Disability and its relationship to health conditions and other factors

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Disability and its relationship to health conditions and other factors

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Foreword

It is exciting to produce a report on disability and related health conditions. Up to now, the ABS Survey of Disability, Ageing and Carers has been recognised as an excellent data source on disability and its impact in Australia. The potential of the 1998 survey to also report on health conditions has not been explored.

This report allows the reader to assess the impact of various health conditions in terms of their contribution to disability.

As with any new measuring stick, some diseases rise in importance when ranked by the disability associated with them. Arthritis has the highest ranking in terms of its frequency among people with a health condition, with a disability, or with severe disability. In contrast, conditions such as autism, dementia, Down syndrome and cerebral palsy are much higher ranked in terms of the likelihood of severe disability. Others rank somewhat lower on the likelihood of severe disability, including asthma, diabetes and cancer.

It is hoped that this new way of looking at health conditions will provoke more debate about the 'burden' of health conditions, and various ways of measuring burden.

Another desirable outcome should be discussion about more integrated measurement of health and disability in Australia's national surveys. This publication comes at an opportune time, when content of both national health and disability surveys are able to be reviewed ahead of planning for the next round of these surveys (2007 and 2009 respectively).

The Institute looks forward to the debate that this fresh view of an important national data set will provoke.

Richard Madden

Director

Australian Institute of Health and Welfare

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Abbreviations

ABS	Australian Bureau of Statistics
ADHD	Attention deficit hyperactivity disorder
AIHW	Australian Institute of Health and Welfare
CI	Confidence interval
CSTDA	Commonwealth State/Territory Disability Agreement
DALY	Disability-adjusted life year
ICD	International Statistical Classification of Diseases and Related Health Problems
ICF	International Classification of Functioning, Disability and Health
ICPC	International Classification of Functioning of Primary Care
nec	Not elsewhere classified
nfd	Not further defined
OECD	Organisation for Economic Co-operation and Development
RSE	Relative standard error
SEIFA	Socio-Economic Indexes for Areas (the index of relative socio-economic disadvantage used in this report is one of the four SEIFA indexes)
WHO	World Health Organization

Glossary

Anxiety disorder	A group of mental disorders marked by excessive feelings of apprehension, worry, nervousness and stress.
Asthma	A chronic, inflammatory disease of the lung's air passages that causes widespread narrowing of the passages, obstruction to airflow, episodes of shortness of breath and chest tightness.
Autism	A pervasive developmental disorder involving disturbances in cognition, interpersonal communication, social interactions and behaviours (in particular obsessional, ritualistic, stereotyped and rigid behaviours).
Attention deficit hyperactivity disorder (ADHD)	A common childhood mental disorder showing markedly low attention and very high levels of activity. It is one of the most common forms of learning problems.
Cared accommodation	Hospitals, homes for the aged such as nursing homes and aged care hostels, cared components of retirement villages, and other 'homes' such as children's homes.
Cataract	A cloudiness or opacity of the lens of the eye which may cause vision problems. Cataracts are typically associated with ageing but may occur at birth.
Cerebral palsy	A non-progressive movement disorder, resulting from an injury to the immature brain in a foetus or infant.
Conduct disorder	A repetitive and persistent pattern of aggressive or otherwise antisocial behaviour, usually recognised in childhood or adolescence.
Dementia	A general and worsening loss of brain power such as memory, understanding and reasoning. Main types of dementia include Alzheimer's disease, Pick's disease, Huntington's disease and Parkinson's disease.
Depression	A common mental disorder marked by persistent sadness, loss of interest or pleasure in activities, and by decreased energy. Often involves suicidal thoughts or self-blame. It is differentiated from normal mood changes by the extent of its severity, the symptoms and the duration of the disorder.
Epilepsy	A tendency to have recurrent seizures (fits) indicating a disorder that arises in the brain or affects it secondarily, through a wide range of causes.
Glaucoma	An eye condition in which vision is impaired by raised pressure within the eye, resulting in damage to the optic nerve.
Hypertension	Long-term high blood pressure, which may damage the heart, brain or kidneys.

Migraine	A recurrent throbbing headache that typically affects one side of the head, often accompanied by nausea, vomiting and other symptoms. It is a condition resulting from spasm and subsequent overdilatation of certain arteries in the brain.
Osteoporosis	Reduction in bone tissue caused by the loss of calcium from the bones, making them thinner and weaker, and thus more prone to fractures.
Parkinson's disease	A brain disease characterised by hand tremors, rigid limbs, difficulty in starting and stopping movements, and often mental effects.
Schizophrenia	A severe disorder typically beginning in late adolescence or early adulthood. It is characterised by profound disruptions in thinking, affecting language, perception, mood, behaviour, motivation and sense of self. It often includes psychotic experiences such as hearing voices or delusions.
Stroke	When an artery supplying blood to the brain suddenly becomes blocked or bleeds, often causing paralysis of parts of the body or speech problems.
Tinnitus	A continual noise in the ears or head, such as ringing, buzzing or clicking.

Overview of the report

This is a large report covering a wide range of information relating to disability and the factors influencing the experience of people with a disability. This brief overview and guide is designed to assist people to find what they are interested in.

A summary of the main findings of the report.	Sections 7.1 and 7.2
An outline and conceptual framework of the report, including a brief discussion of the International Classification of Functioning Disability and Health (ICF): Disability is considered a multidimensional experience—in terms of impairments, activity limitations and participation restrictions—and is crucially influenced by environmental factors.	Chapter 1
Information about data sources used in the report.	Chapter 2
Estimates of the prevalence of significant diseases and health conditions, and a comparison of estimates from different data sources.	Chapter 3
Estimates of disability prevalence, and an exploration of the relationships between health conditions, impairments and 'disabling conditions'.	Chapter 4
The relationships between disability and health conditions, using different severity measures of disability and different ways of 'asking the question' about the relationship.	Chapter 5
Multivariate analyses examining the relationships among disability, health conditions, and personal and environmental factors: This chapter contains methodological details that may not be of interest to all readers. A final section of the chapter summarises the key findings.	Chapter 6
Concluding discussion recognising that the relationships among disability health conditions and other factors are complex, and that analyses should not try to oversimplify the picture. There is a dearth of adequate information on environmental factors, crucial to the understanding of disability. This is likely to be remedied as the ICF is implemented as a national standard.	Sections 7.3 to 7.7

1 Introduction

1.1 Why this report?

Disability and human functioning are relevant and studied across the policy spectrum of human service systems. Perspectives on functioning and the approach to its measurement vary with the policy focus, the area of functioning or disability that is receiving attention, and the method of measurement chosen. Whole-of-government approaches to disability—for instance, continuity of care policies—require analyses that bridge the boundaries sometimes created by these differing perspectives. This study sets out to bridge some boundaries, by examining some of the interrelationships among components of disability, health conditions and other related factors, as well as some aspects of measurement.

'Disability' is an umbrella term for any or all of impairments, activity limitations and participation restrictions, as influenced by environmental factors; disability is defined in the context of health, and health conditions and personal factors are also part of the interactive model (WHO 2001; see more discussion in Section 1.2).

Despite the acknowledged links between health and disability, there has not been a great deal of analysis on how they relate to each other. Disability or aged care policies and programs frequently focus on activity limitations (for instance, limitations in mobility) and participation restrictions (for instance, restrictions in employment); these programs often provide personal assistance, aids or environmental modifications but do not usually delve into the related health condition. Related population analyses focus on 'disability' as a summary measure in its own right—for instance, in terms of the numbers of people in the population needing assistance with mobility activities. Health-focused analyses that also look at disability may, in contrast, seek to explain health outcomes (or 'burdens' or costs) in terms of 'disabilities' attributed, by some means, to specific health conditions. Where multiple health conditions and/or multiple disabilities exist, these analyses pose difficult problems. 'Disability' in the population then becomes a complex and constructed summary measure, apportioned among and combined across a range of health conditions.

Whole-of-government approaches to policy and service delivery mirror a 'whole person' appreciation of service users, and increasingly require analyses that bridge the health–disability divide in terms of their focus and language. The 'epidemiological transition' of the 20th century enlarged the focus of health systems beyond diagnosis of illness and prevention and treatment of acute disease and death. Health systems now also focus on the long-term health status of the population, and on interventions to sustain healthy ageing, minimise chronic disease and its effects, promote rehabilitation, and provide community care. People's health is thus increasingly conceptualised in terms of their quality of life, what activities they can do, in what areas of life they are able to participate as they wish, and what long-term supports they need for community living. In turn, health information systems must focus on longer term health outcomes, on health status, and on the functional status of people in the population.

Central to progress in these analyses and applications is the question of measurement of disability, and the portability of measures across environments, disciplines, service programs, diseases and other factors affecting disability. The ability to compare, collate or summarise data depends on such portability. For instance, in the aged care field, it is well accepted that it is important to have a broad measure of the need for support or service that

does not vary too much according to disease. Assessment of the need for support focuses on the need for assistance with daily activities.

Functioning and disability and related factors will therefore receive major policy and analytical attention for years to come.

This report sets out to explore Australian data in order to improve our understanding of two broad areas:

- Disability and related factors: What do Australian survey data reveal about the relationship of functioning and disability to health conditions and other related factors? These other factors include the environment of the person, characteristics of the person such as age and sex, other demographic characteristics, and socioeconomic factors.
- Disability and measurement: What measures of disability do we already have, and what does the use of different measures tell us about the relationship of functioning and disability to health conditions and other related factors?

Other studies, both in Australia and internationally, focus on many other aspects of functioning and disability measurement, and on mapping and calibrating the many existing measures in the field. This study does not describe or summarise this very significant international work. Rather, it aims to contribute to these efforts by the analysis of existing Australian data.

What questions does this report set out to answer?

Questions of primary interest include:

- Which diseases are the most strongly associated with severe disability? According to what measure?
- Among people with severe disabilities, what are the most common associated diseases or health conditions?
- What is the relationship between disability, environmental and personal factors as well as health conditions? How does this vary with different measures of 'severity' of disability?

To answer these questions, this report:

- provides prevalence estimates of significant diseases and health conditions associated with disability, and the strength of these associations (Chapter 3)
- estimates the likelihood and severity of disability associated with significant diseases and health conditions; analyse some different measures of severity (Chapters 4 and 5)
- conducts multivariate analyses to explore the relationship between severity of disability, health conditions, and personal and environmental factors (Chapter 6).

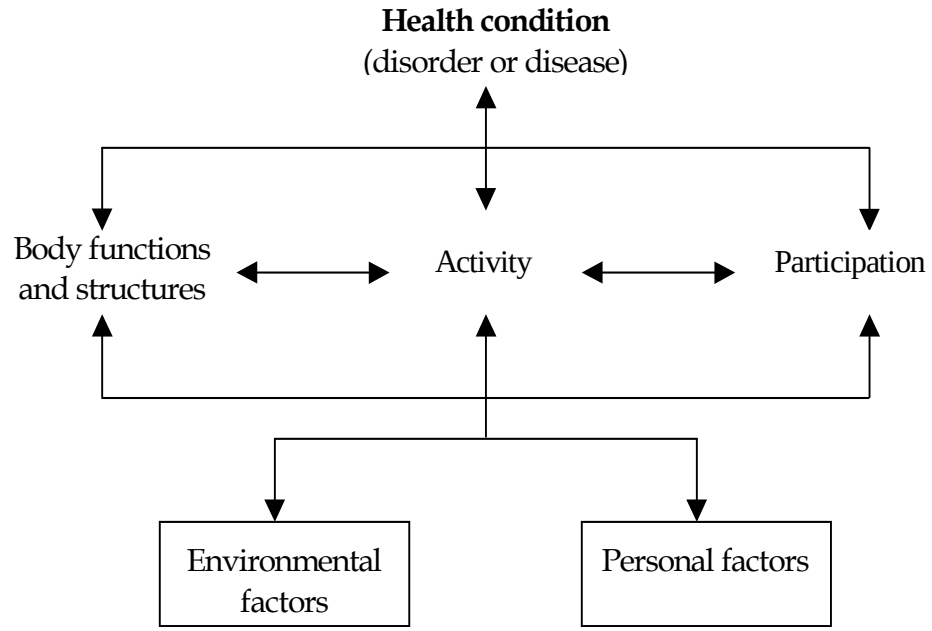
1.2 Background and broad approach

This section presents a brief discussion of definitions of disability and approaches to defining and measuring disability.

Defining disability

In the International Classification of Functioning, Disability and Health (ICF), disability is considered an umbrella term for any or all of the components: impairments, activity limitation and participation restriction, as influenced by environmental factors. Health conditions are a prerequisite (but not a determinant), and personal factors may also influence outcomes. Impairments are 'problems in body function or structure such as significant deviation or loss'. Activity limitations are 'difficulties an individual may have in executing activities'. Participation restrictions are 'problems an individual may experience in involvement in life situations' (WHO 2001:7—10). Environmental factors include all the physical and social aspects of the environment that may affect a person's experience of disability, including equipment used or personal assistance provided. Environmental factors may act as facilitators that diminish disability, or barriers that create it.

Disability experience is often complex and multidimensional. It may be related to the body functions and structures of people, the activities they do, the life areas in which they participate, and the factors in their environment that affect these experiences (Figure 1.1; WHO 2001). A person's functioning or disability is considered as a dynamic interaction between the health condition and environmental and personal factors.



Source: WHO 2001

Figure 1.1: Interactions between the components of the ICF

'Health condition' is an umbrella term for disease, disorder, injury or trauma. Two persons with the same health condition can have different levels of disability, and two persons with the same level of disability do not necessarily have the same health condition.

Disability does not necessarily equate to poor health. For example, in the early stages of disability associated with paraplegia, the affected person may be considered in poor health and may have a greater need for medical and health care, but once their condition is stable they may enjoy good health.

Disability does not include situations that are not health-related, such as participation restriction solely due to socioeconomic factors. This therefore distinguishes disability from disadvantage or exclusion unrelated to health. However, the presence of disability and the severity of disability are often associated with individuals' socioeconomic environments.

Approaches to measuring severity of disability

To explore the relationship between disability, health conditions and related factors in Australia, two key measurements of disability are important: population estimates of prevalence of disability and measures of severity of disability.

The Australian Institute of Health and Welfare (AIHW) has published a series of reports on the definition and prevalence of different disability groups in Australia. These reports review the existing definitions, data collections and estimates of prevalence relating to some significant disability groups (intellectual, psychiatric, sensory/speech, physical/diverse and acquired brain injury), and provide improved estimates of the size and profile of these groups (e.g. AIHW 2003b).

The present report puts more emphasis on exploring the measurement of 'severity' of disability. Information about severity of disability in the Australian population is of great relevance to policy and service planning. The eligibility criteria for receiving disability-related services and assistance generally include at least one indicator of severity of disability.

'Severity' is used in this report as a term indicating the extent of the impact of disability on a person's life. The severity of disability can be measured in relation to different dimensions of disability, depending on specific purposes. For example, the purpose may be to:

- estimate the potential population needing services and assistance;
- assess eligibility for receiving government income support for disability;
- provide information to facilitate early intervention and disability prevention ; and
- conduct epidemiological studies, or studies on morbidity and disability.

For the first two purposes, the measurements of disability are more likely to concentrate on the activity limitations and participation restrictions (although impairment is often a threshold criterion). For the third or fourth purposes the measurements are often related to problems in body functions and body structures. Corresponding to various purposes, different data have been collected and analysed.

Measures of severity may be constructed on individual components of disability, for instance, extent of impairment as distinct from extent of activity limitation. Alternatively, they may be combined, or conceptualised in an over-arching way, into a 'severity of disability' measure.

Population surveys, to be most useful, will take a number of these purposes into account. This enables a multidimensional and holistic approach to estimating the prevalence of disability and its components, and to measuring the severity of disability. The Australian Bureau of Statistics (ABS) disability survey data provide an opportunity to apply a

multidimensional approach to examining severity of disability associated with specific health conditions based on lived experience of people with a disability in Australia.

The analysis in this report attempts such a multidimensional approach using Australian population survey data, in particular the ABS disability survey data. The relationship between disability, health conditions and related factors is examined. The approach covers epidemiological aspects of disability and also looks, as far as possible, at the social construction of disability and the effects that health conditions place on everyday life of individuals with a disability.

The following sections briefly outline the multidimensional approaches used in this report, including two types of measures of severity of disability and multivariate analysis of severity of disability associated with health conditions. More detailed discussions on methods and data sources are given in Chapter 2.

Disability, severity and relationship to health conditions

Chapters 4 and 5 of this report examine the relationship between disability and health conditions in various ways.

Several analyses focus on the Body Function and Body Structures (and impairment) component of the ICF, estimating:

- the likelihood of 'disability', as defined by the ABS disability survey screening question (Section 4.2)
- the likelihood that each of the selected health conditions is reported as the 'main disabling condition' among other conditions (Section 4.3)
- the mean number of disabling conditions for the selected health conditions (multiple conditions and co-morbidity) (Section 4.4)
- likelihood of various impairments and limitations, for the selected health conditions; (Section 4.4).

The second group of analyses focuses on the Activities and Participation component of the ICF. For each of several selected health conditions, the association with disability is examined by estimating:

- likelihood of severe or profound 'core' activity limitation[1], with a given impairment or health condition (Section 5.2)
- the likelihood of severe or profound core activity limitations associated with each of the selected conditions (Section 5.3)
- the number of core activities in which assistance is needed (Section 5.4)
- the frequency of need for assistance with core activities (Section 5.5)
- the level of restriction in employment (participation restrictions) (Section 5.6).

1 'Core' activities are self-care, mobility and communication, so named in the ABS Survey of Disability, Ageing and Carers; more detailed description of this survey and other data sources is given in Chapter 2.

Exploration of other disability-related factors

Environmental and personal factors, in the ICF model, are also recognised as impacting on disability experience. The environment is, in fact, critical to the understanding of disability. A person with some functional impairments (e.g. related to a high level spinal cord injury) may have no activity limitation or participation restriction in an enabling work environment (e.g. with appropriate computing equipment and some personal assistance) or may be completely disabled by an environment that does not include such features.

The use of the measures described above, together with a multivariate analysis of their association with environmental and personal factors on severity of disability, would contribute to a better understanding of the relationship between disability, health conditions and related factors, including implications for services and social and community development in Australia. The ABS disability survey contains some information about environmental and personal factors, although nowhere near the full spectrum of environmental factors recognised by the ICF (products and technology; natural environment and human-made changes to environment; support and relationships; attitudes; services, systems and policies). These survey data are used in an exploratory multivariate analysis to investigate these relationships. The statistical model used is a regression of severity of core activity limitations with disabling conditions, personal and environmental factors. The ICF conceptual framework guides the analytical approach for the regression analysis.

1.3 Structure of the report

Chapter 2 provides background information about the data sources used in the report.

Chapter 3 analyses the data on significant diseases and health conditions in the general population, making comparisons among different data sources and suggesting possible reasons for the differences. Trends in disability are outlined.

Chapters 4 and 5 look at the associations between disability and related health conditions, without specifically considering environmental and other factors. Chapter 4 starts with the estimates of disability prevalence and carries out preliminary analyses on the associations between particular impairments and related diseases or health conditions. Chapter 5 explores different population measures of disability severity (based on activity limitations) and their relationships to health conditions.

Chapter 6 describes and reports the findings of the multivariate analyses examining associations between disability, related health conditions and personal and environmental factors.

Chapter 7 discusses some of the main results of the study and concludes that, while the relationships among disability, health conditions and other factors are complex, holistic analysis demands that we not try to oversimplify the picture.

2 Main data sources and definitions

This chapter provides background information about the data and definitions used in this report. The chapter begins with a brief discussion about two health data sources: the ABS 2001 National Health Survey and the study on the burden of disease and injury in Australia. It then focuses on the primary data source of this report: the ABS 1998 Survey of Disability, Ageing and Carers.

In the National Health Survey and Disability Survey, the ABS collected data about long-term health conditions on the basis of the respondents' self-reported information that may or may not be a result of professional assessments. There may be problems with validity for some reported long-term health conditions.

2.1 ABS 2001 National Health Survey

The national health surveys collect information about the health status of Australians, their use of health services and facilities, and health-related aspects of their lifestyle such as smoking, alcohol consumption and exercise (ABS 1997, 2002). The surveys have been used as a source for the analysis of health and health service use in Australia.

Information most relevant to disability in the national health surveys is the data items about long-term conditions. In the ABS 2001 National Health Survey, a long-term condition is defined as one which, in the respondent's opinion, has lasted, or is expected to last, for six months or more (ABS 2002:122). The ABS has produced three output classifications of the conditions based on the *International Statistical Classification of Diseases and Related Health Problems*, version 10 (ICD-10), ICD-9 (for comparisons) and the *International Classification of Primary Care* (ICPC) (ABS 2002:101). In this report data on long-term conditions coded to the ICD-10 are used.

Data from the 2001 National Health Survey are not appropriate sources for the generation of estimates of disability prevalence. The Health Survey has a limited amount of information reported on the disabilities associated with those conditions and impairments. Hence, the 2001 Health Survey data are used to extract prevalence estimates of long-term conditions for comparison with those derived from the disability surveys and other data sources.

The 2001 National Health Survey covers only people in households and excludes people in hospitals, nursing homes and other institutions. This may contribute to an underestimation of the prevalence of long-term conditions in the Australian population based on these data.

2.2 The study of the burden of disease and injury in Australia

The AIHW's report on the national burden of disease and injury for Australia uses the disability-adjusted life year, or DALY, to measure the total impact of mortality and non-fatal health outcomes in a consistent way across a comprehensive range of diseases and illnesses (AIHW: Mathers et al. 1999). The report provides detailed estimates for Australia of the incidence, prevalence, duration, mortality and disease burden for more than 175 disease and

injury categories. It also attempts to quantify the 'burden' associated with a range of risk factors and health determinants, and with socioeconomic disadvantage.

As was noted in the report, the estimates should be considered as provisional and developmental. Further work is needed to refine the estimates of prevalence of diseases and conditions and to explore how to assess the disability associated with health conditions in the Australian context. There are concerns about the acceptability of some health summary measures such as the DALY, particularly from some groups of people with a disability, with regard to both the underlying concepts, the methods of developing weights and the specific severity weights assigned. The technical application of such measures needs to be subject to further debate within Australia (NHPC 2001:10).

Disability weights have been the subject of considerable debate and critical literature. Weights can be estimated in various ways, and different methods give different results. Some of the techniques used include personal trade-off, or time trade-off; some methods ascertain the preferences of health experts only, some ask the general public and others ask people with lived experience of the condition. A method used in the World Health Organisation (WHO) burden of disease estimates attempts to quantify societal preferences (by aggregating the preferences of various panels of medical and non-medical people) for health states in relation to the 'ideal' of good health of the member of the panels. For example, on the basis of the weights, the panels judge a year with blindness (weight 0.43) to be preferable to a year with paraplegia (weight 0.57), and a year with paraplegia to be preferable to a year with unremitting unipolar major depression (weight 0.76) (AIHW: Mathers et al. 1999:11).

Disability weights have been designed with an emphasis on measuring the effects of diseases and conditions that are more relevant to health care systems rather than the community service system. Some versions of the disability weights, such as the Dutch weights, have incorporated results of some measurements of functional states (AIHW: Mathers et al. 1999).

There is broad debate on the summary measures of the effects of diseases on disability using disability weights as an index (e.g. Bastian 2000; Nygaard 2000; Reidpath et al. 2001). The main criticism of the measures is the assumption that severity of a health condition does not vary according to location and socioeconomic settings. It has been argued that when trying to make assessments of the severity level of a health condition, the degree of severity, even for fairly objective dimensions of a health condition, depends on contextual factors (Nygaard 2000).

Prevalence estimates of long-term conditions from this study are compared with those from the ABS 2001 National Health Survey and ABS 1998 Disability Survey in Chapter 3.

2.3 The ABS 1998 Survey of Disability, Ageing and Carers

The ABS disability surveys are specifically designed to collect comprehensive information about disability in the Australian population (ABS 1999). The surveys cover both rural and urban areas in all states and territories. Data are gathered from both households and cared

accommodation (hospitals, nursing homes and hostels etc.). The surveys provide cross sectional data at four points in time (1981, 1988, 1993 and 1998) over a period of 17 years.[2]

The objectives of the disability surveys are to:

- measure the prevalence of disability in the Australian population and consequent need for assistance
- provide a demographic and socioeconomic profile of people with a disability and older people compared with the general population
- provide information about informal carers who provide care for people with a disability (ABS 1999).

This section outlines the main relevant survey data items and definitions used for this report. More specific data items relating to particular estimates or measures are presented in relevant chapters.

Long-term health condition

In the ABS 1998 Disability Survey, a long-term health condition is defined as a disease or disorder which has lasted or is likely to last for at least six months; or a disease, disorder or event (e.g. stroke, poisoning, accident etc.) which results in an impairment or restriction which has lasted or is likely to last for at least six months (ABS 1999:69). In other words, people may have a long-term health condition, but not a disability, if the health condition does not results in an impairment or restriction which has lasted or is likely to last for at least six months. Long-term health conditions have been coded to a classification based on the ICD-10 (WHO 1992).

Base 'disability' population defined by the Disability Survey

Section 1.2 discussed definitions of disability conceptualised in the ICF. The operational definition of disability in the ABS 1998 Disability Survey is based on 17 screening questions on impairments and limitations (Box 2.1). A person is considered to have a disability if he/she has at least one of 17 limitations, restrictions or impairments that has lasted, or is likely to last, for at least six months and restricts everyday activities (ABS 1999: 67). The survey definition of disability is relatively broad, aiming to capture a broad range of people who have one or more impairments or limitations, or who have one or more health conditions which restrict everyday life. Thus, the 17 items were used as criteria to create the base 'disability' population with multi-dimensional disability experiences. This base 'disability' population is the starting point for prevalence estimates.

2 ABS has conducted the 2003 Survey of Disability, Ageing and Carers but data are not available at the time of preparing this report.

Box 2.1: Areas of impairment, limitation or restriction identified by the ABS

Affirmative responses to any of the following categories, where the limitation, restriction or impairment has lasted or was likely to last for six months or more, 'screen' the person into the ABS survey:

- *loss of sight, not corrected by glasses or contact lenses*
- *loss of hearing, with difficulty communicating or use of aids*
- *speech difficulties (including speech loss)*
- *chronic or recurring pain or discomfort that restricts everyday activities*
- *shortness of breath or breathing difficulties that restrict everyday activities*
- *blackouts, fits, or loss of consciousness*
- *difficulty learning or understanding*
- *incomplete use of arms or fingers*
- *difficulty gripping or holding things*
- *incomplete use of feet or legs*
- *a nervous or emotional condition that restricts everyday activities*
- *restriction in physical activities or in doing physical work*
- *disfigurement or deformity*
- *head injury, stroke or any other brain damage with long-term effects that restrict everyday activities*
- *needing help or supervision because of a mental illness or condition*
- *receiving treatment or medication for any other long-term condition or ailment and still restricted in everyday activities*
- *any other long-term condition that restricts everyday activities.*

This list creates the implicit definition of 'disability' used in the ABS 1998 Survey of Disability, Ageing and Carers (ABS 1999). This creates the base 'disability' population that is the starting point for the prevalence estimates.

The screening questions cover specific impairments that correspond generally to the impairment component of the ICF framework. The screening questions relating to body function impairments are, for instance, 'loss of sight not corrected by glasses or contact lenses', 'loss of hearing' and 'incomplete use of arms or fingers'. The questions also include structure impairments such as 'disfigurement or deformity'.

Two screening questions relate to the activity component of the ICF: 'difficulty gripping or holding things' and 'whether restricted in physical activities or physical work'. The question about 'difficulty gripping or holding things' indicates limitations in performing simple activities that are likely to be associated with specific impairments. The question of 'whether restricted in physical activities or physical work' is much broader, and is likely to 'catch' a broad range of people who may have a disability. Restrictions in physical activity and physical work could be associated with a wide range of impairments.

Two screening questions relate to the environmental factor component of the ICF: 'whether receiving treatment for any long-term conditions or ailments (and still restricted)' and 'need to be helped or supervised in doing things because of a mental illness or condition'.

The screening questions also include two broad items:

- ‘head injury, stroke or other brain damage with long-term effects that restrict everyday activities’
- ‘any other condition, lasting or likely to last for six months or more, not already mentioned’.

The last item of the screening questions about ‘any other long-term condition’ allows the survey to collect information that may relate to most ICF domains of body functions and structure which are not covered by other items of the screening questions, as well as conditions that are not related to impairments, activity limitations or participation restrictions.

A follow-up filtering question was also asked, to determine whether the person was ‘restricted in everyday activities’ for those who reported: ‘shortness of breath or difficulty breathing’, ‘chronic or recurrent pain or discomfort’, ‘a nervous or emotional condition’ and ‘any other long-term condition that has lasted or likely to last for six months or more’. Only those people who reported positively to one or more of the above questions and were also restricted in everyday activities were defined by the survey as having a disability.

Activity restrictions and their severity

A ‘specific restriction’ is defined in the 1998 Disability Survey as a restriction in core activities (self-care, mobility and communication), schooling or employment (Box 2.2). People who were ‘captured’ into the Disability Survey by the screening questions (defining disability population) and all people aged 60 years or over, were asked about their need for assistance with various daily activities: self-care, mobility, communication, health care, housework, property maintenance, paperwork, meal preparation, transport and guidance. Guidance refers to interacting, making and maintaining relationships, coping with emotions, making decisions, thinking through problems and managing behaviour (children aged under 15 years, people in cared accommodation).

In the 1998 survey four levels of core activity restriction are determined, based on whether a person needs personal assistance with, has difficulty with, or uses aids or equipment for any of the core activities. A person’s overall level of core activity restriction is determined by the highest level of restriction the person experienced in any of the core activity areas. Profound core activity restriction refers to a person who is unable to do, or always needs help with, a core activity. Severe core activity restriction refers to a person who sometimes needs help with a core activity, or has difficulty understanding or being understood by family or friends, or who can communicate more easily using sign language or other non-spoken forms of communication.

Box 2.2: ABS 1998 Survey of Disability, Ageing and Carers: activity restrictions and their severity

Specific restrictions *are:*

- *Core activity restrictions*
- *Schooling or employment restrictions.*

Core activities *are:*

- *Self-care – bathing or showering, dressing, eating, using the toilet and managing incontinence*
- *Mobility – moving around at home and away from home, getting into or out of a bed or chair, and using public transport*
- *Communication – understanding and being understood by others: strangers, family and friends.*

A ***core activity restriction*** *may be:*

- *Profound – unable to perform a core activity or always needing assistance*
- *Severe – sometimes needing assistance to perform a core activity*
- *Moderate – not needing assistance, but having difficulty performing a core activity*
- *Mild – having no difficulty performing a core activity but using aids or equipment because of disability.*

Source: ABS 1999.

Note: The term 'activity restriction' is equivalent to the ICF concept of 'activity limitation'. The ABS has aligned the terminology of the 2003 survey with the ICF. Throughout this report we use the 1998 survey terminology when referring to the results of the 1998 survey.

People with a severe or profound core activity restriction conform closely to the definition of the target group of disability support services (Services funded under the Commonwealth - State/Territory Disability Agreement, CSTDA). Services provided under the CSTDA are targeted to people who need ongoing support with everyday life activities. The target group is specified as 'people with disabilities':

> 'people with disabilities' means people with a disability attributable to an intellectual, psychiatric, sensory, physical or neurological impairment or acquired brain injury (or some combination of these) which is likely to be permanent and results in substantially reduced capacity in at least one of the following:
>
> - Self-care/management
> - mobility
> - communication
>
> and requiring ongoing or episodic support.

The estimated number of people with a severe or profound core activity restriction is generally accepted as a broad indicator of potential need for disability support services in Australia.

Explanatory notes about the terms relating to prevalence estimation and analysis of severity of disability using the ABS Disability Survey are provided in Table 2.1.

Table 2.1: Terms relating to prevalence estimation and analysis of severity of disability using the ABS 1998 Survey of Disability, Ageing and Carers

Terms	Working definition
Long-term health condition	A long-term health condition is defined as a disease or disorder that has lasted or is likely to last for at least six months, or a disease, disorder or event (e.g. stroke, poisoning, accident etc.) that results in an impairment or restriction that has lasted or is likely to last for at least six months (ABS 1999:69).
Disabling condition	A disabling condition is a disease, disorder or event (e.g. stroke, poisoning, accident etc.) that leads to an impairment or restriction that has lasted or is likely to last at six months.
Main disabling condition	If only one disabling condition is reported in the survey, this is recorded as the main disabling condition. If multiple conditions are reported, then the main disabling condition is the one identified as causing the most problems.
All disabling conditions	All disabling conditions reported by or for a person.
Activity	An activity comprises one or more tasks in daily life. In the 1998 Disability Survey tasks have been grouped into ten activities: self-care, mobility, communication, health care, housework, meal preparation, paperwork, property maintenance, transport and guidance.
Core activities	Core activities are self-care, mobility and communication. Questions are asked about several tasks under each of these headings. For instance, bathing, eating and toileting are grouped under self-care.
Severe or profound core activity restrictions	A profound core activity restriction refers to a person who is unable to do, or always needs help with, a core activity task. A severe core activity restriction refers to a person who sometimes needs help with a core activity task, or has difficulty understanding or being understood by family or friends; or can communicate more easily using sign language or other non-spoken forms of communication.
Activity limitations	Activity limitations refers to a person being unable to do, or having a need for assistance, or having difficulty with, at least one of the ten activities, or uses aids and equipment, or has changes made to home environment because of his/her health condition(s).
Participation restrictions	Participation restriction refers to a person being restricted in schooling, employment or social and community participation because of his/her disability.

Sources: ABS 1999; AIHW 2003a.

Disability groups in Australia

In Australia, disabilities are often classified into 'disability groups'. Disability groups, such as 'intellectual disability' and 'physical disability', provide a broad categorisation of disabilities based not only on underlying health conditions and impairments but also on activity limitations, participation restrictions and related environmental factors. These groups are generally recognised in the disability field and in legislative and administrative contexts in Australia. Australian disability administrators, peak bodies, people with disabilities and service providers use disability groups as a basis for describing groups of people with similar experiences of disability and patterns of impairments, activity limitations, participation restrictions and related environmental factors (Box 2.3; AIHW 2003a).

It is important to note that disability groupings do not classify people, rather they categorise individuals' experience in various domains of functioning and disability.

AIHW has recently published a report that provides a broad spectrum of estimates of prevalence of main disability groups that may suit different purposes (AIHW 2003b). For example, the prevalence could be estimated either on the basis of disabling conditions only, or using information combining disabling condition and certain levels/severities of activity

limitations or participation restrictions. This report explores severity of disability in relation to the number of associated conditions and patterns of multiple conditions and disabilities for five main disability groups: 'intellectual', 'psychiatric', 'sensory/speech', 'physical/diverse' and 'acquired brain injury'. The estimates of disability groups in this report use data on either main or all disabling conditions. Survey information about certain levels/severity of activity limitations or participation restriction is not included in the estimation. A full list of impairments and disabling conditions related to specific disability groups is presented in Appendix 1 of the report.

Box 2.3: Disability groups

Intellectual/learning disability *is associated with impairment of intellectual functions with limitations in a range of daily activities and with restriction in participation in various life areas. Supports may be needed throughout life, the level of support tending to be consistent over a period of time but may change in association with changes in life circumstances.*

Psychiatric disability *is associated with clinically recognisable symptoms and behaviour patterns frequently associated with distress that may impair personal functioning in normal social activity. Impairments of global or specific mental functions may be experienced, with associated activity limitations and participation restrictions in various areas. Supports needed may vary in range, and may be required with intermittent intensity during the course of the condition. Changes in level of support tend to be related to changes in the extent of impairment, or in the environment.*

Sensory/speech disability *is associated with impairment of the eye, ear and related structures and of speech, structures and functions. Extent of impairment and activity limitation may remain consistent for long periods. Activity limitations may occur in a various areas, for instance communication and mobility. Availability of a specific range of environmental factors will affect the level of disability experienced by people in this grouping. Once in place, the level of support tends to be relatively consistent.*

Physical/diverse disability *is associated with the presence of an impairment, which may have diverse effects within and among individuals, including effects on physical activities such as mobility. The range and extent of activity limitation and participation restriction will vary with the extent of impairment as well as with environmental factors. Environmental adjustments and support needs are related to areas of activity limitation and participation restriction, and may be required for long periods. Levels of support may vary with both life changes and extent of impairment. Included in this broad category is the subcategory* ***Acquired brain injury,*** *which is used to describe multiple disabilities arising from damage to the brain acquired after birth. It can occur as a result of accident, stroke, brain tumour, infection, poisoning, lack of oxygen, degenerative neurological disease, etc. Effects include deterioration in cognitive, physical, emotional or independent functioning.*

Source: AIHW 2003a.

3 Prevalence of disability and long-term health conditions

To explore the relationship between disability, health condition and other related factors, it is necessary to examine two key measurements of disability: its prevalence and severity. Before examining severity of disability and its relationship to health conditions, this chapter gives an overview of the prevalence estimates of significant health conditions in the Australian population in general, and among people with a disability and those with a severe or profound core activity restriction in particular. Estimates from different data sources are compared, contributing to a better understanding of the discrepancies between disability and health information. The chapter aims to answer a number of questions:

- Which diseases or conditions are the most commonly self-reported long-term health conditions in the Australian population?
- Among people with a disability and those with a severe disability, which are the most commonly associated diseases or conditions respectively?
- Which impairments or limitations are most commonly associated with a disability, or with a severe or profound disability?

The chapter begins with a discussion of the main data sources and then a review of the prevalence estimates of long-term health conditions from these sources. The ABS 1998 Survey of Disability, Ageing and Carers is selected as the primary data source to provide detailed estimates of long-term heath conditions and impairments/limitations associated with disability and severe disability. A brief review of recent trends in the prevalence of disability and long-term conditions is also presented.

In the first part of this chapter, prevalence estimates of long-term health conditions from two health data sources are presented and reviewed, and compared with the disability data source. The long-term health conditions selected for this study include most common health conditions associated with each of the main disability groups: intellectual, psychiatric, sensory/speech, physical/diverse and acquired brain injury (AIHW 2003b); and conditions identified as national health priority areas, or of significance to the study of burden of disease and injury in Australia. Conditions selected are thus those that affect the health and wellbeing of significant population groups in Australia.

3.1 Main data sources: some differences

The prevalence estimates in this chapter are calculated in terms of the number of people reporting a specific long-term health condition and/or a percentage of the Australian population.

Differences in survey methods between the 1998 Disability Survey and the 2001 National Health Survey

It is necessary to highlight some main differences between the Disability Survey and National Health Survey (see Chapter 2 for detailed background information and definitions). The ABS Disability Survey is specifically designed to collect comprehensive information about disability in the Australian population. The main purpose of the National Health Survey is to obtain information on the health status of Australians and their use of health services and facilities. These surveys have been mainly used as a source for the analysis of health and health service use differentials in Australia.

In the ABS 1998 Disability Survey, a long-term health condition is defined as 'a disease or disorder which has lasted or is likely to last for at least six months; or a disease, disorder or event (e.g. stroke, poisoning, accident etc.), which produces an impairment or restriction which has lasted or is likely to last for at least six months' (ABS 1999:69). In other words, people may have a long-term health condition but not a disability if the health condition does not result in an impairment or restriction which has lasted or is likely to last for at least six months. Long-term health conditions have been coded to a classification based on the WHO ICD-10 (WHO 1992).

In the ABS 2001 National Health Survey, a long-term condition is defined as one which, in the respondent's opinion, has lasted, or is expected to last, for six months or more (ABS 2002:122). The ABS has produced three output classifications of the conditions based on ICD-10, ICD-9 (for comparison) and the ICPC (ABS 2002:101). In this report, data on long-term conditions coded to the ICD-10 are used.

In the Disability Survey, information about health conditions was collected using the screening questions about impairments and limitations. The screening questions were designed mainly to select a potential population group which may have limitations in, or need for assistance with, activities and participation of various life domains, in particular the core activities (self-care, mobility and communication) and schooling or employment . The range of the long-term conditions collected in the survey was, to some extent, constrained by the scope of the screening questions on specific impairments and certain limitations such as loss of sight or hearing, incomplete use of arms or fingers, speech difficulties and difficulty learning or understanding (Box 2.1, see Chapter 2). Although the last item of the screening questions about 'any other long-term condition' allows the survey to collect information about impairments or health conditions which are not covered by other items of the screening questions, only those who reported an impairment or long-term condition which restricts everyday activities are considered as having a disability. Hence, the long-term health conditions reported in the Disability Survey were those more likely to be associated with an impairment or activity limitations. Unlike the Disability Surveys, the National Health Survey used a general question about any long-term condition, and the conditions recorded in the National Health Surveys are not necessarily associated with disabilities.

The Health Survey covers only people in households and excludes people in hospitals, nursing homes and other institutions. Therefore, the Health Survey underestimates the prevalence of some particular long-term conditions in the Australian population, especially among older Australians. For example, a large proportion of people with dementia are living in institutions.

The study of the burden of diseases and injury in Australia

The main purpose of the study of the burden of disease and injury in Australia was to use the disability-adjusted life year, or DALY, to measure the total impact of mortality and non-fatal health outcomes in a consistent way across a wide range of diseases and illnesses. The study provides detailed estimates for Australia of the incidence and prevalence of various diseases and injury categories. As was noted in the 1999 report, the estimates should be considered as provisional and developmental. Further work is needed to refine the estimates of diseases and conditions (AIHW: Mathers et al. 1999).[3]

The Australian study on burden of disease and injury used a wide range of data sources for its estimates of diseases and conditions. Definitions of the conditions and method of collections varied (Section 3.4; AIHW: Mathers et al. 1999:203–205).

3.2 Prevalence estimates of long-term conditions—a comparison of three data sources

Estimates based on the ABS 2001 National Health Survey

Data from the 2001 ABS National Health Survey estimated that 14.7 million people, or 78% of the total population, reported one or more long-term conditions (ABS 2002). The most commonly reported long-term conditions were those associated with vision disorders (51% of the total population) and back problems (18%). Other most frequently reported conditions were hearing (14%), arthritis (14%), asthma (12%) and hypertension (10%) (Figure 3.1 and Table 3.1).

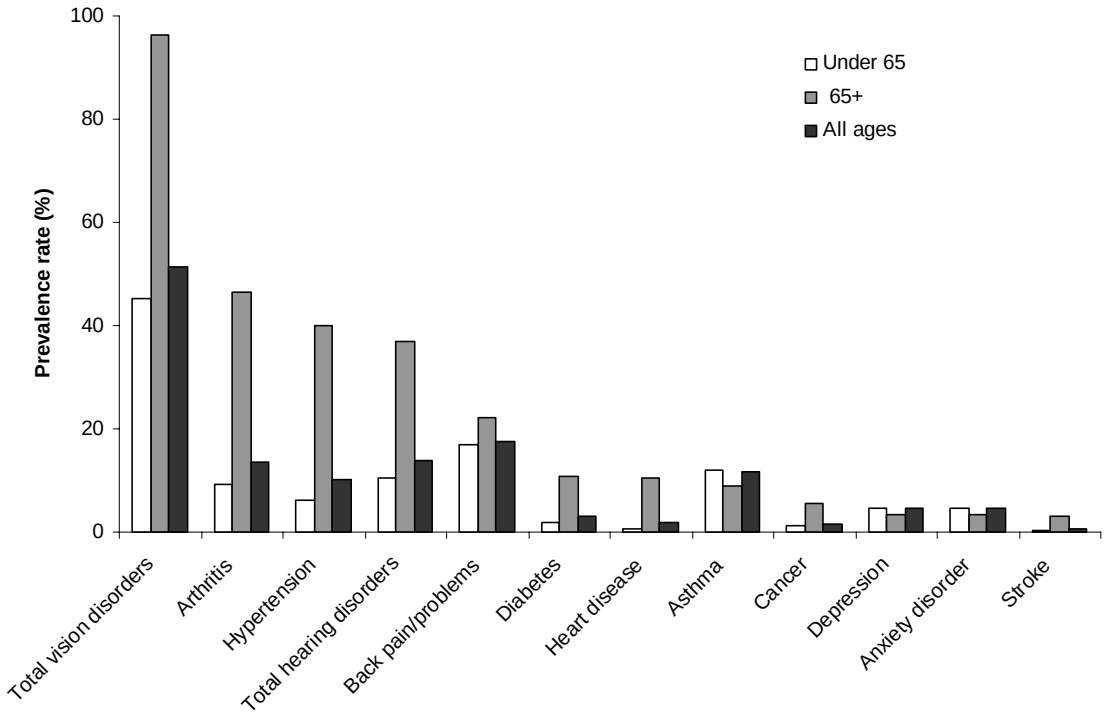
Almost one in ten people reported a long-term condition relating to mental disorders. The most commonly reported mental conditions were depression and anxiety disorders, each affecting about 850,000 people, or 5% of the total population.

The prevalence of most long-term conditions generally was higher at older ages. Almost all people aged 75 or over (99%) reported at least one long-term condition (ABS 2002), mainly because of a large proportion reported vision disorders (Table 3.1). Vision disorders were reported by 96% of people aged 65 or over, as compared with 45% for those aged under 65. Musculoskeletal disorders were more prevalent among people aged 65 or older than those under 65, especially arthritis (47% compared with 9%). Circulatory conditions were also more prevalent among those aged 65 or more, in particular hypertension (40% versus 6%), hearing (37% versus 11%) and heart disease (11% versus 1%).

In contrast, conditions associated with mental and neurological disorders were more prevalent among people aged under 65 (9.9% and 8.0%) than those aged 65 or over (7.2% and 4.6%).

Diabetes and Cancer were more frequently reported by people aged 65 or over (10.8% and 5.6%) than those aged under 65 (1.9% and 1.1%), while asthma was more prevalent among those under 65 (12% versus 8.8% for aged 65 or over).

3 An updated version of the study is to be published in 2005.



Source: Table 3.1.

Figure 3.1: Prevalence rates of selected health conditions, 2001 National Health Survey

Table 3.1: Prevalence of long-term health conditions reported in the ABS 2001 National Health Survey, by age group

	0–65	65+	Total	0–65	65+	Total
		('000)			(%)[a]	
Depression	774.1	74.7	848.9	4.6	3.3	4.5
Anxiety disorder	778.7	74.6	853.3	4.7	3.3	4.5
Total mental disorders[b]	*1,649.4*	*163.2*	*1,812.6*	*9.9*	*7.2*	*9.6*
Cataract	82.2	279.1	361.3	0.5	12.3	1.9
Glaucoma	67.3	110.2	177.5	0.4	4.9	0.9
Blindness	97.7	69.5	167.2	0.6	3.1	0.9
Loss of vision	328.7	99.2	427.9	2.0	4.4	2.3
Total vision disorders[b]	*7,526.8*	*2,178.4*	*9,705.2*	*45.2*	*96.4*	*51.3*
Speech difficulties	126.3	*10.6	136.9	0.8	*0.5	0.7
Loss of hearing	1,270.7	742.1	2,012.8	7.6	32.8	10.6
Total hearing disorders[b]	1,768.4	832.8	2,601.2	10.6	36.8	13.7
Hypertension	1,004.9	904.2	1,909.1	6.0	40.0	10.1
Heart diseases	125.9	238.2	364.1	0.8	10.5	1.9
Stroke	37.3	67.6	104.9	0.2	3.0	0.6
Total circulatory diseases[b]	*1,864.6*	*1,214.3*	*3,079.0*	*11.2*	*53.7*	*16.3*
Asthma	1,999.0	198.3	2,197.3	12.0	8.8	11.6
Total respiratory diseases[b]	*5,060.6*	*710.7*	*5,771.3*	*30.4*	*31.4*	*30.5*
Arthritis	1,524.2	1,052.6	2,576.9	9.1	46.6	13.6
Osteoporosis	119.8	180.0	299.8	0.7	8.0	1.6
Back pain/problems	2,835.9	498.0	3,333.9	17.0	22.0	17.6
Total musculoskeletal disorders[b]	*4,619.7*	*1,439.1*	*6,058.8*	*27.7*	*63.7*	*32.0*
Epilepsy	111.2	*9.2	120.3	0.7	*0.4	0.6
Migraine	1,112.7	57.8	1,170.6	6.7	2.6	6.2
Total neurological disorders[b]	*1,330.0*	*104.1*	*1,434.1*	*8.0*	*4.6*	*7.6*
Diabetes	310.6	243.7	554.2	1.9	10.8	2.9
High cholesterol	695.5	436.1	1,131.6	4.2	19.3	6.0
Cancer	184.6	126.7	311.3	1.1	5.6	1.6
Total population	**16,660.0**	**2,260.3**	**18,920.0**			

(a) Percentage of the Australian population of that age.

(b) Includes all other conditions in this category so that total is more than the subcomponents.

