appendix E RISK FACTORS & HEALTH

Table E9. BMI Classification by Age Cohort and Gender

BMI Classification (%)	20s Cohort			40s Cohort			60s Cohort		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Underweight	5.1	2.8	7.2	0.7	0.4	1.0	0.8	0.4	1.3
Normal weight	45.3	41.2	48.8	34.7	27.6	41.1	38.8	34.0	44.0
Overweight	29.1	35.0	24.0	39.0	47.3	31.4	40.4	47.8	32.5
Obese	20.5	20.9	20.0	25.6	24.7	26.5	19.9	17.8	22.1
Total Persons (N)	1906	8888	1018	2146	1014	1132	2188	1134	1054

Table E10. Association Between BMI and Mental Health Impairment: Binary Logistic Regression

BMI Classification	*B* (SE)	Wald	Odds Ratio	95% CI
20s Cohort (N = 1904)				
Obese		9.18*		
Underweight	-0.32(0.28)	1.290	0.73	0.42 -1.26
Normal weight	-0.43(0.15)	8.39**	0.65	0.49 - 0.87
Overweight	-0.38(0.16)	5.77**	0.68	0.49 - 0.93
40s Cohort (N = 2143)				
Obese		9.39*		
Underweight	1.12(0.54)	4.35*	3.07	1.07 - 8.83
Normal weight	-0.24(0.15)	2.570	0.78	0.58 - 1.05
Overweight	-0.25(0.15)	2.710	0.78	0.58 - 1.04
60s Cohort (N = 2148)				
Obese		19.90**		
Underweight	1.32(0.53)	6.31*	3.77	1.34 - 10.60
Normal weight	-0.57(0.19)	8.60**	0.56	0.38 - 0.83
Overweight	-0.43(0.18)	5.06**	0.65	0.45 - 0.95

* $p < .05$, ** $p < .01$.

Appendix E RISK FACTORS & HEALTH

Table E11. Physical Activity Level by Age Cohort and Gender.

Physical Activity Level (%)	**20s Cohort**			**40s Cohort**			**60s Cohort**		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
None - Mild	25.5	16.6	33.3	38.9	30.3	46.7	35.7	31.6	40.2
Moderate	33.5	31.6	35.2	37.2	39.3	35.3	50.0	49.8	50.1
Vigorous	40.9	51.8	31.6	24.0	30.5	18.1	14.3	18.6	9.6
Total Persons (N)	1957	908	1049	2534	1036	1123	2157	1106	1029

Table E12. Association Between Physical Activity Level at Mental Health Impairment: Binary Logistic Regression.

Physical Activity Level	***B* (SE)**	**Wald**	**Odds Ratio**	**95% CI**
20s Cohort (N = 1955)				
Vigorous		41.34**		
None - mild	0.92 (0.14)	40.80**	2.529	1.90 - 3.36
Moderate	0.57 (0.14)	16.26**	1.776	1.34 - 2.34
40s Cohort (N = 2140)				
Vigorous		14.41**		
None - mild	0.59(0.16)	12.95**	1.813	1.31 - 2.50
Moderate	0.27(0.17)	2.47	1.311	0.93 - 1.83
60s Cohort (N = 2147)				
Vigorous		28.54**		
None - mild	1.84 (0.39)	21.58**	6.340	2.99 - 13.81
Moderate	1.30 (0.39)	10.68**	3.683	1.68 - 8.04

* $p < .05$, ** $p < .01$.