Note: Estimates marked with * have an associated relative standard error of about 30% and should be used with caution.

Source: AIHW analysis of ABS 2001 National Health Survey expended confidentialised unit record file from Remote Access Data Laboratory.

Differences in the estimates between the Disability Survey and the National Health Survey

Overall, the number and proportion of people reporting at least one long-term condition in the 2001 National Health Survey were more than two times those of the 1998 Disability Survey: 78% of the total population in the National Health Survey (14.7 million people), compared to about 36% of the total population in the 1998 Disability Survey (6.7 million people) (ABS 2002; Section 4.4: Table 4.3). This is not because Australians have become less well, rather the National Health Survey recorded long-term health conditions that were not necessarily related to disability, whereas the Disability Survey recorded conditions that were more likely to be associated with impairments or activity limitations.

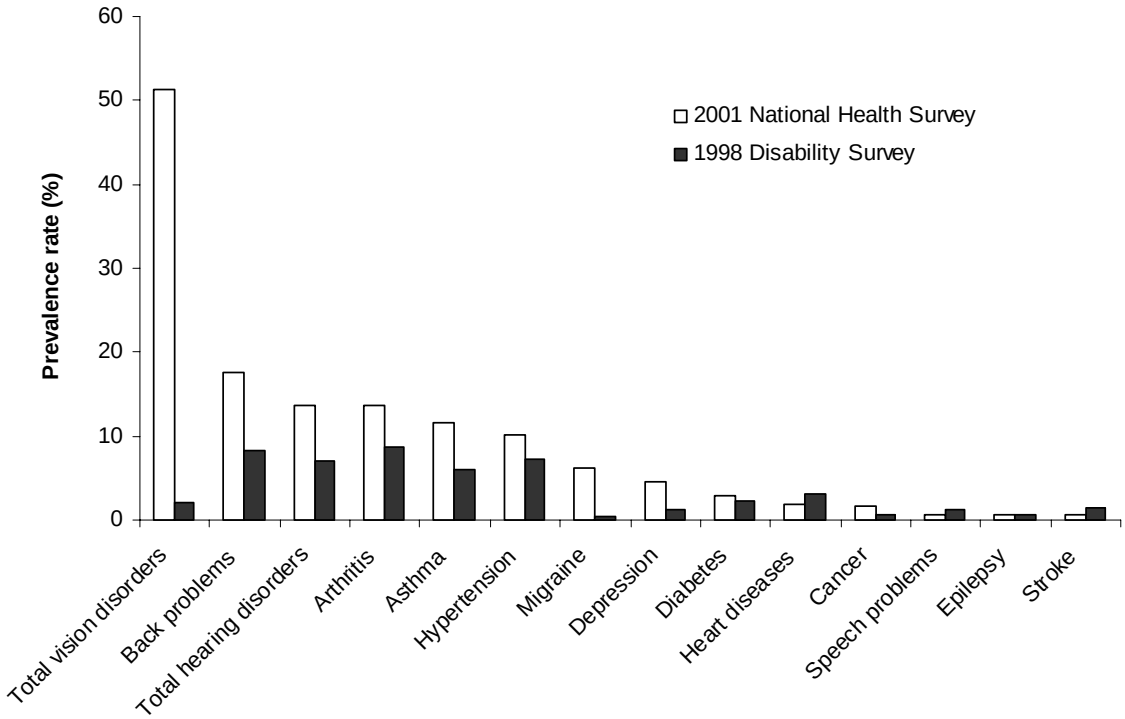
Table 3.2 and Figure 3.2 provide a comparison of the estimates of selected conditions using data available from the confidentialised unit record files of the two surveys. Prevalence rates of most selected conditions were higher for the 2001 National Health Survey than those for the 1998 Disability Survey, especially for vision, back problems, hearing, arthritis, asthma, migraine, depression and hypertension. The rate of vision disorders (51%) recorded in the National Health Survey was extremely high, including any loss of sight (short sightedness or long sightedness) or eye diseases and conditions. This compares to a much lower rate (2%) in the Disability Survey, partly because it excluded people who reported loss of sight corrected by wearing glasses or contact lenses.

The rates of a number of conditions were, nevertheless, higher for the Disability Survey than for the National Health Survey. For example, 3.2% of the total population (589,200 people) reported conditions associated with heart diseases in the Disability Survey, compared to 1.9% (364,100) in the National Health Survey (Table 3.2). About 0.6% people (104,900) in the National Health Survey reported a long-term condition associated with stroke (Table 3.2) and 1.1% (217,500) reported that they had a stroke sometime in their lives (AIHW 2004a:34). In contrast, 282,100 people (1.5%) reported a long-term condition associated with stroke in the Disability Survey.

The relatively lower rates of heart diseases and stroke reported in the National Health Survey is partly because of the exclusion of persons living in institutions, as a substantial proportion of people with those conditions were living in institutions (Table A6.1). The inclusion of a specific screening question in the 1998 Disability Survey to separately identify stroke resulted in an increase in people reporting the condition, in particular among the older population (AIHW 2003b).

The rate of speech problems in the Disability Survey (1.3%) was higher than that of the National Health Survey (0.7%), partly because the Disability Survey also included a specific screening question about speech difficulties.

A number of selected conditions that were highly related to disability were not included in the data file of the National Health Survey, for example dementia, Attention deficit hyperactivity disorder (ADHD), Schizophrenia, Parkinson's disease, paralysis, cerebral palsy, multiple sclerosis, autism and Down syndrome. Most people with dementia were living in institutions (Table A6.1) and they were outside in the scope of the National Health Survey.



Source: Table 3.2.

Figure 3.2: Prevalence rates of selected health conditions, 2001 National Health Survey and 1998 Disability Survey

Table 3.2: Estimates of prevalence of selected long-term conditions: comparisons between the 2001 National Health Survey and the 1998 Disability Survey

	2001 National Health Survey			1998 Disability Survey		
Health conditions	**No. ('000)**	**Prev. rate (%)[(a)]**	**Rank**	**No. ('000)**	**Prev. rate (%)[(a)]**	**Rank**
Total vision disorders	9,705.2	51.3	1	370.4	2.0	8
Back problems	3,333.9	17.6	2	1,554.7	8.3	2
Total hearing disorders	2,601.2	13.7	3	1,315.9	7.1	4
Arthritis	2,576.9	13.6	4	1,608.7	8.6	1
Asthma	2,197.3	11.6	5	1,101.6	5.9	5
Hypertension	1,909.1	10.1	6	1,363.2	7.3	3
Migraine	1,170.6	6.2	7	91.3	0.5	14
Depression	848.9	4.5	8	245.7	1.3	10
Diabetes	554.2	2.9	9	414.0	2.2	7
Heart diseases	364.1	1.9	10	589.2	3.2	6
Cataract	361.3	1.9	11	81.7	0.4	16
Cancer	311.3	1.6	12	123.0	0.7	12
Osteoporosis	299.8	1.6	13	84.7	0.5	15
Glaucoma	177.5	0.9	14	65.0	0.3	17
Speech problems	136.9	0.7	15	244.0	1.3	11
Epilepsy	120.3	0.6	16	105.1	0.6	13
Stroke	104.9	0.6	17	282.1	1.5	9
Total with at least one condition	**14,700.0**	**78.0**		**6,713.0**	**36.0**	
Total population	**18,920.0**			**18,659.7**		

(a) Percentage of the Australian population.

Sources: AIHW analysis of ABS 2001 National Health Survey expanded confidentialised unit record file from Remote Access Data Laboratory and ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Estimates from the study of the burden of disease and injury in Australia—comparison with national survey data

A wide range of data sources was used in the burden of disease study to estimate the prevalence of specific diseases and conditions. The sources were from both overseas and Australia and included disease register data, hospital morbidity data, population survey data and epidemiological studies. These data are combined and adjusted for prevalence estimation. There were also variations in the coverage of the population and reference time for the data collected (AIHW: Mathers et al. 1999:203–205).

Table 3.3 shows the estimates of prevalence of selected diseases or conditions from the burden of disease study. Given the wide range of data sources used for the estimates in the study and the lack of detailed information about the adjustments in the estimates, it is not appropriate to directly compare these estimates with those of the 2001 National Health Survey or the 1998 Disability Survey. However, the overall patterns appear to indicate that many prevalence estimates of the study were generally lower than those of the 2001 National Health Survey but higher than those reported in the 1998 Disability Survey, with the exception of some diseases and conditions.

The reasons for the generally lower estimates of the study than those of the 2001 National Health Survey may be partly attributable to the differences in reference time for the data sources. The study was published in 1999 and the reference time of the data sources for the study was 1996 or earlier.

The burden of disease study aims to estimate prevalence of disease using multiple data sources, not just self-reported survey data sources. Hence, for some conditions, such as diabetes and hypertension, that many people are unaware they have, the estimates of the study would be expected to be higher than the survey estimates.

As discussed previously, the estimates of health conditions in the 1998 Disability Survey were those associated with disabilities. This may contribute to the lower prevalence estimates in the 1998 Disability Survey than those of the study.

The estimates of heart diseases in the study were lower than those in both the 2001 National Health Survey and the 1998 Disability Survey, perhaps largely because hospital morbidity data, which captured admitted patients only, were used for the estimation in the study.

The estimates of ADHD in the study were substantially higher than those in the 1998 Disability Survey. Data on ADHD are not available from the 2001 National Health Survey. High prevalence estimates of ADHD were also reported by one of the three components of the ABS National Survey of Mental Health and Wellbeing, a household survey of children and adolescents aged 4–17 years. The survey results show that the most common disorder was ADHD. An estimated 355,600 children, or 11.2% of those aged 6–17 years, reported ADHD in 1998. Males (250,000, 15.4%) had a higher prevalence of ADHD than females (105,000, 6.8%) (Sawyer et al. 2000). Nevertheless, the survey report suggested that the high prevalence estimates of ADHD be viewed with caution for two reasons (Sawyer et al. 2000). First, the survey interview could not determine whether people identified with ADHD had clinically significant impairment in their social, academic or occupational functioning. Second, the survey focused on only three disorders (the other two are depressive disorder and conduct disorders), therefore it is possible that some children identified as having ADHD had symptoms which would be better classified as another disorder not included in the survey.

On the one hand, estimates from the burden of disease study resulted in higher prevalence than those of the 1998 Disability Survey for some conditions such as dementia, Parkinson's disease, schizophrenia and autism. The estimates for these conditions were not available from the 2001 National Health Survey. On the other hand, estimates from the burden of disease study have also generated lower prevalence than those of the 1998 Disability Survey for conditions such as epilepsy and stroke.

Table 3.3: Estimates of the 1996 prevalence of disease from *The Burden of Disease and Injury in Australia*, 1999

	Prevalence rate per 1,000 population[a]		Estimated number ('000)
Diseases and health conditions	**Males**	**Females**	**Total males and females**
Autism	2.7	0.6	29.7
ADHD	13.8	5.2	173.3
Schizophrenia	0.4	0.3	64.8
Depression	1.8	4.1	538.1
Dementia	5.3	8.3	124.3
Cataract	5.3	13.1	168.8
Glaucoma	7.5	10.4	164.0
Age-related vision disorders	2.5	8.1	97.8
Adult-onset hearing loss	246.6	91.6	3,088.3
Heart diseases			
Rheumatic heart disease	0.1	0.3	3.8
Ischaemic heart disease			
Angina pectoris	9.9	8.4	168.2
Acute myocardial infarction	1.3	0.4	14.9
Inflammatory heart disease	1.6	0.8	21.8
Hypertensive heart disease	0.1	0.4	5.1
Peripheral arterial disease	4.3	2.8	65.0
Stroke	7.4	5.9	121.3
Asthma	58.6	76.0	1,206.1
Chronic obstructive pulmonary disease	19.4	13.0	296.6
Arthritis			
Rheumatoid arthritis	1.9	4.1	55.1
Osteoarthritis	26.5	41.7	625.1
Chronic back pain	33.0	31.0	585.9
Osteoporosis	3.2	13.7	155.2
Parkinson's disease	1.3	2.6	36.4
Multiple sclerosis	0.3	0.6	7.7
Epilepsy	0.4	0.3	6.3
Diabetes			
Type I diabetes	0.4	0.4	73.6
Type 2 diabetes	2.7	2.4	469.4

(a) Prevalent cases of disease per 1,000 total male and female population.

(b) Prevalence of cancer has not been estimated in the report (AIHW: Mathers et al. 1999:210).

Source: AIHW: Mathers et al. 1999: Annex Table D.

Discussion—and the need to use one data source

In summary, this section reviewed the prevalence estimates of long-term health conditions from three main data sources. Overall, the National Health Survey tends to generate relatively high prevalence estimates of long-term health conditions. These estimates provide

some information about the most commonly reported long-term health conditions in Australia. Nevertheless, unlike the Disability Survey, those long-term conditions recorded in the National Health Survey are not necessarily associated with a disability. The exclusion of people in institutions in the National Health Survey may contribute to an underestimation of the prevalence of some particular long-term conditions such as stroke and heart diseases and, importantly, dementia. A number of selected conditions that were highly related to disability, in particular severe disability, were not included in the National Health Survey data file.

The Australian study on burden of diseases and injury used a wide range of data sources for its estimates of diseases and conditions. Definitions of the conditions and method of data collections and prevalence estimation varied. Its estimates tended to be between the Disability Survey and National Health Survey in magnitude, but there was no regular pattern.

It is necessary to select one major data source to carry out consistent analyses for this report. The advantage of using one national survey is that it can provide a suite of 'calibrated' estimates based on similar disability concepts, irrespective of causes.

Of the national population surveys, only the ABS Disability Survey is designed specifically to generate a comprehensive national overview of the levels and patterns of disability in Australia. Severity of disability in terms of difficulties in, needs for assistance with, and aids and equipment used for daily activities and participation in employment participations is the main focus of the Disability Survey. The Disability Survey provides the prevalence estimates of long-term conditions which are the most commonly associated with a disability, or with a severe or profound disability. Hence, the 1998 Disability Survey data are used as the main data source for the rest of this chapter to present detailed prevalence estimates of health conditions and impairments/limitations associated with disability and severe disability, and for the analysis of severity of disability in the subsequent chapters of this report.

3.3 Prevalence estimates of health conditions and impairments/limitations associated with disability

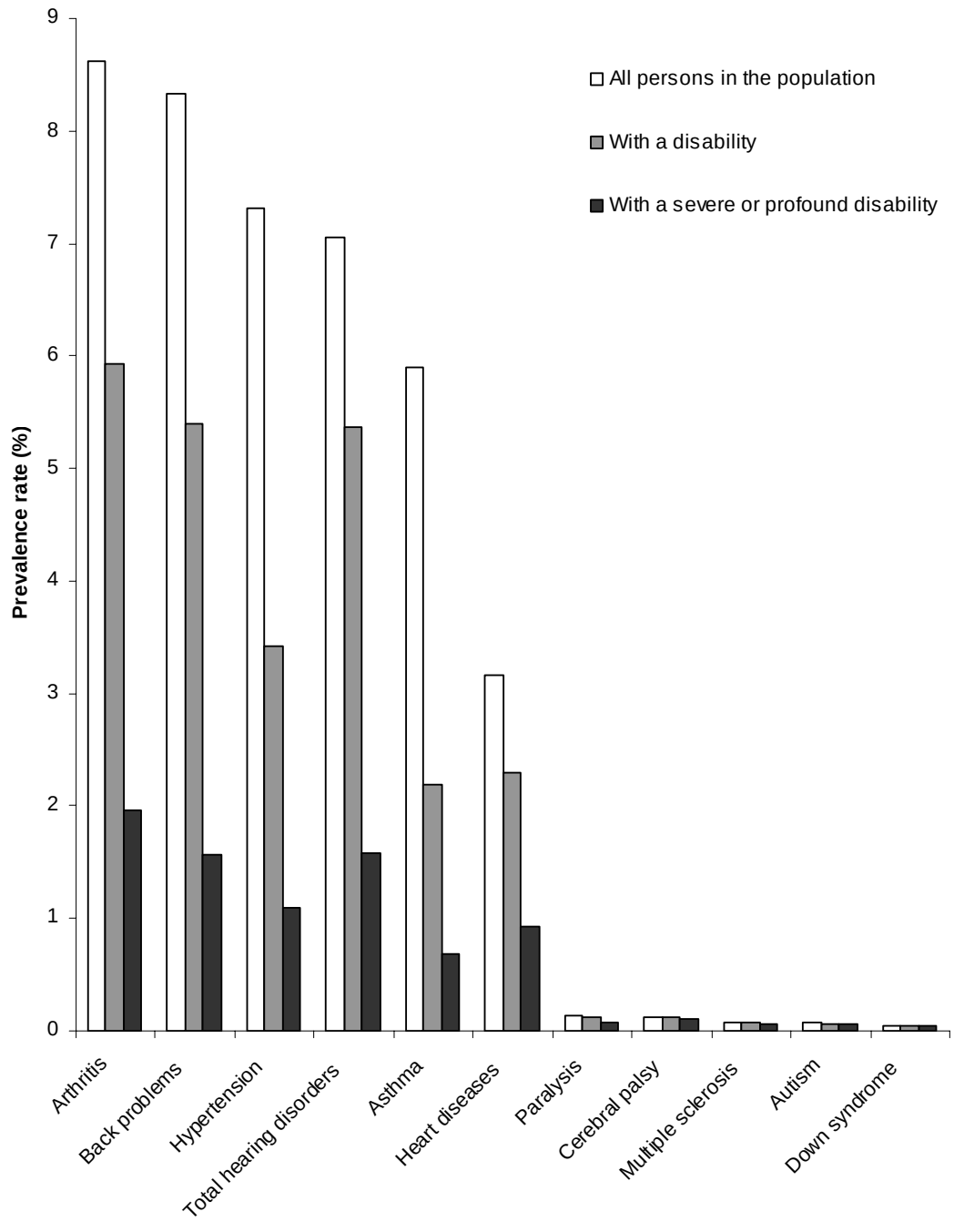
Estimates of prevalence of selected long-term health conditions

At a broad level, according to the 1998 Disability Survey, 6.7 million Australians, or about 36% of the total Australian population, reported at least one long-term health condition (Section 4.4). Some 3.6 million people had a disability (19.4% of the total population); of these, 1.1 million had a severe or profound core activity restriction (6.1%of the total population).

Tables 3.4 ranks the estimated numbers and prevalence rates of the selected long-term conditions reported in the survey by the general population with a condition, people with a disability and those with a severe or profound core activity restriction, respectively. These estimates are based on all conditions reported by the respondents.

The overall pattern indicated that, if only the estimated prevalence of specific conditions rather than severity of disability was considered, some physical conditions, especially musculoskeletal disorders, sensory/speech conditions, hypertension and heart diseases, were the most commonly reported conditions. Conditions relating to intellectual/learning,

psychiatric and neurological disorders, including some physical conditions, were at the bottom of the rank due to their relatively low frequencies (Figure 3.3).



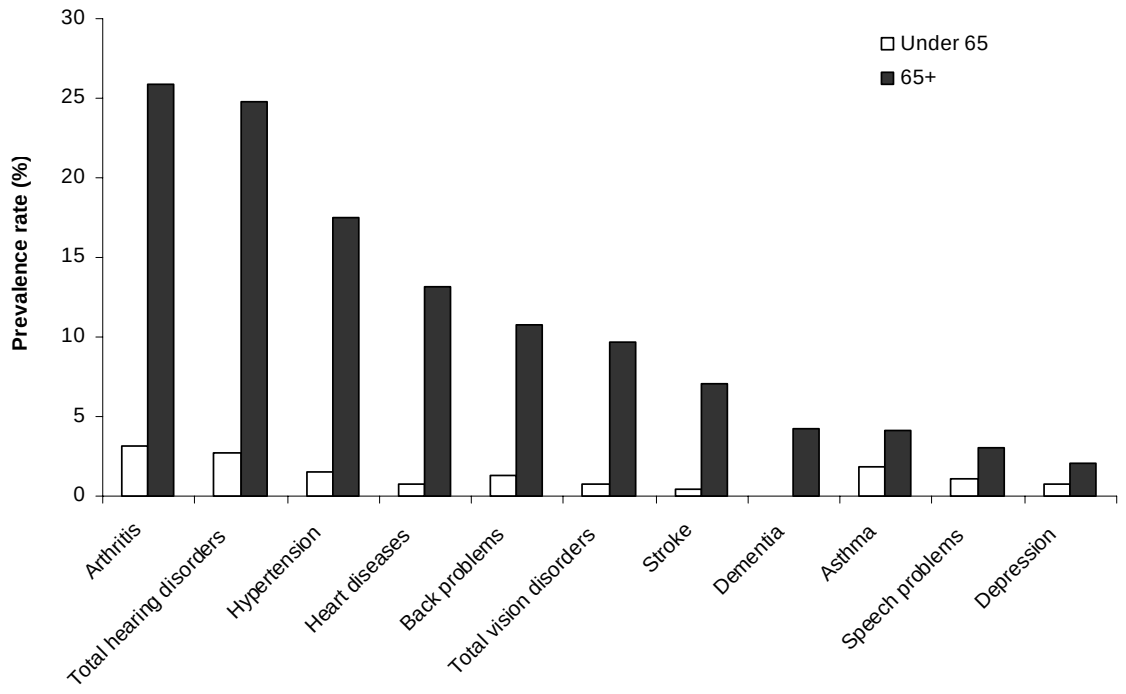
Source: Table 3.4.

Figure 3.3: Prevalence rates of selected health conditions (based on all conditions) by disability status, 1998

For the general population, the top six most commonly reported conditions were arthritis, back problems, hypertension, total hearing disorders, asthma and heart diseases. Among

people with a disability, a similar pattern of prevalence was reported, with the exception of asthma which was ranked as the sixth top condition, and heart disease became the fifth top condition. The pattern for people with a severe or profound core activity restriction was also similar to the general population in terms of top, middle and bottom ranks, although speech problems moved into the top five conditions and heart diseases became the sixth top condition (Table 3.4 and Figure 3.3).

There were age variations in these condition patterns.[4] Back problems led the top five list for people aged under 65 regardless of their disability status, while for people aged 65 and over arthritis was the top condition. Asthma was one of the top five conditions for people aged under 65 regardless of disability status, as compared with heart diseases for those aged 65 or over (tables 3.5 and 3.6, and Figure 3.4).



Sources: Tables 3.5 and 3.6.

Figure 3.4: People with a disability: prevalence rates of selected health conditions (based on all conditions), by age group, 1998

Among people with a severe or profound core activity restriction, speech problems rather than hypertension were listed in top five conditions for people aged under 65. Heart disease instead of back problems was included in top five conditions for people aged 65 or over.

When only the main conditions are considered, that is, the conditions causing the most problems to the respondent, dementia and stroke were ranked as the third and fourth such conditions among those with a severe or profound core activity restriction (Table A3.1).

4 For more discussions about disability and health conditions among older Australians see Chapter 8 of *Australia's Health 2004* (AIHW 2004b).

Table 3.4: People of all ages: prevalence of health conditions (based on all conditions), by disability status, 1998

	With a health condition			With a disability			With a severe or profound restriction	
Health conditions	No. ('000)	Prev. rate[(a)] (%)	Health conditions	No. ('000)	Prev. rate[(a)] (%)	Health conditions	No. ('000)	Prev. rate[(a)] (%)
Arthritis	1,608.7	8.6	Arthritis	1,107.5	5.9	Arthritis	364.9	2.0
Back problems	1,554.7	8.3	Back problems	1,007.1	5.4	Total hearing disorders	295.4	1.6
Hypertension	1,363.2	7.3	Total hearing disorders	1,001.6	5.4	Back problems	291.6	1.6
Total hearing disorders	1,315.9	7.1	Hypertension	638.2	3.4	Hypertension	205.2	1.1
Asthma	1,101.6	5.9	Heart diseases	429.5	2.3	Speech problems	184.2	1.0
Heart diseases	589.2	3.2	Asthma	408.7	2.2	Heart diseases	173.4	0.9
Hearing loss, noise-induced	444.8	2.4	Total vision disorders	349.7	1.9	Total vision disorders	166.7	0.9
Diabetes	414.0	2.2	Hearing loss, noise-induced	330.1	1.8	Stroke	139.2	0.7
Total vision disorders	370.4	2.0	Speech problems	244.0	1.3	Asthma	126.5	0.7
Stroke	282.1	1.5	Diabetes	243.0	1.3	Diabetes	100.1	0.5
Depression	245.7	1.3	Stroke	230.3	1.2	Dementia	95.2	0.5
Speech problems	244.0	1.3	Depression	177.3	1.0	Depression	75.0	0.4
Cancer	123.0	0.7	Dementia	100.3	0.5	Hearing loss, noise-induced	55.0	0.3
Epilepsy	105.1	0.6	Epilepsy	90.9	0.5	Epilepsy	45.9	0.2
Dementia	101.8	0.5	Cancer	84.7	0.5	Cataract	42.4	0.2
Migraine	91.3	0.5	Cataract	79.3	0.4	Osteoporosis	37.5	0.2
Osteoporosis	84.7	0.5	Osteoporosis	72.5	0.4	Cancer	37.3	0.2
Cataract	81.7	0.4	ADHD	60.1	0.3	ADHD	32.5	0.2
ADHD	74.2	0.4	Glaucoma	56.4	0.3	Glaucoma	29.3	0.2
Glaucoma	65.0	0.3	Migraine	55.0	0.3	Parkinson's disease	25.7	0.1
Schizophrenia	36.6	0.2	Parkinson's disease	31.1	0.2	Cerebral palsy	19.3	0.1
Parkinson's disease	34.1	0.2	Schizophrenia	30.5	0.2	Schizophrenia	18.3	0.1
Paralysis	24.5	0.1	Cerebral palsy	22.4	0.1	Paralysis	14.4	0.1
Cerebral palsy	23.1	0.1	Paralysis	22.2	0.1	Migraine	13.8	0.1
Multiple sclerosis	14.4	0.1	Multiple sclerosis	13.4	0.1	Autism	12.4	0.1
Autism	13.0	0.1	Autism	12.4	0.1	Multiple sclerosis	10.6	0.1
Down syndrome	9.9	0.1	Down syndrome	9.9	0.1	Down syndrome	9.1	—
Total	**6,713.0**	**36.0**		**3,610.3**	**19.4**		**1,136.5**	**6.1**

(a) Percentage of the total Australian population. Each column is presented in rank order of prevalence.

Note: The symbol '— ' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table 3.5: People aged under 65: prevalence of health conditions (based on all conditions), by disability status, 1998

With a health condition			With a disability			With a severe or profound restriction		
Health conditions	No. ('000)	Prev. rate[(a)] (%)	Health conditions	No. ('000)	Prev. rate[(a)] (%)	Health conditions	No. ('000)	Prev. rate[(a)] (%)
Back problems	1,243.5	7.6	Back problems	763.0	4.7	Back problems	209.6	1.3
Asthma	976.0	6.0	Arthritis	519.4	3.2	Arthritis	137.3	0.8
Arthritis	807.7	4.9	Total hearing disorders	440.1	2.7	Speech problems	121.5	0.7
Total hearing disorders	652.0	4.0	Asthma	316.6	1.9	Asthma	94.6	0.6
Hypertension	647.9	4.0	Hypertension	242.4	1.5	Total hearing disorders	90.4	0.6
Hearing loss, noise-induced	253.5	1.5	Speech problems	174.7	1.1	Hypertension	67.0	0.4
Diabetes	213.8	1.3	Hearing loss, noise-induced	169.5	1.0	Depression	44.2	0.3
Heart diseases	198.4	1.2	Heart diseases	131.1	0.8	Total vision disorders	36.6	0.2
Depression	189.7	1.2	Total vision disorders	129.4	0.8	Epilepsy	36.4	0.2
Speech problems	174.7	1.1	Depression	129.3	0.8	Diabetes	35.0	0.2
Total vision disorders	143.1	0.9	Diabetes	110.3	0.7	Heart diseases	34.1	0.2
Epilepsy	90.9	0.6	Epilepsy	77.4	0.5	ADHD	32.3	0.2
Stroke	89.4	0.5	Stroke	69.2	0.4	Stroke	31.7	0.2
Migraine	82.9	0.5	ADHD	60.0	0.4	Hearing loss, noise-induced	23.0	0.1
ADHD	74.0	0.5	Migraine	48.7	0.3	Cerebral palsy	18.7	0.1
Cancer	55.6	0.3	Cancer	33.8	0.2	Cancer	13.3	0.1
Schizophrenia	30.8	0.2	Schizophrenia	24.9	0.2	Schizophrenia	13.0	0.1
Osteoporosis	28.8	0.2	Osteoporosis	23.1	0.1	Migraine	12.5	0.1
Cerebral palsy	22.5	0.1	Cerebral palsy	21.8	0.1	Autism	12.4	0.1
Glaucoma	17.3	0.1	Cataract	14.8	0.1	Osteoporosis	9.4	0.1
Paralysis	16.2	0.1	Paralysis	14.7	0.1	Multiple sclerosis	9.4	0.1
Cataract	15.4	0.1	Autism	12.4	0.1	Down syndrome	9.0	0.1
Autism	13.0	0.1	Multiple sclerosis	11.5	0.1	Paralysis	*7.9	—
Multiple sclerosis	12.5	0.1	Glaucoma	11.2	0.1	Cataract	*4.3	—
Down syndrome	9.8	0.1	Down syndrome	9.8	0.1	Parkinson's disease	*4.1	—
Parkinson's disease	*7.6	—	Parkinson's disease	*6.4	—	Glaucoma	*3.5	—
Dementia	*4.0	—	Dementia	*4.0	—	Dementia	**1.8	—

(a) Percentage of the Australian population aged under 65. Each column is presented in rank order of prevalence.

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table 3.6: People aged 65 and over: prevalence of health conditions (based on all conditions), by disability status, 1998

With a health condition			With a disability			With a severe or profound restriction		
Health conditions	No. ('000)	Prev. rate[(a)] (%)	Health conditions	No. ('000)	Prev. rate[(a)] (%)	Health conditions	No. ('000)	Prev. rate[(a)] (%)
Arthritis	801.0	35.3	Arthritis	588.0	25.9	Arthritis	227.5	10.0
Hypertension	715.3	31.5	Total hearing disorders	561.5	24.8	Total hearing disorders	205.0	9.0
Total hearing disorders	663.9	29.3	Hypertension	395.8	17.4	Heart diseases	139.3	6.1
Heart diseases	390.8	17.2	Heart diseases	298.4	13.2	Hypertension	138.2	6.1
Back problems	311.1	13.7	Back problems	244.1	10.8	Total vision disorders	130.1	5.7
Total vision disorders	227.3	10.0	Total vision disorders	220.3	9.7	Stroke	107.5	4.7
Diabetes	200.2	8.8	Stroke	161.1	7.1	Dementia	93.4	4.1
Stroke	192.7	8.5	Hearing loss, noise-induced	160.6	7.1	Back problems	82.0	3.6
Hearing loss, noise-induced	191.4	8.4	Diabetes	132.7	5.9	Diabetes	65.1	2.9
Asthma	125.6	5.5	Dementia	96.3	4.2	Speech problems	62.7	2.8
Dementia	97.8	4.3	Asthma	92.1	4.1	Cataract	38.0	1.7
Speech problems	69.4	3.1	Speech problems	69.4	3.1	Hearing loss, noise-induced	32.0	1.4
Cancer	67.4	3.0	Cataract	64.5	2.8	Asthma	32.0	1.4
Cataract	66.3	2.9	Cancer	50.9	2.2	Depression	30.8	1.4
Depression	56.0	2.5	Osteoporosis	49.4	2.2	Osteoporosis	28.1	1.2
Osteoporosis	55.8	2.5	Depression	48.1	2.1	Glaucoma	25.9	1.1
Glaucoma	47.7	2.1	Glaucoma	45.2	2.0	Cancer	24.0	1.1
Parkinson's disease	26.6	1.2	Parkinson's disease	24.7	1.1	Parkinson's disease	21.7	1.0
Epilepsy	14.2	0.6	Epilepsy	13.5	0.6	Epilepsy	9.6	0.4
Migraine	*8.4	*0.4	Paralysis	*7.5	*0.3	Paralysis	*6.5	*0.3
Paralysis	*8.3	*0.4	Migraine	*6.3	*0.3	Schizophrenia	*5.3	*0.2
Schizophrenia	*5.7	*0.3	Schizophrenia	*5.6	*0.2	Migraine	**1.2	**0.1
Multiple sclerosis	**1.9	**0.1	Multiple sclerosis	**1.9	**0.1	Multiple sclerosis	**1.2	**0.1
Cerebral palsy	**0.6	—	Cerebral palsy	**0.6	—	Cerebral palsy	**0.6	—
ADHD	**0.1	—	ADHD	**0.1	—	ADHD	**0.1	—
Down syndrome	**0.1	—	Down syndrome	**0.1	—	Down syndrome	**0.1	—
Autism	—	—	Autism	**0.0	—	Autism	**0.0	—

(a) Percentage of the Australian population aged 65 or over. Each column is presented in rank order of prevalence.

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Estimates of prevalence of specific impairments and limitations

As discussed in Chapter 2, the definition of disability in the ABS 1998 Disability Survey is based on a set of screening questions containing 17 items about impairments, limitations or

restrictions (Box 2.1). Positive responses to any of the 17 categories, where the impairment, limitation or restriction has lasted or is likely to last for six months or more, 'screen' the person into the base 'disability' population. Thus, the 17 screening items were used as criteria to create the base 'disability' population with multidimensional disability experiences.

This section presents estimated frequencies of impairment and limitation based on 15 of the 17 screening items, aiming to answer the question: which impairments or limitations are the most commonly associated with a disability, or with a severe disability? Data from two broad screening questions are excluded. The question relating to 'long-term effects as a result of head injury, stroke or other brain damage' is intended to identify persons who had multiple limitations and restrictions. This question, while an important element in the disability estimation of the survey, does not enable analysis of an associated specific condition. The question about 'any other condition, lasting or likely to last for six months or more, not already mentioned' is non-specific.

Table 3.7 and Figure 3.5 rank the estimated numbers of various types of impairments among people with a disability and also those with a severe or profound core activity restriction. The differences in the estimates between people aged under 65 and those aged 65 or over are compared (Figure 3.6).

For people of all ages:

- The most commonly reported impairments or limitations were 'restriction in physical activities or in doing physical work' and 'chronic or recurrent pain or discomfort'; more than 1.5 million people reported each of these two categories of impairments and limitations respectively.
- These two categories also headed the list for people of all ages with a severe or profound core activity restriction, with 744,900 people reporting restriction in physical activities or in doing physical work and 568,500 reporting chronic or recurrent pain or discomfort.
- For all people with a disability overall, 'receiving treatment or medication for long-term conditions or ailments and still restricted' was the third most frequently reported category (1.1 million). As a specific impairment, loss of hearing was reported by about 1 million people with a disability and ranked fourth.
- Among those with a severe or profound core activity restriction, 'incomplete use of feet or legs' (371,200) and 'difficulty gripping or holding things' (343,300) were the third and fourth most commonly reported categories.
- The impairments that were ranked at the bottom of the list were 'blackouts, fits, or loss of consciousness' and 'disfigurement or deformity'.

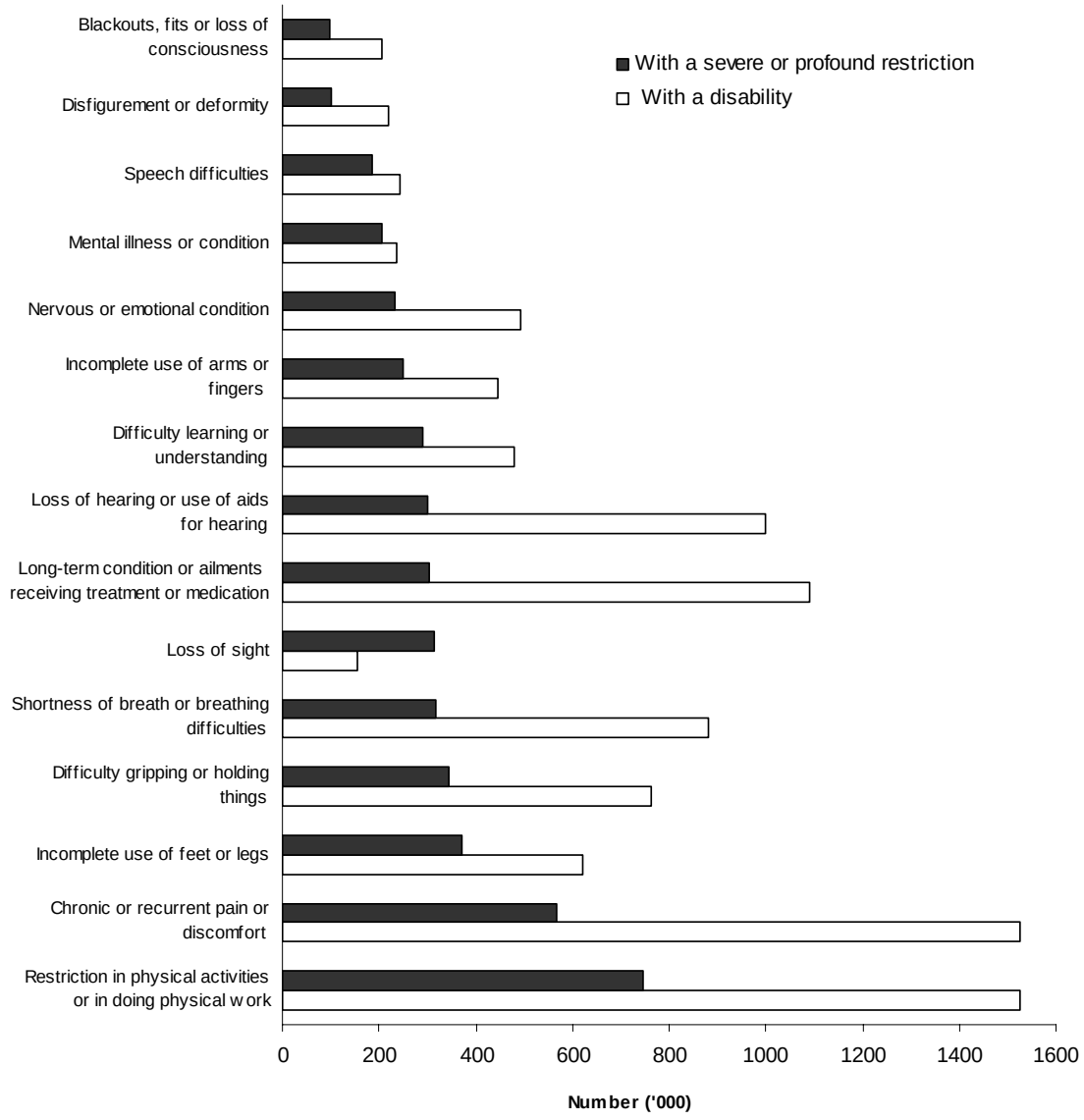
For people aged under 65:

- 'Chronic or recurrent pain or discomfort' led the list for people with a disability, followed by 'restriction in physical activities or in doing physical work'.
- The two categories were also on the top of the list for people with a severe or profound core activity restriction. 'Difficulty learning or understanding things' was the third top category for those under 65, as compared to 'incomplete use of feet or legs' for those aged 65 or over (Figure 3.6).

For people aged 65 or over:

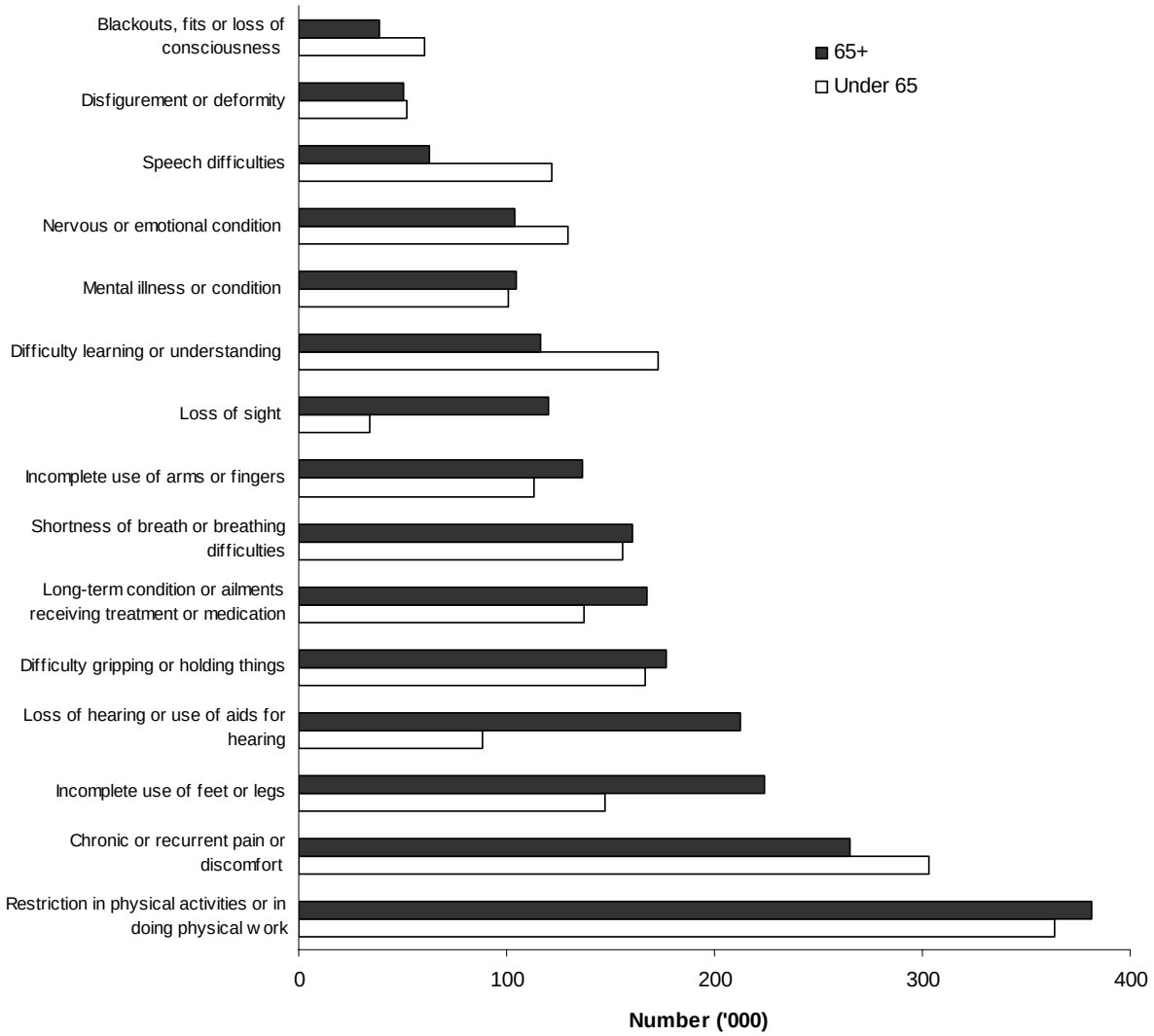
- 'Restriction in physical activities or in doing physical work' and 'receiving treatment or medication for long-term conditions or ailments and still restricted' were the top two impairments and limitations for people with a disability.

- 'Incomplete use of feet or legs' was the third top category for people with a severe or profound core activity restriction (Figure 3.6).



Source: Table 3.7.

Figure 3.5: People with a disability: prevalence of impairments and limitations by disability status, 1998



Source: Table 3.7.

Figure 3.6: People with severe or profound restriction: prevalence of impairments and limitations by age groups, 1998

Table 3.7: People with a disability: frequency of impairments and limitations, by age, 1998

	Severe or profound restriction						Disability					
	0–64	Rank	65+	Rank	Total	Rank	0–64	Rank	65+	Rank	Total	Rank
	('000)		('000)		('000)		('000)		('000)		('000)	
Restriction in physical activities or in doing physical work	363.7	1	381.3	1	744.9	1	895.7	2	629.1	1	1,524.8	1
Chronic or recurrent pain or discomfort	303.4	2	265.1	2	568.5	2	966.5	1	557.8	4	1,524.2	2
Incomplete use of feet or legs	147.2	6	223.9	3	371.2	3	289.5	9	332.4	6	621.9	7
Difficulty gripping or holding things	166.3	4	177.0	5	343.3	4	436.4	5	327.3	7	763.6	6
Shortness of breath or breathing difficulties	156.1	5	160.2	7	316.3	5	497.9	4	384.4	5	882.3	5
Long-term conditions or ailments receiving treatment or medication	137.2	7	167.5	6	304.8	6	520.0	3	571.3	2	1,091.3	3
Loss of hearing where communication is restricted, or use of aids for hearing	88.6	12	212.4	4	301.0	7	433.3	6	567.4	3	1,000.7	4
Difficulty learning or understanding things	172.8	3	116.3	10	289.1	8	355.7	7	124.5	11	480.2	9
Incomplete use of arms or fingers	113.4	10	136.7	8	250.1	9	245.7	10	200.7	8	446.3	10
Nervous or emotional condition causing restriction	129.1	8	103.8	12	232.9	10	331.9	8	160.7	10	492.7	8
Mental illness or condition requiring help or supervision	101.2	11	104.9	11	206.0	11	128.4	14	106.7	12	235.2	13
Speech difficulties	121.5	9	62.6	13	184.1	12	173.4	11	68.1	14	241.6	12
Loss of sight (not corrected by glasses or contact lenses)	34.0	15	120.5	9	154.5	13	115.2	15	198.6	9	313.8	11
Disfigurement or deformity	51.6	14	50.5	14	102.2	14	147.0	12	73.0	13	220.0	14
Blackouts, fits or loss of consciousness	60.1	13	38.5	15	98.6	15	146.3	13	58.8	15	205.2	15

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Main conditions associated with a specific impairment or limitation

In the 1998 Disability Survey, a positive response to each screening question let to a further question to identify the underlying health condition. For example, if a respondent said 'yes' to the questions on speech difficulties, the further question was: 'What is the main condition that causes this speech difficulty?' Survey respondents could report one or more types of impairment or limitations and thus one or more associated main conditions.

It should be emphasised that disability associated with a particular health condition can vary considerably among individuals, and that the associations between health conditions and impairments/limitations are complex. A health condition may be associated with a variety of impairments/limitations and an impairment/limitation may be related to any of the various health conditions. The main condition reported by respondents in the survey may not be sufficient to explain the associated impairment/limitation.

Bearing these issues in mind, the data in Table 3.8, which detail the reported main conditions for each of the related impairments or limitations, was examined.

People with the most commonly reported limitation—'restriction in physical activities or in doing physical work'—nominated almost all the selected conditions as the main condition, with the exception of vision, hearing and speech disorders (Figure 3.7a). Musculoskeletal disorders, especially back problems (368,400) and arthritis (263,700) were the most frequently reported main conditions, followed by heart disease (102,300), stroke (57,000), asthma (40,800) and dementia (37,000).

The second most frequently reported impairment—'chronic or recurrent pain or discomfort'— was most often associated with back problems (491,000) and arthritis (448,700), followed by heart disease (43,200) and migraine (28,600) as the 'main condition' (Figure 3.7b).

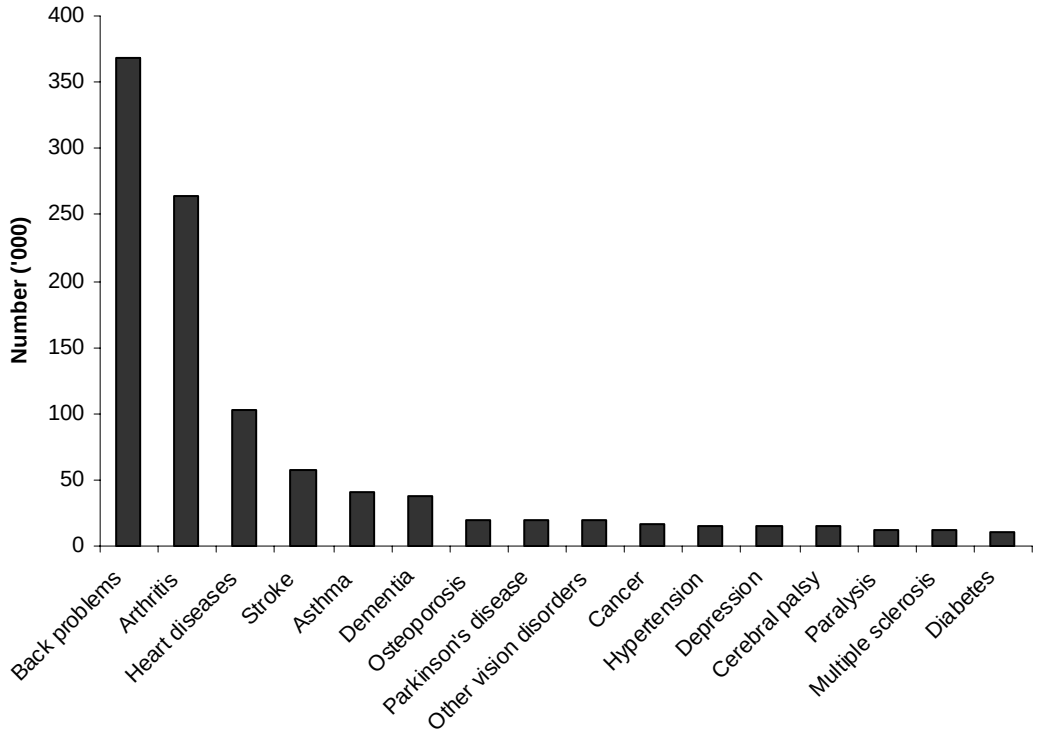
The main conditions most often associated with 'mental illness or condition requiring help or supervision' were dementia (66,900), depression (25,200), schizophrenia (16,900) and ADHD (12,900). 'Nervous or emotional condition causing restrictions' was largely associated with depression (151,300), schizophrenia (20,700) and dementia (16,200). Difficulty learning and understanding things were mostly related to dementia (72,200), ADHD (47,700), stroke (18,300), hearing (12,600) and autism (10,900) (Figure 3.7c).

Loss of sight was primarily related to vision-related diseases and conditions (128,900), cataract (74,800) and glaucoma (36,400), while diabetes (15,200) was also a significant related condition (Figure 3.7d). Loss of hearing was predominately related to hearing conditions, in particular hearing loss due to regular exposure to loud noise (329,600). Speech difficulties were mainly associated with speech impediment (67,200), stroke (29,800), dementia (20,000) and hearing (11,300) (Figure 3.7d).

'Disfigurement or deformity' was largely associated with arthritis (20,100) and back problems (16,500) (Figure 3.7b). Epilepsy (76,600) and diabetes (9,400) were the main conditions associated with blackouts, fits or loss of consciousness.

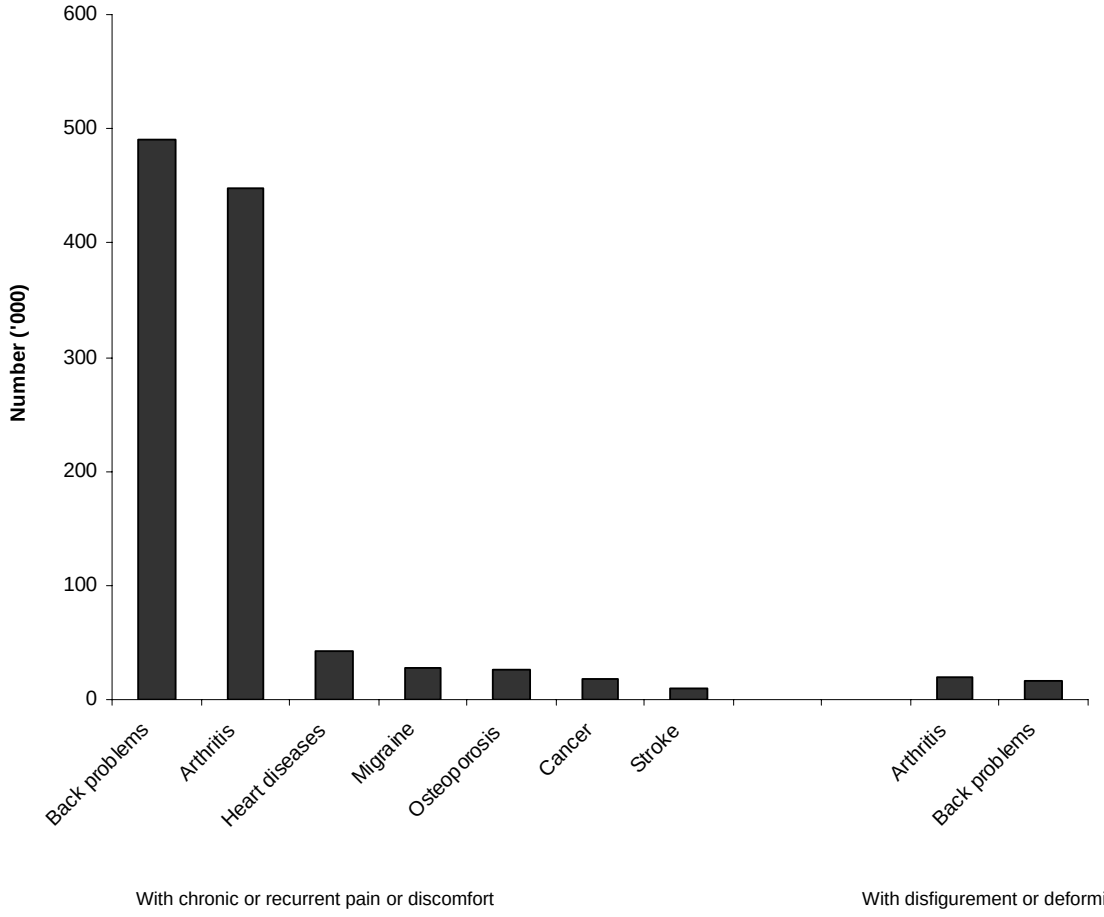
Many conditions were associated with incomplete use of feet, legs, arms or fingers, including arthritis, stroke, back problems, paralysis, cerebral palsy and Parkinson's disease. Dementia was also a main condition causing incomplete use of feet or legs.

A wide range of conditions were reported as the main conditions associated with receiving treatment or medication and still restricted, in particular hypertension (282,000) and heart diseases (106,200). Other conditions included diabetes, arthritis, cancer, asthma, migraine, osteoporosis and glaucoma.



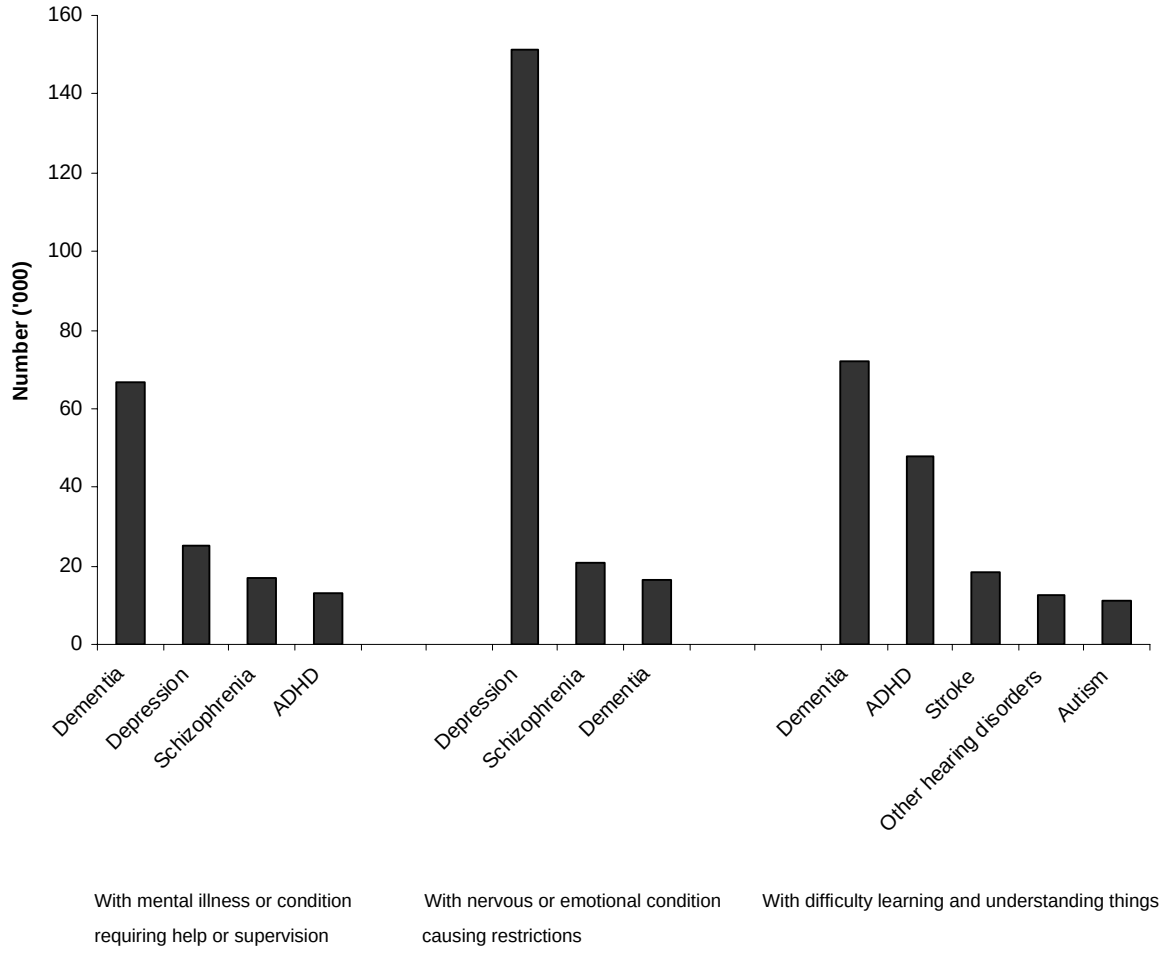
Source: Table 3.8.

Figure 3.7a: People with a disability: prevalence of the most common main conditions associated with restriction in physical activities or in doing physical work



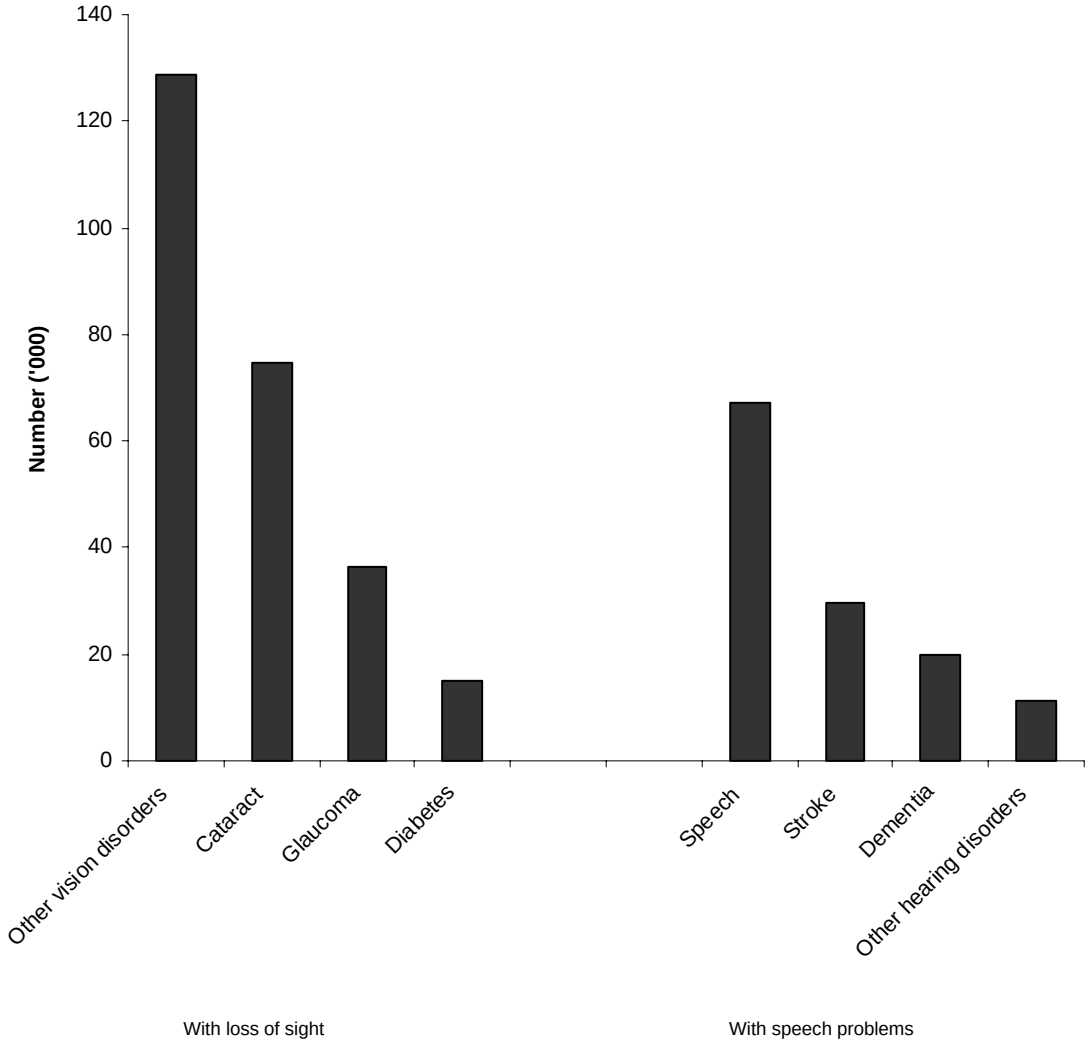
Source: Table 3.8.

Figure 3.7b: People with a disability: prevalence of the most common main conditions associated with chronic or recurrent pain or discomfort and with disfigurement or deformity, respectively, 1998



Source: Table 3.8.

Figure 3.7c: People with a disability: prevalence of the most common main conditions associated with mental illness or condition requiring help or supervision, with nervous or emotional condition causing restrictions and with difficulty learning and understanding things, respectively, 1998



Source: Table 3.8.

Figure 3.7d: People with a disability: prevalence of the most common main conditions associated with loss of sight and with speech problems, respectively, 1998

Table 3.8: People with a disability: main conditions associated with a specific impairment or limitation ('000), 1998

Health conditions	Loss of sight[a]	Loss of hearing[b]	Speech difficulties	Shortness of breath or breathing difficulties	Chronic or recurrent pain or discomfort	Blackouts, fits or loss of consciousness	Difficulty learning or understanding things
ADHD	**0.6	—	*2.8	—	—	—	47.7
Autism	—	—	*7.4	—	—	**0.4	10.9
Down syndrome	—	**0.1	**2.3	—	—	—	*7.8
Schizophrenia	—	—	**0.7	—	**0.1	—	*8.2
Depression	**0.4	—	**0.3	**0.8	**1.9	—	*4.6
Dementia	**0.7	*2.8	20.0	**0.2	**0.5	**0.4	72.2
Cataract	74.8	—	—	—	—	—	—
Glaucoma	36.4	**0.1	—	—	—	—	**0.1
Other vision disorders	128.9	**0.3	**0.2	**0.6	**2.1	—	**1.7
Hearing loss noise-induced	—	329.6	—	—	—	—	**0.6
Other hearing disorders	**0.8	637.8	11.3	—	**2.2	**1.5	12.6
Speech impediment	—	—	67.2	**0.6	**0.1	—	**0.3
Heart diseases	—	**0.1	**0.6	142.6	43.2	*7.4	**0.2
Stroke	*8.5	*5.4	29.8	*4.1	10.5	*3.8	18.3
Hypertension	**0.4	**0.1	—	22.4	**2.1	*6.9	—
Asthma	—	—	**0.1	358.3	*3.1	**1.4	—
Arthritis	**0.5	**0.5	**0.2	*2.5	448.7	**0.6	—
Back problems	**0.3	—	**0.5	*3.7	491.0	*1.5	**1.1
Osteoporosis	—	**0.2	—	—	26.1	—	—
Parkinson's disease	**0.1	**0.2	*6.7	**0.7	*4.6	**0.2	*2.9
Multiple sclerosis	**2.5	**0.3	*3.6	**1.0	*5.6	—	**1.5
Epilepsy	—	—	*1.0	—	**0.3	76.6	*6.0
Migraine	—	—	—	—	28.6	*3.2	—
Cerebral palsy	—	**0.1	*8.7	**0.5	*3.8	*3.1	*5.3
Paralysis	**0.6	**0.4	**0.7	**0.4	*4.9	**0.7	**0.1
Diabetes	15.2	**0.4	—	*2.9	*5.4	9.4	**0.1
Cancer	*0.4	—	**1.4	9.6	17.3	**1.9	*2.1

(continued)

Table 3.8 (continued): People with a disability: main conditions associated with a specific impairment or limitation ('000), 1998

Impairments	Incomplete use of arms or fingers	Difficulty gripping or holding things	Incomplete use of feet or legs	Nervous or emotional condition causing restriction	Restriction in physical activities or in doing physical work	Disfigure-ment or deformity	Mental illness or condition requiring help or supervision	Long-term condition or ailments receiving treatment or medication
ADHD	**0.5	**1.2	—	*5.3	**0.9	—	12.9	*2.3
Autism	—	**0.7	—	*3.4	*2.7	—	*7.9	—
Down syndrome	**0.1	**0.1	**0.1	—	*2.8	**0.4	*5.9	—
Schizophrenia	**0.1	**0.1	**0.1	20.7	*6.7	—	16.9	**1.1
Depression	—	**0.1	—	151.3	14.5	—	25.2	*8.9
Dementia	*6.6	*8.5	11.2	16.2	37.0	**1.2	66.9	**0.8
Cataract	—	—	—	—	—	—	—	**0.9
Glaucoma	—	—	—	—	**1.6	—	—	9.3
Other vision disorders	—	**0.2	**0.1	—	19.1	*3.0	**0.2	*4.1
Hearing loss noise-induced	—	—	—	—	—	**0.1	—	**0.7
Other hearing disorders	—	**0.4	**1.0	**0.7	*4.5	—	**0.6	*6.5
Speech impediment	—	—	**0.6	—	—	—	—	—
Heart diseases	**1.0	**1.1	*5.7	**0.1	102.3	—	**0.3	106.2
Stroke	45.1	51.7	49.2	**2.1	57.0	*7.6	*6.2	**2.0
Hypertension	—	—	—	**0.3	15.4	—	—	282.0
Asthma	—	—	—	—	40.8	—	—	25.9
Arthritis	117.7	324.8	167.0	**0.1	263.7	20.1	**0.5	82.8
Back problems	15.7	26.6	46.6	**0.3	368.4	16.5	**1.7	46.1
Osteoporosis	*3.9	*3.6	*8.5	—	19.9	**2.0	**0.1	9.5
Parkinson's disease	10.4	14.1	13.5	**2.5	19.8	**0.8	**1.5	*1.0
Multiple sclerosis	*7.5	10.2	9.2	**1.4	11.4	**0.4	**0.2	—
Epilepsy	**0.1	**1.0	**0.1	**1.2	*5.0	—	**0.9	9.5
Migraine	—	—	—	—	*2.8	—	**0.6	12.4
Cerebral palsy	12.4	12.4	13.1	**0.2	14.5	*5.5	*3.5	**0.2
Paralysis	10.5	9.9	12.6	**0.7	12.6	**2.2	**0.3	—
Diabetes	**0.7	**2.5	*6.3	—	10.3	**0.2	**0.1	97.0
Cancer	**1.7	**2.4	**1.9	—	16.2	*5.2	**0.7	27.2

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

3.4 Trends in the prevalence of disability and long-term conditions

This section provides a brief overview of recent trends in the prevalence of disability and long-term health conditions and possible explanations for those trends. Exploring the changes in the prevalence and pattern of long-term health conditions can shed light on changes in reported disability prevalence.

Recent trends in the prevalence of long-term conditions

Reported changes by the ABS National Health Surveys

Overall, in Australia the proportion of people reporting one or more 'long-term health conditions' increased from 66% in 1989–90 to 78% in 2001 (ABS 1991, 2002). Table 3.9 presents estimates and standardised rates for selected long-term health conditions reported by the ABS National Health Surveys of 1989–90, 1995 and 2001. The comparisons of the data from the three surveys, where they are comparable, suggest that the reported prevalence of most selected conditions increased in the 1990s and the magnitude of the increases was particularly large for mental conditions. Estimates of several of the selected conditions were higher in 1995 than those in 2001 for some conditions.

These trends in the prevalence of long-term health conditions reported by the National Health Surveys are likely to have resulted from a combination of various factors. Several specific factors should be particularly emphasised (ABS 2003a):

- First, there have been some changes in survey methods over time, especially in the wording of survey questions or associated inclusions, exclusions and prompt cards for specific conditions, which may influence the level of response and thus the estimates of prevalence.
- Second, in the 1995 National Health Survey, after the questions about long-term conditions, respondents were asked about recent actions they had taken for their health and the medical conditions involved. This provided an opportunity for respondents to be reminded about a condition which they had, but had forgotten to previously mention (in which case earlier responses were amended). In contrast, in the 2001 National Health Survey respondents were asked about recent actions taken for illness but were not asked to associate those actions with a specific condition, with the exception of the conditions covered by the National Health Priority Areas. This difference may have resulted in the higher prevalence estimates for some conditions in 1995, while other changes introduced in 2001 may have compensated for this effect for some conditions.
- Third, the significant increases in reported mental disorders may have been affected by heightened awareness and increased acceptance of mental health conditions through public education programs, media campaigns, and improved diagnosis and treatment of those conditions. The Kessler 10 instrument[5] for measuring psychological distress was

5 Kessler Psychological Distress Scale–10 items (K10) is a scale of non-specific psychological distress based on 10 questions about negative emotional states in the preference period (4 weeks) prior to interview. The K10 is generally scored from 10 to 50, with higher scores indicating higher levels of distress; low scores indicate a low level of distress (ABS 2003b)

also asked of all respondents aged 18 years and over in the 2001 survey. This may have also had some influence on the reported prevalence of mental disorders in 2001.

There are other possible factors affecting recent trends in the reported prevalence of long-term health conditions which are not unique in the National Health Surveys. Increasing accessibility and use of health services could play a role in increased reporting of disease presence. Population cohorts who use more health care services are likely to be more knowledgeable about disease (Crimmins & Saito 2000).

Decline in mortality from some major diseases, such as heart disease, stroke and vascular diseases and cancer, has resulted in an increase in the prevalence of those diseases (AIHW 2001a; AIHW: Dunn et al. 2002; Crimmins & Saito 2000).

Table 3.9: Estimates of selected long-term health conditions reported in the ABS 1989-90, 1995 and 2001 national health surveys

	Estimated numbers ('000)			Standardised rate (%)[(a)]		
Health conditions	**1989-90**	**1995**	**2001**	**1989-90**	**1995**	**2001**
Depression	[(c)]46.8	[(c)]147.0	[(c)]839.2	[(c)]0.3	[(c)]0.8	[(c)]4.4
Nervousness/anxiety disorders	[(c)]161.5	[(c)]137.6	[(c)]858.1	[(c)]1.0	[(c)]0.8	[(c)]4.5
Total mental disorders	[(c)]370.7	[(c)]723.3	[(c)]1,775.0	[(c)]2.3	[(c)]4.1	[(c)]9.4
Glaucoma	n.a.	134.2	177.5	n.a.	0.8	0.9
Blindness (complete/partial)	[(b)]124.7	[(b)]185.0	167.2	[(b)]0.8	[(b)]1.1	0.9
Deafness (complete/partial)	[(c)]685.8	[(c)]1,718.5	2,056.1	4.4	10.0	10.9
Hypertension	[(b)]1,210.2	[(b)]1,839.2	[(b)]1,909.1	[(b)]7.9	[(b)]10.7	[(b)]10.1
Heart disease	[(b)]317.4	[(c)]449.5	[(c)]707.7	[(b)]2.1	[(c)]2.6	[(c)]3.8
Stroke	[(c)]28.3	[(b)]103.2	[(b)]103.1	[(c)]0.2	[(b)]0.6	[(b)]0.6
Total circulatory disease	[(c)]2,225.2	[(c)]3,615.0	[(c)]3,184.7	[(c)]14.3	[(c)]20.9	[(c)]16.9
Asthma	[(b)]1,364.8	[(b)]2,002.6	[(b)]2,197.3	[(b)]7.8	[(b)]11.0	[(b)]11.6
Arthritis	[(b)]1,803.4	[(b)]2,633.3	[(b)]2,585.0	[(b)]11.7	[(b)]15.4	[(b)]13.7
Osteoporosis	n.a.	[(c)]247.7	[(b)]299.8	n.a.	[(c)]1.5	[(b)]1.6
Back pain/problems	[(c)]1,895.1	[(c)]902.0	[(c)]3,876.2	[(c)]11.6	[(c)]5.1	[(c)]20.5
Epilepsy	[(b)]79.9	[(b)]117.6	120.3	0.5	0.7	0.6
Migraine	[(c)]578.2	[(c)]226.9	[(c)]1,172.2	[(c)]3.4	[(c)]1.3	[(c)]6.2
Diabetes	[(b)]193.7	[(b)]352.5	[(b)]554.2	[(b)]1.2	[(b)]2.1	[(b)]2.9
High cholesterol	[(c)]383.3	[(c)]881.8	[(c)]1,131.6	[(c)]2.5	[(c)]5.2	[(c)]6.0
Cancer	[(b)]274.2	[(b)]321.1	[(b)]310.4	[(b)]1.8	[(b)]1.9	[(b)]1.6

(a) Age standardised to 2001 National Health Survey benchmark population.

(b) Difficulty to quantify the impact of questionnaire changes between the surveys. Caution should be exercised in comparisons.

(c) Significant inter-survey differences in questionnaire or unexplainable major change in prevalence and not reliable for comparisons.

n.a.= not available.

Source: ABS 2003a.

Reported changes by the ABS disability surveys

A comparison of data from the four ABS disability surveys shows that the overall prevalence of most disabling conditions increased during the period 1981–98 (Table 3.10). There were noticeable increases in the reported prevalence rates of ear diseases, circulatory diseases and

musculoskeletal conditions, and marked increases in intellectual and psychiatric conditions over the period 1993–98. The significant increase in intellectual and psychiatric disabling conditions in the late 1990s was consistent with the patterns of long-term conditions associated with mental disorders reported in the National Health Surveys.[6]

Changes in the prevalence of various diseases and long-term conditions are not consistent and trends in the prevalence of diseases and long-term conditions vary by age, sex and types of disease. However, weighing up various possible factors affecting the reported prevalence, the bulk of evidence appears to indicate an increase in the presence of long-term conditions among the Australian populations, in particular the older population.

Reported changes in some OECD countries

The reported trends in the prevalence of long-term health conditions in Australia are not unique. In the United States, the reported prevalence of some diseases increased in recent years, with the largest increases being in the proportion of people with heart disease and cancer. Increases were also reported in some chronic conditions such as arthritis, osteoporosis and visual conditions. There has also been a decrease in the number of older Americans with no disease and an increase in the proportion of people with multiple conditions (Crimmins & Saito 2000; Freedman & Martin 2000). In France, the reported prevalence rates increased between 1981 and 1991 in almost all the main groups of chronic diseases among older people, in particular the most frequent diseases—cardiovascular and osteoarticular diseases. The proportion of older people with at least one chronic disease also increased, in particular among those aged 70 or over (Robine et al. 1998).

6 Intellectual conditions were grouped into mental and behavioural disorders in the 2001 National Health Survey data. 'Difficulty learning and understanding' was listed as one of the 21 conditions in the prompt card for the question about 'any other conditions that have lasted, or are expected to last, for six months or more'.

Table 3.10: People with a disability: prevalence rates (%) of all reported disabling conditions by type of condition, by age groups, 1981, 1988, 1993 and 1998

Year/age	Psychiatric	Intellectual	Diseases of eye	Diseases of ear	Nervous system diseases	Circulatory diseases	Respiratory diseases	Musculoskeletal disorders	All other diseases and conditions
1981									
0–14	0.4	1.1	0.4	1.1	0.8	0.2	0.8	0.5	1.2
15–64	2.3	0.5	0.8	2.9	1.1	1.9	1.0	4.2	2.6
65+	6.0	1.3	8.1	16.2	3.5	13.7	3.1	16.7	10.6
1988									
0–14	0.4	1.2	0.3	1.0	0.9	0.1	1.7	0.4	1.7
15–64	1.8	0.6	0.7	2.9	1.2	1.8	1.2	4.9	3.6
65+	6.3	2.3	8.7	19.6	4.1	16.0	4.1	20.2	17.8
1993									
0–14	0.4	1.7	0.3	1.0	0.7	0.1	2.1	0.3	2.5
15–64	2.2	0.8	0.8	4.0	1.3	2.4	1.9	5.5	5.6
65+	5.9	1.4	8.9	23.3	4.5	24.9	6.7	28.6	26.6
1998									
0–14	0.3	3.6	0.2	1.1	0.6	0.2	2.2	0.2	2.0
15–64	3.4	1.7	0.6	4.7	1.6	3.0	2.2	7.5	6.6
65+	10.5	2.5	8.5	28.9	4.1	30.5	8.1	31.0	29.7

Notes

1. Percentages have been standardised using the age and sex structures of the estimated resident population at March 1998. The estimates from the previous three surveys were adjusted to show the prevalence rates that would have been expected in the 1981, 1988 and 1993 populations, if those populations had the same age and sex structure as the 1998 population.
2. The 1993 and 1998 data were adjusted to the 1981 and 1988 definition of disability.

Sources: AIHW 2003b; AIHW analysis of ABS 1993 and 1998 Surveys of Disability, Ageing and Carers confidentialised unit record files; ABS 1981 Survey of Handicapped Persons unpublished data table; ABS 1988 Survey of Disabled and Aged Persons unpublished data table.

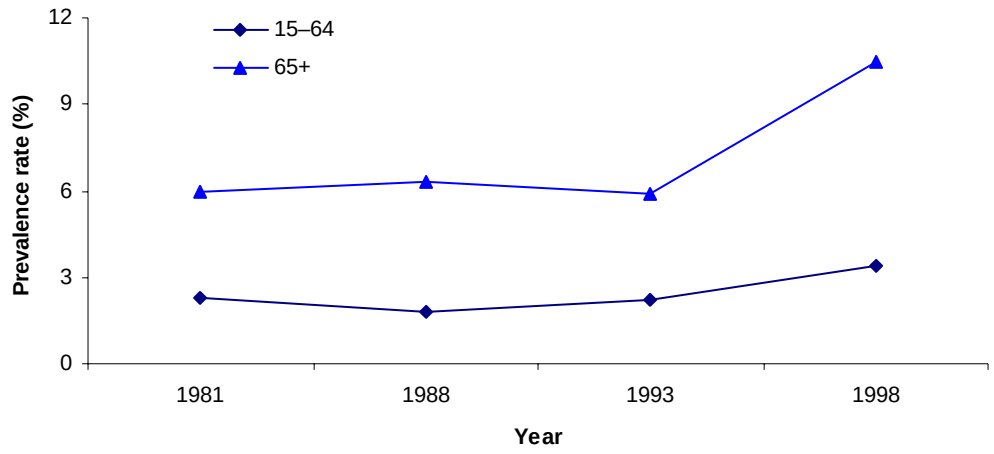
Recent trends in disability prevalence

In Australia, there has been a consistent increase in the overall reported rate of disability for almost two decades. The age-standardised rate of disability increased from 15% in 1981 to 19% in 1998 (AIHW 2003b: Table 8.1).

The age-standardised rates of severe or profound restrictions were relatively stable during the 1980s and early 1990s, remaining at around 4% of the Australian population (AIHW: Wen et al. 1995). However, between 1993 and 1998 the rate increased from 4.3% to 5.5% (AIHW 2003b: Table 8.1). This marked increase was largely the result of changes in the 1998 survey methods, which brought more people with a disability into the scope of the survey (AIHW 2001b:267–9; ABS: Davis et al. 2001).

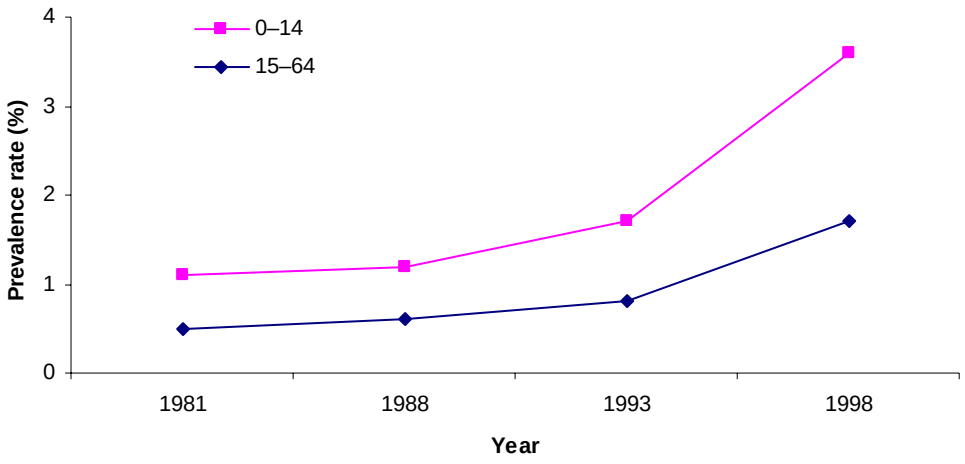
The comparisons of the age-specific prevalence rates of severe or profound core activity restrictions for each of the four ABS disability surveys indicate that the rates for 1998 were higher in most age groups than those for the previous surveys. The increases were particularly marked among children aged 5–14, the older working-age population, and people aged 75 and over (AIHW 2003b: Chapter 8).

There has been a substantial increase in the rates of severe or profound core activity restriction among children, in particular boys. Between 1993 and 1998, the rates for males aged 5–14 increased from 2.7% to 4.9%, more than twice the average increase for males aged 15–64 (AIHW 2003b: Table 8.1). Between 1993 and 1998, the main area of increase in the prevalence of disabling conditions among children of school age was intellectual disabling conditions (from 1.7% to 3.6%) (Table 3.10 and Figure 3.8b). Rises in the reported ADHD was a significant contributing factor to this increase.



Source: Table 3.10.

Figure 3.8a: People with a disability: prevalence rates of psychiatric disabling condition by age group



Source: Table 3.10.

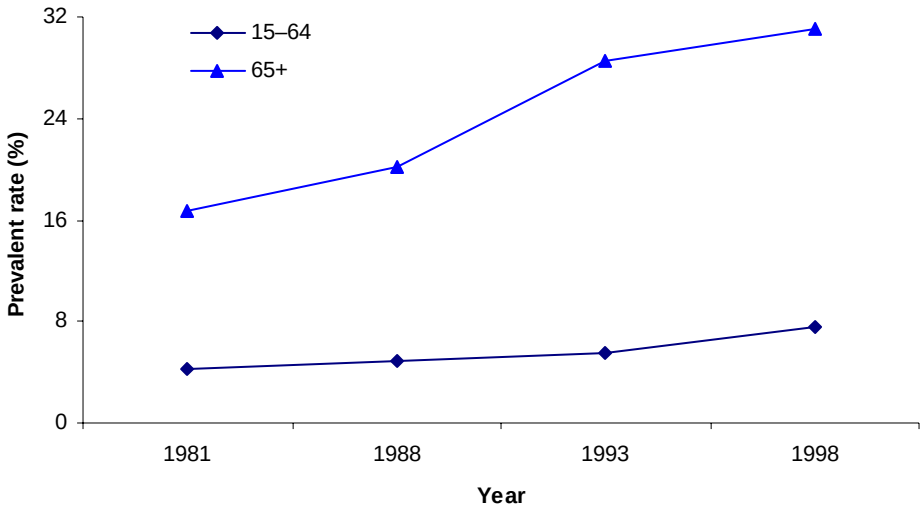
Figure 3.8b: People with a disability: prevalence rates of intellectual disabling condition by age group

Both higher levels of diagnosis and heightened awareness among parents, educators and health professionals may have contributed to the increase in reporting ADHD. An increase in prescriptions for the most commonly prescribed drugs to treat ADHD may indicate an increase in the diagnosis of the disorder (AIHW 2001b; ABS: Davis et al. 2001).

The change of wording in the screening question from 'slow at learning or understanding' (1993 survey) to 'difficulty learning or understanding' (1998 survey) may have increased reporting of intellectual disability, in particular among males.

Among the working-age population (aged 15–64 years), the age-standardised rate of severe or profound restrictions increased from 2.4% in 1993 to 3.3% in 1998, while the rates had been relatively stable at about 2.2% to 2.4% between 1981 and 1993 (AIHW 2003b: Table 8.1). The increase in 1998 was particularly evident in the older working-age population, especially in the 55–59 age group. This was largely associated with the post–World War 2 baby-boomer population 'bulge'.

There had been a large increase between 1993 and 1998 in the prevalence rate of physical/diverse conditions, in particular musculoskeletal disorders. The age-standardised rate of musculoskeletal conditions for people aged 15–64 with a disability increased from 6% in 1993 to 8% in 1998 (Table 3.10 and Figure 3.8c). Musculoskeletal disorders other than arthritis, particularly back problems and some soft tissue disorders, were most commonly reported for males aged 45–64 and females aged 45–54. The new screening question about chronic pain in the 1998 survey could have contributed considerably to the increase in reporting of these conditions. In 1998 a much higher proportion of the population with these conditions was classified as having a severe restriction than in previous survey years (ABS: Davis et al. 2001).



Source: Table 3.10.

Figure 3.8c: People with a disability: prevalence rates of musculoskeletal disabling condition by age group

The ageing of the older population has had a strong impact on disability prevalence among the older population. Compared with the 1981 disability survey, the three later surveys (1988, 1993 and 1998) reported substantially higher rates of disability for the older population. The disability rates for people aged 65 and over increased from 43% in 1981 to over 50% in the later surveys. The rate of severe or profound restrictions for people aged 65 and over increased markedly between 1993 and 1998, from 17.1% to 19.6%(AIHW 2003b).

It has been suggested that about half of the increase in the rate of severe or profound core activity restriction between 1993 and 1998 is due to changes in survey methods and the other half is attributable to population ageing and probably an actual increase in the prevalence among the oldest age groups of the population (ABS: Davis et al. 2001; AIHW 2003b). Changes in the 1998 survey screening question on learning and understanding may have increased the number of people reporting conditions associated with dementia. The separate identification of head injury, stroke and other brain damage may have led to increased reporting of stroke among the older population.

Differences in reported disability trends and implications for survey design

Recently reported declines in disability prevalence among the older population in some OECD countries such as the United States have been the subject of vigorous debate due to the great relevance to social and economic policies (e.g. Robine et al. 1998; Waidmann & Manton 1999; Waidmann & Liu 2000; Manton & Gu 2001; Schoeni et al. 2001). Different trends (increases or decreases) in disability prevalence have been reported among the OECD countries (Jacobzone et al. 2000). A decline in reported disability prevalence occurred at the same time as an increase in the reported prevalence of chronic conditions in some OECD

countries. Increases in chronic conditions were also reported in countries where no decline in disability overall was reported, such as Australia.

A number of issues are crucial for understanding trends in disability prevalence:

- Why has a decline in reported disability prevalence occurred at the same time as an increase in the reported prevalence of chronic diseases in some developed countries?
- Why have different trends (increases and decreases) in disability prevalence been reported among the OECD countries?
- While the cross-national comparison of level of disability prevalence is limited by the differences in survey design and methods, can trends in disability within each country be compared internationally on the basis of the existing survey data?

Variations in survey measures and their effect on disability prevalence are important in identifying the causes affecting the reported disability trends in different countries. A comparison of the United States and Australian surveys indicates that the differences in reported disability trends between the two countries may be affected by whether the presence of any chronic conditions restricting everyday activity are included as part of the survey definition of disability (AIHW 2003b; Wen 2004). Focusing on long-term and severe disability may increase the comparability of disability estimates from different countries, including estimates from time-series data.

4 Severity of disability in relation to health conditions—measures on impairments/limitations and disabling conditions

The previous chapter has presented prevalence estimates of disability and long-term health conditions. This chapter explores severity of disability, in relation to health conditions, based on a group of measures relating to impairments/limitations and disabling conditions. The first part of the chapter focuses on measurements relating to the information collected by the disability survey screening questions on impairments and limitations. The second part concentrates on measurements relating to the information on disabling conditions. Patterns of associated multiple conditions and disabilities are explored. Severity of disability is measured in terms of:

- whether a health condition is more likely to be associated with one or more impairments or limitations restricting everyday activities
- whether a health condition is more likely to be reported as the main condition causing the most problems associated with disability
- whether a health condition is more likely to be associated with multiple impairments or conditions.

4.1 Measures and main data items

As discussed in Chapter 1, severity of disability can be measured in relation to different dimensions of disability. This section looks at a group of measures focusing on impairments/limitations and disabling conditions. For each of the selected health conditions or impairments, these measures estimate:

- the likelihood of 'disability' defined by the ABS disability survey screening questions that focus on impairments and limitations; this measures the severity in terms of the presence of one or more of the impairments or limitations
- the likelihood of a conditions being reported as the main disabling condition among other conditions; this indicates whether some health conditions are more likely to cause more problems than other conditions
- the mean number of disabling conditions (multiple conditions and co-morbidity)
- multiple impairments or limitations associated with a given disabling condition.

The last two measures examine whether some health conditions are more likely to be associated with multiple impairments, disabling conditions and disability groups. This is of interest, assuming that the presence of multiple conditions or disabilities is likely to be associated with a more severe experience of disability for an individual with specific health conditions.

4.2 Likelihood of 'disability' defined by the ABS disability survey screening questions

In the 1998 Disability Survey, 'disability' is effectively defined by a list of screening questions consisting of a variety of impairments and limitations (Box 2.1). A person is considered to have a disability if he/she has a 'limitation, restriction or impairment', which has lasted, or is likely to last, for at least six months and restricts everyday activities (ABS 1999:67) (see detailed discussion in Chapter 2 and Section 3.2). This survey's operational definition of 'disability' aims to capture a broad spectrum of people who have various experiences of disability, since disability experience is often complex and multidimensional.

The measurement in this section estimates the likelihood of 'disability' (as defined by the survey screening questions) for each of the selected health conditions. A person is considered to have a specific health condition and also have a disability if:

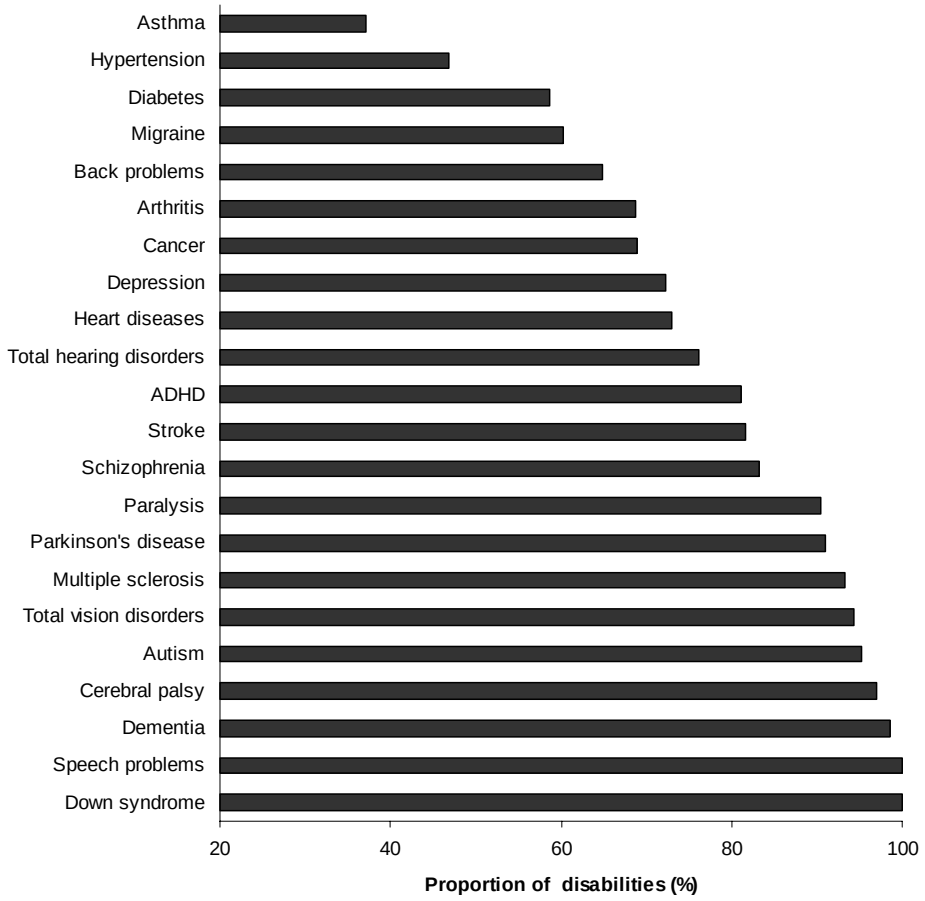
- a specific health conditions was reported by or for them
- a positive response was made by or for them to one or more of the 17 screening questions.

Overall, of the 6.7 million Australians who reported at least one long-term health condition (36% of the total Australian population), 3.6 million people (19.3% of the total population) reported one or more impairments or limitations (Section 4.4). These people were considered by the survey as having a 'disability'.

For the selected health conditions, each row of Table 4.1 shows the proportions of disability among people with a given condition. These proportions have been ranked to consider whether people with a given condition reported a higher proportion of disability than those with other conditions.

Overall, the estimated proportions of people with disability for the selected conditions differed from the ranking pattern based on the estimated frequencies of those conditions (Table 3.1). Conditions associated with intellectual/learning, psychiatric, sensory and neurological disorders, including some physical conditions, were more likely to be associated with a disability (Figure 4.1). For each of the top ten conditions, at least 90% of people with these conditions had a disability: Down syndrome (100%), speech problems (100%), dementia (99%), cataract (97%), cerebral palsy (97%), autism (95%), total vision disorders (94%), multiple sclerosis (93%) and Parkinson's disease (91%).

In contrast, some conditions that had been on the top of the list in terms of their prevalence (Table 3.1) tended to be ranked at the bottom of the list in Table 4.1, for example, arthritis, back problems, hypertension and asthma.



Source: Table 4.1.

Figure 4.1: Proportion of people with disability among people with a specific health condition (based on all conditions) for all ages, 1998

Table 4.1: Proportions of people with 'disability' among people with a specific health condition (based on all conditions), by age, 1998

Health conditions	Aged under 65 years	Health conditions	Aged 65 years or over	Health conditions	All ages
Down syndrome	100.0	ADHD	**100.0	Down syndrome	100.0
Dementia	*100.0	Down syndrome	**100.0	Speech problems	100.0
Speech problems	100.0	Speech problems	100.0	Dementia	98.6
Cerebral palsy	96.9	Multiple sclerosis	**100.0	Cataract	97.1
Cataract	96.3	Cerebral palsy	**100.0	Cerebral palsy	97.0
Autism	95.3	Dementia	98.5	Autism	95.3
Multiple sclerosis	92.3	Schizophrenia	*97.5	Total vision disorders	94.4
Paralysis	90.9	Cataract	97.3	Multiple sclerosis	93.3
Total vision disorders	90.4	Total vision disorders	96.9	Parkinson's disease	91.0
Epilepsy	85.1	Epilepsy	95.3	Paralysis	90.4
Parkinson's disease	*84.7	Glaucoma	94.9	Glaucoma	86.8
ADHD	81.0	Parkinson's disease	92.8	Epilepsy	86.5
Schizophrenia	80.7	Paralysis	*89.6	Osteoporosis	85.6
Osteoporosis	80.0	Osteoporosis	88.4	Schizophrenia	83.3
Stroke	77.4	Depression	85.9	Stroke	81.7
Depression	68.2	Total hearing disorders	84.6	ADHD	81.1
Total hearing disorders	67.5	Hearing loss, noise-induced	83.9	Total hearing disorders	76.1
Hearing loss, noise-induced	66.9	Stroke	83.6	Hearing loss, noise-induced	74.2
Heart diseases	66.1	Back problems	78.4	Heart diseases	72.9
Glaucoma	64.4	Heart diseases	76.4	Depression	72.2
Arthritis	64.3	Cancer	75.5	Cancer	68.9
Back problems	61.4	Migraine	*74.9	Arthritis	68.8
Cancer	60.8	Arthritis	73.4	Back problems	64.8
Migraine	58.8	Asthma	73.3	Migraine	60.2
Diabetes	51.6	Diabetes	66.3	Diabetes	58.7
Hypertension	37.4	Hypertension	55.3	Hypertension	46.8
Asthma	32.4	Autism	—	Asthma	37.1

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

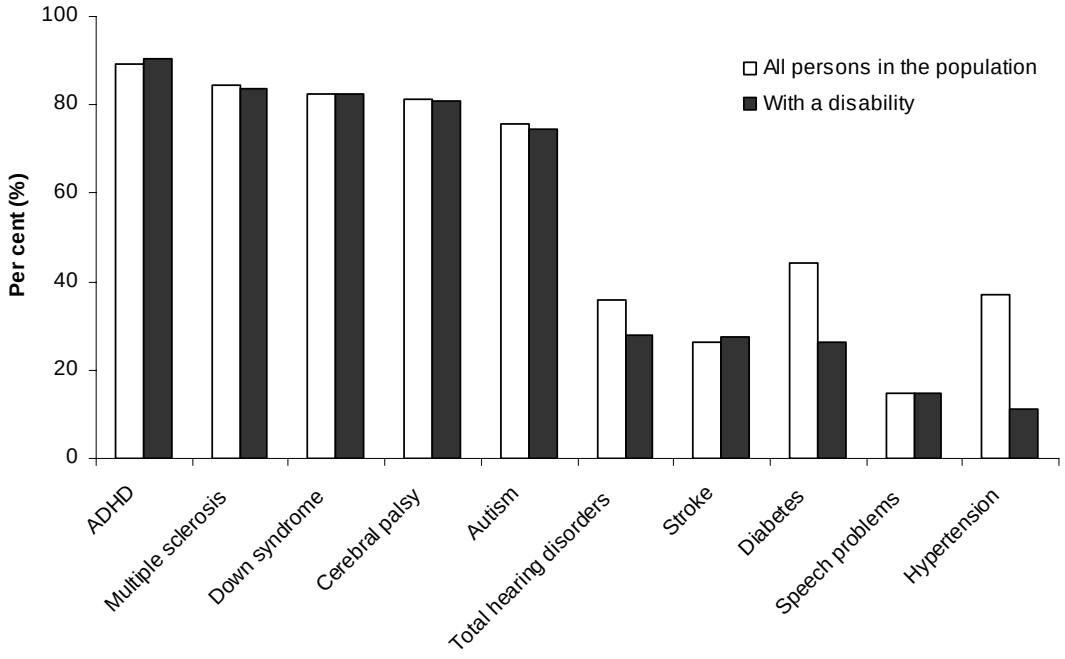
4.3 Likelihood of being reported as main disabling condition

This section explores the likelihood of a health condition being reported as the main condition, i.e. being identified by survey respondents as causing the most problems for them (see Box 2.2 and Table 2.1 for the explanation of key terms).