Appendix E RISK FACTORS & HEALTH

Table E13. Association Between Physical Activity Level and Mental Health Impairment: Cross Tabulation

Physical Activity Level		Mental Health Impairment		Total	χ^2 (df)	*V*
		None — Mild	Mod. — Severe			
20s Cohort					42.66(2)**	0.15**
None - Mild	n	363	137	500		
	%	72.6	27.4	100		
Moderate	n	517	137	654		
	%	79.1	20.9	100		
Vigorous	n	697	104	801		
	%	87.0	13.0	100		
Total Persons	N	1577	378	1955		
	%	80.7	19.3	100		
40s Cohort					14.61(2)**	0.08**
None - Mild	n	675	156	831		
	%	81.2	18.8	100		
Moderate	n	682	114	796		
	%	85.7	14.3	100		
Vigorous	n	455	58	513		
	%	88.7	11.3	100		
Total Persons	N	1812	328	2140		
	%	84.7	15.3	100		
60s Cohort					32.82(2)**	0.12**
None - Mild	n	647	98	745		
	%	86.8	13.2	100		
Moderate	n	966	85	1051		
	%	91.9	8.1	100		
Vigorous	n	293	7	300		
	%	97.7	2.3	100		
Total Persons	N	1906	190	2096		
	%	90.9	9.1	100		

* $p < .05$, ** $p < .01$.

Appendix E RISK FACTORS & HEALTH

Table E14. Prevalence of Medical Conditions by Age Cohort and Gender

Medical Condition	Total Persons		Male		Female	
	%	N	%	N	%	N
20s Cohort						
Heart Trouble	1.7	1975	1.7	919	1.7	1056
Cancer	0.4	1975	0.3	919	0.5	1056
Arthritis	4.7	1975	5.0	919	4.4	1056
Thyroid Disorder	2.5	1973	0.2	918	4.5	1055
Epilepsy	1.0	1975	1.1	919	0.9	1056
Eye Disease	1.3	1975	1.3	919	1.2	1056
Respiratory Trouble	14.6	1975	12.7	919	16.2	1056
Diabetes	0.9	1975	0.4	919	1.3	1056
40s Cohort						
Heart Trouble	5.4	2174	7.0	1032	4.0	1142
Cancer	3.2	2173	3.6	1031	2.9	1142
Arthritis	21.1	2174	16.9	1031	24.9	1143
Thyroid Disorder	5.1	2170	0.8	1030	8.9	1140
Epilepsy	1.0	2172	0.6	1030	1.4	1142
Eye Disease	4.1	2171	4.0	1031	4.1	1140
Respiratory Trouble	11.5	2173	8.8	1031	13.9	1142
Diabetes	3.8	2173	4.6	1031	3.2	1142
60s Cohort						
Heart Trouble	18.4	2156	22.2	1125	14.3	1031
Cancer	8.6	2146	8.9	1119	8.2	1027
Arthritis	43.0	2178	33.0	1128	53.8	1050
Thyroid Disorder	6.9	2145	2.2	1114	11.8	1031
Epilepsy	0.7	2140	0.4	1113	0.9	1027
Eye Disease	16.8	2152	13.2	1118	20.7	1034
Respiratory Trouble	11.9	2151	7.4	1120	16.9	1031
Diabetes	10.2	2143	11.5	1117	8.7	1026

Appendix E RISK FACTORS & HEALTH

Table E15. Association Between Medical Conditions and Mental Health Impairment: Binary Logistic Regression