Table 4.2 presents the estimates of selected health conditions based on all conditions and compares these with those based on main conditions. For people with a disability, the last figure in each row shows the proportion being reported as main disabling condition for a given health condition. These proportions are ranked to assess whether a given condition is more likely to be reported as main condition among people with a disability (Figure 4.2).

ADHD, multiple sclerosis, Down syndrome, cerebral palsy and autism were most likely to be considered as main disabling conditions. For instance, among all people who reported ADHD as a condition, 89.4% said it was the main disabling condition. Among people with ADHD and a disability, 90.3% said ADHD was the main disabling condition.

Hypertension (11%) was least likely to be reported as main disabling condition, followed by people with speech problems (15%), hearing loss due to regular noise (21%) and diabetes (26%). This pattern suggested that these conditions were more likely to be one of the co-morbidity conditions for people with a disability.



Source: Table 4.2.

Figure 4.2: Proportion being reported as a main health condition for a given health condition (top five conditions versus bottom five conditions), 1998

Table 4.2: Comparisons of main condition and all conditions: proportion being reported as the main condition among other conditions for a given condition, 1998

	People with a condition		People with a disability		Main condition as a percentage of all conditions	
Health conditions	**All conditions**	**Main condition**	**All conditions**	**Main condition**	**With a condition**	**With a disability**
	No. ('000)	**No. ('000)**	**No. ('000)**	**No. ('000)**	**(%)**	**(%)**
ADHD	74.2	66.3	60.1	54.3	89.4	90.3
Multiple sclerosis	14.4	12.2	13.4	11.2	84.6	83.5
Down syndrome	9.9	*8.2	9.9	*8.2	82.5	*82.5
Cerebral palsy	23.1	18.8	22.4	18.1	81.3	80.8
Autism	13.0	9.8	12.4	9.2	75.7	74.5
Parkinson's disease	34.1	23.8	31.1	22.2	69.8	71.3
Schizophrenia	36.6	24.8	30.5	19.5	67.9	64.1
Dementia	101.8	64.8	100.3	63.8	63.6	63.6
Back problems	1,554.7	1,041.5	1,007.1	600.8	67.0	59.7
Migraine	91.3	62.7	55.0	29.9	68.7	54.3
Paralysis	24.5	13.5	22.2	12.0	55.0	54.2
Arthritis	1,608.7	859.0	1,107.5	497.1	53.4	44.9
Asthma	1,101.6	785.7	408.7	170.9	71.3	41.8
Osteoporosis	84.7	36.0	72.5	29.1	42.5	40.2
Epilepsy	105.1	47.3	90.9	35.5	45.0	39.1
Cancer	123.0	56.9	84.7	31.4	46.3	37.1
Depression	245.7	111.3	177.3	62.9	45.3	35.5
Total vision disorders	370.4	127.3	349.7	113.2	34.4	32.4
Cataract	81.7	27.0	79.3	25.1	33.0	31.6
Heart diseases	589.2	233.2	429.5	134.9	39.6	31.4
Glaucoma	65.0	20.8	56.4	16.2	32.1	28.7
Total hearing disorders	1,315.9	471.0	1,001.6	280.6	35.8	28.0
Stroke	282.1	74.3	230.3	63.6	26.3	27.6
Diabetes	414.0	183.2	243.0	63.4	44.2	26.1
Hearing loss, noise-induced	444.8	128.0	330.1	69.1	28.8	20.9
Speech problems	244.0	36.5	244.0	35.7	14.9	14.6
Hypertension	1,363.2	506.3	638.2	71.6	37.1	11.2
Other		1839.2		1170.8		
Total		**6713.4**		**3610.0**		

Note: Estimates marked with * have an associated relative standard error of between 25% and 50% and should be used with caution.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

4.4 Multiple associated conditions and co-morbidity

This section explores health conditions in relation to multiple associated conditions and co-morbidity. Co-morbidity refers to the circumstance where a person has two or more health conditions at the same time. The analysis first explores severity of disability in relation to the number of conditions for the individuals and for main disability groups. Exploratory analysis on patterns of multiple conditions and multiple impairments associated with a given health condition are also presented.

Number of long-term health conditions

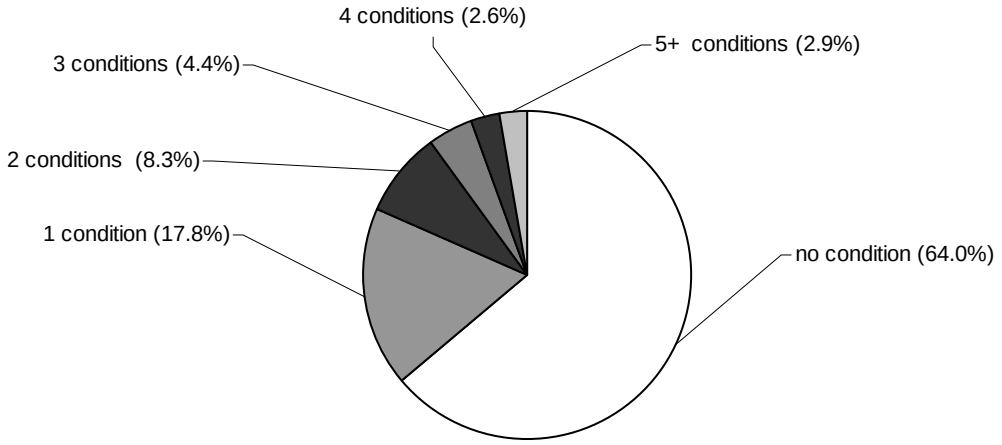
Among the general population, about 6.7 million (36% of the total Australian population) reported at least one long-term health condition. Of these, around half (3.4 million) had two or more conditions (Table 4.3 and Figure 4.3a).

Over 84% of people aged 65 or older reported at least one condition compared to 29% for people aged under 65. About 63% of people aged 65 or over had two or more conditions and an average of 2.5 conditions, compared to 12% of people aged under 65 with an average of 0.5 conditions (Figure 4.3b).

Almost the same proportions of males and females reported at least one condition and the percentage distribution of the number of conditions was similar for both males and females.

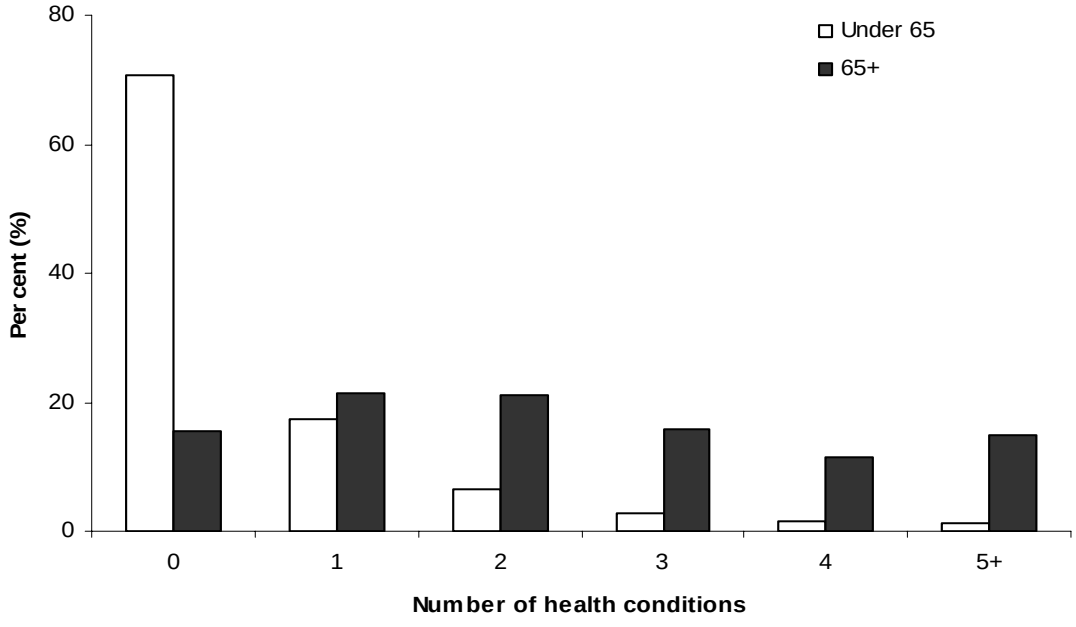
Table 4.4 and Figure 4.4 show the pattern of multiple conditions, in terms of mean number of conditions by disability status. The presence of multiple conditions is likely to be associated with a more severe experience of disability for the individual. The average numbers of conditions were 0.8 for the general population and 2.1 for people with at least one health condition, compared to 2.7 for people with a disability. People with a profound core activity restriction had the highest mean number of conditions, 3.7 for people of all ages.

Among people with a disability, the relatively low mean number of conditions for people with a schooling or employment restriction only was largely because they did not have other restrictions, for example restrictions in self-care or mobility activity. It is also due to the fact that information about schooling restriction was collected only among people of school age (5–20) and employment restriction was only applicable to people of working- age (15–64). Those people were younger and less likely to have multiple conditions than older people.



Source: Table 4.3.

Figure 4.3a: Percentage of persons in the population by number of health conditions, 1998



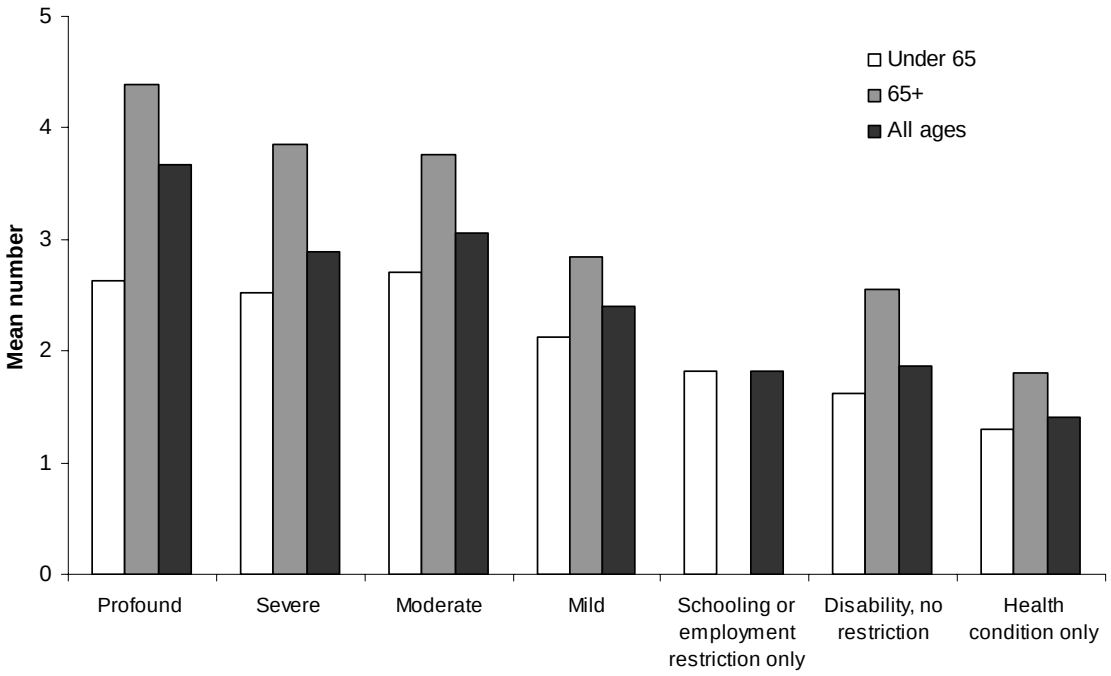
Source: Table 4.3.

Figure 4.3b: Percentage of persons in the population by number of health conditions, by age group, 1998

Table 4.3: All persons: number of health conditions by age and sex, 1998

Number of conditions	Male	Female	Aged 0–64	Aged 65+	Total person	Total population
		Per cent (sum horizontally)				**No. ('000)**
0	50.3	49.7	97.0	3.0	100.0	**11,946.6**
1	50.0	50.0	85.4	14.6	100.0	**3,312.8**
2	49.2	50.8	69.2	30.8	100.0	**1,552.4**
3	47.3	52.7	56.5	43.5	100.0	**818.3**
4	46.1	53.9	46.9	53.1	100.0	**491.1**
5+	44.4	55.6	37.8	62.2	100.0	**538.5**
Total	49.7	50.3	87.8	12.2	100.0	**18,659.7**
		Per cent (sum vertically)				
0	64.7	63.3	70.7	15.6	64.0	
1	17.8	17.7	17.3	21.4	17.8	
2	8.2	8.4	6.5	21.1	8.3	
3	4.2	4.6	2.8	15.7	4.4	
4	2.4	2.8	1.4	11.5	2.6	
5+	2.6	3.2	1.2	14.8	2.9	
Total %	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	
Total population ('000)	**9,282.0**	**9,377.6**	**16,391.1**	**2,268.6**	**18,659.7**	
Mean no. of conditions	0.72	0.79	0.52	2.45	0.75	

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.



Source: Table 4.4.

Figure 4.4: Mean number of health conditions in the population by disability status, by age group, 1998

Table 4.4: All persons: mean number of health conditions by disability status, by age and sex, 1998

	Male	Female	0-64	65+	Total
Profound	3.35	3.90	2.63	4.39	3.67
Severe	2.76	3.00	2.53	3.86	2.89
Moderate	2.99	3.14	2.70	3.76	3.06
Mild	2.37	2.43	2.12	2.85	2.40
Schooling or employment restriction only	1.87	1.75	1.82	—	1.82
Disability no restriction	1.92	1.79	1.62	2.55	1.86
Health condition only [(a)]	1.39	1.43	1.30	1.80	1.41
Total with a condition [(b)]	***2.03***	***2.14***	***1.76***	***2.90***	***2.09***
Total with a disability	***2.55***	***2.80***	***2.24***	***3.52***	***2.67***
Total population	**0.72**	**0.79**	**0.52**	**2.45**	**0.75**

(a) Incudes people with a health conditions but no disability.

(b) Includes people with and without a disability.

Note: The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

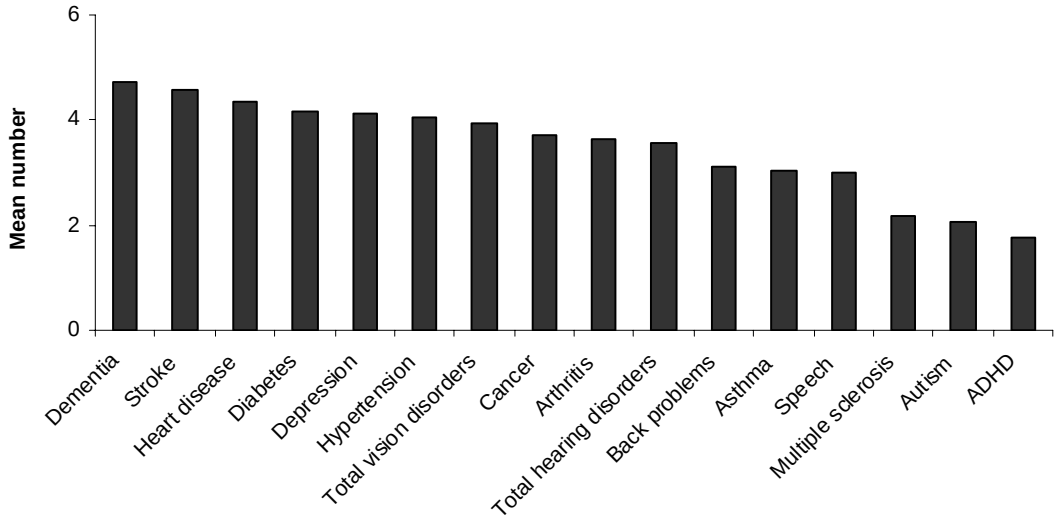
Mean number of disabling conditions for selected health conditions

All disabling conditions

For people with a disability, Table 4.5 lists the mean number of associated conditions for each of the selected health conditions. The estimates for each of the selected conditions were based on all reported conditions, whether or not these were reported as main condition for an individual. People with multiple conditions may be included into more than one condition category. For example, if a person had dementia, stroke, diabetes and heart disease, and if dementia was reported as the main condition, all these conditions are counted in each of the four condition categories respectively, not just the dementia category.

Multiple conditions were reported among people with most of the selected conditions (Figure 4.5). People with dementia led the list, with an average of 4.7 conditions. The next in line was stroke (4.6), followed by glaucoma (4.5), osteoporosis (4.4), heart disease (4.4), cataracts (4.3), diabetes (4.2), depression (4.1) and hypertension (4.1).

People who were less likely to report multiple conditions were those with ADHD (1.8), autism (2.1) and multiple sclerosis (2.2). It is worth noting that most people with ADHD and autism were children of school age and they were less likely to have conditions more commonly associated with older ages. This could contribute to the relatively low average number of conditions for people in these groups.



Source: Table 4.5.

Figure 4.5: people with a disability: mean number of health conditions by selected health condition (based on all conditions) for all ages, 1998

Table 4.5: People with a disability: mean number of conditions by selected health condition (based on all disabling conditions), by age and sex, 1998

Health conditions	Male	Female	Aged 0-64	Aged 65+	Total with a disability
Dementia	4.73	4.72	**5.32	4.70	4.72
Stroke	4.53	4.62	4.18	4.75	4.58
Glaucoma	4.33	4.57	4.33	4.50	4.46
Osteoporosis	4.47	4.42	3.90	4.67	4.43
Heart disease	4.06	4.68	3.88	4.56	4.36
Cataracts	4.02	4.44	2.45	4.73	4.30
Diabetes	4.16	4.20	3.81	4.49	4.18
Depression	4.11	4.16	3.72	5.29	4.14
Hypertension	4.06	4.05	3.79	4.21	4.05
Total vision disorders	3.70	4.13	2.96	4.50	3.93
Parkinson's disease	3.52	4.38	2.80	4.12	3.85
Paralysis	3.58	3.96	2.87	*5.46	3.74
Cancer	3.83	3.60	2.95	4.23	3.72
Arthritis	3.73	3.58	3.27	3.96	3.64
Total hearing disorders	3.37	3.85	2.97	4.04	3.57
Hearing loss, noise-induced	3.37	3.49	3.19	3.59	3.38
Down syndrome	3.08	3.33	3.19	**3.50	3.19
Epilepsy	3.28	3.05	2.85	4.87	3.15
Cerebral palsy	2.97	3.30	3.07	**5.52	3.13
Back problems	3.02	3.23	2.75	4.28	3.12
Migraine	3.01	3.10	2.92	*4.32	3.08
Schizophrenia	2.69	3.53	2.88	*3.82	3.05
Asthma	2.83	3.20	2.70	4.18	3.03
Speech	2.80	3.33	2.40	4.56	3.01
Multiple sclerosis	1.57	2.34	2.03	**3.09	2.18
Autism	1.82	3.10	2.05	—	2.05
ADHD	1.65	2.42	1.76	**7.79	1.77

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

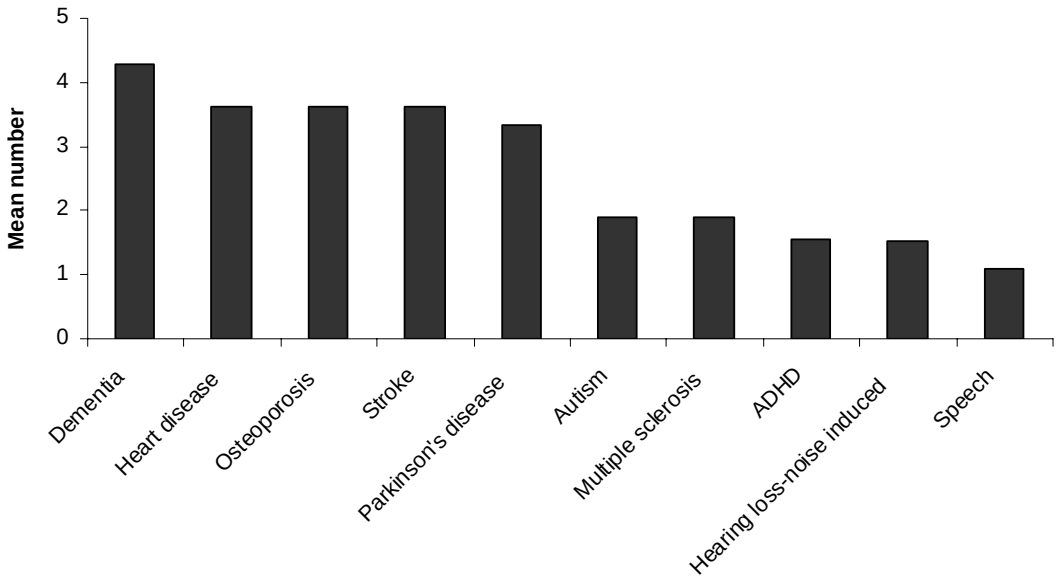
Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Main disabling conditions

Table 4.6 presents the mean number of associated conditions for people with each of the selected health conditions, on the basis of main disabling conditions. The overall pattern of multiple conditions is similar to the pattern based on all disabling conditions (Table 4.5). People with dementia had the highest mean number of conditions (4.3). Cataracts were replaced with Parkinson's disease as one of the top ten conditions, otherwise the top ten conditions were the same as those based on all disabling conditions. An average of three or more conditions was reported by people with a top ten condition (Figure 4.6).

People with speech difficulties, hearing loss due to regular noise, ADHD, multiple sclerosis and autism were ranked at the bottom of the list, each with an average of less than two conditions.

One possible explanation for the low average number of conditions reported by people with speech problems as the main condition was that these problems were often associated with other conditions such as dementia, stroke and autism that were more likely to be described as the 'main condition' (Table 4.6). The other possible explanation was that a large proportion of people with speech problems were at younger ages at the time of survey, especially those reporting these problems as their main conditions.[7] These people were less likely than older people to have associated multiple conditions.



Source: Table 4.6.

Figure 4.6: People with a disability: mean number of conditions by selected condition (based on main conditions), by age group, 1998

7 On the basis of all disabling conditions, 72% of people reporting speech problems were aged under 65 years; if only the main disabling conditions were considered, 98% of people with reporting speech problems were aged under 65.

Table 4.6: People with a disability: mean number of conditions by selected health condition (based on main disabling condition), by age and sex, 1998

Selected conditions	Male	Female	Aged 0–64	Aged 65+	Total with a disability
Dementia	4.29	4.29	**3.11	4.30	4.29
Heart disease	3.37	4.06	3.15	3.96	3.63
Osteoporosis	4.60	3.46	3.10	3.88	3.62
Stroke	3.66	3.57	2.89	3.87	3.61
Parkinson's disease	3.16	3.61	*2.49	3.62	3.33
Glaucoma	2.90	3.46	*3.21	3.21	3.21
Diabetes	3.39	2.99	2.80	3.68	3.18
Depression	3.18	3.11	2.92	4.45	3.14
Other vision disorders	2.92	3.32	2.06	3.87	3.13
Total vision disorders	*2.85*	*3.19*	*1.97*	*3.63*	*3.03*
Hypertension	3.11	3.12	2.85	3.31	3.12
Paralysis	2.69	3.19	*2.02	*5.07	2.87
Arthritis	2.78	2.87	2.39	3.22	2.84
Cataracts	2.57	2.68	*1.22	3.34	2.63
Cerebral palsy	2.47	2.70	2.54	**4.91	2.58
Down syndrome	2.67	2.47	*2.57	**3.50	*2.58
Back problems	2.43	2.57	2.25	3.55	2.49
Schizophrenia	2.24	2.72	2.20	*3.41	2.43
Cancer	2.75	1.65	1.67	3.02	2.30
Epilepsy	2.19	2.09	1.93	*3.64	2.13
Migraine	2.70	1.73	1.98	**3.69	2.09
Asthma	2.00	2.18	1.86	3.14	2.09
Other hearing disorders	2.15	2.00	1.71	2.58	2.08
Total hearing disorders	*1.92*	*1.98*	*1.61*	*2.37*	*1.94*
Autism	1.66	3.13	1.91	—	1.91
Multiple sclerosis	1.44	2.04	1.85	**2.27	1.89
ADHD	1.53	1.64	1.54	**9.00	1.54
Hearing loss, noise-induced	1.50	1.56	1.33	1.74	1.51
Speech	1.05	1.28	1.08	**1.58	1.09

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Mean number of conditions for significant disability groups

In Australia, disabilities are often classified into 'disability groups'. Disability groups, such as 'intellectual disability' and 'physical disability' provide a broad categorisation of disabilities based not only underlying health conditions and impairments, but also on activity limitations, participation restrictions and related environmental factors (see Chapter 2 for detailed definitions). Australian disability administrators, peak bodies, people with disabilities and service providers use disability groups as a basis for describing groups of

people with similar experience of disability and patterns of impairments, activity limitation, participation restrictions and related environmental factors (AIHW 2003a).

AIHW has published a report that provides a range of estimates of prevalence of the main disability groups that may suit different purposes (AIHW 2003b). For example, prevalence may be estimated either on the basis of disabling conditions only, or using information combining disabling condition and certain levels/severities of activity limitations or participation restrictions.

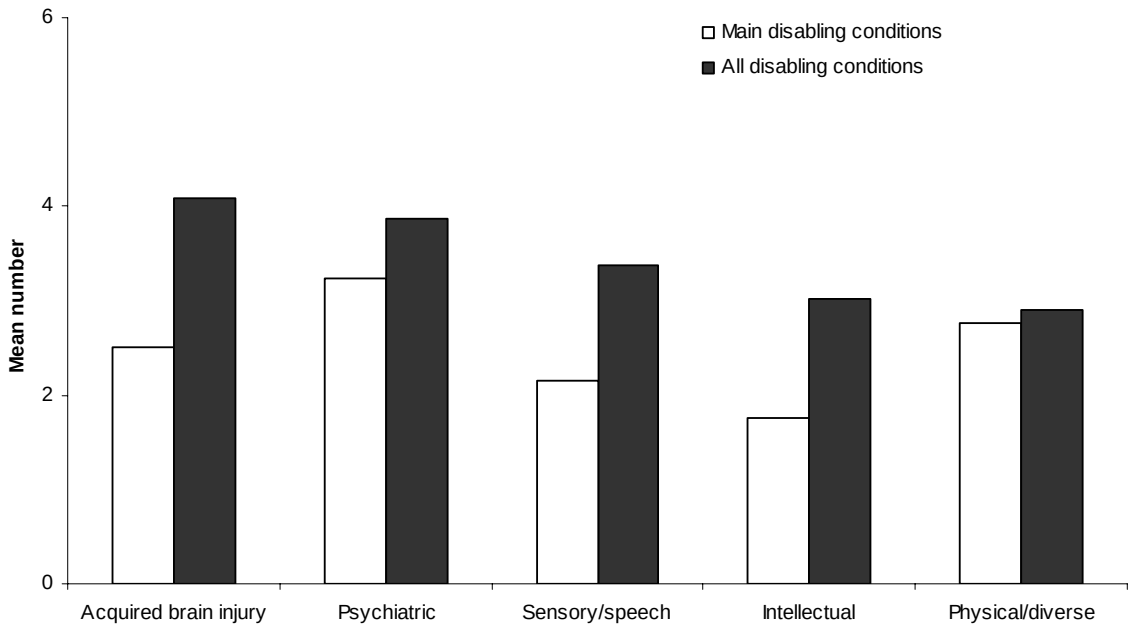
In this section, the estimates of five disability groups (intellectual, psychiatric, sensory/speech, acquired brain injury and physical/diverse) in Table 4.7 use only data on the main disabling condition or all disabling conditions. Survey information about certain levels/severity of activity limitations or participation restrictions is not included in the estimation. A full list of impairments and disabling conditions related to specific disability groups is presented in Appendix 1.

The general pattern shows that, of the five disability groups, the mean number of conditions was relatively high for people with psychiatric disability, whether considering main disabling condition (the highest) or all disabling conditions (the second highest) (Table 4.7; Figure 4.7). In contrast, the mean number of conditions for people with an intellectual disability tended to be lower, either on the basis of main disabling conditions (fifth) or all disabling conditions (fourth).

The relatively high mean number of conditions for people with psychiatric disability may be largely because this disability was more common among the adult population who were more likely to acquire other age-related conditions. One of the main conditions associated with psychiatric disability was dementia. People with dementia had the highest mean number of disabling conditions (tables 4.5 and 4.6).

Intellectual disability is an early onset disability. Analysis of Australian disability survey data indicated that the prevalence rates of intellectual disability were markedly higher among children of school age than the adult population and were highest for those aged 10 to 14 (AIHW: Wen 1997; AIHW 2003b). The relatively low average number of conditions for this group could be partly due to the fact that most people with an intellectual disability surveyed were young at the time of survey and had not reach the life stage that was more likely to acquire various age-related conditions, especially physical and sensory conditions.

When the estimates were based on all reported conditions, the mean number of conditions was highest for the acquired brain injury disability group. Acquired brain injuries are often associated with multiple disabilities arising from damage to the brain acquired after birth due to various causes: traumatic accidents, stroke, brain tumours, infection, poisoning, lack of oxygen, degenerative neurological diseases etc. Acquired brain injuries can result in reduced and/or deteriorating cognitive, physical, emotional or independent functioning (AIHW: Fortune & Wen 1999; AIHW 2003b).



Source: Table 4.7.

Figure 4.7: People with a disability: mean number of health conditions by disability groups for all ages, 1998

Table 4.7: People with a disability: mean number of conditions by disability groups, by age and sex, 1998

Disability groups	Male	Female	Aged 0-64	Aged 65+	Total with a disability
Main disabling condition					
Intellectual	1.66	2.03	1.72	*4.25	1.76
Psychiatric	3.13	3.32	2.75	4.36	3.24
Sensory/speech	2.01	2.38	1.60	2.84	2.16
Acquired brain injury	2.33	2.75	2.26	*4.91	2.50
Physical/diverse	2.72	2.82	2.33	3.58	2.77
All disabling conditions					
Intellectual	2.69	3.52	2.46	4.71	3.02
Psychiatric	3.71	3.99	3.33	4.90	3.87
Sensory/speech	3.16	3.64	2.74	3.98	3.37
Acquired brain injury	3.99	4.22	3.64	5.45	4.09
Physical/diverse	2.85	2.97	2.46	3.68	2.91

Note: Estimates marked with * have an associated relative standard error of between 25% and 50%. These estimates should be used with caution.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Patterns of associated conditions and disabilities

This section provides an exploratory analysis of the patterns of multiple conditions among people who had one or more of the selected health conditions as well as those who had one or more types of disabilities.

Associated conditions

For people with a disability with each of the selected conditions, each column of Table 4.8 shows the estimates of proportions of people with the other conditions. These estimates are based on all reported conditions, thus the co-morbid conditions reported by people with multiple conditions may be classified into more than one condition category.

People with dementia were likely to report other selected conditions, six conditions being reported by over one-fifth of them: total hearing (43%), arthritis (32%), speech (30%), total vision (26%), heart diseases (26%) and stroke (23%). The proportion of people with depression (9.5%) was highest among people with dementia compared with people with other conditions.

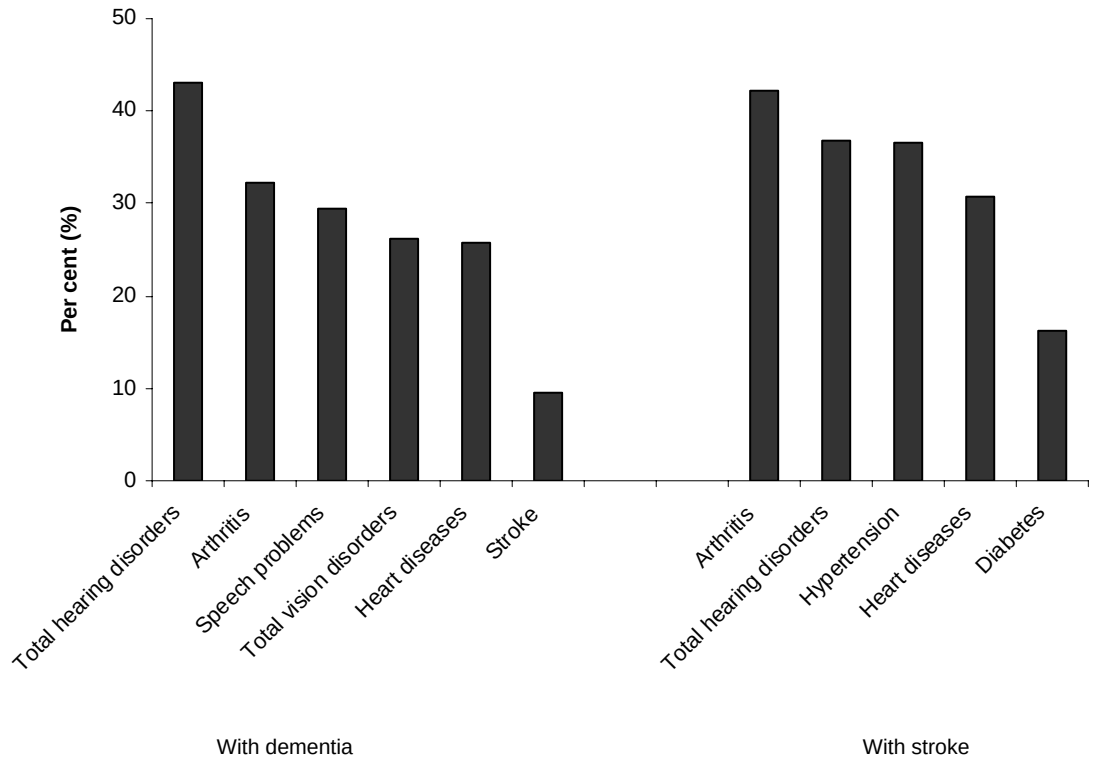
People who had stroke were the most likely to report heart diseases (31%) and diabetes (16%) as other conditions. People with stroke also reported high proportions with arthritis (42%), hypertension (37%) and total hearing (37%). For example, this relationship may be reflected in the pattern:

- Diabetes was most commonly reported by those with stroke (16%), hypertension (15%), heart disease (13%) and dementia (13%).
- Hypertension most frequently occurred among people with diabetes (38%), stroke (37%), osteoporosis (33%) and heart disease (32%).
- People with osteoporosis were the most likely to also report the highest proportion of arthritis (48%).

Of those conditions that more frequently occurred among younger people (Table A6.1), speech problems were reported by 76% of people with autism and 55% of people with cerebral palsy. Asthma was reported by 23% of people with ADHD and 20% of people with autism.

The proportion reporting back problems (35%) was highest for people with depression, possibly because these conditions were more prevalent among older working-age people.

Discussions on the patterns of multiple conditions for people with some low-frequency conditions, for example, autism, Down syndrome, cerebral palsy and Parkinson's disease, are not possible on the basis of the data in Table 4.8 due to the high relative standard errors.



Source: Table 4.8.

Figure 4.8: People with a disability: the most commonly associated conditions as a proportion of the total number of a given condition, 1998

Table 4.8: People with a disability: associated conditions as a proportion of the total number of a given health condition, 1998

	Dementia	Stroke	Glaucoma	Osteo-porosis	Heart diseases	Cataracts	Diabetes	Depre-ssion	Hyperten-sion
	Per cent of column total (Total number of a given condition)								
Dementia	100.0	10.1	*11.5	*8.6	6.0	*9.0	5.4	5.4	2.6
Stroke	23.3	100.0	*11.9	*10.0	16.5	14.2	15.4	10.2	13.2
Glaucoma	*6.5	*2.9	100.0	**2.0	2.5	**1.3	*2.3	**1.3	2.6
Osteoporosis	*6.2	*3.2	**2.6	100.0	3.9	*6.7	*2.2	*3.7	3.7
Heart diseases	25.7	30.7	18.7	22.8	100.0	28.2	23.5	12.7	21.7
Cataracts	*7.1	4.9	**1.8	*7.3	5.2	100.0	*2.8	**1.4	3.9
Diabetes	13.2	16.2	*9.8	*7.4	13.3	*8.7	100.0	6.1	14.5
Depression	9.5	7.8	**4.0	*9.0	5.2	**3.0	4.4	100.0	5.5
Hypertension	16.6	36.7	29.7	32.6	32.3	31.7	38.0	19.6	100.0
Total vision disorders	26.1	19.4	100.0	16.0	16.0	100.0	16.5	9.1	13.7
Parkinson's disease	*6.5	*1.8	**1.0	**2.1	*1.5	**2.5	*1.3	*1.5	*0.7
Paralysis	**1.2	*2.5	**0.7	—	**0.6	**1.5	*0.4	**0.6	*0.4
Cancer	*4.2	4.4	**2.3	**0.9	3.0	*4.0	*3.7	*2.4	3.2
Arthritis	32.3	42.2	42.8	48.2	41.4	43.4	38.2	36.1	49.1
Total hearing disorders	43.0	36.7	40.3	33.8	41.6	38.9	30.9	24.0	36.9
Hearing loss, noise-induced	*4.7	10.7	*7.3	**1.0	13.2	*4.4	11.0	6.1	12.6
Down syndrome	**0.1	**0.3	—	—	**0.3	**0.1	—	—	—
Epilepsy	*3.2	4.4	**1.5	**2.1	*1.2	**0.3	*1.3	*2.5	*0.8
Cerebral palsy	**0.2	*1.1	**2.1	—	**0.2	**0.1	—	**0.1	**0.3
Back problems	*7.9	19.7	19.8	22.5	23.2	18.1	23.6	35.1	26.8
Migraine	**0.7	**0.5	—	—	**0.3	**0.4	*1.6	*3.6	*0.6
Schizophrenia	**1.4	**0.5	**0.2	**0.2	**0.2	**0.4	**0.9	**1.3	0.2
Asthma	*2.8	7.2	*8.7	*7.8	9.6	*5.3	9.1	12.9	8.2
Speech	29.5	18.2	*4.6	*2.8	5.0	*6.7	5.2	7.1	2.9
Multiple sclerosis	**0.1	**0.2	0.1	**1.0	—	**0.1	—	**0.6	**0.3
Autism	—	**0.2	—	—	—	—	—	—	—
ADHD	—	**0.2	—	—	0.1	—	—	*1.9	—
Total ('000)	**100.3**	**230.3**	**56.4**	**72.5**	**429.5**	**79.3**	**243.0**	**177.3**	**638.2**

(continued)

Table 4.8 (continued): People with a disability: associated conditions as a proportion of the total number of a given health condition, 1998

	Total vision	Parkinson's disease	Paralysis	Cancer	Arthritis	Total hearing	Hearing loss, noise-induced	Down syndrome	Epilepsy
	Per cent of column total (Total number of a given condition)								
Dementia	7.5	*20.9	**5.2	*5.0	2.9	4.3	*1.4	**0.9	*3.5
Stroke	12.8	*13.1	*26.3	12.1	8.8	8.4	7.4	**7.2	11.0
Glaucoma	16.1	**1.8	**1.8	**1.5	2.2	2.3	*1.3	—	**0.9
Osteoporosis	3.3	**5.0	**0.1	**0.7	3.2	2.4	**0.2	—	**1.7
Heart diseases	19.6	*20.2	**11.0	15.2	16.1	17.8	17.2	**13.8	*5.5
Cataracts	22.7	**6.5	**5.2	*3.7	3.1	3.1	*1.1	**1.1	**0.2
Diabetes	11.5	*9.8	**4.8	*10.5	8.4	7.5	8.1	—	*3.5
Depression	4.6	*8.7	**5.0	*5.0	5.8	4.3	3.3	**0.2	*4.9
Hypertension	25.1	*14.1	*12.8	24.0	28.3	23.5	24.3	—	*5.7
Total vision disorders	100.0	*16.2	*17.2	12.2	11.1	12.1	8.9	**3.5	*5.8
Parkinson's disease	*1.4	100.0	**0.5	**1.5	*0.6	0.9	**0.5	—	**0.3
Paralysis	*1.1	**0.4	100.0	**0.3	*0.3	*0.3	—	**7.9	**1.5
Cancer	2.9	*4.2	**1.1	100.0	3.0	3.2	3.2	—	**1.4
Arthritis	35.2	*20.6	*13.0	39.5	100.0	36.7	35.6	**18.0	14.8
Total hearing disorders	34.6	29.5	*14.4	37.7	33.2	100.0	100.0	**19.2	15.2
Hearing loss, noise-induced	8.4	**5.1	**0.3	12.4	10.6	33.0	100.0	—	**2.6
Down syndrome	**0.1	—	**3.5	—	**0.2	**0.2	—	100.0	**0.1
Epilepsy	*1.5	**0.9	**6.2	**1.6	1.2	1.4	**0.7	**1.3	100.0
Cerebral palsy	*1.1	**0.3	**8.5	—	**0.2	**0.2	—	—	*5.8
Back problems	19.1	*13.4	**7.3	21.5	29.6	25.7	32.4	**22.3	12.9
Migraine	*0.9	**1.8	**1.8	**1.1	1.0	*0.8	**0.7	—	**1.3
Schizophrenia	**0.3	**1.0	**0.8	**0.1	*0.4	*0.5	—	—	**1.0
Asthma	7.5	**3.2	*12.2	*4.6	9.3	8.0	7.4	**0.2	15.0
Speech	7.7	32.0	*24.5	*6.3	2.8	5.6	*1.7	*69.2	18.7
Multiple sclerosis	*0.8	—	**0.3	—	*0.3	**0.1	—	—	**0.2
Autism	**0.1	—	—	—	—	—	—	—	**1.5
ADHD	**0.2	—	—	—	**0.1	*0.5	—	—	**1.3
Total ('000)	**349.7**	**31.1**	**22.2**	**84.7**	**1,107.5**	**1,001.6**	**330.1**	**9.9**	**90.9**

(continued)

Table 4.8 (continued): People with a disability: associated conditions as a proportion of the total number of a given health condition, 1998

	Cerebral palsy	Back problems	Migraine	Schizo-phrenia	Asthma	Speech problems	Multiple sclerosis	Autism	ADHD
	Per cent of column total (Total number of a given condition)								
Dementia	**0.8	*0.8	**1.2	**4.6	*0.7	12.1	**0.4	—	—
Stroke	**10.9	4.5	**2.1	**3.5	4.1	17.2	**3.5	**4.5	**0.6
Glaucoma	**5.3	1.1	—	**0.4	*1.2	*1.1	**0.3	—	—
Osteoporosis	**0.1	1.6	—	**0.4	*1.4	**0.8	**5.3	—	—
Heart diseases	**3.0	9.9	**2.7	**2.8	10.1	8.7	**0.2	—	**0.4
Cataracts	**0.3	1.4	**0.6	**1.0	*1.0	*2.2	**0.3	—	—
Diabetes	**0.2	5.7	*7.2	**7.0	5.4	5.1	**0.6	—	—
Depression	**1.2	6.2	*11.5	**7.8	5.6	5.2	**8.2	—	*5.7
Hypertension	**7.7	17.0	*7.3	**5.0	12.9	7.6	**15.2	—	**0.1
Total vision disorders	*16.8	6.6	*5.9	**3.2	6.4	11.0	*20.2	**2.1	*1.4
Parkinson's disease	**0.5	*0.4	**1.0	**1.0	**0.2	4.1	—	—	—
Paralysis	**8.4	**0.2	**0.7	**0.6	*0.7	*2.2	**0.5	—	—
Cancer	**0.1	1.8	**1.7	**0.4	*1.0	*2.2	—	—	—
Arthritis	**8.4	32.5	20.3	*13.7	25.1	12.9	*24.2	—	**1.7
Total hearing disorders	**9.2	25.6	*14.7	*15.7	19.6	23.2	**6.3	**2.1	*8.2
Hearing loss, noise-induced	—	10.6	**4.3	—	5.9	*2.3	—	—	—
Down syndrome	—	**0.2	—	—	—	*2.8	—	—	—
Epilepsy	23.6	1.2	**2.2	**3.0	3.3	7.0	**1.6	**11.2	**2.0
Cerebral palsy	100.0	—	—	—	*0.7	5.0	—	**4.5	**0.6
Back problems	**1.4	100.0	24.1	*21.0	24.0	8.1	**17.0	—	**3.0
Migraine	—	1.3	100.0	**3.6	*2.1	—	—	—	**1.8
Schizophrenia	—	*0.6	**2.0	100.0	*0.8	*1.2	**0.2	—	**0.9
Asthma	*12.8	9.7	*15.5	*10.3	100.0	8.3	**5.2	20.0	23.2
Speech	55.0	2.0	**0.1	*9.8	5.0	100.0	*27.1	75.7	*13.3
Multiple sclerosis	—	**0.2	—	**0.1	**0.2	*1.5	100.0	—	—
Autism	**2.5	—	—	—	**0.6	3.8	—	100.0	**1.2
ADHD	**1.6	**0.2	**2.0	**1.7	3.4	*3.3	—	**5.9	100.0
Total ('000)	**22.4**	**1,007.1**	**55.0**	**30.5**	**408.7**	**244.0**	**13.4**	**12.4**	**60.1**

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Sources: Table A5.1; AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

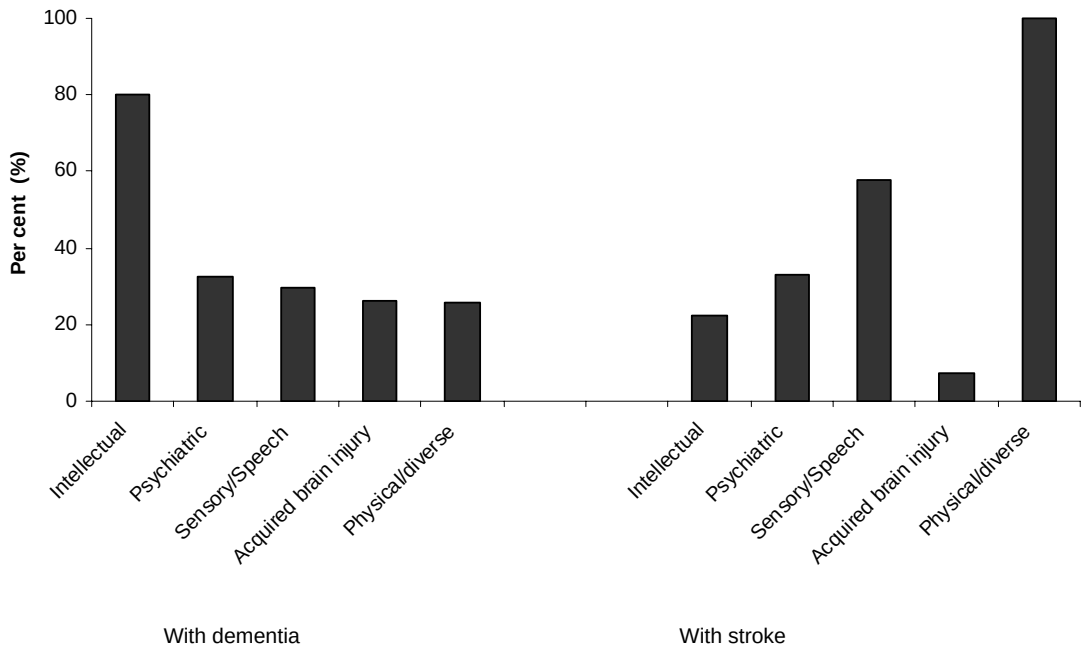
Associated disabilities

In this section, analysis of patterns of multiple conditions uses data that are more aggregated, namely disability groups rather than health conditions.

Table 4.9 illustrates the pattern of associated disabilities for people with several of the selected conditions. Each row of the table gives the estimates of associated disability groups reported by people with a given condition. The estimates were calculated as the proportions of the total number of people with a given condition. People with a specific condition may be associated with more than one type of disability so the sum of the components of each row may be larger than 100%. The estimates of disability groups use data on all disabling conditions. Survey information about certain levels/severity of activity limitations or participation restrictions is not included in the estimation. A full list of impairments and disabling conditions related to specific disability groups is presented in Appendix 1.

People with dementia (by definition in the psychiatric disability group) were most likely to have multiple disabilities: 90% of them had physical/diverse disability, 80% intellectual disability, 69% sensory/speech disability and 16% disability associated with acquired brain injury (Figure 4.9; Table 4.9).

High proportions of people with multiple associated disabilities were also found for people with autism, Down syndrome, cerebral palsy, Parkinson's disease, schizophrenia, speech and stroke, each with a relatively high proportion in three or more associated disability groups.



Source: Table 4.9.

Figure 4.9: People with disabilities: percentage of co-morbid health conditions by disability group, as a proportion of those with a given health condition, 1998

Table 4.9: People with a disability: associated conditions (based on all disabling conditions) by disability group, as a proportion of the total number of a given health condition, 1998

Health conditions	Intellectual	Psychiatric	Sensory/ speech	Acquired brain injury	Physical/ diverse	Total ('000)
			Per cent of the total number of a given health condition			
ADHD	100.0	30.9	18.6	**3.3	27.9	**60.1**
Autism	100.0	*70.1	*75.7	**8.5	*50.9	**12.4**
Down syndrome	100.0	*66.5	*69.6	**6.8	*44.0	**9.9**
Schizophrenia	47.7	100.0	*24.7	*9.6	48.6	**30.5**
Depression	20.3	100.0	32.1	10.6	84.3	**177.3**
Dementia	80.0	96.6	69.4	15.9	90.2	**100.3**
Cataracts	12.0	20.9	100.0	*5.0	80.7	**79.3**
Glaucoma	*13.4	25.6	100.0	*9.1	88.0	**56.4**
Total vision disorders	14.6	24.7	100.0	10.6	80.9	**349.7**
Hearing loss, noise-induced	5.6	15.3	100.0	3.3	80.7	**330.1**
Total hearing disorders	10.2	21.2	100.0	5.1	78.4	**1,001.6**
Speech	56.6	43.4	100.0	17.7	61.2	**244.0**
Heart diseases	9.4	24.1	52.7	4.7	100.0	**429.5**
Stroke	22.4	32.9	57.6	7.5	100.0	**230.3**
Hypertension	6.5	20.8	46.2	4.3	100.0	**638.2**
Asthma	14.3	18.8	27.2	4.7	100.0	**408.7**
Arthritis	6.1	21.6	40.8	4.5	100.0	**1,107.5**
Back problems	5.5	20.2	30.9	5.7	100.0	**1,007.1**
Osteoporosis	6.1	32.1	45.1	**2.2	100.0	**72.5**
Parkinson's disease	29.2	41.7	57.4	*12.2	100.0	**31.1**
Multiple sclerosis	**11.9	**16.7	*42.8	**1.4	100.0	**13.4**
Epilepsy	33.1	36.5	33.6	23.8	100.0	**90.9**
Migraine	*8.1	30.1	19.5	*6.1	100.0	**55.0**
Cerebral palsy	48.0	*36.2	62.7	*39.4	100.0	**22.4**
Paralysis	*33.3	*29.9	*38.0	*24.1	100.0	**22.2**
Diabetes	11.9	23.6	44.2	6.0	93.6	**243.0**
Cancer	10.9	17.6	47.7	*4.3	92.3	**84.7**

Note: Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.

Sources: Table A5.2; AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Multiple impairments and limitations associated with a condition

A health condition may be associated with a variety of impairments. Section 3.3 detailed the reported main conditions for each of the associated impairments or limitations. Describing the pattern of various impairments associated with a condition is essential for a better understanding of the associations between health conditions and disability. This section examines which health conditions are more likely to be associated with multiple impairments.

For people with a disability, each row of Table 4.10 shows the estimates of impairments (as identified by the survey screening questions) associated with a given main condition. Dementia and stroke were the most likely to be associated with multiple impairments, relating to almost all the listed impairments and limitations.

Dementia was strongly associated with intellectual/learning and mental impairments: 72,200 people with dementia as a main condition had difficulty learning or understanding things, 66,900 had mental illness or conditions requiring help or supervision, 16,200 had nervous or emotional conditions causing restrictions. Dementia was also associated with physical and sensory impairments: 37,000 people with dementia had restriction in physical activities or in doing physical work, 11,200 reported incomplete use of feet or legs and 20,000 reported speech difficulties.

Stroke had a strong association with physical impairments and limitations: 57,000 people reporting stroke as a main condition were restricted in physical activities or in doing physical work, 51,700 had difficulty gripping or holding things, 49,200 reported incomplete use of feet or legs, 45,100 reported incomplete use of arms or fingers and 10,500 had chronic or recurrent pain or discomfort. Stroke was also associated with sensory/speech and intellectual/learning impairments: 29,800 people with stroke as a main condition had speech difficulties and 18,300 people had difficulty learning or understanding things.

People with musculoskeletal disorders, such as arthritis and back problems, frequently had multiple physical impairments or limitations, for instance, restriction in physical activities or in doing physical work, incomplete use of feet or legs and difficulty gripping or holding things. People with musculoskeletal disorders as a main condition were also more likely to suffer chronic or recurrent pain or discomfort (491,000 for people with back problems and 448,700 for people with arthritis).

Heart disease had a strong association with shortness of breath or breathing difficulties (142,600), restriction in physical activities or doing physical work (102,300) and chronic or recurrent pain or discomfort (43,200).

Table 4.10: People with a disability: main conditions associated with a specific impairment or limitation ('000), 1998

Health conditions	Loss of sight[a]	Loss of hearing[b]	Speech difficulties	Shortness of breath or breathing difficulties	Chronic or recurrent pain or discomfort	Blackouts, fits or loss of consciousness	Difficulty learning or understanding things
ADHD	**0.6	—	*2.8	—	—	—	47.7
Autism	—	—	*7.4	—	—	**0.4	10.9
Down syndrome	—	**0.1	**2.3	—	—	—	*7.8
Schizophrenia	—	—	**0.7	—	**0.1	—	*8.2
Depression	**0.4	—	**0.3	**0.8	**1.9	—	*4.6
Dementia	**0.7	*2.8	20.0	**0.2	**0.5	**0.4	72.2
Cataract	74.8	—	—	—	—	—	—
Glaucoma	36.4	**0.1	—	—	—	—	**0.1
Other vision disorders	128.9	**0.3	**0.2	**0.6	**2.1	—	**1.7
Hearing loss, noise-induced	—	329.6	—	—	—	—	**0.6
Other hearing disorders	**0.8	637.8	11.3	—	**2.2	**1.5	12.6
Speech impediment	—	—	67.2	**0.6	**0.1	—	**0.3
Heart diseases	—	**0.1	**0.6	142.6	43.2	*7.4	**0.2
Stroke	*8.5	*5.4	29.8	*4.1	10.5	*3.8	18.3
Hypertension	**0.4	**0.1	—	22.4	**2.1	*6.9	—
Asthma	—	—	**0.1	358.3	*3.1	**1.4	—
Arthritis	**0.5	**0.5	**0.2	*2.5	448.7	**0.6	—
Back problems	**0.3	—	**0.5	*3.7	491.0	*1.5	**1.1
Osteoporosis	—	**0.2	—	—	26.1	—	—
Parkinson's disease	**0.1	**0.2	*6.7	**0.7	*4.6	**0.2	*2.9
Multiple sclerosis	**2.5	**0.3	*3.6	**1.0	*5.6	—	**1.5
Epilepsy	—	—	*1.0	—	**0.3	76.6	*6.0
Migraine	—	—	—	—	28.6	*3.2	—
Cerebral palsy	—	**0.1	*8.7	**0.5	*3.8	*3.1	*5.3
Paralysis	**0.6	**0.4	**0.7	**0.4	*4.9	**0.7	**0.1
Diabetes	15.2	**0.4	—	*2.9	*5.4	9.4	**0.1
Cancer	*0.4	—	**1.4	9.6	17.3	**1.9	*2.1

(continued)

Table 4.10 (continued): People with a disability: main conditions associated with a specific impairment or limitation ('000), 1998

Impairments	Incomplete use of arms or fingers	Difficulty gripping or holding things	Incomplete use of feet or legs	Nervous or emotional condition causing restriction	Restriction in physical activities or in doing physical work	Disfigure-ment or deformity	Mental illness or condition requiring help or supervision	Long-term condition or ailments receiving treatment or medication
ADHD	**0.5	**1.2	—	*5.3	**0.9	—	12.9	*2.3
Autism	—	**0.7	—	*3.4	*2.7	—	*7.9	—
Down syndrome	**0.1	**0.1	**0.1	—	*2.8	**0.4	*5.9	—
Schizophrenia	**0.1	**0.1	**0.1	20.7	*6.7	—	16.9	**1.1
Depression	—	**0.1	—	151.3	14.5	—	25.2	*8.9
Dementia	*6.6	*8.5	11.2	16.2	37.0	**1.2	66.9	**0.8
Cataract	—	—	—	—	—	—	—	**0.9
Glaucoma	—	—	—	—	**1.6	—	—	9.3
Other vision disorders	—	**0.2	**0.1	—	19.1	*3.0	**0.2	*4.1
Hearing loss, noise-induced	—	—	—	—	—	**0.1	—	**0.7
Other hearing disorders	—	**0.4	**1.0	**0.7	*4.5	—	**0.6	*6.5
Speech impediment	—	—	**0.6	—	—	—	—	—
Heart diseases	**1.0	**1.1	*5.7	**0.1	102.3	—	**0.3	106.2
Stroke	45.1	51.7	49.2	**2.1	57.0	*7.6	*6.2	**2.0
Hypertension	—	—	—	**0.3	15.4	—	—	282.0
Asthma	—	—	—	—	40.8	—	—	25.9
Arthritis	117.7	324.8	167.0	**0.1	263.7	20.1	**0.5	82.8
Back problems	15.7	26.6	46.6	**0.3	368.4	16.5	**1.7	46.1
Osteoporosis	*3.9	*3.6	*8.5	—	19.9	**2.0	**0.1	9.5
Parkinson's disease	10.4	14.1	13.5	**2.5	19.8	**0.8	**1.5	*1.0
Multiple sclerosis	*7.5	10.2	9.2	**1.4	11.4	**0.4	**0.2	—
Epilepsy	**0.1	**1.0	**0.1	**1.2	*5.0	—	**0.9	9.5
Migraine	—	—	—	—	*2.8	—	**0.6	12.4
Cerebral palsy	12.4	12.4	13.1	**0.2	14.5	*5.5	*3.5	**0.2
Paralysis	10.5	9.9	12.6	**0.7	12.6	**2.2	**0.3	—
Diabetes	**0.7	**2.5	*6.3	—	10.3	**0.2	**0.1	97.0
Cancer	**1.7	**2.4	**1.9	—	16.2	*5.2	**0.7	27.2

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

5 Severity of disability in relation to health conditions—five measures on activities and participation

The previous chapter has explored severity of disability in relation to health conditions using a group of 'severity' measures based on impairments/limitations and disabling conditions. This chapter uses a second group of severity measures which examine severity of disability in terms of core activity restrictions. Level of participation restrictions in employment is also examined.

5.1 Measures and main data items

Severity of disability can be examined in relation to different dimensions of disability, depending on specific purposes. In the 1998 Disability Survey definitions, severity of disability is chiefly measured by the need for, and the frequency of, personal assistance in three 'core activities' of self-care, mobility and communications (see Box 2.2).

The group of measures in this chapter uses multidimensional data combining not only health conditions but also activity limitations and participation restrictions. This may provide information relevant to planning for long-term care, disability support services and other community services.

This group of measures corresponds to the activities/participation components of the ICF. The key severity criterion for this group of measures is the level of need for assistance in core activities. This chapter examines the following associations[8]:

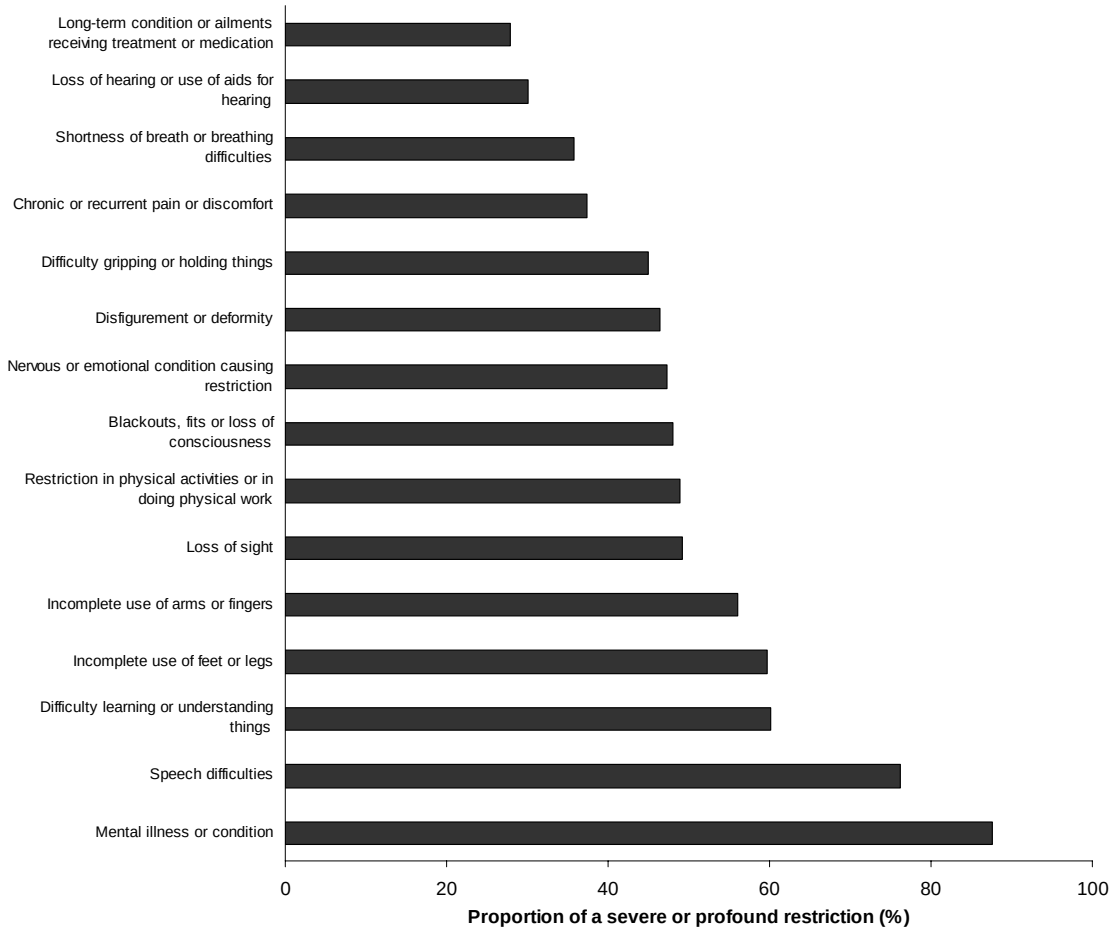
- Likelihood of severe or profound core activity restrictions, with a given impairment or limitation
- Likelihood of severe or profound core activity restrictions, for selected health conditions
- The number of core activities in which assistance is needed, for selected health conditions
- The frequency of help needed, for selected health conditions
- Level of restrictions in employment participation, for selected health conditions.

5.2 Likelihood of severe or profound core activity restrictions, with a given impairment or limitation

This section explores the likelihood of a severe or profound core activity restriction among people with various impairments or limitations (from the disability survey screening questions). An activity restriction may be associated with a number of different impairments

8 The disability survey also collected information about schooling restriction among people aged 5–20 years. However, the severity of schooling limitations was not classified in the survey.

or limitations. Severity of core activity restriction varied according to the type of impairment a person had. For people with a disability reporting various types of impairments and limitations, each row of Table 5.1 shows the proportion with a severe or profound core activity restriction. These proportions have been ranked to examine whether people with a given impairment are more likely to be associated with a severe or profound core activity restriction than those with other impairments (Figure 5.1a).



Source: Table 5.1.

Figure 5.1a: People with a specific impairment or limitation for all ages: proportion with a severe or profound core activity restriction, 1998

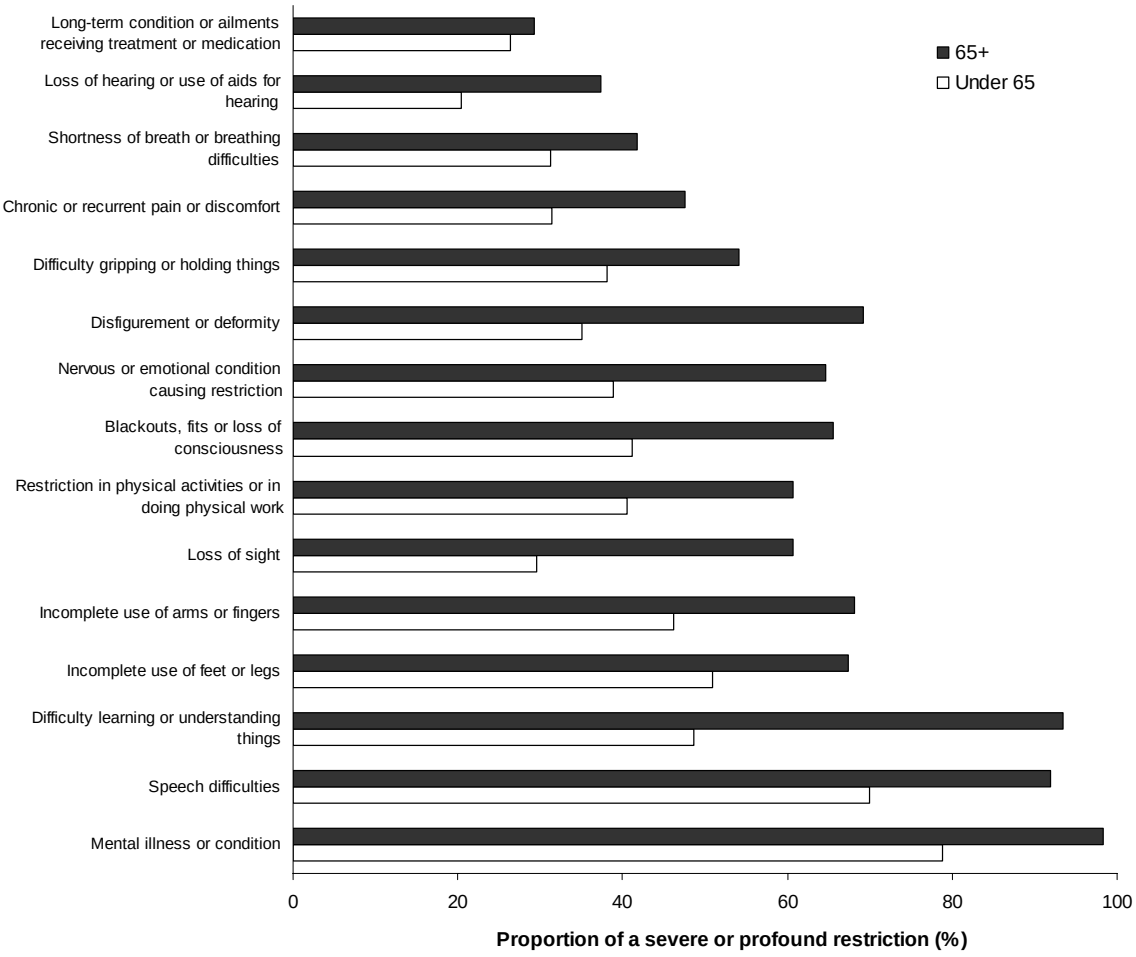
People with a mental illness or condition requiring personal help (88%)[9] and those with speech difficulties (76%)[10] were the most likely to have a severe or profound core activity restriction, followed by those with difficulty learning or understanding things (60%), incomplete use of feet or legs (60%) and incomplete use of arms or fingers (56%).

9 Mental illness or conditions were more likely to be associated with dementia (see Table 4.10).

10 Speech difficulties were more likely to be associated with underlying conditions such as dementia or stroke (see Table 4.8).

Receiving treatment or medication for a long-term condition or ailment (and still restricted) was ranked at the bottom of the list, with only 28%of people of all ages reporting that limitation having a severe or profound core activity restriction.

The age pattern indicated a higher proportion of severe or profound core activity restriction for those aged 65 or over than for those aged under 65 across all types of impairments (Figure 5.1b). The largest age difference was among those who had difficulty learning or understanding things, with 93% for those aged 65 or over compared to 49% for those aged under 65 years. The high proportion for those aged 65 or more was largely related to people with an underlying condition associated with dementia (Table 3.8).



Source: Table 5.1.

Figure 5.1b: People with a specific impairment or limitation by age groups: proportion with a severe or profound core activity restriction, 1998

Table 5.1: People with a disability: proportion of severe or profound core activity restriction among people with a specific impairment, 1998

	0–64		65+		All ages	
	%	Rank	%	Rank	%	Rank
Mental illness or condition requiring help or supervision	78.8	1	98.3	1	87.6	1
Speech difficulties	70.0	2	91.9	3	76.2	2
Difficulty learning or understanding things	48.6	4	93.4	2	60.2	3
Incomplete use of feet or legs	50.9	3	67.4	6	59.7	4
Incomplete use of arms or fingers	46.2	5	68.1	5	56.0	5
Loss of sight (not corrected by glasses or contact lenses)	29.5	13	60.7	9	49.2	6
Restriction in physical activities or in doing physical work	40.6	7	60.6	10	48.9	7
Blackouts, fits or loss of consciousness	41.1	6	65.5	7	48.1	8
Nervous or emotional condition causing restriction	38.9	8	64.6	8	47.3	9
Disfigurement or deformity	35.1	10	69.2	4	46.4	10
Difficulty gripping or holding things	38.1	9	54.1	11	45.0	11
Chronic or recurrent pain or discomfort	31.4	11	47.5	12	37.3	12
Shortness of breath or breathing difficulties	31.3	12	41.7	13	35.8	13
Loss of hearing where communication is restricted, or use aids for hearing	20.4	15	37.4	14	30.1	14
Receiving treatment or medication for a long-term condition or ailments (and still restricted in everyday activities)	26.4	14	29.3	15	27.9	15

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

5.3 Likelihood of severe or profound core activity restrictions, for selected health conditions

This section examines some significant health conditions and the likelihood of an associated severe or profound core activity restriction. Table 5.2 shows the proportions of people with a severe or profound core activity restriction among Australians who had each of the selected health conditions.

The overall pattern depicts a quite different picture compared to that based on the estimated frequencies of specific health conditions. Many conditions that were on the top of the list in terms of their frequencies (Table 3.4) were ranked towards the bottom of the list in terms of the likelihood of being associated with a severe or profound core activity restriction (Table 5.2 and Figure 5.2). These include asthma (12% of people with this condition had a severe or profound core activity restriction), hypertension (15%), back problems (19%), arthritis (23%) and hearing (23%).

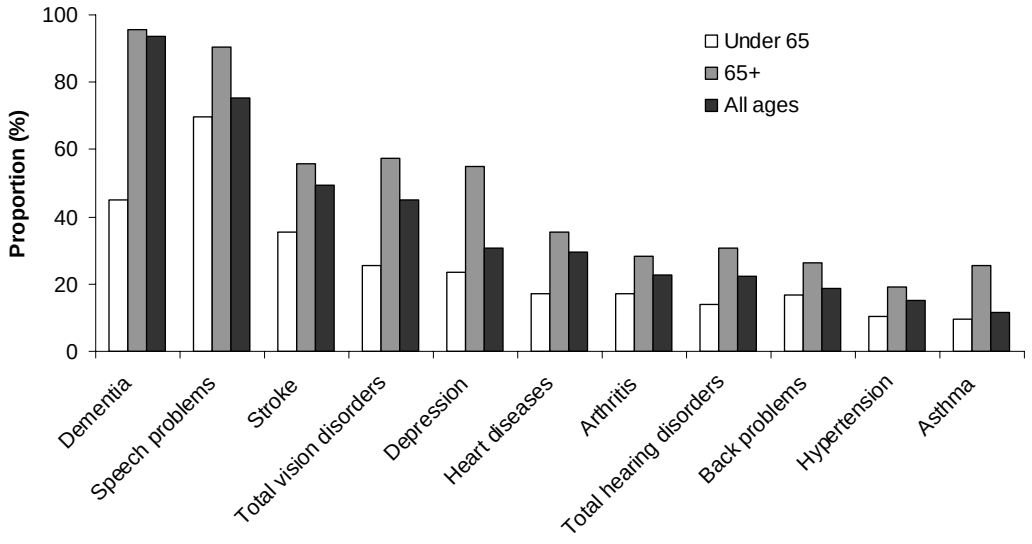
In contrast, conditions associated with intellectual, learning, psychiatric and neurological disorders and some physical conditions were ranked on the top of the list in Table 5.2. The top five conditions most likely to be associated with a severe or profound core activity restriction were autism (95%), dementia (94%), Down syndrome (92%), cerebral palsy (84%) and speech problems (76%). This was followed by Parkinson's disease (75%), multiple sclerosis (73%), paralysis (59%), cataract (52%) and schizophrenia (50%).

For people aged under 65, conditions associated with congenitally related disorders or which occurred in early childhood were ranked highest: autism (95% of people with this condition had a severe or profound core activity restriction), Down syndrome (92%) and cerebral palsy (83%).

Dementia (96%of people with this condition had a severe or profound core activity restriction) led the list for people aged 65 or over, followed by schizophrenia (93%), speech problems (90%) and Parkinson's disease (82%). Most of these conditions are highly related to age.[11]

It should be noted that the estimates were based on all reported conditions. The associations between health conditions and activity limitations are complex. An activity limitation may be associated with a number of different health conditions, or with just one of a number of reported conditions and it is not possible to tell which from the survey data. Multiple conditions are more common among older people. Two persons with the same health condition can have different levels of activity limitation, and two persons with the same level of activity limitation do not necessarily have the same health condition.

When the estimates based on main condition rather than all conditions were considered, speech problems were ranked lower but stroke was higher, especially for those aged 65 or over (Table A5.1). This reflects that the reported speech problems may be associated with conditions such as dementia and stroke for those aged 65 or over, and autism for those aged under 65. The relatively high ranking for speech problems in the estimates based on all conditions could reflect their associations with those other underlying conditions.



Source: Table 5.2.

Figure 5.2: Proportion of a severe or profound core activity restriction among people with a specific health condition (based on all conditions), by age group, 1998

11 The estimates for ADHD, Down syndrome and cerebral palsy in this age group have very higher relative standard errors and are considered too unreliable for this comparison.

Table 5.2: Proportion of severe or profound core activity restrictions among people with a specific condition (based on all conditions), by age, 1998

Health conditions	Aged under 65 years	Health conditions	Aged 65 years or over	Health conditions	All ages
Autism	95.3	ADHD	**100.0	Autism	95.3
Down syndrome	91.5	Down syndrome	**100.0	Dementia	93.6
Cerebral palsy	83.2	Cerebral palsy	**100.0	Down syndrome	91.5
Multiple sclerosis	74.9	Dementia	95.6	Cerebral palsy	83.6
Speech problems	69.6	Schizophrenia	*93.4	Speech problems	75.5
Parkinson's disease	*53.7	Speech problems	90.4	Parkinson's disease	75.4
Paralysis	*48.6	Parkinson's disease	81.6	Multiple sclerosis	73.3
Dementia	**45.2	Paralysis	*78.1	Paralysis	58.6
ADHD	43.7	Epilepsy	67.5	Cataract	51.9
Schizophrenia	42.1	Multiple sclerosis	**62.5	Schizophrenia	50.2
Epilepsy	40.0	Cataract	57.4	Stroke	49.3
Stroke	35.5	Total vision disorders	57.2	Glaucoma	45.1
Osteoporosis	32.7	Stroke	55.8	Total vision disorders	45.0
Cataract	*28.2	Depression	55.1	Osteoporosis	44.3
Total vision disorders	25.6	Glaucoma	54.2	ADHD	43.8
Cancer	23.9	Osteoporosis	50.3	Epilepsy	43.7
Depression	23.3	Cancer	35.6	Depression	30.5
Glaucoma	*20.0	Heart diseases	35.6	Cancer	30.3
Heart diseases	17.2	Diabetes	32.5	Heart diseases	29.4
Arthritis	17.0	Total hearing disorders	30.9	Diabetes	24.2
Back problems	16.9	Arthritis	28.4	Arthritis	22.7
Diabetes	16.4	Back problems	26.3	Total hearing disorders	22.5
Migraine	15.1	Asthma	25.4	Back problems	18.8
Total hearing disorders	13.9	Hypertension	19.3	Migraine	15.1
Hypertension	10.3	Hearing loss, noise-induced	16.7	Hypertension	15.1
Asthma	9.7	Migraine	**14.5	Hearing loss, noise-induced	12.4
Hearing loss, noise-induced	9.1	Autism	—	Asthma	11.5

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

5.4 Number of core activities in which help is needed, for selected health conditions

This section explores the number of core activities in which help was needed for people with selected health conditions. The focus of this measure is now on people with a disability.[12]

Table 5.3 shows the percentage distributions of the number of core activities in which help was needed, for people with each of the selected health conditions. For each of the selected conditions, the proportion needing help with all three activities was ranked.

The overall pattern was similar to that for the proportion having a severe or profound core activity restriction (Section 5.3). People with dementia, Down syndrome and autism were more likely to have more need for assistance; about 60% of people with those conditions needed help with all three core activities (Figure 5.3). A high proportion needing help with three activities was also reported by people with cerebral palsy (52%), speech problems (38%) and Parkinson's disease (35%).

About 95% of people with autism (11,700), 84 %of people with dementia (84,300) or Down syndrome (8,300), and 78% of those with cerebral palsy (17,300) needed help with at least two core activities.

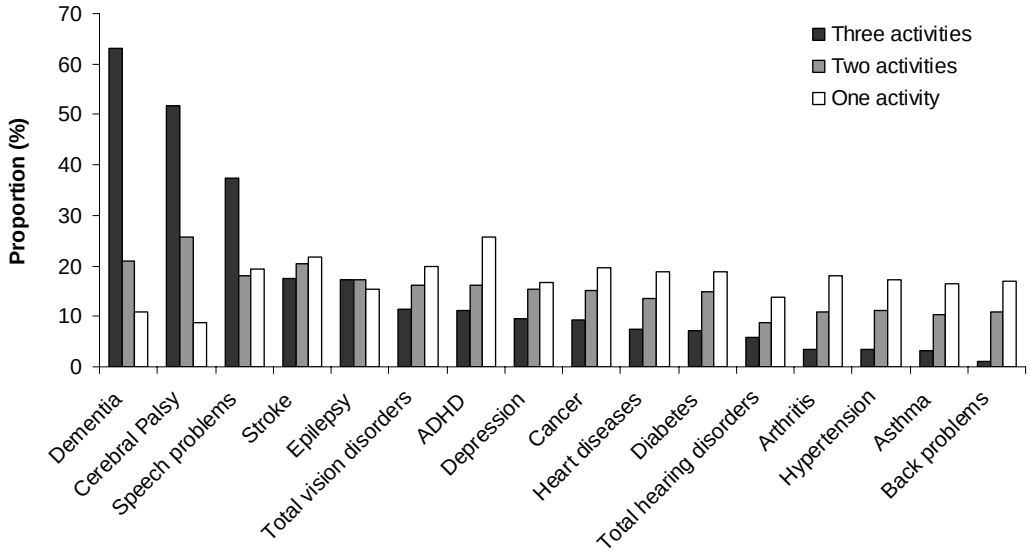
Of people with paralysis, about 60% needed help with at least two core activities, including 26% who needed help with all three activities.

In contrast, people with back problems, asthma, migraine, hypertension, arthritis and hearing disorders were ranked at the bottom of the list. Between 85%and 95% of people with these conditions either required no assistance or needed help with only one core activity.

If the estimates are based on main condition only, the pattern is similar to that for the previous measure. Speech problems were ranked toward the bottom of the list while stroke was in the top five of the list.[13]

12 The denominator for the previous measurement was all persons with a specific health condition. For this measurement, the denominator was people with a disability reporting a specific health condition, since the information about need for help with core activities was only collected among people with a disability.

13 When only the main condition is considered, many cells of the data table contain smaller estimates which are subject to very high relative standard errors. Therefore, this data table is not discussed but included in the Appendix tables: Table A5.2.



Source: Table 5.3.

Figure 5.3: People with a disability: number of core activities in which help needed, as a proportion of people with a disability who had a given condition (based on all conditions), 1998

Table 5.3: People with a disability: number of core activities in which help needed, as a proportion of people with a disability who had a given condition (based on all disabling conditions), 1998

Health conditions	Three core activities	Two core activities	One core activity	No need for help with core activities	Total (%)	Total with a disability ('000)
Down syndrome	*63.5	**19.7	**8.4	**8.4	**100.0**	**9.9**
Dementia	63.0	21.0	10.8	*5.2	**100.0**	**100.3**
Autism	*60.2	*34.7	**5.2	**0.0	**100.0**	**12.4**
Cerebral palsy	51.7	*25.8	**8.7	*13.8	**100.0**	**22.4**
Speech problems	37.5	17.9	19.4	25.2	**100.0**	**244.0**
Parkinson's disease	35.3	*29.4	*18.0	17.3	**100.0**	**31.1**
Paralysis	*25.6	*34.0	**5.2	*35.2	**100.0**	**22.2**
Stroke	17.4	20.5	21.7	40.3	**100.0**	**230.3**
Epilepsy	17.3	17.3	15.4	50.0	**100.0**	**90.9**
Glaucoma	*12.9	19.8	19.1	48.2	**100.0**	**56.4**
Cataract	12.1	15.2	26.1	46.6	**100.0**	**79.3**
Total vision disorders	11.5	16.1	19.9	52.5	**100.0**	**349.7**
ADHD	*11.3	16.3	25.6	46.9	**100.0**	**60.1**
Schizophrenia	*11.1	*20.2	*23.0	45.7	**100.0**	**30.5**
Depression	9.5	15.4	16.7	58.4	**100.0**	**177.3**
Osteoporosis	*9.4	19.4	22.3	48.8	**100.0**	**72.5**
Cancer	*9.3	15.0	19.5	56.2	**100.0**	**84.7**
Heart diseases	7.4	13.6	19.0	60.1	**100.0**	**429.5**
Diabetes	7.2	14.9	18.8	59.1	**100.0**	**243.0**
Multiple sclerosis	**6.3	*53.7	**18.6	*21.4	**100.0**	**13.4**
Total hearing disorders	5.9	8.8	13.9	71.4	**100.0**	**1,001.6**
Arthritis	3.6	11.0	18.1	67.4	**100.0**	**1,107.5**
Hypertension	3.4	11.1	17.2	68.4	**100.0**	**638.2**
Migraine	**3.3	*6.1	*13.6	77.0	**100.0**	**55.0**
Asthma	3.3	10.2	16.5	70.0	**100.0**	**408.7**
Back problems	1.1	10.8	16.8	71.3	**100.0**	**1,007.1**
Hearing loss, noise-induced	**0.6	4.7	10.9	83.8	**100.0**	**330.1**

Note: Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

5.5 Frequency of need for help with core activities, for selected health conditions

In the 1998 survey new questions were asked of those people with a disability about how often a person needed assistance with a specific activity. The range of frequencies recorded in the data file includes those who needed help from less than once per month to six times or more per day (Table 5.4).

This section examines severity of disability associated with various health conditions by looking at the likelihood of needing more frequent assistance with core activities. The percentage distributions of the highest frequencies of need for help were estimated for people with each of the selected health conditions; this was the highest frequency of need for help with any one of the three core activities, regardless of the number of activities in which help was needed.

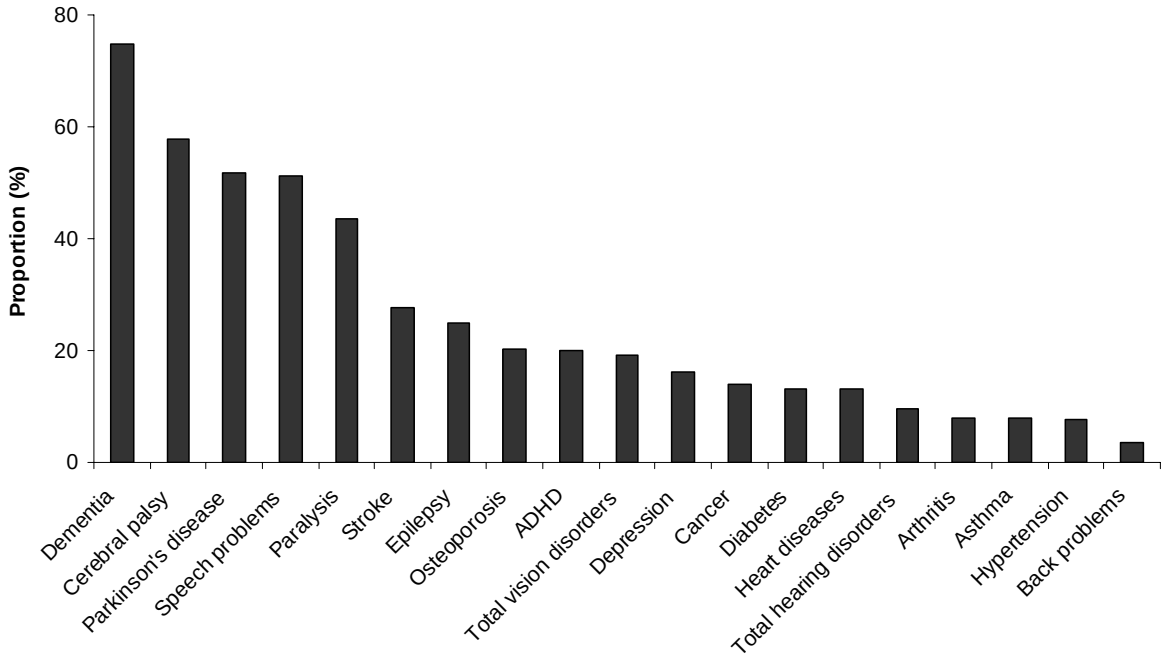
Table 5.4 shows the percentage distributions of the highest frequencies of need for assistance for each of the selected health conditions. For example, about 58% of people with cerebral palsy needed help three times or more a day, meaning that they required assistance at least three times a day with at least one of the three core activities, while they might have a lower frequency of need for help with other activities. The proportions of people reporting their highest frequencies of need for help as at least three times a day for each of the selected conditions are ranked.

Overall, the pattern is similar to those of the previous two measures. Dementia led the list with 75% of people with this condition needing help at least three times a day (Figure 5.4). About 60% of people with autism and 58% with cerebral palsy also needed assistance three or more times a day, followed by Parkinson's disease (52%), speech problems (51%) and Down syndrome (48%).

In contrast, conditions that were more likely to be associated with relatively low frequencies of need for help were back problems, migraine, hypertension, asthma, arthritis and hearing disorders. Only about 2–10% of people with those conditions required assistance three or more times a day.

If the estimates are based on main condition only, the pattern is also similar to that of the previous two measures. Speech problems were ranked toward the middle of the list (11th) rather than the top five of the list while stroke was in the top five of the list.[14]

14 When only the main condition is considered, many cells of the data table contain smaller estimates which are subject to very higher relative standard errors. Therefore, this data table is not discussed but included in Appendix tables: Table A5.3.



Source: Table 5.4.

Figure 5.4: People with a disability: proportion of people by the highest frequency (3+ per day) of need for assistance with core activities, by selected conditions (based on all conditions), 1998

Table 5.4: People with a disability: the highest frequency of need for assistance with core activities, as a proportion of people with a disability who had a specific condition (based on all disabling conditions), 1998

	Highest frequency of need for assistance with core activities								
Health conditions	**3+/day**	**1–2/ day**	**2–6/ week**	**1/week**	**1–3/ month**	**<1/ month**	**No need for help**	**Total (%)**	**Total number ('000)**
Dementia	74.7	11.9	*3.5	*2.7	**1.1	**1.0	*5.2	**100.0**	**100.3**
Autism	*63.4	*26.1	**4.9	—	—	**5.7	—	**100.0**	**12.4**
Cerebral palsy	57.9	*14.9	**8.2	—	—	**5.2	*13.8	**100.0**	**22.4**
Parkinson's disease	51.8	*18.3	**6.6	**2.5	**1.4	**2.1	*17.3	**100.0**	**31.1**
Speech problems	51.1	9.0	5.4	*1.9	5.3	*2.2	25.2	**100.0**	**244.0**
Down syndrome	*47.6	**25.7	**3.0	**0.7	**14.6	—	**8.4	**100.0**	**9.9**
Paralysis	43.6	*14.4	**4.5	**0.2	**1.9	**0.2	*35.2	**100.0**	**22.2**
Multiple sclerosis	*35.0	**12.4	**9.4	**4.9	**4.3	**12.6	*21.4	**100.0**	**13.4**
Stroke	27.8	8.8	8.3	6.3	5.0	*3.5	40.3	**100.0**	**230.3**
Epilepsy	25.0	*5.5	*6.3	**2.1	*4.1	*6.9	50.0	**100.0**	**90.9**
Glaucoma	22.4	*6.1	*6.8	*9.4	**3.9	**3.2	48.2	**100.0**	**56.4**
Cataract	21.3	*5.3	*4.4	11.3	*5.7	*5.4	46.6	**100.0**	**79.3**
Osteoporosis	20.3	*8.2	*8.6	**3.1	*7.9	**3.0	48.8	**100.0**	**72.5**
ADHD	20.0	19.7	**3.0	**4.1	**2.1	**4.2	46.9	**100.0**	**60.1**
Total vision disorders	19.1	7.3	5.4	7.6	4.2	3.9	52.5	**100.0**	**349.7**
Depression	16.2	7.3	6.7	*4.5	*2.6	*4.3	58.4	**100.0**	**177.3**
Schizophrenia	*15.8	*14.2	*10.6	**6.2	**4.5	**3.0	45.7	**100.0**	**30.5**
Cancer	14.1	*9.1	*7.8	*3.9	*5.3	*3.6	56.2	**100.0**	**84.7**
Diabetes	13.1	8.3	4.6	5.2	4.0	5.5	59.1	**100.0**	**243.0**
Heart diseases	13.1	7.2	6.4	5.4	4.4	3.3	60.1	**100.0**	**429.5**
Total hearing disorders	9.6	4.4	4.3	3.2	3.3	4.0	71.4	**100.0**	**1,001.6**
Arthritis	8.0	5.6	5.1	3.9	4.3	5.7	67.4	**100.0**	**1,107.5**
Asthma	8.0	5.6	4.6	2.5	3.3	6.2	70.0	**100.0**	**408.7**
Hypertension	7.6	5.1	6.0	4.2	3.8	4.9	68.4	**100.0**	**638.2**
Migraine	**4.4	**4.6	**3.4	**2.0	**2.9	*5.7	77.0	**100.0**	**55.0**
Back problems	3.6	4.6	4.7	3.5	4.4	7.9	71.3	**100.0**	**1,007.1**
Hearing loss, noise-induced	*1.7	3.7	2.9	*1.7	*2.4	3.8	83.8	**100.0**	**330.1**

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

5.6 Level of participation restrictions in employment

Employment restriction and need for assistance

Information about employment restriction was collected in the ABS 1998 Disability Survey for persons with a disability aged 15–64 years living in households. Four levels of severity of restrictions in employment were classified by the survey (Box 5.1).

The four levels of restriction are broadly consistent with the four levels of severity of core activity restriction. A severe or profound employment restriction refers to being unable to work, needing or receiving ongoing personal assistance or supervision; a moderate or mild employment restriction refers to not needing ongoing personal assistance or supervision but with various restrictions and difficulties in employment, including use of special equipment and modified work environment.

Box 5.1: ABS 1998 Survey of Disability, Ageing and Carers: employment restrictions and their severity

Profound–*Permanently unable to work because of own condition/disability, and no provision could be made to enable work.*

Severe–*Needed/would need ongoing assistance or supervision at work because of conditions; and received assistance from disability job placement program or agency.*

Moderate–*Restricted in type of work could do because of health conditions; often needed time off work; restricted in number of hours worked; and difficulty in changing jobs/getting better job.*

Mild– *Did not need ongoing personal assistance or supervision, time off, shorter hours or have difficulty changing or getting better job, but needed 'employer other arrangements': needed employer to provide training/retraining, special equipment, modified buildings/fittings, special/free transport or parking.*

Source: ABS unpublished document on data items of the 1998 Survey of Disability, Ageing and Carers.

Overall, among people aged 15—64 with a severe or profound core activity restriction living in households, 321,700 people were not in the labour force and 18,700 were unemployed, while 151,900 people were employed (Table 5.5).

Over 80% of people who were not in the labour force had a severe or profound employment restriction (Table 5.5). The proportion of people with a severe employment restriction was higher for unemployed people (20%) than employed people (13%). (By definition ,no one who reported a profound employment restriction was in the labour force.)

The overall picture also illustrates associations between the level of participation in employment and social support in the workplace and various aspects of the individuals' environment. About 73% of people who were not in the labour force said that they would need a support person if they were employed. For people in the labour force, a substantially higher proportion of unemployed people than employed people reported various employment restrictions, such as need for time off work and need for employer to provide equipment or special arrangements.

Table 5.5: People aged 15–64 with a severe or profound core activity restriction living in households: labour force status, by employment restrictions, severity of employment restriction, requirements to enable workforce participation, 1998

	Employed		Unemployed		Not in the labour force	
	No. ('000)	%	No. ('000)	%	No. ('000)	%
Severity of employment restriction						
Profound	—	—	—	—	221.6	68.9
Severe	19.5	12.8	*3.7	20.0	39.4	12.3
Moderate	112.7	74.1	14.3	76.4	43.5	13.5
Mild to no employment restriction	19.8	13.0	**0.7	**3.5	17.1	5.3
Employment restrictions[(a)]						
Restricted in type of job	125.2	82.4	16.5	88.1	68.0	21.1
Restricted in number of hours	83.9	55.2	11.3	60.5	35.7	11.1
Difficulty in changing job or getting a better job	104.3	68.6	14.9	79.6	52.9	16.4
Need for time off work	28.6	18.8	*8.5	45.3	31.6	9.8
Need for employer provided equipment and/or special arrangements	26.4	17.4	*8.9	*47.8	33.6	10.4
Need for ongoing supervision or assistance	19.5	12.8	*3.4	*18.3	25.3	7.9
Need for support person	—	—	—	–	235.8	73.3
Other employer arrangements[(a)]						
A disability support person or someone at work to assist/train on the job	14.4	9.5	**0.8	**4.3	10.0	3.1
Special equipment	10.2	6.7	*4.8	*25.8	11.6	3.6
Training or retraining	**2.5	**1.6	—	—	7.7	2.4
Different duties	*8.9	*5.9	**1.1	**5.7	12.6	3.9
Total	**151.9**		**18.7**		**321.7**	

(a) Total may be not equal to the sum of the components as the questions on employment restrictions, arrangements and requirements were asked separately in the survey.

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Level of participation restrictions in employment, for selected health conditions

This measurement explores health conditions in relation to the level of participation restriction in employment. Table 5.6 shows the percentage distributions of the level of restrictions in employment for working-age people with the selected health conditions. A large proportion of working-age people with some specific conditions was in cared accommodation[15], for instance, people with dementia (27%), cerebral palsy (16%),

15 Cared accommodation refers to non-private dwellings such as hospitals, homes for the aged, nursing homes, aged care hostels and children's homes. Independent living units located within retirement villages are excluded (ABS 1999).

schizophrenia (13%), speech problems (14%), Down syndrome (13%) and paralysis (13%). While the information about participation restriction was not collected among people in cared accommodation, it is reasonable to assume that those living in cared accommodation had a profound level of participation restriction, meaning that they were permanently unable to work and no provision could be make to enable them to work. In Table 5.6, therefore, people living in cared accommodation and people with a profound employment restriction were grouped together as an additional broad group (Column 2). The proportions of this group for each of the selected conditions were ranked to find whether people with a given condition reported a higher level of participation restriction in employment than those with other conditions.