Medical Condition	*B* (SE)	Wald	Odds Ratio	95% CI
20s Cohort				
Heart Trouble	0.73 (0.37)	3.82	2.08	1.00 - 4.32
Cancer	1.15 (0.73)	2.52	3.17	0.76 - 13.10
Arthritis	0.30 (0.25)	1.44	1.35	0.835 - 13.14
Thyroid disorder	-0.06 (0.35)	0.03	0.94	0.479 - 2.22
Epilepsy	0.63 (0.51)	1.51	1.87	0.69 - 1.88
Eye Disease	0.61 (0.44)	1.92	1.84	0.78 - 5.07
Respiratory Trouble	0.19 (0.16)	1.46	1.21	0.89 - 4.38
Diabetes	0.28 (0.53)	0.27	1.32	0.46 - 1.64
40s Cohort				
Heart Trouble	0.27 (0.25)	1.19	1.31	0.81 - 2.12
Cancer	0.39 (0.30)	1.70	1.48	0.82 - 2.65
Arthritis	0.46 (0.14)	11.29**	1.58	1.21 - 2.07
Thyroid disorder	0.13 (0.26)	0.26	1.14	0.69 - 1.88
Epilepsy	0.50 (0.50)	0.99	1.64	0.62 - 4.35
Eye Disease	0.48 (0.27)	3.21	1.61	0.96 - 2.72
Respiratory Trouble	0.33 (0.17)	3.65	1.39	0.99 - 1.95
Diabetes	-0.15 (0.32)	0.23	0.86	0.46 - 1.61
60s Cohort				
Heart Trouble	0.67 (0.18)	13.87**	1.95	1.37 - 2.78
Cancer	0.26 (0.26)	1.05	1.30	0.79 - 2.16
Arthritis	0.64 (0.16)	15.21**	1.89	1.37 - 2.61
Thyroid disorder	0.04 (0.29)	0.02	1.04	0.59 - 1.84
Epilepsy	1.85 (0.56)	10.83**	6.34	2.11 - 19.06
Eye Disease	0.21 (0.19)	1.24	1.24	0.85 - 1.80
Respiratory Trouble	0.40 (0.21)	3.69	1.50	0.99 - 2.26
Diabetes	0.27 (0.24)	1.31	1.31	0.83 - 2.08

Note: Adjusted for gender. All medical conditions tested simultaneously, so effects are independent.

* $p < .05$, ** $p < .01$.

Appendix F SERVICE USE

Table F1. Association Between GP Visits and Mental Health Impairment: Cross Tabulation

Visited GP within 12 months		Mental Health Impairment		Total	χ^2 (df)	*V*
		None — Mild	Mod. — Severe			
20s Cohort					8.37 (1)**	0.07**
No	n	361	70	431		
	%	83.8	16.2	100		
Yes	n	1150	338	1488		
	%	77.3	22.7	100		
Total Persons	N	1511	408	1919		
	%	78.7	21.3	100		
40s Cohort					7.52 (1)**	0.06**
No	n	344	46	390		
	%	88.2	11.8	100		
Yes	n	1356	288	1644		
	%	82.5	17.5	100		
Total Persons	N	1700	334	2034		
	%	83.6	16.4	100		
60s Cohort					0.04 (1)	<0.01
No	n	97	9	106		
	%	91.5	8.5	100		
Yes	n	1630	162	1792		
	%	91.0	9.0	100		
Total Persons	N	1727	171	1898		
	%	91.0	9.0	100		

* p <.05, ** p <.01.

Table F2. Association Between GP Visits and Mental Health Impairment: Binary Logistic Regression

	B (SE)	Wald	Odds Ratio	95% CI
20s Cohort				
	0.42 (0.15)	8.28**	1.52	1.14 - 2.01
40s Cohort				
	0.46 (0.17)	7.42**	1.59	1.14 - 2.22
60s Cohort				
	0.07 (0.36)	0.04	1.07	0.53 - 2.16

* p <.05, ** p <.01.

Appendix F SERVICE USE

Table F3. Association Between Medication Use and Mental Health Impairment: Binary Logistic Regression

Medication Use	*B (SE)*	Wald	Odds Ratio	95% CI
20s Cohort				
Sleep Medication	0.57 (0.17)	11.24**	1.76	1.27 - 2.45
Pain Relievers	0.40 (0.15)	7.30**	1.49	1.12 - 1.99
Anxiety Medication	0.56 (0.24)	5.31*	1.75	1.09 - 2.83
Depression Medication	1.88 (0.20)	89.05**	6.58	4.45 - 9.73
40s Cohort				
Sleep Medication	0.62 (0.16)	14.72**	1.86	1.36 - 2.56
Pain Relievers	0.65 (0.16)	17.19**	1.91	1.41 - 2.60
Anxiety Medication	0.46 (0.22)	4.25*	1.59	1.02 - 2.47
Depression Medication	1.87 (0.18)	111.16**	6.46	4.57 - 9.14
60s Cohort				
Sleep Medication	0.73 (0.19)	15.43**	2.08	1.44 - 3.00
Pain Relievers	0.93 (0.18)	25.77**	2.53	1.77 - 3.61
Anxiety Medication	1.42 (0.25)	31.97**	4.15	2.53 - 6.79
Depression Medication	1.45 (0.23)	40.65**	4.25	2.73 - 6.64

* $p < .05$, ** $p < .01$.