The results indicate that the ranking pattern differs from the previous 'severity' measures in this chapter, which focused on need for assistance with core activities. Some health conditions that were ranked in the top list by previous measures were excluded from the discussion due to the small estimates and large relative standard errors. Dementia and Parkinson's disease were mostly related to people aged 65 year or over, while most people with autism were aged under 15.

Stroke and schizophrenia were at the top of the list in terms of the level of restriction in employment, with over 60% of people with those conditions either living in cared accommodation or having a profound employment restriction (permanently unable to work). This was followed by people with osteoporosis (57%) and heart disease (57%) (Figure 5.5).

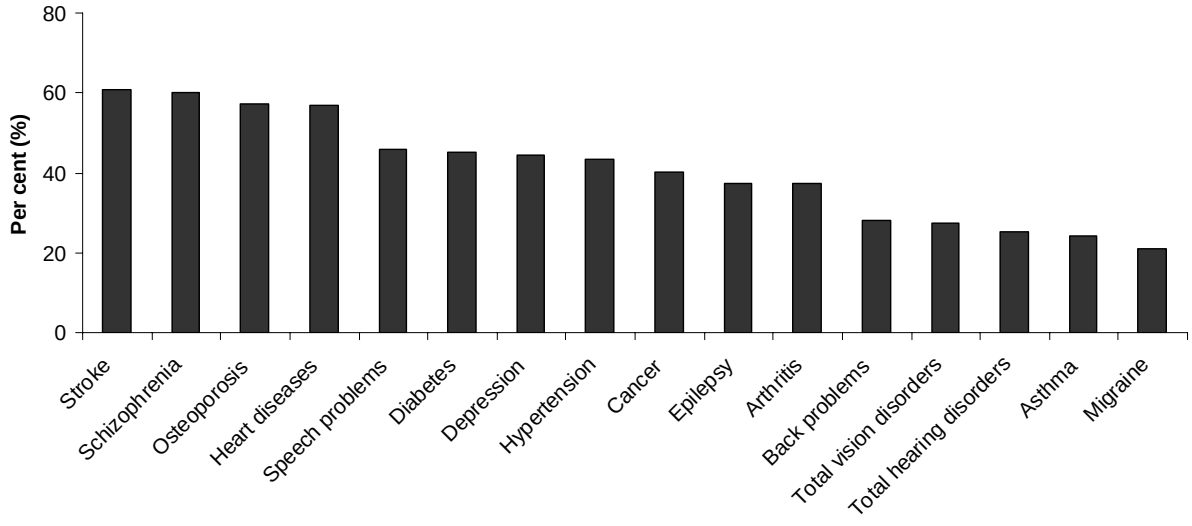
Although the estimates in Table 5.6 appears to indicate that 46% of people with speech problems were permanently unable to work, the estimates based on main condition shows that only about 8,700 working-age people with a disability reported speech problems as their main condition (Table A5.4). Of these, 93% had either mild or no restriction in employment and no one had a profound restriction or was living in cared accommodation. This suggested that the reported speech problems among working-age people were likely to be associated with the effects of stroke and other conditions affecting work.

It is worth noting that a high proportion of people with diabetes (44%), depression (43%) and arthritis (37%) had a profound restriction in employment, and this was also true when estimates based on main conditions was considered (Table A5.4): diabetes (30%), depression (34%) and arthritis (31%).

Even though the estimates based on all conditions showed a high proportion of profound employment restriction among people with hypertension (43%), cancer (40%) and epilepsy (31%), the numbers of people with these conditions as main conditions reduced dramatically and the estimates were subject to high relative standard errors (Table A5.4).

There were several possible explanations for the differences between the pattern measured using severity of restriction in employment and the pattern measured by the three measures focusing on severity of restriction in core activities. First, the focus of life areas is different between these measurements. The measurement on severity of restriction in employment focuses on people's involvement in economic activities in terms of doing paid work, while the measurements on core activity restrictions concentrate on tasks relating to basic daily activities of self-care, mobility and communication.

Second, the pattern of health conditions for the working-age population differs from that of the total population. Several conditions which were likely to be associated with more severe disability were not particularly prevalent among people of working age.



Source: Table 5.6.

Figure 5.5: People with a disability aged 15–64: proportion of a profound employment restriction or living in cared accommodation for a given health condition (based on all disabling conditions), 1998

Table 5.6: People with a disability aged 15–64: health conditions (based on all disabling conditions), by severity of employment restriction, 1998

Health conditions	Sum of profound and living in cared accommodation	Living in cared accommodation	Profound	Severe	Moderate	Mild or no restriction	Total (%)	Total No. ('000)
			Per cent					
Autism	***100.0*	**9.2	**90.8	—	—	—	**100.0**	****1.6**
Parkinson's disease	**68.4*	**5.9	*62.5	—	**18.0	**13.6	**100.0**	***6.4**
Dementia	**66.0*	**26.6	**39.4	**34.0	—	—	**100.0**	***4.0**
Stroke	*60.9*	**3.6	57.3	*7.7	16.5	14.9	**100.0**	**66.4**
Schizophrenia	*60.1*	**12.6	47.5	*16.6	*16.9	**6.4	**100.0**	**24.9**
Osteoporosis	*57.2*	**0.3	57.0	**2.2	*21.7	*18.8	**100.0**	**23.1**
Heart diseases	*56.8*	**0.6	56.2	*4.6	22.2	16.5	**100.0**	**127.7**
Glaucoma	**56.7*	**1.7	*55.0	**4.8	**21.3	**17.2	**100.0**	**10.8**
Down syndrome	**54.0*	**12.6	*41.4	*36.9	—	**9.0	**100.0**	**8.4**
Cerebral palsy	**53.7*	**15.6	*38.2	**17.2	*23.9	**5.2	**100.0**	**12.1**
Speech problems	*46.0*	13.7	32.3	17.3	19.2	17.4	**100.0**	**85.6**
Diabetes	*45.1*	**1.1	44.0	*5.6	25.8	23.6	**100.0**	**109.3**
Depression	*44.3*	**1.4	42.9	9.8	31.2	14.8	**100.0**	**126.1**
Hypertension	*43.3*	**0.6	42.7	*3.5	28.0	25.2	**100.0**	**242.1**
Cancer	*40.2*	**0.5	39.6	**5.7	36.6	*17.5	**100.0**	**31.7**
Epilepsy	*37.5*	*6.7	30.8	*11.0	25.2	26.2	**100.0**	**63.2**
Arthritis	*37.4*	**0.2	37.2	3.5	33.1	26.0	**100.0**	**517.4**
Multiple sclerosis	**35.3*	**8.4	*26.9	**13.7	*42.3	**8.8	**100.0**	**11.5**
Paralysis	**28.1*	**13.3	**14.9	**11.2	*41.3	*19.3	**100.0**	**14.0**
Hearing loss, noise-induced	*28.1*	—	28.1	*2.9	31.9	37.1	**100.0**	**168.2**
Back problems	*28.1*	**0.1	27.9	6.5	46.5	18.9	**100.0**	**761.5**
Cataract	**27.5*	**4.7	*22.9	**5.3	*22.8	*44.4	**100.0**	**11.5**
Total vision disorders	*27.3*	*3.2	24.1	7.9	35.6	29.2	**100.0**	**115.6**
Total hearing disorders	*25.3*	**0.3	24.9	5.4	33.8	35.5	**100.0**	**409.2**
Asthma	*24.1*	**0.5	23.7	5.4	38.0	32.5	**100.0**	**235.7**
Migraine	*20.9*	—	20.9	*5.6	35.4	38.1	**100.0**	**47.3**
ADHD	***8.6*	**0.4	**8.2	*18.5	*36.1	*36.8	**100.0**	**17.3**

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

6 Disability, health conditions and other factors—multivariate analyses

6.1 Introduction

The previous three chapters presented analyses of the associations between the prevalence and severity of disability, and health conditions in the Australian population. These analyses do not take into account personal or environmental factors that may influence these relationships. This chapter examines how such factors are related to measures of the severity of disability for selected health conditions.

The only data source for the Australian population that is appropriate for such analyses is the Survey of Ageing, Disability and Carers, 1998. As well as the items on disability and health condition, the survey contains a number of items relating to a person's characteristics and situation. The impact of disability is probably related to a wide range of such factors and many of these may interact. To better understand these relationships it is necessary to move beyond simple bivariate analyses and use multivariate techniques, designed to isolate the relationship with each possible factor.

The two main aims of these analyses were to explore what personal and environmental factors are significantly associated with each of three different measures of the 'severity' of disability, and to examine variations in the pattern of these factors for different selected health conditions. Severity is used here as a term indicating the impact of disability on a person's life (see Section 1.2 for further discussion of this).

There are two important issues to consider in interpreting the results of these analyses. Firstly, the survey data provide information on only a limited number of all the possible personal and environmental characteristics that could be postulated as being associated with the severity of disability. In particular, there are only a few items that might be regarded as environmental factors. Secondly, any association found between the severity of disability and any particular characteristic could occur for a number of reasons that involve different pathways of relationship. For example, *if* low income was found to be associated with a greater likelihood of severe disability, this may occur because:

(a) having a low income increases the likelihood of a person's disability being more severe

(b) having a more severe disability increases the likelihood of a person having a low income

(c) one or more other characteristics of a person increase the likelihood of a person having both a low income and a more severe disability

(d) of some combination of any two or all of a, b and c.

This means that any model of the severity of disability will be predictive only in the statistical sense, that is, for a particular health condition, given a certain set of personal and environmental characteristics, it is possible to estimate the probability of a person experiencing a certain severity of disability, however measured.

Given the above limitations, the multivariate analyses described in this chapter are exploratory and designed to stimulate ideas about the analytical strategy and possible areas for further investigation. This exploration is to give a general picture of the degree to which

the personal and environmental factors in the survey are associated with the severity of disability, rather that to examine any particular associations in detail. Given this, there has been no adjustment for the fact that, due to the large number of analyses and the large survey sample, it is possible that there will be some statistically significant results that will occur by chance and so do not reflect meaningful differences in the population. However, it may be possible to draw some conclusions about some particular factors if they show strong and consistent patterns.

Some interesting results will be discussed without attempting to precisely quantify the magnitude of all the possible associations. Further work is necessary to accurately determine the relative importance of different factors and to identify interactions among them, as well as to explore the relationship between disability and different combinations of health conditions. Such work could be more targeted in its approach so as to test specific hypotheses in a structured way. The exploratory analyses reported here may suggest particular hypotheses that could be tested with more sophisticated modelling approaches.

Consistent with the concepts of the ICF, the severity of disability is here measured in terms of activity limitations and participation restrictions. The range of questions in the survey allows severity to be measured in a number of possible ways. Different measures involve more or less restricted groups of people. Three representative measures of severity were selected, resulting in three models, which progressively limit the population being analysed from all people in the population to people with a disability, to people with a severe or profound core activity restriction. That is, within the overall spectrum of disability, the three models progressively examine a more restricted range in finer detail.

The models using each of these measures will be referred to as models A, B and C and are detailed in the next section:

A. The presence of 'severe or profound' activity restrictions for the three core activities for all people with and without a disability
B. The frequency of the need for help in the three core activities, for people with a disability only
C. The amount of assistance received from carers, for people with a severe or profound core activity restriction only.

The first two of these measures are also discussed and examined in Chapter 5. Another measure examined in that chapter—the number of core activities in which assistance was needed—was also tested here in less detail.

Section 6.2 describes the statistical methods used for the analysis and readers who are not familiar with multivariate analysis may choose to skip part or all of this section. Sections 6.3, 6.4 and 6.5 discuss the results for the three models in detail and Section 6.6 gives an overview of these.

6.2 Statistical analysis

Regression models

The analyses were carried out by multivariate logistic regression, which is appropriate given the nature of the variables of interest. There were three models (A, B and C) corresponding to the three measures of severity of disability chosen (see below). In each case, all selected potential factors were forced into the multivariate model, and backward elimination ($p <$

0.05) was used to obtain a parsimonious final model. However, three factors were retained in the model regardless of their statistical significance: sex, age and survey component (household or cared accommodation[16], in models A and B only). This was firstly because they were used as stratifying variables in the survey, and secondly because of their basic importance in the population.

Ordered multiple outcomes logistic regression was used to determine the associations between the response variable (the measure of severity of disability) and the covariates (the personal and environmental factors). This regression model assumes the relationship:

$$\text{logit}(\text{prob}(Y \leq j)) = \log((\text{prob}(Y \leq j)/(1 - \text{prob}(Y \leq j)) = \alpha_j + \beta' x \quad \text{for } j=1,\ldots k$$

where the response of the variable Y is measured in one of k+1 different categories, α_j are k intercept parameters, and β is the slope parameter vector not including the intercept term. By construction, $\alpha_1 < \alpha_2 < \ldots < \alpha_{k-1} < \alpha_k$ holds. This model fits a common slope cumulative model, which is a parallel lines regression model based on the cumulative probabilities of the response categories.

The three models are described in detail below.

Weighting of survey sample

To enable the data provided by each person to be expanded to provide estimates relating to the total Australian population, each record in the ABS survey data includes a weight calculated by post-stratification at the level of state by capital city/rest of state by age group by sex for both the household and cared accommodation components of the survey. The data are weighted to match the age and sex distribution of the 1998 estimated population of Australia.

For the analysis, the normalised weight was used so that the weighted cases sum to the actual sample size. With this option, the estimated covariance matrix of the parameter estimators is invariant to the scale of the weight variable.

The final effective sample for the survey includes 36,948 persons for the household component and 5,716 persons for the cared accommodation component.

Model A

The measure of severity is whether the person has a severe or profound core activity restriction, that is, with two categories, yes or no. For *total* conditions, this analysis was done in two ways:

- including all people, with the 'no' category including both people with a disability but without a severe or profound activity restriction, and people without a disability, whether or not they have a long-term condition. Obviously, all those people without a long-term health condition will not have a severe or profound core activity restriction.
- including all people with one or more conditions, with the 'no' category including both people with a disability but without a severe or profound activity restriction, and people with at least one condition but without a disability.

16 Cared accommodation refers to non-private dwellings such as: hospitals, homes for the aged, nursing homes, aged care hostels and children's homes. Independent living units located within villages are excluded (ABS 1999).

For each *separate* condition the analysis could by definition include only people who had at least one condition (see below for the conditions selected).

Model B

This model includes all people with a disability (19% of the population). The measure of severity is a scale of need for assistance. To calculate this scale a score is given from 0 to 180 based on the actual frequency of assistance for each area of the three core activities, as in Table 6.1. The scores for the three core areas are summed and then grouped into four levels as follows:

level 0: sum of the scores equals zero

level 1: sum of the scores is greater than zero and less than or equal to 180

level 2: sum of the scores is greater than 180 and less than or equal to 360

level 3: sum of the scores is greater than 360.

The relationship between this measure and having a severe or profound activity restriction is shown in Table 6.2. Only 14% of all people without a severe or profound core activity restriction have a disability; however, all these by definition have no need for assistance (level 0) and they are the majority of people with a disability. A small number of people who had a severe/profound activity restriction did not record a need for assistance when answering the questions on frequency. These two groups together constituted 69% of all people with a disability. Most people with a severe or profound activity restriction were in the level 1 category (78%) with lesser numbers in the higher two categories. All people with a need for assistance must by definition have a severe or profound activity restriction.

Model C

The third measure of severity of disability is based on a scale of the amount of informal assistance received in the areas of self-care, communication and mobility from primary carers. The model includes only people who have a severe or profound activity restriction (6.1% of the population). This is because most people who do not have a severe or profound activity restriction do not have a primary informal carer and this data item was not collected for them.

Table 6.1: Score of frequency of need for help in the core activities for regression model B

Frequency	Score
Do not need assistance because of disability	0
Less than once a month	0.5
One to three times a month	2
Once a week	4
Two to six times a week	16
Once a day	30
Twice a day	60
Three to five times a day	120
Six or more times a day	180

Table 6.2: All persons: severe/profound core activity restriction by frequency of need for assistance (based on all conditions), by sex, 1998

	Without disability	Level 0	Level 1	Level 2	Level 3	All persons
Severe/profound			**Number ('000)**			
Male						
Yes	—	9.2	400.7	56.7	38.9	505.5
No	7,460.9	1,315.2	**0.4	—	—	8,776.6
Total	7,460.9	1,324.4	401.1	56.7	38.9	9,282.0
Female						
Yes	—	*7.1	484.1	79.8	60.1	631.0
No	7,588.7	1,156.7	**1.2	—	—	8,746.6
Total	7,588.7	1,163.7	485.3	79.8	60.1	9,377.6
Persons						
Yes	—	16.2	884.8	136.4	99.0	1,136.5
No	15,049.7	2,471.9	**1.6	—	—	17,523.2
Total	**15,049.7**	**2,488.1**	**886.4**	**136.4**	**99.0**	**18,659.7**
			Per cent by frequency of need for assistance			
Male						
Yes	—	1.8	79.3	11.2	7.7	100.0
No	85.0	15.0	—	—	—	100.0
Total	*80.4*	*14.3*	*4.3*	*0.6*	*0.4*	*100.0*
Total with disability	*..*	*72.7*	*22.0*	*3.1*	*2.1*	*100.0*
Female						
Yes	—	*1.1	76.7	12.6	9.5	100.0
No	86.8	13.2	—	—	—	100.0
Total	*80.9*	*12.4*	*5.2*	*0.9*	*0.6*	*100.0*
Total with disability	*..*	*65.1*	*27.1*	*4.5*	*3.4*	*100.0*
Persons						
Yes	—	1.4	77.9	12.0	8.7	100.0
No	85.9	14.1	—	—	—	100.0
Total	**80.7**	**13.3**	**4.8**	**0.7**	**0.5**	**100.0**
Total with disability	**..**	**68.9**	**24.6**	**3.8**	**2.7**	

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

In the survey, the number of hours per week of care received from the co-resident primary carer was asked for people living in households, categorised as under 20 hours, 20 to 39 hours, 40 or more hours or 'not applicable'. People who were recorded as 'not applicable' for this question were further categorised into two groups depending upon whether they had a main provider of care. In this case a main provider could be either a primary carer who was not co-resident, or else a formal service provider who provided assistance with one or more

of self-care, communication or mobility.[17] People living in cared accommodation were not asked the question on number of hours of care and for this measure were assumed to be in the highest category. That is, this scale assumes that people who do not have a main provider received the least assistance while people who live in cared accommodation received the most assistance. Thus this measure of informal assistance has six ranked categories as shown in Table 6.3.

Table 6.3: Categories in descending order for the amount of assistance received for core activities for regression model C

Determinants	Category
People living in cared accommodation	Living in cared accommodation
People living in households with a co-resident primary carer	
	40 or more hours per week of assistance
	20 to 39 hours per week of assistance
	Under 20 hours per week of assistance
People living in households without a co-resident primary carer	
(a) Other informal primary carer or formal care provider for assistance with self-care, communication and/or mobility	Have main provider
(b) No care provider for self-care, communication or mobility	No main provider

The relationship between this measure and the frequency of need for assistance (model B) is shown in Table 6.4. Almost all (99%) of people with no recorded need for assistance (level 0) are excluded from this analysis as they do not have a severe/profound activity restriction. (The small number that are included are those who had a severe/profound activity restriction but did not record a need for assistance when answering the questions on frequency. These are also the only people recorded as not having a main provider.)

There is a strong relationship between the two measures for people who are included in the model C analysis. The majority of people (74%) with a level 3 frequency of need are in cared accommodation, while the majority of people (69%) with a level 1 frequency of need have a main provider with no weekly hours of care recorded. The distribution of people with a level 2 frequency of need was more even, although concentrated in the two groups for cared accommodation and 40 or more hours of care per week.

The patterns of relationship between the two measures are different for males and females. This is examined further in the discussion of results for model C.

17 It is possible for a person to receive both informal and formal care for assistance with self-care, mobility and communication; however, there was no question on the amount of formal care provided.

Table 6.4: All persons with disability: frequency of need for assistance by amount of assistance received from primary carers (based on all conditions), by sex, 1998

Need for assistance	Not severe/ profound	Cared accommodation	40 or more hours/wk	20–39 hours/wk	Less than 20 hours /wk	Have main provider	No main provider	All with disability
				Number ('000)				
Males								
Level 3	—	23.7	12.2	**1.2	**0.3	**1.6	—	38.9
Level 2	—	15.9	19.9	*7.2	*2.9	10.8	—	56.7
Level 1	**0.4	15.5	50.8	18.5	47.6	268.3	—	401.1
Level 0	1,315.2	**1.0	—	—	—	—	*8.2	1,324.4
Total	1,315.6	56.1	82.8	26.9	50.8	280.7	*8.2	1,821.1
Females								
Level 3	—	49.2	9.7	—	**0.5	**0.7	—	60.1
Level 2	—	33.4	21.1	9.0	*5.2	11.0	—	79.8
Level 1	1.2	34.4	40.0	22.7	48.3	338.8	—	485.3
Level 0	1,156.7	**1.8	—	—	**0.7	—	*4.5	1,163.7
Total	1,157.9	118.9	70.7	31.7	54.7	350.6	*4.5	1,788.9
Persons								
Level 3	—	73.0	21.9	**1.2	**0.7	**2.3	—	99.0
Level 2	—	49.3	41.0	16.2	*8.1	21.9	—	136.4
Level 1	**1.6	49.9	90.7	41.1	95.9	607.2	—	886.4
Level 0	2,471.9	**2.8	—	—	**0.7	—	12.7	2,488.1
Total	**2,473.5**	**174.9**	**153.5**	**58.6**	**105.5**	**631.3**	**12.7**	**3,610.0**
				Per cent of all with disability				
Males								
Level 3	—	60.9	31.3	**3.1	**0.7	**4.0	—	100.0
Level 2	—	28.0	35.1	*12.7	*5.1	19.1	—	100.0
Level 1	**0.1	3.9	12.7	4.6	11.9	66.9	—	100.0
Level 0	99.3	**0.1	—	—	—	—	*0.6	100.0
Total	*72.2*	*3.1*	*4.5*	*1.5*	*2.8*	*15.4*	*0.5*	*100.0*
Total S/P	*..*	*11.1*	*16.4*	*5.3*	*10.0*	*55.5*	*1.6*	*100.0*
Females								
Level 3	—	81.9	16.1	0.0	**0.8	**1.2	—	100.0
Level 2	—	41.9	26.4	11.3	*6.5	13.8	—	100.0
Level 1	0.3	7.1	8.2	4.7	9.9	69.8	—	100.0
Level 0	99.4	**0.2	—	—	**0.1	0.0	*0.4	100.0
Total	*64.7*	*6.6*	*4.0*	*1.8*	*3.1*	*19.6*	*0.3*	*100.0*
Total S/P	*..*	*18.8*	*11.2*	*5.0*	*8.7*	*55.6*	*0.7*	*100.0*
Persons								
Level 3	—	73.7	22.1	**1.2	**0.7	**2.3	—	100.0
Level 2	—	36.1	30.0	11.9	6.0	16.0	—	100.0
Level 1	**0.2	5.6	10.2	4.6	10.8	68.5	—	100.0
Level 0	99.3	**0.1	—	—	—	—	0.5	100.0
Total	**68.5**	**4.8**	**4.3**	**1.6**	**2.9**	**17.5**	**0.4**	**100.0**
Total S/P	**..**	**15.4**	**13.5**	**5.2**	**9.3**	**55.5**	**1.1**	**100.0**

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Long-term health conditions

Modelling by logistic regression was undertaken for all health conditions (termed here 'total conditions' analysis) and each selected health condition separately. Ten of the possible 27 health conditions discussed in the previous chapters are reported on here. These were selected to give a range of conditions with regard to policy importance, prevalence, severity and age groups most affected. The 10 conditions are autism, ADHD, depression, dementia, stroke, asthma, arthritis, cerebral palsy, paralysis and total vision disorders (glaucoma, cataracts and other vision disorders combined). These 10 conditions cover a range of rankings for prevalence, the percentage of people with the condition having a disability and the percentage having a severe or profound activity limitation (Table 6.5).

As discussed in Chapter 4, estimates based on all conditions are more inclusive than estimates based only on main condition. Therefore for each condition, the analysis was carried out for all people who had the condition, whether as their main condition or not ('all conditions'), as the standard analysis, and for people who had the condition as their main condition for comparison. It should be kept in mind that the age range of people included in the analysis may vary with the nature of the condition. For example, in the survey population, stroke generally includes people over the age of 30, while autism includes mostly people under the age of 20.

Table 6.5: Rankings of the 10 health conditions (out of 27 conditions) selected for regression modelling (based on all conditions)

Condition	Rank by prevalence	Rank by % having disability	Rank by prevalence having severe/profound activity limitation	Rank by % having severe/profound activity limitation
Autism	26	5	25	1
ADHD	19	15	18	15
Depression	11	19	12	17
Dementia	15	2	11	2
Total vision disorders	9	6	7	13
Stroke	10	14	8	11
Asthma	5	26	9	27
Arthritis	1	21	1	21
Cerebral palsy	24	4	21	4
Paralysis	23	9	23	8

Personal and environmental factors

The Survey of Disability, Ageing and Carers contains a large number of items that could be considered as potential personal and a small number of items that may be considered as potential environmental factors, and so possibly included in some form in the regression models as covariates. To ensure that the analyses were meaningful and practicable a smaller group of items was selected, to cover a range of areas while ensuring that they were not too highly correlated with each other.

The 14 items chosen were age, sex, birthplace, marital status, survey component (household or cared accommodation), number of conditions, geographical location, the index of relative socioeconomic disadvantage (one of the Socio-Economic Indexes for Areas or SEIFA), age of onset of main condition, house tenure, whether completed Year 12, level of post-school

education qualification, number of types of aids or equipment used[18] and type of class/school. Only a few of these items, for example, number of types of aids and type of class/school, might be regarded as being 'environmental' rather than 'personal' factors. Table 6.6 shows the categories used for these items. The last two items were not asked for people who did not have a disability and so were not included in model A.

Labour force status and duration of unemployment were selected for testing; however, in most cases when labour force status was introduced into the model, it had a destabilizing affect on the estimates for other factors, particularly age. This was probably due to both its strong relationship to other factors and the large proportion of people for whom it is not applicable. These two factors were the only ones that had a high covariance with any of the others. Thus they were not included in the analysis with the other covariates but were tested by adding them to the final model for total conditions and each selected condition.

The survey had two components—the household component and the cared accommodation component. Information for the cared accommodation component was obtained by using a mail-back form completed by an administrative staff member of the establishment, and this form included only a subset of the questions asked of people in households. This part of the collection was designed to identify only disability status and assistance needs, so some information was either not applicable and/or not collected. This included seven items in the above list: age of onset of the main condition, house tenure, whether completed Year 12, level of post-school education qualification, labour force status, duration of unemployment and type of class or school. Partly for this reason, the survey component was included as a covariate in models A and B, whether or not it was statistically significant (as were age and sex, see Section 6.3 below). In model C, 'living in cared accommodation' is one category of the measure of severity of disability, so the survey component was not included as a covariate.

The SEIFA index of relative socio-economic disadvantage is formed using the area-based socioeconomic indexes for areas developed by the ABS. It reflects the socioeconomic characteristic of the area in which an individual lives, rather than being a direct measure of each individual's socioeconomic status. The index includes attributes such as income, educational attainment, unemployment and job skill levels. An area in the most disadvantaged group would have a smaller proportion of households with high incomes, tertiary education, employees in skilled occupations, and other similar characteristics.

Bradbury et al. (2001) also did a multivariate analysis to assess the extend of the relationship between disability and socioeconomic disadvantage for those people living in households based on data from the 1998 Survey of Disability, Ageing and Carers. They found that the percentage of adults with disability fell as the geographic location became more socioeconomically advantaged.

Appendix Tables A6.1 to A6.3 give the population of people with each of the selected 10 health conditions by the personal and environmental factors. Some of the factors are not applicable for some conditions, mostly due to respondent's age.

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18 Types of aids and equipment include eating aids, showering aids, toilet aids, incontinence aids, dressing aids, electric wheelchair, scooter, manual wheelchair, cane, crutches or walking stick, walking frame, seating and bedding, modified car or car aids, other mobility aids, low-tech aids for reading and writing, high-tech aids for reading and writing, low-tech aids for speech, high-tech aids for speech, mobile or cordless phone to communicate, fax machine to communicate, hearing aids and cochlear implants, other aids for hearing, meal preparation aids, medical aids, home modification, aids for moving around home and aids for moving around outside of home.

Table 6.6: Personal and environmental factors included in regression models, and their categories

Age	**Index of relative socioeconomic disadvantage (SEIFA)**	**Labour force status**
0–14 years	Lower 30%	Employed
15–44 years	Middle 40%	Unemployed
45–64 years	Upper 30%	Not in the labour force
65–74 years	Not applicable	Not applicable
75+ years	**Age of onset**	**Duration of unemployment**
Sex	0–17 years	1–26 weeks (Ref.)
Male	18–44 years	27–52 weeks
Female	45–64 years	53–103 weeks
Survey component	65+ years	104 or more weeks
Household	Not applicable	Not applicable
Cared accommodation	Not known	**Type of class/school**
Country of birth	**House tenure**	Ordinary class
Australia, UK, Ireland and USA	Renter	Special class
Other places	Owner	Special school
Marital status	Boarder	Not applicable
Married	Rent-free	**Number of aids used**
Separated	Other	0
Never married	Not applicable	1
Not known	**Year 12 completed**	2
Number of conditions	Yes	3
	No	4
Geographic location	Not applicable	5+
Capital city	**Post-school qualification**	
Rest of state	Bachelor degree or higher	
	Diploma	
	Vocational	
	Not applicable	

Note: The first category for each factor is the reference category to which other categories are compared in the regression model.

6.3 Factors associated with severe or profound core activity restriction (model A)

General

The two model A analyses of the presence of a severe or profound core activity restriction for total conditions (described in Section 6.2 above) showed similar results. That is, the same factors were statistically significantly associated with the presence of severe or profound activity restriction regardless of whether all people were included in the analysis (with or without a long-term health condition) or only people with a long-term health condition. The results for the latter analysis are given in Table 6.7 (model A column).

In both cases, 10 of the 12 personal and environmental factors are statistically significantly associated with the presence of severe or profound activity restriction. The exceptions are geographical location and post-school qualification. Of the 10 health conditions modelled separately, geographical location was statistically significantly associated with the presence of severe or profound activity restriction for autism and paralysis, and post-school qualification was so associated for paralysis only.

The results for model A will be described in some detail in this section, and then those for models B and C will be discussed in less detail in sections 6.4 and 6.5 by comparing them with the other models and noting the important differences.

Due to the exploratory nature of the analyses, no adjustment has been made for the large number of statistical tests carried out in the analyses (see Section 6.1 for further discussion). Therefore it is possible that there will be some statistically significant results that will occur by chance and so do not reflect meaningful differences in the population. However, some factors show associations that are both highly statistically significant and consistent across analyses and these are likely to reflect patterns that are present in the population.

Number of long-term health conditions and survey component

Two factors that had particularly strong associations with the likelihood of having a severe or profound core activity restriction were the number of long-term health conditions and survey component. The likelihood of a severe or profound disability increases with the number of conditions. This shows that the relationship between particular health conditions and the severity of disability will be complicated by any other conditions a person may have, that is, co-morbidity. This association with the number of conditions was statistically significant also in the models for eight out of the 10 individual conditions, the exceptions being autism and ADHD (Table 6.8). This appears to be because nearly all people with either of these conditions are in the younger age group and very few of them have more than two conditions (see Table A6.1).

For the survey component, people in cared accommodation were much more likely to have a severe or profound restriction than people in households. As might be expected, almost all people in cared accommodation (97%) have a severe or profound disability. This means both that a person is more likely to have a severe/profound disability if they are in cared accommodation and that this association is not explained by the other factors that are in the model. This result does not rule out the possibility of there being other unexamined factors associated both with having a severe or profound disability and being in cared accommodation.

Table 6.7: Results of logistic regression models A, B and C for total conditions

	Odds ratio (95% CI)		
Covariates	**Model A**	**Model B**	**Model C**
Age			
0–14 years			
15–44 years	***0.27 (0.22, 0.35)	***0.17 (0.13, 0.22)	***0.30 (0.23, 0.41)
45–64 years	***0.29 (0.21, 0.36)	***0.16 (0.12, 0.22)	***0.23 (0.17, 0.33)
65–74 years	***0.18 (0.13, 0.24)	***0.09 (0.06, 0.12)	***0.16 (0.11, 0.24)
75+ years	***0.39 (0.29, 0.53)	***0.13 (0.09, 0.17)	***0.21 (0.14, 0.31)
Sex			
Male			
Female	***1.20 (1.09,1.32)	***1.36 (1.24, 1.48)	0.93 (0.83, 1.05)
Survey component			
Household			
Cared accommodation	***56.74 (36.71,87.70)	***76.51 (50.27, 116.44)	
Country of birth			
Australia, UK, Ireland and USA			
Other countries	***1.35 (1.17, 1.56)	***1.47 (1.30, 1.66)	**0.76 (0.64, 0.90)
Marital status			
Married			
Separated	***0.72 (0.63, 0.83)	***0.65 (0.58, 0.74)	***0.22 (0.19, 0.27)
Never married	*0.81 (0.67, 0.97)	**0.79 (0.68, 0.92)	***0.30 (0.24, 0.39)
Not known	0.69 (0.06, 7.85)	1.00 (0.32, 3.13)	
Number of conditions			
	***1.69 (1.64, 1.75)	***1.20 (1.16, 1.23)	***1.17 (1.14, 1.21)
Geographic location			
Capital city			
Rest of state			***0.67(0.59, 0.75)
Index of relative socioeconomic disadvantage (SEIFA)			
Lower 30%			
Middle 40%	0.96 (0.86, 1.07)		***0.74 (0.65, 0.84)
Upper 30%	**0.81 (0.71,0.92)		***0.67 (0.57, 0.78)
Not applicable	1.45 (0.50, 4.22)		***0.05 (0.01, 0.16)
Age of onset			
0–17 years			
18–44 years	0.95 (0.80, 1.11)	0.98 (0.84, 1.13)	**0.76 (0.62, 0.92)
45–64 years	0.73 (0.60, 0.89)	0.93 (0.78, 1.11)	1.05 (0.83, 1.32)
65+ years	1.10 (0.86, 1.40)	**1.34 (1.08, 1.65)	**1.49 (1.13,1.96)
Not applicable			
Not known			0.87 (0.51, 1.51)

(continued)

Table 6.7 (continued): Results of logistic regression models A, B and C for total conditions

	Odds ratio (95% CI)		
Covariates	**Model A**	**Model B**	**Model C**
Owner			
Renter	1.04 (0.92, 1.19)	1.02 (0.91, 1.15)	0.96 (0.83, 1.12)
Boarder	***3.39 (2.65, 4.34)	***3.51 (2.82, 4.37)	***3.86 (2.99, 4.98)
Rent-free	***2.47 (1.96, 3.11)	***2.37 (1.92, 2.92)	***3.19 (2.51, 4.06)
Other	**2.05 (1.20, 3.49)		***1.56 (0.87, 2.80)
Not applicable	0.92 (0.63, 1.34)	***1.15 (0.82, 1.60)	
Year 12 completed			
Year 12 completed			
Year 12 not completed	***1.37 (1.18, 1.58)	***1.33 (1.15, 1.52)	
Not applicable	***1.61 (1.37, 1.88)	***1.56 (1.34, 1.81)	
Post-school qualification			
Bachelor degree or higher			
Diploma		0.87 (0.67, 1.15)	1.44 (0.98, 2.12)
Vocational		0.97 (0.78, 1.20)	**1.64 (1.22, 2.21)
Not applicable		1.11 (0.90, 1.37)	***2.10 (1.58, 2.79)
Labour force status			
Employed			
Unemployed			
Not in labour force			
Not applicable			
Duration of unemployment			
1–26 weeks			
27–52 weeks			
53–103 weeks			
104 or more weeks			
Not applicable			
Type of class/school			
Ordinary class			
Special class		***1.72 (1.27, 2.33)	***2.02 (1.45, 2.83)
Special school		***23.27 (14.77, 36.67)	***9.49 (6.40, 14.08)
Not applicable		***1.66 (1.26, 2.18)	*1.39 (1.02, 1.89)
Number of aids used			
0			
1		***1.57 (1.41, 1.75)	0.95 (0.81, 1.10)
2		***3.19 (2.75, 3.71)	1.12(0.92, 1.36)
3		***6.03 (4.97, 7.32)	***1.76 (1.41, 2.20)
4		***9.36 (7.53, 11.63)	***1.92 (1.52, 2.42)
5+		***21.27 (17.93, 25.24)	***3.85 (3.24, 4.56)

Notes

1. First category for each factor is the reference category against which other categories were compared.
2. Only statistically significant results are given. The statistical significance is indicated as follows: *** significant at the 0.1 per cent level; ** significant at the 1 per cent level; * significant at the 5 per cent level.
3. Measures of severity of disability in each model were: presence of severe or profound core activity restriction for people with a long-term health condition (model A), need for assistance with core activities by people with a disability (model B) and amount of informal assistance received for core activities by people with a severe or profound activity restriction (model C).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Cared accommodation is associated with only six of the 10 conditions separately: depression, dementia, total vision disorders, stroke, arthritis and asthma. The first five of these all had substantial numbers of people in cared accommodation (Table A6.1). In contrast, only a small proportion (0.7%) of people with asthma was in cared accommodation. For these people it is most likely that they were in cared accommodation because they had disabilities related to conditions other than asthma and thus had multiple conditions associated with severe or profound activity restriction.

Table 6.8: Summary of the results of logistic regression model A for 10 selected conditions: association of factors with the presence of severe or profound activity restriction for all people with the condition ('all conditions' model)

Factor	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis
Age			*	****	****	****	**	****		
Sex				****	*	**		****		****
Survey component			****	****	****	****	****	****		
Number of conditions			****		****	****	****	****	*	**
Age of onset			**	****		****	*	*		
Country of birth					***			**		****
Marital status			****	****	***	****		****		
Location			*							**
SEIFA						*				
House tenure			**		****	****		****		*
Year 12			****	**			***	**		**
Post-school qualification										***
Total	**0**	**0**	**8**	**6**	**7**	**7**	**5**	**9**	**1**	**7**

Note: **** Significant at the 0.01 per cent level; *** Significant at the 0.1 per cent level; ** Significant at the 1 per cent level; * Significant at the 5 per cent level.

Sex, age and age of onset

For 'total conditions' there is a strong statistically significant association between sex and the likelihood of severe/profound activity. This was also the case for five of the 10 selected individual health conditions. For total conditions, dementia, total vision disorders, stroke and arthritis females were more likely to have a severe /profound core activity restriction than males, but for paralysis the reverse is true. For each condition, this generally reflects the proportion of males and females who had a severe/profound activity restriction (Table 6.9).

When no other factors are taken into account, the likelihood of severe/profound activity restrictions for people with a long-term health condition is highest in the youngest and oldest age groups (24% for those aged under 15, and 39% for those aged 75 and over) and lowest in the 15 to 44 year age group (11%, Table 6.10). For the 75 years and over age group people tend to have more conditions on average than the younger age groups. For any specified number of conditions they are also more likely to have a severe or profound activity restriction than all other age groups except for those aged under 15. For the latter age group, the average number of conditions is much lower but the severity of disability is higher than for any age group, regardless of the number of conditions.

Table 6.9: People with a severe or profound core activity restriction: prevalence of health conditions (based on all conditions), by sex, 1998

Health condition	Male	Female	All
		Number ('000)	
Autism	10.1	**2.3	12.4
ADHD	27.4	*5.1	32.5
Depression	25.6	49.4	75.0
Dementia	30.7	64.5	95.2
Total vision disorders	63.3	103.4	166.7
Stroke	60.2	79.0	139.2
Asthma	52.0	74.5	126.5
Arthritis	112.6	252.3	364.9
Cerebral palsy	9.5	9.8	19.3
Paralysis	*8.2	*6.2	14.4
		Per cent	
Autism	94.4	**100.0	95.4
ADHD	43.2	*47.2	43.8
Depression	29.1	31.3	30.5
Dementia	86.7	97.1	93.5
Total vision disorders	37.6	51.1	45.0
Stroke	45.8	52.5	49.3
Asthma	10.3	12.5	11.5
Arthritis	17.3	26.4	22.7
Cerebral palsy	83.3	84.5	83.5
Paralysis	*63.6	*53.4	58.8

Note: Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table 6.10: People with a severe or profound core activity restriction: number of health conditions by age, 1998

Age group	1	2	3	4	5+	1 or more	All
				Number ('000)			
0–14 years	82.3	43.0	10.7	*5.2	*3.2	144.3	144.3
15–44 years	83.5	63.3	36.3	15.6	25.7	224.5	224.5
45–64 years	59.3	65.1	55.9	42.7	64.1	287.2	287.2
65–74 years	10.8	24.3	32.6	28.3	44.2	140.2	140.2
75+ years	14.5	43.8	73.3	66.7	141.9	340.2	340.2
Total	**250.5**	**239.5**	**208.8**	**158.6**	**279.1**	**1,136.50**	**1,136.50**
				Prevalence rate (%)			
0–14 years	16.9	53.1	70.4	*75.4	*100.0	24.3	3.7
15–44 years	6.2	14.6	24.6	26.9	50.5	11.0	2.7
45–64 years	6.0	11.7	18.7	25.8	42.9	13.3	7.1
65–74 years	3.3	8.6	18.3	22.2	36.3	13.5	10.9
75+ years	9.2	22.5	41.2	49.9	66.6	38.8	34.7
Total	**7.6**	**15.4**	**25.5**	**32.3**	**51.8**	**16.9**	**6.1**

Note: Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associate RSE of between 25% and 50%. These estimates should be used with caution.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

However, when other factors are included as in the models here, this pattern changes somewhat because age is related to a number of other factors, including the number of conditions and the likelihood of living in cared accommodation, both of which generally increase with age. For total conditions the main difference is between the 0 to 14 year age group and all others, with the former group being more likely to have a severe/profound activity restriction after other factors are taken into account (Table 6.10).

Among the 10 individual conditions, age was statistically significantly associated with the likelihood of severe/profound activity restriction for total vision disorders, stroke, asthma, arthritis, depression and dementia. The first four of these followed the general pattern above, as did depression except that both the 0–14 and 45–64 year age groups were associated with a higher risk of having severe/profound activity restriction. On the other hand, for dementia the risk increased with increasing age.

Overall, people whose age of onset of the condition was between ages 45 and 64 years appear less likely to have a severe or profound activity restriction than those whose age of onset was earlier or later (Table 6.7). However, this pattern varies for the five out of 10 conditions for which there is a statistically significant association. The relationship for arthritis is similar to the overall pattern. For depression the likelihood of severe/profound activity restriction is greater for people whose age of onset was under 45 compared to those for whom it was age 45 and over, but for stroke, the likelihood increased with age of onset. For dementia, the greatest likelihood of severe/profound activity restriction was for people whose age of onset was between 18 and 64. For asthma, the least likelihood was for people whose age of onset was under 18.

The same six conditions (depression, dementia, total vision disorders, stroke, asthma and arthritis) had statistically significant associations for number of conditions, survey component and age, and five of these (not total vision disorders) also had such an association for age of onset. Of the other four selected conditions, cerebral palsy and paralysis had a statistically significant relationship for the number of conditions. For dementia and cerebral palsy the association between severe/profound activity restriction and number of conditions is not as strong as for the other conditions ($0.01 < p < 0.05$) because for both these conditions most people had a severe or profound activity restriction regardless of the number of conditions.

Marital status

Married people were more likely to have a profound or severe activity restriction than people who had never married or who had separated or divorced. This is possibly because people who have difficulty with activities of everyday living are more likely to receive assistance if they have a partner who can provide that assistance. Thus they will answer yes when asked if they need assistance and will be recorded as having a severe activity restriction. An unmarried person with a similar disability may not receive assistance on a day-to-day basis and may carry out the same activities on their own but with difficulty. Thus they will be recorded as having a moderate activity restriction. That this might be the case is shown by the fact that, of people with a severe or profound activity restriction, a much greater proportion of married people have a severe activity restriction rather than a profound activity restriction, as compared to single people (Table 6.11).

This pattern is replicated for five of the 10 conditions (depression, dementia, total vision disorders, stroke and arthritis). However, for dementia it appears to be true only for people

who have been separated and not those who have never married, whose risk of severe/profound activity restriction appears to be higher than those who are married.

Table 6.11: People in the Australian population by marital status and disability status (based on all conditions), 1998

	Profound	Severe	Moderate	Mild	Other	All
Marital status			**Number ('000)**			
Married/de facto	176.9	324.9	375.6	582.1	7,354.9	8,814.4
Separated	197.2	133.0	183.0	258.3	1,239.5	2,011.0
Never married	160.7	140.5	100.7	190.2	7,238.6	7,830.7
Not known	*3.0	**0.2	—	**0.1	**0.3	*3.5
Total	**537.8**	**598.7**	**659.4**	**1,030.6**	**15,833.0**	**18,659.7**
			Per cent by disability status			
Married/de facto	2.0	3.7	4.3	6.6	83.4	100.0
Separated	9.8	6.6	9.1	12.8	61.6	100.0
Never married	2.1	1.8	1.3	2.4	92.4	100.0
Not known	*85.7	**5.7	—	**2.9	**8.6	100.0
Total	**2.9**	**3.2**	**3.5**	**5.5**	**84.9**	**100.0**
			Per cent by marital status			
Married/de facto	32.9	54.3	57.0	56.5	46.5	47.2
Separated	36.7	22.2	27.8	25.1	7.8	10.8
Never married	29.9	23.5	15.3	18.5	45.7	42.0
Not known	0.6	—	—	—	—	—
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Other factors

For the remaining factors when total conditions are considered, the following characteristics are less likely to be associated with severe or profound disability: being born in Australia, United Kingdom, Ireland or the United States of America; not being in the lowest 30% on the SEIFA scale; being an owner or renter; and having completed Year 12 at school.

Birth place is significantly associated with severe/profound activity restriction for three conditions: total vision disorders, arthritis and paralysis. The first two of these follow the pattern for total conditions with people born in Australia, United Kingdom, Ireland or the United States of America having less likelihood of having severe/profound restriction; however, the reverse is true for the last condition.

With some slight exceptions, the direction of any statistically significant associations for the selected individual conditions is the same as that for total conditions for house tenure, completion of year 12 schooling and SEIFA. For house tenure, owners and sometimes renters were less likely to have severe/profound activity restriction than those living in other situations. The individual conditions with consistent statistical significant associations included depression, total vision disorders, stroke, arthritis and paralysis for house tenure;

depression, dementia, asthma, arthritis and paralysis for completion of year 12; and paralysis only for SEIFA. The main exception is for dementia for which there is a weak negative association with year 12 completion (in the reverse direction).

Geographical location had a statistically significant association for depression and paralysis, with people in capital cities more likely to have a severe or profound activity restriction.

For the 10 conditions examined there was considerable variation in the number of factors that were statically significantly associated with the likelihood of severe of profound activity restriction. For autism and ADHD there were no significant associations and for cerebral palsy there was only a significant association with the number of conditions. Of the 10 selected conditions these three were the ones that occurred mostly in the lower age groups so that a number of the factors did not apply. Most people with autism and cerebral palsy also had a severe or profound activity restriction (95% and 84% respectively), although this was not the case with ADHD (44%; Table A6.1). Five of the 10 conditions (total vision disorders, arthritis, depression, stroke and paralysis) had between seven and nine statistically significant associations, whereas asthma had five and dementia had six.

As discussed in Section 6.2, because labour force status had a high correlation with some other factors, it was tested by adding it to the final model after all other factors had been tested. It does appear that being in the labour force is associated with a reduced presence of severe/profound activity restriction for total conditions and each of depression, total vision disorders, stroke, asthma and arthritis. There were no statistically significant associations with duration of unemployment.

In general, for each of the analyses based on main condition, the factors that were statistically significant were a subset of those in the corresponding analysis of all conditions. The main exception was dementia, for which age, marriage, age of onset and year 12 schooling were replaced by country of birth, survey component and SEIFA as statistically significant factors, with only sex and number of conditions appearing in both models. This difference is most likely due to the fact that almost all people (94%) with dementia did have a severe/profound activity restriction and so differences between groups was based on a small number of people. In such a situation, among pairs or groups of related factors, one or the other may show up as being the most important when slightly different groups of people are included.