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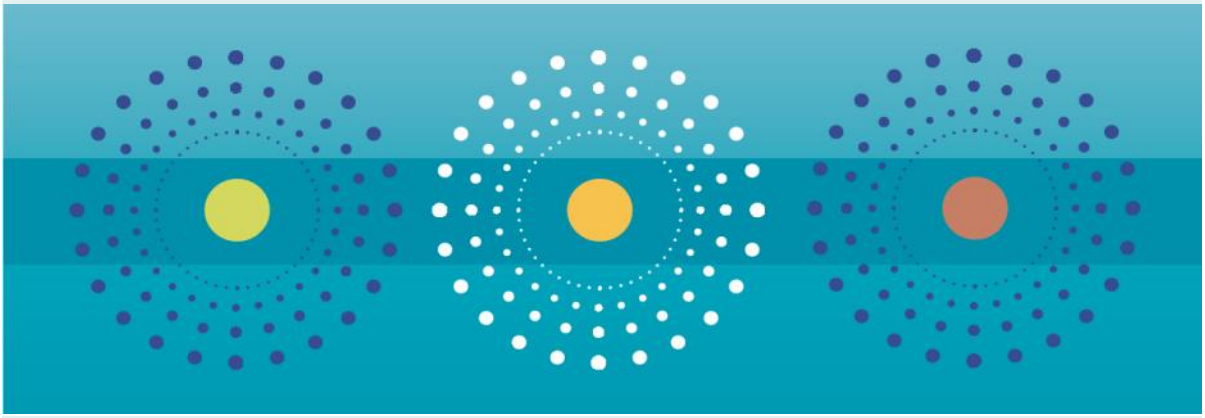

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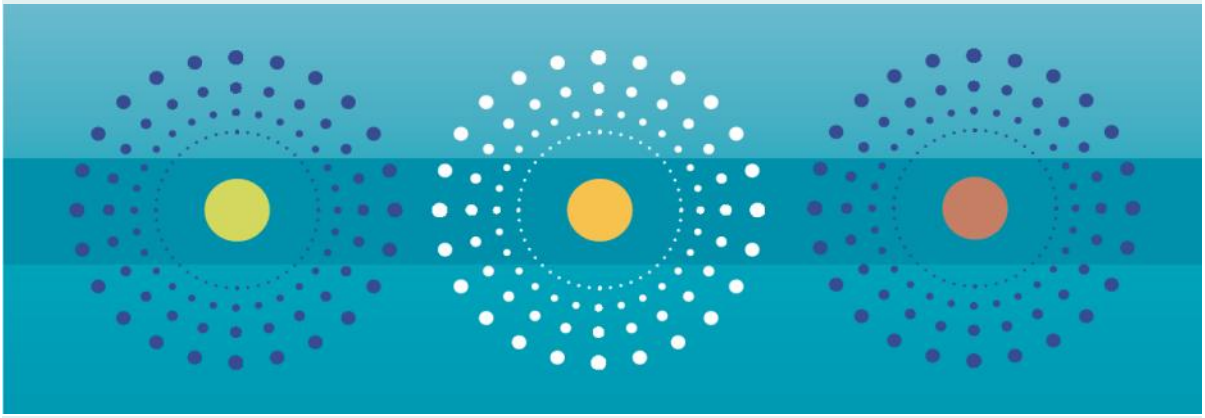

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List of Tables

List of Tables

List of Figures

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