6.4 Factors associated with frequency of help needed in the three core activities for those who have disabilities (model B)

Comparison with model A

For total conditions among people who had a disability, 12 of the 14 personal and environmental factors were statistically significantly associated with the frequency of help needed in the three core activities (Table 6.7). This includes nine of the same factors as in model A plus the two extra factors that were possible to include in model B but not model A, namely the number of types of aids/equipment used and the type of class/school. The other statistically significant factor was post-school qualification, instead of SEIFA as in model A.

In general, for the 10 selected conditions the same factors are statistically significantly associated with frequency of help needed as for severe/profound activity restriction, with

one or two additional factors for most conditions. For each condition, the patterns of association were generally similar for those factors that showed statistically significant associations with both measures.

As with the likelihood of severe or profound activity restriction, married people on average recorded a greater frequency of need for assistance than people who had never married or who had separated or divorced. This probably occurs for similar reasons to those suggested in the previous section, that is, people with a partner are on average more likely to say they need a higher frequency of help because their partner is there to provide it. Thus using the frequency of assistance needed as a measure of severity of disability may be compounded by the amount of informal assistance that is actually available.

Excluding paralysis (see below), there were only five associations that were statistically significant for severe/profound activity restriction but not for frequency of help needed, and four of these were only significant at the 5% level (Table 6.12). For arthritis, there was no statistically significant association for survey component with frequency of help needed, as there was for severe/profound activity restriction, suggesting that the other factors have a stronger association with the former measure for people in cared accommodation.

Table 6.12: Summary of the results of logistic regression model B for 10 selected long-term health conditions: association of factors with need for assistance with core activities for people with a disability and with the condition ('all conditions' model)

Factor	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis
Age			****	****	****	***	****	****		****
Sex			**	****	*	**		****		*
Survey component			****	****	****	****	****			****
Number of conditions	*		****		*	*	****	****		
Age of onset			**	****	*	****				****
Country of birth				*	****	**		****		
Marital status			****	****	**	****		****		
Location		*	*		*			*		
SEIFA									*	
House tenure			***	****	****	****		****	**	*
Year 12			****	***			*	***	*	****
Post-school qualification				****						***
Type of class/school			**		****	****	****		***	
Number of aids used		**	****	****	****	****	****	****	***	****
Total	**1**	**2**	**11**	**10**	**11**	**10**	**6**	**9**	**5**	**8**

Note: **** Significant at the 0.01 per cent level; *** Significant at the 0.1 per cent level; ** Significant at the 1 per cent level; * Significant at the 5 per cent level.

Paralysis is the only one of the 10 conditions for which there is a distinctly different pattern of association for model B compared to model A. Age, age of onset, survey component and post-school education were statistically significant whereas country of birth, number of conditions and geographical location were not. This may be because for this condition the two measures were not so closely correlated as for the other conditions. The associations with age and survey component follow the general pattern for these factors. However, in contrast to other selected conditions, but as for this condition in model A, males with paralysis on average received more frequent assistance than did females. People whose age

of onset of paralysis was between 15 and 64 years received more frequent assistance than those whose age of onset was earlier or later.

For other conditions, the small number of factors that had a statistically significant association with frequency of help needed but not severe/profound activity restriction followed the general pattern for total conditions, with a few exceptions. In particular, people with dementia born in Australia, United Kingdom, Ireland or the United States of America on average received more frequent assistance than those born elsewhere, and people with cerebral palsy in the lower 30% SEIFA group received more frequent assistance than those in the middle and upper SEIFA groups.

As with the likelihood of severe/profound activity restriction, for each of the analyses based on main condition, the factors that were statistically significant were a subset of those in the corresponding analysis of all conditions. The number of statistically significant associations was always less than the number for the 'all conditions' analysis. The most extreme example of this was vision disorders, for which there were no statistically significant associations for the analysis of main condition.

Number of aids used and type of class or school

The number of different types of aids used had a strong positive association with the frequency of assistance received for total conditions and all selected conditions except autism. For paralysis the pattern appeared to be slightly different, with people with one type of aid receiving less frequent assistance and people with two or more types of aid receiving more frequent assistance, on average, compared to people using no aids.

The type of class or school was also strongly related to the frequency of assistance for total conditions and for depression, vision disorders, stroke, asthma and cerebral palsy. Generally children attending special schools received the most frequent assistance on average, followed by children attending special classes in mainstream schools. The exception was depression, for which children attending special classes had the least frequent assistance on average. In this case the children are likely to be attending special classes as a result of some other condition.

Number of core activities in which assistance was needed

A fourth measure, the number of core activities in which assistance was needed, was also tested. The results for this measure were very similar to those for the frequency of assistance needed for the core activities (model B) and are not reported separately.

6.5 Factors associated with amount of assistance received from carers (model C)

This analysis includes only those people who had severe or profound core activity restriction. As with model B, almost all factors in the model for total conditions have a statistically significant association with the amount of assistance received (Table 6.7). The differences are that the association for geographic location was statistically significant while those for sex and completion of year 12 schooling were not.

For seven of the 10 selected conditions, in general the same factors were statistically significantly associated with the amount of assistance received as for frequency of help, with one or two additional factors for most conditions (Table 6.13). Cerebral palsy, paralysis and to a lesser extent dementia had differing sets of associated factors to those in model B. Excluding these three, there were only nine associations that were statistically significant for frequency of help needed but not for amount of assistance received, and six of these were only significant at the 5% level. The other three were completion of year 12 for stroke and arthritis, and country of birth for arthritis.

Table 6.13: Summary of the results of logistic regression model C for 10 selected long-term health conditions: association of factors with amount of assistance received for core activities for people with the condition and a severe or profound core activity restriction ('all conditions' model)

Factor	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis
Age			***		****	****	****	****		
Sex			**	****	*	**	**	****		*
Number of conditions				****	*		****	****	****	
Age of onset			***	***	****	****		*		
Country of birth			****		**	**				
Marital status			****		****	****	**	****		
Location					**	****	*	*		
SEIFA			**		****	****		***		
House tenure			****	****	****	**	*	****		
Year 12			****	****	**	**				
Post-school qualification			*	****	****	**		**		
Type of class/school			****		**		**			
Number of aids used		**	*		**	****	**	****		
Total	**0**	**1**	**11**	**6**	**13**	**11**	**8**	**10**	**1**	**1**

Note: **** Significant at the 0.01 per cent level; *** Significant at the 0.1 per cent level; ** Significant at the 1 per cent level; * Significant at the 5 per cent level.

For each of the seven conditions with similar sets of associated factors for models B and C, the patterns of association were generally similar for those factors that showed statistically significant associations with both measures. There were exceptions: sex, number of aids used and country of birth.

As with the likelihood of severe/profound activity restriction and/or the frequency of help needed, sex was also statistically significantly associated with the amount of informal assistance received for people with depression, vision disorders, stroke, asthma and dementia. However, in each case, whereas on average females were more likely to have a severe/profound activity restriction (model A) or on average received more frequent help (model B), males on average received a greater amount of informal assistance (model C).

Although the two measures 'frequency of assistance' and 'amount of informal assistance' are obviously highly correlated, they do not correspond completely and the latter measure is for a more restricted population. The difference between males and females is much clearer for frequency of assistance (see Table 6.2, proportion of people with disability for males and females). The proportion of people in the three highest levels (levels 1, 2 and 3) is greater for females than males, with the opposite being the case for the lowest level (level 0, 65% versus 73%). For amount of assistance received, although there is a higher proportion of females

than males in the highest category, cared accommodation (19% versus 11%), for other categories on average males receive more assistance per week than females (see Table 6.4, proportion of people with a severe or profound core activity restriction for males and females).

For total conditions, there was no statistically significant association between sex and amount of assistance received, after controlling for other factors. For some particular conditions, the contrast between the two measures differed more between the sexes, and the result was a statistically significant association in the opposite direction, after controlling for other factors. For example, for arthritis the proportion of females in the three highest frequency of need categories was greater than that for males and the reverse was true for the lowest category (414,000 out of 664,000, or 62%, compared to 332,000 out of 444,000, or 75%; Table 6.14). However, for the amount of assistance received, the proportion of females in both the highest category (cared accommodation, 15% versus 10% for males) and the lowest effective category (main provider without hours recorded, 60% versus 54%) was higher than that for males (see Table 6.14).

The relationship of the number of types of aid used with the amount of assistance needed appeared to be more complex than that with the frequency of assistance. For total conditions, only people with three aids or more on average appeared to have a higher level of assistance needed than people who used no, one or two aids. This was also the case for vision disorders, arthritis and depression. For stroke and asthma the dividing category was five or more aids. (Only ADHD appeared to show an increasing pattern of amount of assistance with the number of aids; however, the confidence limits were very wide.)

These patterns may be the result of a two-way relationship between the number of aids and the amount of assistance needed. For total conditions and for a number of selected conditions there tends to be a bimodal distribution for the number of aids used, so that the majority of people are either using none or one, or five or more (see Table A6.3). People with severe/profound activity restriction who require a high level of assistance may either require a large number of aids or, because of the severity of their disability, may not be able to use them much at all.

As with sex, country of birth also showed an opposite pattern to that generally found in model B, for total conditions, vision disorders and stroke. That is, people born in Australia, United Kingdom, Ireland or the United States of America on average had a higher level of assistance. This was also the case for depression. The reasons for this are not apparent.

In contrast to both models A and B the amount of informal assistance received for paralysis was only statistically significantly associated with one factor, sex. For cerebral palsy the number of conditions was the only factor with a statistically significant association, as it was in model A. The reasons for this are not clear, but it may be partly due to the fact that both conditions have a comparatively small number of people with a severe/profound activity restriction, and for each of these conditions the majority are concentrated in one category for the amount of assistance (cared accommodation for paralysis and 40 or more hours for cerebral palsy, see Table A6.3).

In contrast to models A and/or B, age group, country of birth, marriage and the number of aids used were not statistically significantly associated with the amount of assistance for dementia, whereas the number of conditions was. For age group this was probably because almost all people with severe/profound activity restriction are over 70.

Table 6.14: All persons with disability and arthritis: frequency of need for assistance by amount of assistance received from primary carer (based on all conditions), by sex, 1998

	Not severe /profound	Cared accommodation	More than 40+ hours/wk	20–39 hours/wk	Less than 20 hours/wk	Have main provider	No main providers	All with disability
				Number ('000)				
Male								
Level 3	—	*4.1	**1.4	—	—	—	—	5.5
Level 2	—	*3.4	**1.0	**0.5	**0.5	**2.1	—	7.6
Level 1	—	*3.6	17.0	*5.1	14.1	58.7	—	98.5
Level 0	331.1	**0.2	—	—	—	—	**0.8	332.0
Total	*331.1*	*11.3*	*19.4*	*5.7*	*14.6*	*60.8*	*0.8*	*443.6*
Female								
Level 3	—	14.4	*3.0	—	—	**0.3	—	17.7
Level 2	—	12.2	9.3	*4.3	*2.6	**2.5	—	30.9
Level 1	**0.4	11.0	12.6	*8.9	20.3	148.3	—	201.4
Level 0	411.2	**0.5	—	—	—	—	**2.2	413.9
T*otal*	*411.5*	*38.1*	*24.9*	*13.2*	*22.8*	*151.1*	*2.2*	*663.9*
Persons								
Level 3	—	18.5	*4.3	—	—	**0.3	—	23.2
Level 2	—	15.6	10.3	*4.9	*3.1	*4.6	—	38.4
Level 1	**0.4	14.6	29.6	14.1	34.3	207.0	—	299.9
Level 0	742.2	**0.7	—	—	—	—	*3.0	745.9
Total	**742.6**	**49.4**	**44.3**	**18.9**	**37.4**	**211.9**	***3.0**	**1,107.5**
				Per cent				
Male								
Level 3	—	*75.4	**24.6	—	—	—	—	100.0
Level 2	—	*45.2	**13.6	**6.9	**6.6	**27.7	—	100.0
Level 1	—	*3.7	17.3	*5.2	14.3	59.6	—	100.0
Level 0	99.7	—	—	—	—	—	0.2	100.0
Total	*74.6*	*2.6*	*4.4*	*1.3*	*3.3*	*13.7*	*0.2*	*100.0*
Total S/P		*10.0*	*17.2*	*5.1*	*13.0*	*54.0*	*0.7*	
Female								
Level 3	—	81.3	*16.9	—	—	**1.9	—	100.0
Level 2	—	39.4	30.1	*14.0	*8.3	**8.1	—	100.0
Level 1	**0.2	5.5	6.3	*4.4	10.1	73.6	—	100.0
Level 0	99.3	**0.1	—	—	—	—	0.5	100.0
Total	*62.0*	*5.7*	*3.7*	*2.0*	*3.4*	*22.8*	*0.3*	*100.0*
Total S/P		*15.1*	*9.9*	*5.2*	*9.0*	*59.9*	*0.9*	
Persons								
Level 3	—	79.8	*18.7	—	—	**1.4	—	100.0
Level 2	—	40.5	26.9	*12.6	*8.0	*12.0	—	100.0
Level 1	**0.1	4.9	9.9	4.7	11.5	69.0	—	100.0
Level 0	99.5	**0.1	—	—	—	—	*0.4	100.0
Total	**67.1**	**4.5**	**4.0**	**1.7**	**3.4**	**19.1**	***0.3**	**100.0**

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

6.6 Discussion

As outlined in Section 6.1, the purpose of these analyses was not to examine all the associations in detail but to give a picture of the complexity of relationships between severity of disability and a number of personal and environmental factors. This complexity is very apparent for all three measures used, in the results for 'total conditions' and a number of the specific conditions considered. Personal and environmental factors were strongly related to severity of disability. Of course, as discussed in Section 6.1, the causal pathways relating the severity of disability to any particular factor may be in either or both directions, and may be modified by other factors.

A number of factors show highly significant and consistent patterns for total conditions and a number of the 10 specific conditions, regardless of the measure of severity used. These include age, survey component (household or cared accommodation), number of conditions, age of onset, number of aids used and house tenure, where applicable. Sex and marital status also showed some strong associations with the severity of disability but had more complex patterns as discussed below. However, as discussed in Section 6.1, because of the exploratory nature of the analyses, no adjustment was made for the large number of statistical tests undertaken and it is possible that for some factors some statistically significant results, particularly at the 5% level, could occur by chance and so not reflect meaningful differences in the population.

For most of the personal and environmental factors, the severity measure chosen does not make a big difference to the associations, with some notable exceptions. Such exceptions may bring out some important patterns, such as were apparent with the differences between the sexes for the three measures. In this case, for five of the specific conditions considered, females were more likely than males to have a severe or profound core activity restriction and had a greater need for assistance on average, yet for people with a severe/profound restriction, males received more assistance than females (see Section 6.5).

Generally for specific conditions, the number of factors with statistically significant associations increased as the scope of the population under analysis was restricted, that is from models A to B to C. However, in some cases, such as paralysis in particular, there were different results for the three measures.

The fact that almost all the factors examined were statistically significant in the analyses for 'total conditions' shows that there is the potential for associations between them and the severity of disability for any particular specific condition. However, for most specific conditions not all associations were apparent. There was considerable variation in the number of factors that did show statistically significant associations. This was partly because some conditions are concentrated in particular age ranges, but also appeared in some cases to be due to other reasons that require further investigation. This shows that there are possible three-way interactions between the severity of disability, the personal and environmental factors that may affect it, and the underlying long-term conditions associated with the disability.

There is a strong relationship between the long-term health condition and the severity of disability experienced by a person, as shown in the analyses in chapters 4 and 5 for many health conditions. The results in this chapter show that this relationship may possibly often be mediated by a number of personal and environmental factors. However, the degree of such mediation varied considerably with the type of condition, although some of this variation may be due to the limitations of the data. For some health conditions for which there were few or no associations apparent between severity of disability and the various

factors, this may be due to the restricted nature of the population and the limited number of factors that were available for analysis.

Some factors had strong associations for 'total conditions' but had few or no strong relationships for the selected specific conditions. These factors may be more important for some of the other 17 conditions, but it may also be that some factors are more related to the severity of disability per se than with individual conditions.

The patterns of many of the associations that were found were as might be expected, for example the severity of disability increased with the number of health conditions. However, the reasons for some associations required considerable interpretation or were not readily apparent from the data. For example, it was not clear why people who were married should have a greater likelihood of a severe disability until the patterns in the distribution of profound and severe activity restriction were examined in more detail (see Section 6.3; this was also a good example of a factor that possibly affects the measurement of the severity of disability in contradictory ways). For some measures and conditions people who lived in capital cities were more likely to have a severe disability than people who did not. This could result from people who most needed assistance often moving to major centres, but such a hypothesis would require further investigation.

Controlling for some factors may change the relationship of other factors with the severity of disability. Also, some factors had different patterns of associations depending upon health condition. Where there are factors that are related to each other and to severity, the statistical significance of any one factor may vary for different individual conditions.

These analyses have been limited to the personal and environmental factors that are available in the Survey of Disability, Ageing and Carers. Most of the factors that could be included are personal rather than environmental, and although these include many of the factors that might in any case have been chosen for investigation, there are other possibly important factors that are not included, for example personal income. Such factors, as well as themselves being related to the severity of disability, may also affect the patterns of association of some of the factors that were included.

The number of long-term conditions a person has is obviously highly correlated with the severity of disability, however measured. This means that co-morbidity is very important in examining the relationships between particular conditions and the severity of disability. As distinct from the number of conditions, there has been no attempt in these analyses to look at the types of co-morbidity and one line of future investigation could be to analyse the relationships between disability and specific combinations of conditions.

7 Summary and conclusion

The analyses in the previous chapters of this report reveal the complexity and variability of the relationships among aspects of disability, related health conditions and other factors, both personal and environmental.

This chapter discusses and contrasts some of these interrelationships, and goes on to outline the reasons for caution in disability-related analyses, the need to ensure that analytical purposes and methods are well aligned, and the desirability of holistic analytical approaches to disability data.

7.1 Estimating the prevalence of health conditions related to disability

Chapter 3 compared prevalence estimates of health conditions from three sources: the Australian National Health Survey, the Australian Survey of Disability, Ageing and Carers and the Australian burden of disease study. Differences among the estimates were found, relating to survey design and screening (sample catchment) method, as well as the different focus and method of the three sources.

The comparison of prevalence from the health and disability surveys revealed (Table 3.2):

- The prevalence rates from the health survey were generally higher than those from the disability survey—which is to be expected, since the disability survey recorded conditions that were more likely to be associated with impairments or activity limitations.
- This pattern was not universal, with heart and stroke conditions estimated to be more prevalent from the disability survey (possibly because of the screening questions and the exclusion of people in cared accommodation from the health survey).
- Nevertheless, the 'top 10' conditions in the two surveys had nine conditions in common: arthritis, back problems, hypertension, total hearing, asthma, heart disease, diabetes, 'total vision', depression; the non-matching 10th conditions were stroke, which was in the top 10 conditions in the disability survey, and migraine in the health survey.

The burden of disease study used a range of data sources and yielded prevalence estimates different again, often lower than the health survey estimates but higher than the disability survey estimates (Table 3.3).

Thus we see that prevalence of health conditions is a measure sensitive to method.

7.2 Disability and related health conditions

In chapters 4 and 5 we looked at the relationships between disability and health conditions in several ways. Two contrasting analyses, focused on two of the main questions raised in Chapter 1, illustrate some of the differing findings.

Among people with severe disabilities, what were the most common associated diseases or health conditions?

When severe disability (severe or profound core activity restriction in the ABS disability survey) in the population was examised, which were the most common associated diseases or conditions in 1998?

The most common condition associated with 'severe disability' was arthritis, with 2.0% of people of all ages having severe disability and arthritis (Section 3.3: Table 3.4).

Other conditions that came to the fore on this criterion are:

- hearing conditions and back problems, with 1.6% of people having severe disability and these conditions
- hypertension, speech problems, heart disease and vision problems (1.1%, 1.0%, 0.9% and 0.9% respectively, of people having severe disability and these conditions).

It is worth noting that this report does not say that these diseases account for relatively high proportions of disability, because the ICF model carefully does not suggest simple causative relationships. Rather it acknowledges that a health condition is one of several important factors in the creation of disability.

Which health conditions were the most likely to be associated with severe disability?

When health conditions, and how likely each one is to be associated with severe disability were considered, a different picture emerged.

The conditions most likely to be associated with 'severe disability' in 1998 were (Section 5.3, Table 5.2):

- Autism—95.3% of people with these conditions reported severe disability
- Dementia—93.6% of people with these conditions reported severe disability
- Down syndrome—91.5% of people reported severe disability
- Cerebral palsy—83.6% of people reported severe disability
- More than 50% of people with the following conditions reported 'severe disability'—Parkinson's disease (75.4%), multiple sclerosis (73.3%), paralysis (58.6%), cataract (51.9%) and schizophrenia (50.2%).

It is important to remember here that the data come from a population survey and these percentages could be affected by people's ability or willingness to name the health condition. It may be, for instance, that it is only at a certain severity level that diagnosis of dementia happens and is able to be reported by the person or carer. That is, the disability may be severe before the condition is given a name, effectively leading to under-reporting and contributing to the high percentage reporting severe disability.

More detailed findings were:

- The overall pattern depicts a quite different picture compared to that based on the estimated frequencies of specific health conditions. Many conditions that were on the top

of the list in terms of their frequencies (Table 3.4) were ranked towards the bottom of the list in terms of the likelihood of being associated with a severe or profound core activity restriction (Table 5.2 and Figure 5.2). These include asthma (12% of people with this condition had a severe or profound core activity restriction), hypertension (15%), back problems (19%), arthritis (23%) and hearing (23%).

- For people aged under 65, conditions associated with congenitally related disorders or occurring in early childhood were ranked highest: autism (95% of people with this condition had a severe or profound core activity restriction), Down syndrome (92%) and cerebral palsy (83%).
- Dementia led the list for people aged 65 or over (96% of people with this condition had a severe or profound core activity restriction), followed by schizophrenia (93%), speech problems (90%) and Parkinson's disease (82%). Most of these conditions are highly related to age.[19]
- It should be noted that the estimates were based on all reported conditions. The associations between health conditions and activity limitations are complex. An activity limitation may be associated with a number of different health conditions, or with just one of a number of reported conditions, and it is not generally possible to tell which from the survey data. Multiple conditions are more common among older people. Two persons with the same health condition can have different levels of activity limitation, and two persons with the same level of activity limitation do not necessarily have the same health condition. Environmental factors play a role in the creation of disability, and this would account for further variability in the relationship between health conditions and disability.

Prevalence of a health condition did not indicate prevalence or severity of associated disability

The bivariate analyses of chapters 4 and 5 found that, when health conditions were examined in terms of their associations with prevalence and severity of disability using the two groups of severity measures, there was a wide range of possibilities (sections 3.3, 4.2, 5.3, 5.4 and 5.5):

- high disability prevalence but low level of severity (e.g. arthritis, back problems, hearing, hypertension and asthma)
- low disability prevalence but high level of severity (e.g. autism, dementia, Down syndrome, cerebral palsy and Parkinson's disease)
- high disability prevalence and high level of severity (e.g. speech problems which were more likely to be associated with intellectual and learning conditions for children, and stroke and dementia for older people)
- high dependence on health service system but low dependence on community system (e.g. hypertension, arthritis, heart disease, asthma and diabetes)
- high dependence on community system but lower dependence on health system (e.g. autism)
- high dependence on both health and community systems (e.g. dementia and stroke)

19 The estimates for ADHD, Down syndrome and cerebral palsy in this age group have very high relative standard errors and are considered too unreliable for this comparison.

- some conditions were more likely to be associated with multiple diseases and impairments (e.g. dementia and stroke; Section 4.4)
- some conditions were more likely to be associated with needs for assistance in core activity while less likely to be related to multiple conditions (e.g. autism; Sections 4.3, 4.4, 5.3, 5.4 and 5.5)
- some conditions were more likely to be associated with severe employment restrictions among the working age population but less likely to be associated with need for assistance with core activities (e.g. diabetes, depression and arthritis; Section 5.6).

Multiple conditions

People with disability, particularly in older age groups, were very likely to report multiple conditions.

Analysis based on all disabling conditions

- Multiple conditions were reported among people with most of the selected conditions (Figure 4.5). People with dementia led the list, with an average of 4.7 conditions. The next in line was stroke (4.6), followed by glaucoma (4.5), osteoporosis (4.4), heart disease (4.4), cataracts (4.3), diabetes (4.2), depression (4.1) and hypertension (4.1).
- People less likely to report multiple conditions were those with ADHD (1.8), autism (2.1) and multiple sclerosis (2.2).
- It is worth noting that most people with ADHD and autism were children of school age and they were less likely to have conditions more commonly associated with older ages. This could contribute to the relatively low average number of conditions for people in these groups.

Patterns of associated conditions

People with dementia were likely to have other selected conditions, and six conditions were reported by over one-fifth of them: total hearing (43%), arthritis (32%), speech (30%), total vision (26%), heart diseases (26%) and stroke (23%) (Table 4.8). The proportion of people with depression (9.5%) was highest among people with dementia compared to people with other conditions.

People who had had strokes were the most likely to report heart diseases (31%) and diabetes (16%) as other conditions. People with stroke also reported high proportions with arthritis (42%), hypertension (37%) and total hearing (37%). For example, this relationship may be reflected in the pattern:

- Diabetes was most commonly reported by those with stroke (16%), hypertension (15%), heart disease (13%) and dementia (13%).
- Hypertension most frequently occurred among people with diabetes (38%), stroke (37%), osteoporosis (33%) and heart disease (32%).
- People with osteoporosis were the most likely to also report the highest proportion of arthritis (48%).

Of those conditions that more frequently occurred among younger people (Table A6.1), speech problems were reported by 76% of people with autism and 55% of people with

cerebral palsy. Asthma was reported by 23% of people with ADHD and 20%of people with autism.

The proportion reporting back problems (35%) was highest for people with depression, possibly because these conditions were more prevalent among older working-age people.

Patterns of associated disabilities

- People with dementia (by definition in the psychiatric disability group) were most likely to have multiple disabilities, 90% of them had physical/diverse disability, 80% intellectual disability, 69% sensory/speech disability and 16% disability associated with acquired brain injury (Figure 4.9; Table 4.9).
- High proportions of people with multiple associated disabilities were also found for people with autism, Down syndrome, cerebral palsy, Parkinson's disease, schizophrenia, speech and stroke, each with a relatively high proportion in three or more associated disability groups.

7.3 Alternative measures of severity

The outline of key results above (Section 7.2) has focused on the severity measure: 'severe or profound core activity restriction', that is, where assistance is needed with self-care, mobility and/or communication. Fairly similar results were found for the two alternative severity measures used in the bivariate analyses, as follows.

Number of core activities in which help is needed, for selected health conditions

- The overall pattern was similar to that for the proportion having a severe or profound core activity restriction (Section 5.3). People with dementia, Down syndrome and autism were more likely to have more needs for assistance; about 60% of people with those conditions needed help with all three core activities (Figure 5.3). A high proportion needing help with three activities was also reported by people with cerebral palsy (52%), speech problems (38%) and Parkinson's disease (35%).
- About 95% of people with autism (11,700), 84% of people with dementia (84,300), 83% of people with Down syndrome (8,300), and 78% of those with cerebral palsy (17,300) needed help with at least two core activities.
- Of people with paralysis, about 60% needed help with at least two core activities, including 26% who needed help with all three activities.
- In contrast, people with back problems, asthma, migraine, hypertension, arthritis and hearing disorders were ranked at the bottom of the list. Between 85%and 95% of people with these conditions either required no assistance or needed help with only one core activity.

Frequency of need for help with core activities, for selected health conditions

- Overall, the pattern is similar to those of the previous two measures. Dementia led the list with 75% of people with this condition needing help at least three times a day (Figure 5.4). About 60% of people with autism and 58% with cerebral palsy also needed

assistance three or more times a day, followed by Parkinson's disease (52%), speech problems (51%) and Down syndrome (48%).

- In contrast, conditions that were more likely to be associated with relatively low frequencies of need for help were back problems, migraine, hypertension, asthma, arthritis and hearing disorders. Only about 2–10% of people with those conditions required assistance six or more times a day.

7.4 Disability, health conditions and other factors: multivariate analyses

The multivariate analyses were designed to focus on the third main question asked in Chapter 1: What are the relationships between disability, environmental factors and personal factors as well as health conditions? How do these vary with different measures of 'severity' of disability?

The multivariate analyses of Chapter 6 did not reveal key indicators of disability severity from among all the factors it was possible to consider—health conditions, personal factors and environmental factors. Rather, they confirmed the complexity of relationships among disability severity, health conditions and personal and environmental factors.

Personal and environmental factors were found to be strongly related to severity of disability. The further variability in these relationships, according to specific health conditions, suggests that health conditions also play a complex and varying role in the creation of disability, although these effects are not simple to predict. The fact that a number of health conditions are very age-related (e.g. dementia and autism) further complicates the relationships. Overall, it appears likely that there are three-way interactions between the severity of disability, the environmental factors that may affect it, and the underlying long-term conditions associated with the disability.

The main results were reasonably similar for the severity measures examined: regularity of need for assistance with core activities (sometimes, always, never); frequency of need for assistance (daily, 3 times a day etc.); and hours of informal care. This may not be surprising given the probable relationship between these measures. The robustness of the results for most factors for the three measures suggests that the associations found do reflect relationships within the population.

The number of long-term conditions a person had was obviously highly correlated with the severity of disability, however measured. This means that co-morbidity is very important in examining the relationships between particular conditions and the severity of disability.

7.5 Contrasting disability-focused and health-focused analyses

What does this analysis contribute to the understanding of the ICF model of functioning and disability, and the relationships among its entities (Figure 1.1)? What does it contribute to disability measurement?

Sometimes it is easiest to draw out features of analysis when they are described as a contrast or comparison to alternative approaches. This section draws out some contrasts between the

exploratory analysis of this report and the 'burden of disease' studies (e.g. AIHW: Mathers et al. 1999).

Disease focused analyses

Disease focused analyses, such as the burden of disease studies, can be represented as follows:

Their purpose is to consider the 'consequences' and costs of specific diseases. This approach has applications in prioritising actions and interventions aimed at preventing disease and disease 'burden', as defined.

They start with a particular disease, estimate the prevalence in the population of relevance, describe a broad distribution of sequelae and apply weightings to these (e.g. obtained by person trade-off methods) in order to estimate or summarise the total 'burden' for people with that disease. 'Burden' may be short or long term.

The analysis allowed by this approach results in the assignment of metrics (years lost, costs, 'burden') to specific disease outcomes (as well as to some risk factors). This allows for the years lost due to 'disability' as defined to be combined with years lost due to mortality, and for diseases to be ranked in terms of their 'burden'. Co-morbidities are allowed for but, because the approach is disease-centred rather than person-centred, such co-morbidity adjustments are difficult.

The metrics used by such analyses include 'years lost' or 'healthy years lost' because of the disease. These metrics are combined or summed to construct corresponding summary measures across a number of diseases (or the whole set, constructed to be mutually exclusive). Problems in ascribing meaning to such summary measures arise from the perceived problems with the disability weightings (discussed extensively in the literature—see also Chapter 3) and the difficulty (so far) in allowing for co-morbidities.

This approach does not explore the creation of disability by the interplay among and within the various factors in the ICF model. In a disease-focused analysis this can also mean problems in understanding and allowing for co-morbidities.

Disability-focused analyses

The approach in this study is primarily a disability-focused analysis and can be represented as follows:

The purpose was to start by looking at disability and considering the correlates or factors influencing the disability experience. This approach has applications in programs that deal with managing the day-to-day reality of disability, or programs that require some understanding of the profiles of people with disability, and the associated factors influencing disability, perhaps so as to minimise the disabling effects of health conditions or environmental policies.

First, the total population with certain activity limitations was considered, and from there, data about related health conditions, demographic characteristics, and environmental factors were considered. The use of the ABS Survey of Disability, Ageing and Carers means that the focus was on disability lasting six months or more.

The analysis allowed by this approach included the description of disease or co-morbidities related to disability.

The metrics used in our study are population prevalence and disability 'severity'.

This approach does not consider disease where no disability was involved. It readily allowed the construction of summary measures of disability, as that was where the analysis started. (This is the case because the Australian disability survey was constructed to align well with the ICF; it defined core activities and made simple rules about combining activity limitation information.)

The contrast in ICF terms

One way of representing this contrast is by referring to the ICF model (see Figure 1.1).

Disability-focused analysis

In the disability focused analysis, activity limitations have been explored in their own right and 'disability' measures constructed using this one ICF component. In this study, simple bivariate analyses explored the relationships between various diseases and disability, while the more complex multivariate analyses explored the strength of the other inter-relationships in the ICF model, and sought the strongest relationships among the elements on which there are data, using the various available measures of disability.

Both sets of analyses confirmed the complexity of the disability phenomenon and of its relationship with health conditions. Prevalence of a health condition did not directly indicate prevalence or severity of associated disability; particular health conditions had higher probabilities of disability or severe disability. The multivariate analysis did not reveal key indicators of disability severity from among all the factors considered—health conditions, personal factors and environmental factors.

Disease-focused analyses

In the disease-focused analysis, the starting point was the health condition. The 'burden' of the health condition implicitly summarised (perhaps some of) the other components of the ICF model (e.g. activity limitations, participation restrictions, environmental factors such as aids and equipment or carers). This process of synthesis and summary happened during the assigning of weights (that is, in the heads of the experts and other people asked to assign values, or preferences, to different functional states described to them). This has some risks, as the ICF model illustrated the large number of inter-relationships among the relevant factors, and the analyses carried out in this report did not indicate obvious simplifications.

Purpose and method

This discussion illustrates that purpose and analytical method are interwoven, and that it is important to suit method to purpose as far as possible. Disease-focused analyses of 'disability' and 'disease burden', as described here, may be useful for disease costing and priority setting for disease prevention. There may be problems in ascribing a 'disability' meaning to the summary measures derived in these analyses.

Disability-focused analyses may be more relevant for understanding disability in the population, for designing services and environmental modifications, and for understanding

the inter-relationships in the ICF model—that is, the creation of disability and the relevant environmental and other factors affecting it.

7.6 Environmental factors

The absence of good data on the full range of environmental factors in the ICF will hamper disability data analysis for some years to come. The importance of environmental factors—recognised in the ICF—has been vividly illustrated in a comparative study on burden of disease measurement in developed and developing countries (Australia and Cameroon; Reidpath et al. 2001). The data analysis of the study was based on two groups of people (40 participants for each group) with paraplegia and epilepsy, respectively. The study found that paraplegia was rated as a 'worse burden' in Cameroon largely because of the physical environmental factors, while epilepsy was rated as a 'worse burden' in Australia largely because of the less tolerant social environment, in particular the attitudes to some visible behaviours. This study was designed as an empirical study which set out to examine the 'evidence' for the disability weights in burden of disease studies (Reidpath et al. 2001). To date, most critical reviews of the burden of disease measure and, in particular, its key technical basis—'disability weights'—have tended to be theoretical in nature, and there have been few empirical studies. Given that the burden of disease estimate is mainly a population-based summary statistic measure, it is also useful to examine empirical evidence from population surveys.

7.7 Conclusion

Overall, the study has yielded rich detail about the relationships among disability, health conditions and other factors. It was found that:

- Prevalence of a health condition did not indicate prevalence or severity of associated disability.
- Ranking health conditions in terms of their prevalence gave very different results from ranking them in terms of the likelihood of their being associated with severe disability. Conditions such as asthma, hypertension, arthritis and hearing are relatively prevalent but relatively unlikely (less than 25%) to be associated with severe disability. In contrast, conditions associated with intellectual, learning, psychiatric and neurological disorders were less prevalent but very likely to be associated with severe disability. For instance, over 90% of people reporting autism, dementia or Down syndrome had severe disability.
- Looking yet another way at the relationship between disability and health conditions, it was found that the most common condition associated with 'severe disability' was arthritis, with 2.0% of people of all ages having severe disability and arthritis.
- The multivariate analyses conducted did not reveal key indicators of disability severity from among all the factors it was possible to consider—health conditions, personal factors and environmental factors. This confirms the ICF model of disability, as reflecting a complex interaction among a wide range of personal, health and environmental factors.

The brief discussion in this chapter, contrasting two approaches to the analysis of disability, suggests the need for care in aligning purpose and method, and in the application of results. Perhaps more desirably the development of more common or holistic approaches to the analysis of health and disability would minimise the risk of inappropriate application of

results. The complexity of human functioning and disability is not something that statistical and policy analysts can escape from.

With 'whole of government' approaches increasingly demanding that services focus on the person as a whole, and not subdivide areas of life to align with service 'silos', the analysis of disability and long-term conditions requires a more holistic analytical approach. Health and community care services will increasingly deal with chronic and long term conditions, and support people long term in the community. As people move between these services over longer periods of time, the 'whole person' and contextual model of the ICF provides a useful conceptual and information framework.

Overall, it is concluded that:

- understanding analytical methods and what policy purposes they suit (or do not suit) is a major responsibility of disability data analysts
- it may be time to work towards more common or holistic approaches to the analysis of health and disability to minimise the risk of inappropriate application of results
- 'whole of government' policies require a 'whole person' analysis of health and disability, and this provides further motivation to seek less fragmented analysis.

Appendixes

Appendix 1 Grouping of disabling conditions

Grouping of disabling conditions for estimating main disability groups in Australia, using the ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file (CURF)

	CURF code	ABS survey code	AIHW/National Community Services Data Dictionary, version 3 grouping
Intellectual and developmental disorders nfd	22	530	Intellectual/learning
Mental retardation/intellectual disability	23	531	Intellectual/learning
Autism and related disorders	24	532	Intellectual/learning
Developmental learning disorders	25	533	Intellectual/learning
Other developmental disorders	26	534–539	Intellectual/learning
ADD/hyperactivity	27	595	Intellectual/learning
Down syndrome	79	1603	Intellectual/learning
Mental and behavioural disorders nfd	13	500	Psychiatric
Psychoses and mood affective disorders nfd	14	510	Psychiatric
Dementia	15	511	Psychiatric
Schizophrenia	16	512	Psychiatric
Depression etc. (excl. postnatal)	17	513	Psychiatric
Other psychoses	18	519	Psychiatric
Phobic and anxiety disorders	19	521	Psychiatric
Nervous tension/stress	20	522	Psychiatric
Other neurotic and stress-related disorders	21	520, 523, 529	Psychiatric
Other mental and behavioural disorders	29	590–594, 597-599	Psychiatric
Cataracts	39	702	Sensory/speech (Vision)
Retinal disorders/defects	40	703	Sensory/speech (Vision)
Glaucoma	41	704	Sensory/speech (Vision)
Sight loss	42	707	Sensory/speech (Vision)
Other diseases of the eye/adnexa	43	700–701, 705–706, 799	Sensory/speech (Vision)
Tinnitus	44	804	Sensory/speech (Hearing)
Deafness/hearing loss nfd	45	810	Sensory/speech (Hearing)
Deafness/hearing loss—noise–induced	46	811	Sensory/speech (Hearing)
Deafness/hearing loss—congenital	47	812	Sensory/speech (Hearing)
Deafness/hearing loss—due to accident	48	813	Sensory/speech (Hearing)
Other deafness/hearing loss	49	814	Sensory/speech (Hearing)
Other diseases of the ear and mastoid process	50	899	Sensory/speech (Hearing)
Speech impediment	28	596	Sensory/speech (Speech)
Unspecified speech difficulties	83	1705	Sensory/speech (Speech)
Head injury/acquired brain damage	86	1801	Acquired brain injury

(continued)

Grouping of disabling conditions for estimating main disability groups in Australia, using the 1998 ABS Survey of Disability, Ageing and Carers confidentialised unit record file (CURF) (continued)

	CURF code	ABS survey code	AIHW/National Community Services Data Dictionary, version 3 grouping
Heart disease nfd	51	910	Physical/diverse (Circulatory)
Angina	52	913	Physical/diverse (Circulatory)
Myocardial infarction (heart attack)	53	914	Physical/diverse (Circulatory)
Other heart disease	54	911–912, 919	Physical/diverse (Circulatory)
Hypertension	55	922	Physical/diverse (Circulatory)
Stroke	56	923	Physical/diverse (Circulatory)
Other diseases of circulatory system	57	900, 920–921, 924–925, 929	Physical/diverse (Circulatory)
Bronchitis/bronchiolitis	58	1002	Physical/diverse (Respiratory)
Respiratory allergies(excl allergic asthma)	59	1003	Physical/diverse (Respiratory)
Emphysema	60	1004	Physical/diverse (Respiratory)
Asthma	61	1005	Physical/diverse (Respiratory)
Other diseases of the respiratory system	62	100–1001, 1006, 1099	Physical/diverse (Respiratory)
Arthritis and related disorders	68	1301	Physical/diverse (Arthritis)
Back problems (dorsopathies)	69	1303	Physical/diverse (Other musculoskeletal)
Synovitis/tenosynovitis/repetitive strain injury/occupational overuse syndrome	70	1304, 1305	Physical/diverse (Other musculoskeletal)
Other soft tissue/muscle disorders (incl. rheumatism)	71	1306	Physical/diverse (Other musculoskeletal)
Osteoporosis	72	1307	Physical/diverse (Other musculoskeletal)
Other disorders of musculoskeletal and connective tissue	73	1300, 1302, 1308, 1399	Physical/diverse (Other musculoskeletal)
Deformities of joints/limbs—congenital	78	1602	Physical/diverse (Other musculoskeletal)
Arm/hand/shoulder damage from injury, amputation of finger/thumb/hand/arm	87	1802, 1803	Physical/diverse (Other musculoskeletal)
Leg/knee/foot/hip damage from injury, amputation of toe/foot/leg	88	1804, 1805	Physical/diverse (Other musculoskeletal)
Parkinson's disease	30	604	Physical/diverse (Neurological)
Alzheimer's disease (ABS excluded it from nervous system)	31	605	Physical/diverse (Neurological)
Brain disease/disorder-acquired (incl. senile degen. of brain nec)	32	606	Physical/diverse (Neurological)
Multiple sclerosis	33	607	Physical/diverse (Neurological)
Epilepsy	34	608	Physical/diverse (Neurological)
Migraine	35	609	Physical/diverse (Neurological)

(continued)

Grouping of disabling conditions for estimating main disability groups in Australia, using the ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file (CURF (continued)

	CURF code	ABS survey code	AIHW/National Community Services Data Dictionary, version 3 grouping
Other diseases of the nervous system incl. TIAs	38	600–603, 610, 613–614, 699	Physical/diverse (Neurological)
Cerebral palsy	36	611	Physical/diverse (Other physical)
Paralysis	37	612	Physical/diverse (Other physical)
Spina bifida	77	1601	Physical/diverse (Other physical)
Limited use of arms or fingers	91	1901	Physical/diverse (Other physical)
Difficulty gripping or holding things	92	1902	Physical/diverse (Other physical)
Limited use of feet/legs	93	1903	Physical/diverse (Other physical)
Poliomyelitis	1	102	Physical/diverse (All other)
Other infectious and parasitic diseases	2	100–101, 103, 199	Physical/diverse (All other)
Skin cancer	3	203	Physical/diverse (All other)
Breast cancer	4	204	Physical/diverse (All other)
Prostate cancer	5	205	Physical/diverse (All other)
Other malignant tumors	6	201–202, 206–210	Physical/diverse (All other)
Other neoplasms (incl. benign)	7	200	Physical/diverse (All other)
Diseases of the blood and blood-forming organs	8	300–303, 399	Physical/diverse (All other)
Disorders of thyroid	9	401	Physical/diverse (All other)
Diabetes	10	402	Physical/diverse (All other)
High cholesterol	11	404	Physical/diverse (All other)
Other endocrine, nutritional and metabolic disorder	12	400, 403, 499	Physical/diverse (All other)
Stomach/duodenal ulcer	63	1101	Physical/diverse (All other)
Abdominal hernia (except congenital)	64	1102	Physical/diverse (All other)
Enteritis, colitis and other disease of the intestine	65	1103–1104	Physical/diverse (All other)
Other diseases of the digestive system	66	1100, 1105–1106, 1199	Physical/diverse (All other)
Diseases of the skin and subcutaneous tissue	67	1200–1204, 1299	Physical/diverse (All other)
Disorders of the urinary system	74	1403	Physical/diverse (All other)
Disorders of the genital system	75	1404, 1405,	Physical/diverse (All other)
Other diseases of the genitourinary system	76	1400, 1499	Physical/diverse (All other)
Other congenital/chromosomal abnormalities	80	1600, 1604–1605, 1699	Physical/diverse (All other)
Breathing difficulties/shortness of breath	81	1701	Physical/diverse (All other)
Pain nfd	82	1704	Physical/diverse (All other)
Blackouts, fainting, convulsions nec	84	1708	Physical/diverse (All other)
Other symptoms and signs nec	85	1700, 1702–1703, 1706, 1709–1711, 1799	Physical/diverse (All other)

(continued)

Grouping of disabling conditions for estimating main disability groups in Australia, using the ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file (CURF) (continued)

	CURF code	ABS survey code	AIHW/National Community Services Data Dictionary, version 3 grouping
Complications/consequences of surgery and medical care nec	89	1808	Physical/diverse (All other)
Other injury, poisoning and consequences of external causes	90	1800, 1806–1807, 1809, 1899	Physical/diverse (All other)
Restricted in physical activity or physical work	94	1904	Physical/diverse (All other)
All other conditions	95	1500–1502, 1599, 1905–1908	Physical/diverse (All other)

Note: In current report, 'Physical/diverse' excludes the category of 'Acquired brain injury', which is a separate category of disability group.

Source: ABS Technical Paper: 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Appendix 2 Tables

Table A3.1: People of all ages: estimated frequency of health conditions ('000) (based on main conditions), by disability status, 1998

Health conditions	With a health condition	Health conditions	With a disability	Health conditions	With a severe or profound restriction
Back problems	1,041.5	Back problems	600.8	Back problems	168.6
Arthritis	859.0	Arthritis	497.1	Arthritis	150.9
Asthma	785.7	Other hearing disorders	211.5	Dementia	63.6
Hypertension	506.3	Asthma	170.9	Stroke	49.0
Other hearing disorders	343.0	Heart diseases	134.9	Asthma	38.9
Heart diseases	233.2	Other vision disorders	72.0	Heart diseases	36.0
Diabetes	183.2	Hypertension	71.6	Other hearing disorders	29.1
Hearing loss, noise-induced	128.0	Hearing loss, noise-induced	69.1	ADHD	28.0
Depression	111.3	Dementia	63.8	Other vision disorders	27.6
Other vision disorders	79.5	Stroke	63.6	Parkinson's disease	18.0
Stroke	74.3	Diabetes	63.4	Depression	17.7
ADHD	66.3	Depression	62.9	Cerebral palsy	16.1
Dementia	64.8	ADHD	54.3	Diabetes	15.7
Migraine	62.7	Speech problems	35.7	Speech problems	14.8
Cancer	56.9	Epilepsy	35.5	Hypertension	12.9
Epilepsy	47.3	Cancer	31.4	Epilepsy	12.7
Speech problems	36.5	Migraine	29.9	Osteoporosis	11.2
Osteoporosis	36.0	Osteoporosis	29.1	Schizophrenia	11.1
Cataract	27.0	Cataract	25.1	Cancer	10.1
Schizophrenia	24.8	Parkinson's disease	22.2	Multiple sclerosis	9.7
Parkinson's disease	23.8	Schizophrenia	19.5	Autism	9.2
Glaucoma	20.8	Cerebral palsy	18.1	Down syndrome	*8.1
Cerebral palsy	18.8	Glaucoma	16.2	Paralysis	*7.6
Paralysis	13.5	Paralysis	12.0	Glaucoma	*6.1
Multiple sclerosis	12.2	Multiple sclerosis	11.2	Cataract	*5.9
Autism	9.8	Autism	9.2	Migraine	*4.3
Down syndrome	*8.2	Down syndrome	*8.2	Hearing loss, noise-induced	**1.5

Note: Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table A4.1: People with a disability: selected health conditions by other associated conditions ('000), 1998

Health conditions	Dementia	Stroke	Glaucoma	Osteo-porosis	Heart diseases	Cataracts	Diabetes	Depression	Hyper-tension
Dementia	100.3	23.3	*6.5	*6.2	25.8	*7.1	13.2	9.5	16.7
Stroke	23.3	230.3	*6.7	*7.3	70.8	11.3	37.3	18.0	84.5
Glaucoma	*6.5	*6.7	56.4	**1.5	10.6	**1.0	*5.5	**2.2	16.7
Osteoporosis	*6.2	*7.3	**1.5	72.5	16.6	*5.3	*5.4	*6.5	23.6
Heart diseases	25.8	70.8	10.6	16.6	429.5	22.4	57.1	22.5	138.8
Cataracts	*7.1	11.3	**1.0	*5.3	22.4	79.3	*6.9	**2.4	25.2
Diabetes	13.2	37.3	*5.5	*5.4	57.1	*6.9	243.0	10.8	92.3
Depression	9.5	18.0	**2.2	*6.5	22.5	**2.4	10.8	177.3	34.8
Hypertension	16.7	84.5	16.7	23.6	138.8	25.2	92.3	34.8	638.2
Total vision disorders	26.2	44.7	56.4	11.6	68.6	79.3	40.2	16.1	87.6
Parkinson's disease	*6.5	*4.1	**0.6	**1.6	*6.3	**2.0	*3.0	*2.7	*4.4
Paralysis	**1.2	*5.8	**0.4	—	**2.4	**1.2	**1.1	**1.1	*2.8
Cancer	*4.2	10.2	**1.3	**0.6	12.9	*3.1	*8.9	*4.2	20.3
Arthritis	32.4	97.3	24.1	34.9	178.0	34.4	92.7	64.1	313.3
Total hearing disorders	43.2	84.6	22.7	24.5	178.8	30.9	75.2	42.6	235.4
Hearing loss, noise-induced	*4.7	24.6	*4.1	**0.7	56.8	*3.5	26.7	10.9	80.3
Down syndrome	**0.1	**0.7	—	—	**1.4	**0.1	—	—	—
Epilepsy	*3.2	10.0	**0.8	**1.6	*5.0	**0.2	*3.2	*4.4	*5.2
Cerebral palsy	**0.2	**2.4	**1.2	—	**0.7	**0.1	**0.1	**0.3	**1.7
Back problems	*7.9	45.3	11.1	16.3	99.7	14.4	57.2	62.2	171.2
Migraine	**0.7	**1.2	—	—	**1.5	**0.3	*3.9	*6.3	*4.0
Schizophrenia	**1.4	**1.1	**0.1	**0.1	**0.9	**0.3	**2.1	**2.4	**1.5
Asthma	*2.8	16.7	*4.9	*5.7	41.1	*4.2	22.2	22.9	52.6
Speech	29.6	41.9	*2.6	**2.0	21.3	*5.3	12.5	12.6	18.4
Multiple sclerosis	**0.1	**0.5	—	**0.7	—	—	**0.1	**1.1	**2.0
Autism	—	**0.6	—	—	—	—	—	—	—
ADHD	—	**0.4	—	—	**0.3	—	—	*3.4	**0.1

(continued)

Table A4.1 (continued): People with a disability: selected health conditions by other associated conditions ('000), 1998

Health conditions	Total vision	Parkinson's disease	Paralysis	Cancer	Arthritis	Total hearing	Hearing loss, noise-induced	Down syndrome	Epilepsy
Dementia	26.2	*6.5	**1.2	*4.2	32.4	43.2	*4.7	**0.1	*3.2
Stroke	44.7	*4.1	*5.8	10.2	97.3	84.6	24.6	**0.7	10.0
Glaucoma	56.4	**0.6	**0.4	**1.3	24.1	22.7	*4.1	—	**0.8
Osteoporosis	11.6	**1.6	—	**0.6	34.9	24.5	**0.7	—	**1.6
Heart diseases	68.6	*6.3	**2.4	12.9	178.0	178.8	56.8	**1.4	*5.0
Cataracts	79.3	**2.0	**1.2	*3.1	34.4	30.9	*3.5	**0.1	**0.2
Diabetes	40.2	*3.0	**1.1	*8.9	92.7	75.2	26.7	—	*3.2
Depression	16.1	*2.7	**1.1	*4.2	64.1	42.6	10.9	—	*4.4
Hypertension	87.6	*4.4	*2.8	20.3	313.3	235.4	80.3	—	*5.2
Cancer	10.3	**1.3	**0.2	84.7	33.4	31.9	10.5	—	**1.3
Total vision disorders	349.7	*5.0	*3.8	10.3	123.2	121.0	29.5	**0.3	*5.3
Parkinson's disease	*5.0	31.1	**0.1	**1.3	*6.4	9.2	**1.6	—	**0.3
Paralysis	*3.8	**0.1	22.2	**0.2	*2.9	*3.2	**0.1	**0.8	**1.4
Arthritis	123.2	*6.4	*2.9	33.4	1,107.5	367.3	117.4	**1.8	13.4
Total hearing disorders	121.0	9.2	*3.2	31.9	367.3	1,001.6	330.1	**1.9	13.8
Hearing loss, noise-induced	29.5	**1.6	**0.1	10.5	117.4	330.1	330.1	—	**2.3
Down syndrome	**0.3	—	**0.8	—	**1.8	**1.9	—	9.9	**0.1
Epilepsy	*5.3	**0.3	**1.4	**1.3	13.4	13.8	**2.3	**0.1	90.9
Cerebral palsy	*3.7	**0.1	**1.9	—	**1.9	**2.1	—	—	*5.3
Back problems	66.6	*4.2	**1.6	18.2	327.8	257.8	107.1	**2.2	11.7
Migraine	*3.2	**0.6	**0.4	**0.9	11.2	*8.1	**2.4	—	**1.2
Schizophrenia	**1.0	**0.3	**0.2	**0.1	*4.2	*4.8	—	—	**0.9
Asthma	26.2	**1.0	*2.7	*3.9	102.8	80.3	24.3	—	13.6
Speech	26.9	9.9	*5.4	*5.3	31.5	56.6	*5.6	*6.9	17.0
Multiple sclerosis	*2.7	—	**0.1	—	*3.3	**0.9	—	—	**0.2
Autism	**0.3	—	—	—	—	**0.3	—	—	**1.4
ADHD	**0.9	—	—	—	**1.0	*5.0	—	—	**1.2

(continued)

Table A4.1 (continued): People with a disability: selected health conditions by other associated conditions ('000), 1998

	Cerebral palsy	Back problems	Migraine	Schizophrenia	Asthma	Speech problems	Multiple sclerosis	Autism	ADHD
Dementia	**0.2	*7.9	**0.7	**1.4	*2.8	29.6	**0.1	—	—
Stroke	**2.4	45.3	**1.2	**1.1	16.7	41.9	**0.5	**0.6	**0.4
Glaucoma	**1.2	11.1	—	**0.1	*4.9	*2.6	—	—	—
Osteoporosis	—	16.3	—	**0.1	*5.7	**2.0	**0.7	—	—
Heart diseases	**0.7	99.7	**1.5	**0.9	41.1	21.3	—	—	**0.3
Cataracts	**0.1	14.4	**0.3	**0.3	*4.2	*5.3	—	—	—
Diabetes	**0.1	57.2	*3.9	**2.1	22.2	12.5	**0.1	—	—
Depression	**0.3	62.2	*6.3	**2.4	22.9	12.6	**1.1	—	*3.4
Hypertension	**1.7	171.2	*4.0	**1.5	52.6	18.4	**2.0	—	**0.1
Total vision disorders	*3.7	66.6	*3.2	**1.0	26.2	26.9	*2.7	**0.3	**0.9
Parkinson's disease	**0.1	*4.2	**0.6	**0.3	**1.0	9.9	—	—	—
Paralysis	**1.9	**1.6	**0.4	**0.2	*2.7	*5.4	**0.1	—	—
Cancer	—	18.2	**0.9	**0.1	*3.9	*5.3	—	—	—
Arthritis	**1.9	327.8	11.2	*4.2	102.8	31.5	*3.3	—	**1
Total hearing disorders	**2.1	257.8	*8.1	*4.8	80.3	56.6	**0.9	**0.3	*5.0
Hearing loss, noise-induced	—	107.1	**2.4	—	24.3	*5.6	—	—	—
Down syndrome	—	**2.2	—	—	—	*6.9	—	—	—
Epilepsy	*5.3	11.7	**1.2	**0.9	13.6	17.0	**0.2	**1.4	**1.2
Cerebral palsy	22.4	**0.3	—	—	*2.9	12.3	—	**0.6	**0.4
Back problems	**0.3	1,007.1	13.3	*6.4	98.1	19.8	**2.3	—	**1.8
Migraine	—	13.3	55.0	**1.1	*8.5	**0.1	—	—	**1.1
Schizophrenia	—	*6.4	**1.1	30.5	*3.1	*3.0	—	—	**0.5
Asthma	*2.9	98.1	*8.5	*3.1	408.7	20.3	**0.7	**2.5	13.9
Speech	12.3	19.8	**0.1	*3.0	20.3	244.0	*3.6	9.4	*8.0
Multiple sclerosis	—	**2.3	—	—	**0.7	*3.6	13.4	—	—
Autism	**0.6	—	—	—	**2.5	9.4	—	12.4	**0.7
ADHD	**0.4	**1.8	**1.1	**0.5	13.9	*8.0	—	**0.7	60.1

Notes

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2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table A4.2: People with a disability: selected health conditions ('000) by disability groups (based on all disabling conditions), 1998

Health conditions	Intellectual	Psychiatric	Sensory/speech	Acquired brain injury	Physical/diverse	Total
ADHD	60.1	18.6	11.2	**2.0	16.8	**60.1**
Autism	12.4	*8.7	9.4	**1.0	*6.3	**12.4**
Down syndrome	9.9	*6.6	*6.9	**0.7	*4.4	**9.9**
Schizophrenia	14.5	30.5	*7.5	*2.9	14.8	**30.5**
Depression	36.0	177.3	57.0	18.8	149.5	**177.3**
Dementia	80.3	96.9	69.6	16.0	90.5	**100.3**
Cataracts	9.5	16.6	79.3	*4.0	64.0	**79.3**
Glaucoma	*7.5	14.4	56.4	*5.2	49.6	**56.4**
Total vision disorders	51.0	86.2	349.7	37.0	282.9	**349.7**
Hearing loss, noise-induced	18.6	50.5	330.1	10.9	266.5	**330.1**
Total hearing disorders	102.5	211.8	1,001.6	50.8	784.8	**1,001.6**
Speech	138.1	105.9	244.0	43.1	149.4	**244.0**
Heart diseases	40.6	103.7	226.4	20.3	429.5	**429.5**
Stroke	51.7	75.7	132.7	17.2	230.3	**230.3**
Hypertension	41.6	132.5	294.8	27.5	638.2	**638.2**
Asthma	58.4	77.0	111.2	19.2	408.7	**408.7**
Arthritis	67.3	239.3	452.0	49.6	1,107.5	**1,107.5**
Back problems	55.3	203.7	311.1	57.4	1,007.1	**1,007.1**
Osteoporosis	*4.4	23.3	32.7	**1.6	72.5	**72.5**
Parkinson's disease	9.1	13.0	17.8	*3.8	31.1	**31.1**
Multiple sclerosis	**1.6	**2.2	*5.7	**0.2	13.4	**13.4**
Epilepsy	30.1	33.1	30.6	21.6	90.9	**90.9**
Migraine	*4.4	16.6	10.7	*3.4	55.0	**55.0**
Cerebral palsy	10.7	*8.1	14.0	*8.8	22.4	**22.4**
Paralysis	*7.4	*6.6	*8.4	*5.3	22.2	**22.2**
Diabetes	28.8	57.5	107.3	14.6	227.5	**243.0**
Cancer	9.3	14.9	40.4	*3.7	78.2	**84.7**

Note: Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table A5.1: Proportion of severe or profound core activity restrictions among people with a specific condition (based on main disabling conditions), by age, 1998

Health conditions	Aged under 65	Health conditions	Aged 65+	Health conditions	All ages
Dementia	**100.0	ADHD	—	Down syndrome	*99.4
Down syndrome	*99.4	Down syndrome	**100.0	Dementia	98.1
Autism	93.8	Multiple sclerosis	**100.0	Autism	93.8
Cerebral palsy	85.4	Cerebral palsy	**100.0	Cerebral palsy	85.7
Multiple sclerosis	*78.0	Dementia	98.1	Multiple sclerosis	80.0
Paralysis	*51.7	Schizophrenia	*91.7	Parkinson's disease	75.5
Parkinson's disease	*50.9	Parkinson's disease	85.3	Stroke	66.0
ADHD	42.2	Stroke	78.1	Paralysis	*56.5
Speech problems	41.8	Paralysis	**71.0	Schizophrenia	44.8
Stroke	41.7	Other vision disorders	50.8	ADHD	42.2
Schizophrenia	*36.1	Glaucoma	*42.4	Speech problems	40.5
Epilepsy	27.3	Osteoporosis	41.7	Other vision disorders	34.7
Cataract	**18.0	Depression	*38.5	Osteoporosis	31.1
Cancer	*16.7	Epilepsy	**23.7	Glaucoma	29.3
Back problems	15.5	Cataract	*23.7	Epilepsy	26.9
Other vision disorders	*14.3	Arthritis	23.0	Cataract	*21.8
Depression	13.1	Heart diseases	21.5	Cancer	17.7
Osteoporosis	**12.6	Back problems	20.1	Arthritis	17.6
Arthritis	12.5	Cancer	*19.1	Back problems	16.2
Other hearing disorders	7.6	Diabetes	14.5	Depression	15.9
Heart diseases	*7.4	Asthma	*14.2	Heart diseases	15.4
Migraine	*7.2	Other hearing disorders	10.0	Diabetes	8.6
Diabetes	*5.3	Speech problems	**6.4	Other hearing disorders	8.5
Asthma	4.3	Hypertension	*3.8	Migraine	*6.8
Hypertension	*1.7	Hearing loss, noise-induced	**3.2	Asthma	5.0
Hearing loss, noise-induced	**0.2	Autism	—	Hypertension	2.6
Glaucoma	—	Migraine	—	Hearing loss, noise-induced	**1.1

Notes

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2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table A5.2: People with a disability: number of core activities in which help needed, as a proportion of people with a disability who had a given condition (based on main disabling conditions), 1998

Health conditions	Three core activities	Two core activities	One core activity	No need for help with core activities	Total (%)	Total with a disability ('000)
Dementia	72.2	19.2	*7.8	**0.7	**100.0**	**63.8**
Down syndrome	*67.8	**22.5	**8.8	**0.8	**100.0**	**8.2**
Autism	*65.7	**27.4	**6.9	—	**100.0**	**9.2**
Cerebral Palsy	53.0	*25.3	**10.7	**11.0	**100.0**	**18.1**
Stroke	29.0	29.8	18.3	22.8	**100.0**	**63.6**
Parkinson's disease	*24.9	*32.0	*24.3	*18.9	**100.0**	**22.2**
Paralysis	**13.2	*45.6	**4.7	*36.6	**100.0**	**12.0**
Schizophrenia	**9.1	*22.1	*22.3	46.5	**100.0**	**19.5**
ADHD	*9.0	17.5	25.1	48.4	**100.0**	**54.3**
Multiple sclerosis	**7.0	*63.2	**16.7	**13.1	**100.0**	**11.2**
Cancer	**6.3	*14.2	*11.5	68.1	**100.0**	**31.4**
Epilepsy	**5.3	*12.7	*16.4	65.6	**100.0**	**35.5**
Osteoporosis	**4.9	*15.6	*16.9	62.7	**100.0**	**29.1**
Heart disease	*4.1	8.3	14.1	73.6	**100.0**	**134.9**
Depression	*3.8	**10.2	**13.2	72.8	**100.0**	**62.9**
Glaucoma	**2.9	**9.7	*24.7	62.7	**100.0**	**16.2**
Migraine	**2.5	**3.6	**8.2	85.8	**100.0**	**29.9**
Arthritis	2.2	10.7	17.1	69.9	**100.0**	**497.1**
Speech problems	**1.9	**0.1	39.3	58.7	**100.0**	**35.7**
Other vision disorders	**1.8	16.3	20.0	61.9	**100.0**	**72.0**
Diabetes	**1.7	*6.5	16.8	75.1	**100.0**	**63.4**
Other hearing disorders	**1.1	*2.9	8.3	87.7	**100.0**	**211.5**
Asthma	**1.1	6.0	14.5	78.4	**100.0**	**170.9**
Cataracts	**0.5	**1.3	*21.7	76.5	**100.0**	**25.1**
Hypertension	**0.2	*5.1	*12.0	82.7	**100.0**	**71.6**
Back problems	**0.2	10.7	17.1	72.0	**100.0**	**600.8**
Hearing loss, noise-induced	—	—	**1.3	98.7	**100.0**	**69.1**

Notes

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2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table A5.3: People with a disability: the highest frequency of need for assistance with core activities, as a proportion of people with a disability who had a specific condition (based on main disabling conditions), 1998

	Highest frequency of need for assistance with core activities								
Health conditions	**3+/day**	**1–2/day**	**2–6/ week**	**1/week**	**1–3/ month**	**<1/month**	**No need for help**	**Total (%)**	**Total number ('000)**
Dementia	83.6	*10.4	**2.2	**2.5	**0.2	**0.3	**0.7	**100.0**	**63.8**
Autism	*63.2	**27.6	**1.6	—	—	**7.6	—	**100.0**	**9.2**
Cerebral Palsy	58.1	**12.3	**12.1	—	—	**6.5	**11.0	**100.0**	**18.1**
Down syndrome	*47.6	**31.1	**3.6	**0.5	**16.3	—	**0.8	**100.0**	**8.2**
Stroke	49.2	*13.1	*5.6	**3.2	**3.7	**2.5	22.8	**100.0**	**63.6**
Parkinson's disease	43.7	*20.9	**8.7	**3.1	**2.0	**2.8	*18.9	**100.0**	**22.2**
Multiple sclerosis	*40.2	**9.4	**11.2	**5.9	**5.1	**15.1	**13.1	**100.0**	**11.2**
Paralysis	*41.0	**20.7	**0.3	—	**1.4	—	*36.6	**100.0**	**12.0**
ADHD	18.0	19.9	**3.3	**3.4	**2.3	**4.7	48.4	**100.0**	**54.3**
Cancer	*10.7	4.2	*8.3	**1.7	**5.0	**2.0	68.1	**100.0**	**31.4**
Speech	*12.6	5.8	**7.2	**2.1	*11.2	**2.5	58.7	**100.0**	**35.7**
Schizophrenia	**12.3	17.0	**9.2	**4.1	**6.8	**4.3	46.5	**100.0**	**19.5**
Osteoporosis	*14.8	**5.8	*14.3	**2.0	—	**0.4	62.7	**100.0**	**29.1**
Epilepsy	*8.8	**2.1	**5.8	**4.4	**6.0	**7.2	65.6	**100.0**	**35.5**
Arthritis	7.4	4.9	5.3	3.3	4.5	4.6	69.9	**100.0**	**497.1**
Other vision disorders	*8.4	*7.6	*7.0	*9.6	**3.2	**2.3	61.9	**100.0**	**72.0**
Depression	*7.9	*7.1	*4.5	**3.7	**2.2	**1.8	72.8	**100.0**	**62.9**
Diabetes	*5.0	*4.3	**3.7	*4.8	**1.7	*5.3	75.1	**100.0**	**63.4**
Heart disease	*5.7	*4.2	*4.8	*3.8	*3.5	*4.3	73.6	**100.0**	**134.9**
Glaucoma	**3.4	**2.3	**6.8	**14.2	**6.6	**4.0	62.7	**100.0**	**16.2**
Asthma	*2.8	*4.4	*3.2	*1.9	*2.9	6.5	78.4	**100.0**	**170.9**
Other hearing disorders	3.7	1.8	2.6	**1.1	**2.1	**0.9	87.7	**100.0**	**211.5**
Back problems	2.6	4.2	4.1	3.2	4.2	9.6	72.0	**100.0**	**600.8**
Cataracts	**1.0	**0.8	**1.6	**9.3	**1.2	**9.6	76.5	**100.0**	**25.1**
Hypertension	**2.2	**3.2	**1.9	*5.5	**1.2	**3.3	82.7	**100.0**	**71.6**
Migraine	**2.5	—	**1.5	**3.7	**2.4	**4.2	85.8	**100.0**	**29.9**
Hearing loss, noise-induced	**0.1	**0.5	**0.2	—	**0.5	—	98.7	**100.0**	**69.1**

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table A5.4: People with a disability aged 15–64: health conditions (based on main disabling conditions), by severity of employment restriction, 1998

	Sum of living in cared accommodation and profound	Living in cared accommodation	Profound	Severe	Moderate	Mild or no restriction	Total (%)	Total No. ('000)
Autism	***100*	**3.9	**96.1	—	—	—	**100.0**	****1.6**
Dementia	***100*	**100	—	—	—	—	**100.0**	****0.6**
Stroke	*70.9*	**6.9	64.0	**6.5	**12.7	**9.9	**100.0**	**16.7**
Parkinson's disease	**64.1*	**4.1	*60.0	—	**20.4	**15.5	**100.0**	***5.6**
Schizophrenia	*59.8*	**15.7	*44.1	*19.7	*16.9	**3.6	**100.0**	**15.8**
Down syndrome	**55.0*	**11.8	*43.2	*45.0	—	—	**100.0**	***6.7**
Heart disease	*51.4*	**0.1	51.2	**3.5	26.3	18.9	**100.0**	**51.3**
Osteoporosis	**49.1*	**0.4	*48.7	—	*30.5	**20.4	**100.0**	**9.8**
Glaucoma	***48.9*	—	**48.9	—	**27.2	**23.9	**100.0**	***2.8**
Cerebral palsy	**47.5*	**9.8	*37.8	**18.2	*34.3	—	**100.0**	**9.5**
Cancer	**39.4*	**0.5	*38.9	**7.9	*34.0	*18.6	**100.0**	**14.7**
Depression	*34.8*	**0.6	34.3	*6.8	37.1	21.3	**100.0**	**52.4**
Multiple sclerosis	**33.0*	**8.4	**24.6	**15.6	*44.9	**6.5	**100.0**	**10.1**
Diabetes	*30.8*	**0.4	30.4	**4.4	30.1	34.7	**100.0**	**34.6**
Arthritis	*30.7*	—	30.7	*2.8	33.0	33.5	**100.0**	**227.2**
Epilepsy	**28.1*	**3.4	*24.7	*12.6	*27.2	*32.1	**100.0**	**25.5**
Back problems	*26.0*	—	26.0	6.4	49.2	18.4	**100.0**	**488.5**
Hypertension	**21.7*	—	*21.7	**3.5	*18.8	56.1	**100.0**	**29.9**
Paralysis	***19.5*	**7.5	**12.0	**18.1	*39.9	**22.4	**100.0**	**8.7**
Migraine	**14.9*	—	*14.9	**3.0	34.4	47.7	**100.0**	**26.8**
Asthma	*14.7*	**0.1	14.6	*3.1	34.4	47.9	**100.0**	**90.8**
Other vision disorders	***9.0*	**1.0	**8.1	**6.9	35.9	48.1	**100.0**	**25.7**
Other hearing disorders	**8.7*	**0.1	*8.6	*4.0	37.1	50.2	**100.0**	**101.7**
Hearing loss, noise-induced	***5.2*	—	**5.2	—	*18.7	76.1	**100.0**	**39.5**
ADHD	***2.2*	**0.1	**2.1	*20.5	*36.5	40.8	**100.0**	**15.6**
Cataracts	***0.4*	**0.4	—	—	**41.6	*58.1	**100.0**	***5.0**
Speech problems	—	—	—	**7.4	—	*92.6	**100.0**	***8.7**

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table A6.1: Characteristic of persons by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(a)]
Total	**13.0**	**74.2**	**245.7**	**101.8**	**370.4**	**282.1**	**1,101.6**	**1,608.7**	**23.1**	**24.5**	**18,659.6**
Age (in years)											
0–9	*7.6	27.4	**1.8	—	9.2	**1.8	188.2	**0.6	*7.6	**0.7	2,599.1
10–19	*4.4	38.5	12.4	—	13.4	**2.1	235.1	*4.7	*4.4	**0.8	2,622.5
20–29	**0.1	*4.6	18.3	—	15.2	*4.1	166.1	33.6	*3.7	*3.3	2,827.9
30–39	**0.9	**2.5	38.6	—	20.7	13.5	130.2	80.6	**1.7	*3.7	2,896.1
40–49	—	—	52.2	**1.3	28.4	11.4	117.7	176.8	**2.1	*4.6	2,693.7
50–59	—	**0.4	48.0	**0.4	32.0	32.8	89.0	321.5	**1.6	**2.5	2,016.2
60–69	—	**0.6	33.2	*5.9	53.1	53.6	87.8	385.6	**1.6	**2.5	1,413.8
70–79	—	**0.1	22.7	25.2	91.4	89.6	70.6	401.7	**0.3	*2.9	1,075.9
80+	—	—	18.5	69	106.8	73.2	16.8	203.5	**0.1	*3.5	514.4
Sex											
Male	10.7	63.4	87.9	35.4	168.2	131.5	504.2	651.6	11.4	12.9	9,282.0
Female	**2.3	10.8	157.8	66.4	202.2	150.5	597.4	957.1	11.6	11.6	9,377.6
Age when accident happened/main condition occurred (in years)											
0–17	12.8	70.5	41.0	**0.9	62.8	18.2	684.9	112.5	19.8	*6.8	1,675.7
18–44	—	**2.5	116.2	*2.8	77.7	59.5	243.5	550	—	*7.7	2,422.6
45–64	—	**0.4	51.6	*6.5	81.5	84.4	117.8	608	**0.7	**2.1	1,688.5
65+	—	—	10.0	17.5	98.2	73.3	38.2	269.4	—	**0.4	677.5
Not applicable in cared accommodation	**0.2	**0.3	25.8	73.3	47.6	43.2	*7.4	51.6	*2.6	*7.5	189.7
Not applicable in household	—	—	—	—	—	—	—	**0.1	—	—	11,946.1
Not known	—	**0.6	**1.1	**0.8	*2.6	*3.5	9.7	17.1	—	—	59.6
Marital status											
Married	—	*2.6	119.2	30.0	166.6	145.5	421.2	951.1	*2.9	13.2	8,814.4
Separated	—	**2.5	80.0	62.1	143.3	112.7	123.1	538.1	**0.8	*3.5	2,011.0
Never married	13.0	69.1	45.9	*8.5	59.8	23.1	557	118.4	19.3	*7.7	7,830.7
Not known	—	—	**0.6	**1.2	**0.8	**0.7	**0.2	**1.1	**0.1	**0.1	*3.5
SEIFA											
Lowest 30%	*5.3	23.6	82.8	33.5	125.5	113.6	335.9	550.4	*8.8	*4.5	4,905.4
Middle 40%	*5.4	30.3	98.6	42.0	148.2	113.4	418.1	655.3	10.0	*8.6	7,669.7
Upper 30%	**2.3	20.3	63.8	25.5	96.1	54.4	345.5	401.0	*4.1	11.0	6,059.7
Not applicable	**0.1	—	**0.6	**0.7	**0.6	**0.7	**2.0	**2.1	**0.1	**0.3	24.8
Geographic location											
Capital city	10.0	48.8	156.1	63.6	229.3	182.2	720.2	953.9	14.0	19.3	11,924.3
Rest of state	*3.0	25.4	89.6	38.2	141.1	99.9	381.4	654.8	9.0	*5.2	6,735.4

(continued)

Table A6.1 (continued): Characteristic of persons by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(a)]
Birthplace											
OZ UK IR AM	12.9	73.5	209.5	82.8	317.7	242.9	1,021.8	1,363.4	23.0	21.0	16,203.7
Other places	—	**0.6	36.2	19.0	52.7	39.2	79.8	245.3	**0.1	*3.5	2,456.0
House tenure											
Owner	*7.5	41.3	124.3	18.6	230.1	166.8	635.8	1171.7	10.4	11.8	11,929.2
Renter	*3.8	24.1	70.3	*3.5	53.7	49.3	334	264.1	*6.3	**2.5	4,374.1
Boarder	**0.8	*3.2	9.4	*2.8	10.1	*5.0	56.1	32.9	**1.3	**1.4	853.1
Rent-free	**0.7	*4.2	*8.4	**2.4	13.8	9.2	50.6	43.1	**1.8	**1.4	1,018.7
Other	—	**0.5	*2.6	**0.9	*3.8	*3.6	*3.0	13.7	—	—	83.7
Not applicable in cared accommodation	**0.2	**0.3	25.8	73.3	47.6	43.2	*7.4	51.6	*2.6	*7.5	189.7
Not applicable in household	—	**0.5	*4.9	**0.3	11.3	*4.9	14.8	31.5	**0.7	—	211.2
Survey component											
Cared accommodation	**0.2	**0.3	25.8	73.3	47.6	43.2	*7.4	51.6	*2.6	*7.5	189.7
Household	12.8	73.9	219.9	28.5	322.8	238.9	1094.2	1557.1	20.5	17.0	18,469.9
Whether completed Year 12											
Year 12 completed	—	**2.5	59.0	*3.9	61.1	35.1	267.6	324.5	**1.6	*6.0	5,505.6
Year 12 not completed	**1.5	10.5	100.9	*7.6	111.6	92.3	340.1	649.8	*7.1	*8.2	6,228.0
Not applicable in cared accommodation	**0.2	**0.3	25.8	73.3	47.6	43.2	*7.4	51.6	*2.6	*7.5	189.7
Not applicable in household	11.3	60.9	59.9	16.9	150.2	111.4	486.5	582.8	11.8	*2.8	6,736.3
Post-school education											
Bachelor+	—	—	23.9	—	21.7	*7.7	87	117.9	**0.4	**1.8	1,929.5
Diploma	—	—	9.6	**0.7	22.9	10.6	52.2	105.4	**0.3	**1.6	1,127.4
Vocation	—	**2.0	46.9	*5.9	75	48.4	164.7	372.3	**0.5	*4.1	3,412.8
Not applicable in cared accommodation	**0.2	**0.3	25.8	73.3	47.6	43.2	*7.4	51.6	*2.6	*7.5	189.7
Not applicable in household	12.8	72.0	139.4	21.9	203.3	172.2	790.3	961.5	19.2	9.5	12,000.3

(continued)

Table A6.1 (continued): Characteristic of persons by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(a)]
Labour force											
Employed	—	*7.4	63.4	**0.6	64.7	29.1	425	414.1	*2.8	*7.6	8,816.2
Unemployed	—	*2.6	14.0	—	*8.2	*3.2	46.4	35.1	—	**1.0	781.5
Not in labour	**1.5	10.7	136.9	27.9	233.4	203.4	311.8	1105.8	*7.4	*7.7	4,967.6
Not applicable in cared accommodation	**0.2	**0.3	25.8	73.3	47.6	43.2	*7.4	51.6	*2.6	*7.5	189.7
Not applicable in household	11.3	53.2	*5.5	—	16.5	*3.2	311	**2.0	10.2	**0.7	3,904.7
Duration of unemployment											
1–26 weeks	—	**1.4	*8.7	—	**1.5	*2.7	25.8	15.6	—	—	473.2
27–52 weeks	—	**0.6	**2.0	—	**0.5	—	*5.9	*4.2	—	**0.7	106.2
53–103 weeks	—	—	**0.9	—	**1.5	—	*4.7	*3.1	—	—	58.0
104+ weeks	—	**0.6	**2.4	—	*4.7	**0.5	10.0	12.3	—	**0.4	144.1
Not applicable in cared accommodation	**0.2	**0.3	25.8	73.3	47.6	43.2	*7.4	51.6	*2.6	*7.5	189.7
Not applicable in household	12.8	71.3	205.9	28.5	314.6	235.7	1,047.8	1,521.9	20.5	16.0	17,688.5
Number of conditions											
0	—	—	—	—	—	—	—	—	—	—	11,946.2
1	*6.0	46.2	46.6	*4.3	47.0	17.3	628.4	299.2	*3.5	*4.7	3,313.2
2	*4.7	17.8	47.7	11.5	67.3	47.0	224.6	406.8	*8.1	*3.5	1,552.4
3	**0.7	*4.0	49.5	18.7	72.3	52.2	98.5	332.5	*3.9	*5.6	818.3
4	**0.7	*2.9	35.5	17.8	58.4	50.1	70.4	247.8	*2.6	**2.4	491.1
5+	**0.8	*3.3	66.4	49.5	125.4	115.4	79.8	322.5	*4.9	*8.3	538.5
Whether has severe or profound disability											
Yes	12.4	32.5	75.0	95.2	166.7	139.2	126.5	364.9	19.3	14.4	1,136.5
No	**0.6	41.7	170.6	*6.5	203.7	142.9	975.1	1,243.8	*3.8	10.1	17,523.2

(a) Estimate of the total Australian population.

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table A6.2: Characteristic of persons with disability by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(b)]
Total	**12.4**	**60.1**	**177.3**	**100.3**	**349.7**	**230.3**	**408.7**	**1,107.5**	**22.4**	**22.2**	**3,610.0**
Age (in years)											
0–9	*7.6	20.8	**0.4	—	*7.2	**1.4	50.3	**0.6	*6.9	**0.7	173.3
10–19	*3.8	32.3	*7.1	—	12.7	**1.8	56.6	*3.5	*4.4	—	230.7
20–29	**0.1	*3.9	11.3	—	14.7	*2.7	40.6	16.8	*3.7	*3.3	265.6
30–39	**0.9	**2.0	26.1	—	18.6	*8.7	45.9	51.8	**1.7	*3.7	366.9
40–49	—	—	32.5	**1.3	26.3	*8.3	47.3	99.7	**2.1	*3.9	485.3
50–59	—	**0.4	38.1	**0.4	28.8	29.0	46.5	220.0	**1.6	**2.5	579.1
60–69	—	**0.6	25.2	*5.9	47.4	38.9	54.1	251.8	**1.6	**1.6	559.7
70–79	—	**0.1	19.3	24.4	87.8	73.1	53.4	286.0	**0.3	*2.9	570.5
80+	—	—	17.4	68.3	106.4	66.6	14.0	177.2	**0.1	*3.5	378.8
Sex											
Male	10.1	50.8	69.3	34.9	159.2	107.9	185.4	443.6	11.4	12.9	1,821.1
Female	**2.3	9.3	108.1	65.4	190.5	122.4	223.4	663.9	10.9	9.3	1,788.9
Age when accident happened/main condition occurred (in years)											
0–17	12.2	56.8	27.3	**0.9	58.0	12.9	178.2	85.8	19.1	*5.3	843.4
18–44	—	**2.2	78.8	*2.8	71.9	44.1	114.1	356.6	—	*7.7	1,255.2
45–64	—	**0.4	39.1	*6.5	73.5	63.1	77.3	406.4	**0.7	**1.2	865.5
65+	—	—	*6.5	16.1	96.3	63.9	27.4	195.4	—	**0.4	432.0
Not applicable in cared accommodation	**0.2	**0.2	25.1	73.2	47.4	42.9	*7.2	51.0	*2.6	*7.5	184.0
Not applicable in household	—	—	—	—	—	—	—	**0.1	—	—	**0.1
Not known	—	**0.6	**0.6	**0.8	*2.6	*3.5	*4.5	12.1	—	—	29.8
Marital status											
Married	—	*2.6	85.3	29.5	152.6	117.8	178.6	617.6	*2.9	11.6	1,885.4
Separated	—	**2.0	62.6	61.1	141.3	94.0	75.9	403.4	**0.8	*3.5	878.3
Never married	12.4	55.6	28.9	*8.5	55.2	17.9	154.1	85.3	18.6	*6.9	842.9
Not known	—	—	**0.5	**1.2	**0.7	**0.6	**0.2	**1.1	**0.1	**0.1	*3.4
SEIFA											
Lowest 30%	*5.3	18.9	66.2	32.9	121.3	91.5	153.6	403.2	*8.8	*4.5	1,228.4
Middle 40%	*4.7	26.9	73.6	41.6	140.3	91.4	157.5	451.6	9.3	*7.8	1,460.8
Upper 30%	**2.3	14.4	37.2	25.1	87.6	46.7	97.5	251.2	*4.1	9.5	912.7
Not applicable	**0.1	—	**0.4	**0.7	**0.6	**0.7	**0.1	**1.4	**0.1	**0.3	*8.2
Geographic location											
Capital city	9.4	38.3	110.8	62.2	215.8	146.3	249.7	651.6	13.3	17.0	2,158.9
Rest of state	*3.0	21.8	66.5	38.1	134.0	84.0	159.1	455.8	9.0	*5.2	1,451.1

(continued)

Table A6.2 (continued): Characteristic of persons with disability by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(b)]
Birthplace											
OZ UK IR AM	12.3	60.1	146.8	81.3	299.1	195.3	365.0	937.2	22.3	18.7	3,102.2
Other places	—	—	30.6	19.0	50.7	35.0	43.7	170.3	**0.1	*3.5	507.8
House tenure											
Owner	*6.9	32.5	82.3	17.2	213.3	129.8	231.0	775.0	9.7	9.4	2,300.0
Renter	*3.8	19.6	53.0	*3.5	51.0	39.0	128.4	189.8	*6.3	**2.5	763.2
Boarder	**0.8	*3.2	*7.1	*2.8	10.1	*4.2	19.8	26.8	**1.3	**1.4	136.4
Rent-free	**0.7	*3.5	*4.6	**2.4	13.8	*8.1	14.4	32.1	**1.8	**1.4	141.2
Other	—	**0.5	**1.2	**0.9	*3.5	*2.6	**1.8	10.5	—	—	23.4
Not applicable in cared accommodation	**0.2	**0.2	25.1	73.2	47.4	42.9	*7.2	51.0	*2.6	*7.5	184.0
Not applicable in household	—	**0.5	*3.9	**0.3	10.7	*3.8	*6.3	22.3	**0.7	—	61.8
Survey component											
Cared accommodation	**0.2	**0.2	25.1	73.2	47.4	42.9	*7.2	51.0	*2.6	*7.5	184.0
Household	12.2	59.9	152.2	27.1	302.3	187.4	401.5	1,056.5	19.8	14.7	3,426.0
Type of class or school											
Ordinary class	**1.4	34.9	**1.7	—	12.3	**1.2	62.0	**2.3	**2.3	**0.7	200.2
Special class	**1.6	9.1	**1.4	—	**0.8	**1.6	*8.6	**0.6	*2.7	—	67.5
Special school	*6.0	**2.5	**1.3	—	**1.7	**0.3	*4.0	—	*2.8	—	24.4
Not applicable in cared accommodation	**0.2	**0.2	25.1	73.2	47.4	42.9	*7.2	51.0	*2.6	*7.5	184.0
Not applicable in household	*3.2	13.5	147.8	27.1	287.6	184.3	326.9	1,053.6	11.9	14.0	3,133.9
Whether completed Year 12											
Year 12 completed	—	**1.6	32.4	*3.9	54.9	23.6	73.1	198.3	**1.6	*5.2	725.3
Year 12 not completed	**1.5	*8.6	71.4	*7.1	102.9	69.6	151.4	419.2	*7.1	*7.5	1,380.6
Not applicable in cared accommodation	**0.2	**0.2	25.1	73.2	47.4	42.9	*7.2	51.0	*2.6	*7.5	184.0
Not applicable in household	10.7	49.7	48.3	16.0	144.5	94.3	177.0	439.1	11.1	**1.9	1,320.1

(continued)

Table A6.2 (continued): Characteristic of persons with disability by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(b)]
Post-school education											
Bachelor+	—	—	10.9	—	20.1	*5.7	23.9	67.8	**0.4	**1.8	235.9
Diploma	—	—	*4.4	**0.7	20.0	*8.1	18.4	70.5	**0.3	**0.9	215.0
Vocation	—	**1.4	32.7	*5.4	70.9	40.0	70.2	258.5	**0.5	*4.1	801.1
Not applicable in cared accommodation	**0.2	**0.2	25.1	73.2	47.4	42.9	*7.2	51.0	*2.6	*7.5	184.0
Not applicable in household	12.2	58.5	104.2	21.0	191.2	133.6	289.1	659.7	18.5	*7.8	2,174.0
Labour force											
Employed	—	*5.0	29.0	**0.6	56.7	16.3	112.9	203.9	*2.8	*6.1	1,029.9
Unemployed	—	**2.2	*8.5	—	*6.6	**1.8	17.5	25.8	—	**1	126.4
Not in labour force	**1.5	9.9	111.6	26.5	225.2	166.5	190.2	824.7	*7.4	*6.9	1,974.1
Not applicable in cared accommodation	**0.2	**0.2	25.1	73.2	47.4	42.9	*7.2	51.0	*2.6	*7.5	184.0
Not applicable in household	10.7	42.7	*3.1	—	13.8	*2.8	80.9	**2.0	9.5	**0.7	295.7
Duration of unemployment											
1–26 weeks	—	**1.0	*5.6	—	**1.2	**1.8	*8	12.0	—	—	61.5
27–52 weeks	—	**0.6	**0.9	—	**0.5	—	**1.4	**1.3	—	**0.7	14.1
53–103 weeks	—	—	**0.3	—	**1.5	—	**2.3	*3.0	—	—	14.0
104+ weeks	—	**0.6	**1.6	—	*3.4	—	*5.7	9.6	—	**0.4	36.9
Not applicable in cared accommodation	**0.2	**0.2	25.1	73.2	47.4	42.9	*7.2	51.0	*2.6	*7.5	184.0
Not applicable in household	12.2	57.7	143.8	27.1	295.7	185.6	384.1	1,030.7	19.8	13.6	3,299.6
Number of conditions											
1	*5.4	36.9	10.7	*4.3	39.2	*6.6	78.3	103.7	*3.5	*4.7	1,110.0
2	*4.7	14.4	28.7	10.7	61.7	28.4	122.1	228.4	*7.4	*2.7	915.1
3	**0.7	*2.6	39.4	18.1	68.5	40.9	71.3	251.2	*3.9	*4.1	638.5
4	**0.7	*2.9	33.1	17.7	55.9	43.2	60.4	214.7	*2.6	**2.4	428.0
5+	**0.8	*3.3	65.5	49.5	124.5	111.2	76.7	309.5	*4.9	*8.3	518.4
Whether use aids/home modification											
Yes	*5.0	19.3	95.0	80.0	198.1	162.3	300.9	618.7	15.5	16.0	1,737.8
No	*7.3	40.8	82.3	20.3	151.6	68.0	107.8	488.8	*6.8	*6.2	1,872.2

(continued)

Table A6.2 (continued): Characteristic of persons with disability by selected 10 health conditions (all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(b)]
Number of aids used											
0	*7.2	40.7	82.2	17.7	146.6	62.5	106.1	470.0	*5.8	*5.9	1,836.3
1	**2.4	14.0	44.2	13.9	58.8	38.7	198.3	287.1	*3.4	*2.6	955.9
2	**1.4	*3.2	11.4	*5.3	34.6	27.6	54.6	115.4	**2	**1.3	292.3
3	—	**0.8	11.6	*5.7	26.5	19.3	18.4	67.3	**0.2	**0.8	139.9
4	—	**1	*6.5	*6.9	18.7	16.0	11.8	48.2	**1.2	**0.6	107.1
5+	**1.4	**0.4	21.5	50.8	64.6	66.3	19.5	119.5	9.8	11.0	278.5
Amount of assistance received from carers											
Cared accommodation	**0.2	**0.2	25.1	73.2	47.4	42.9	*7.2	51.0	*2.6	*7.5	184.0
40+ hours/week	*7.9	*6.6	11.0	11.0	25.0	31.5	20.0	45.4	10.5	**1.5	157.7
20–39 hours/week	**0.6	**1.4	*3.2	**0.3	11.6	*6.7	*5.4	20.5	**0.1	**0.9	62.4
Under 20	**0.7	**0.6	*6.2	**0.9	12.0	10.2	11.6	41.0	**1.6	*2.8	116.3
Have main provider	*3.1	23.3	30.2	10.6	72.4	47.2	80.5	211.9	*4.5	*2.7	631.3
No main provider	—	28.1	101.7	*4.4	181.4	91.8	284.0	737.6	*3.1	*6.7	2,458.3
Level of help needed in the core activities											
Level 0: Low	—	28.2	103.5	*5.2	183.7	92.9	286.1	745.9	*3.1	*7.8	2,488.1
Level 1: Mild	*5.6	24.4	51.2	26.6	111.1	85.0	103.1	299.9	*7.2	*6.2	886.4
Level 2: Moderate	**2.5	*6.1	12.2	21.2	27.1	24.1	14.9	38.4	**2.3	*3.4	136.4
Level 3: High	*4.3	**1.5	10.5	47.4	27.9	28.3	*4.7	23.2	9.8	*4.8	99.0

(b) Estimate of the total Australian population with a disability.

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Table A6.3: Characteristic of persons with severe or profound disability by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(c)]
Total	**12.4**	**32.5**	**75.0**	**95.2**	**166.7**	**139.2**	**126.5**	**364.9**	**19.3**	**14.4**	**1,136.5**
Age (in years)											
0–9	*7.6	16.2	—	—	*4.5	**0.9	25.2	**0.6	*6.3	**0.7	96.6
10–19	*3.8	14.1	*3.8	—	**2.4	**1.8	13.1	**1.4	*3.9	—	78.9
20–29	**0.1	**0.8	*2.9	—	**1.5	**2.0	*6.5	*3.9	**2.5	**1.3	51.6
30–39	**0.9	**0.8	*7.6	—	*7	*5.0	12.6	17.0	**1.7	**2.0	88.6
40–49	—	—	*8.7	**0.7	*6.3	*3.9	12.1	30.7	**2.1	**1.8	129.5
50–59	—	**0.4	12.8	**0.4	*8.4	11.8	16.1	52.9	**1.6	**1.5	145.7
60–69	—	—	11.8	*3.7	16.0	17.0	14.6	59.5	**0.9	**1.3	122.8
70–79	—	**0.1	12.1	22.9	44.1	43.1	18.4	90.7	**0.3	**2.3	186.2
80+	—	—	15.3	67.5	76.6	53.8	*7.9	108.1	**0.1	*3.5	236.7
Sex											
Male	10.1	27.4	25.6	30.7	63.3	60.2	52.0	112.6	9.5	*8.2	505.5
Female	**2.3	*5.1	49.4	64.5	103.4	79.0	74.5	252.3	9.8	*6.2	631.0
Age when accident happened/main condition occurred (in years)											
0–17	12.2	31.1	9.6	**0.3	18.3	*5.5	54.2	27.7	16.7	**2.2	278.1
18–44	—	**0.8	27.0	**1.7	22.7	17.5	32.1	101.0	—	*3.4	304.1
45–64	—	**0.4	11.8	*5.3	26.5	29.4	21.5	101.7	—	**1.2	204.1
65+	—	—	**2.4	14.5	51.6	42.0	11.0	79.0	—	—	164.0
Not applicable in cared accommodation	**0.2	**0.1	24.2	72.7	46.5	42.1	*6.6	49.4	*2.6	*7.5	174.9
Not applicable in household	—	—	—	—	—	—	—	—	—	—	—
Not known	—	—	—	**0.8	**1.1	*2.8	**1.1	*6.1	—	—	11.3
Marital status											
Married	—	**1.5	35.4	26.9	62.2	70.2	49.0	182.3	*2.9	*6.4	501.8
Separated	—	**0.1	27.8	58.6	83.8	56.9	27.4	157.3	**0.8	*3.5	330.3
Never married	12.4	30.9	11.3	*8.4	20.1	11.4	49.9	24.3	15.5	*4.3	301.2
Not known	—	—	**0.5	**1.2	**0.7	**0.6	**0.2	**1.0	**0.1	**0.1	*3.2
SEIFA											
Lowest 30%	*5.3	10.5	29.7	31.0	61.3	56.1	49.4	134.0	*6.8	*3.5	397.2
Middle 40%	*4.7	15.6	27.9	40.0	62.7	55.0	51.3	149.5	*8.6	*5.4	469.6
Upper 30%	**2.3	*6.4	17.1	23.4	42.2	27.4	25.6	80.7	*3.8	*5.1	264.2
Not applicable	**0.1	—	**0.4	**0.7	**0.6	**0.6	**0.1	**0.7	**0.1	**0.3	*5.4
Geographic location											
Capital city	9.4	21.8	49.2	59.5	102.2	88.4	75.9	225.0	11.4	10.0	677.0
Rest of state	*3.0	10.7	25.9	35.7	64.5	50.8	50.6	139.9	*7.9	*4.3	459.5

(continued)

Table A6.3 (continued): Characteristic of persons with severe or profound disability by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(c)]
Birthplace											
OZ UK IR AM	12.3	32.5	63.3	78.8	137.9	115.8	111.8	301.1	19.2	12.7	971.4
Other places	—	—	11.8	16.4	28.9	23.4	14.7	63.8	**0.1	**1.7	165.0
House tenure											
Owner	*6.9	16.4	26.0	14.4	80.6	63.8	68.4	213.5	*8.6	*5.5	609.2
Renter	*3.8	11.0	17.4	**2.2	17.1	18.8	37.4	61.4	*5.5	**0.7	207.7
Boarder	**0.8	**1.7	*3.5	*2.6	*7.4	*3.6	*6.1	16.3	**1.3	—	58.3
Rent-free	**0.7	**2.2	**1.5	**2.4	*8.4	*7.7	*5.1	13.2	**1.3	**0.7	58.5
Other	—	**0.5	**0.6	**0.9	**1.7	**1.9	**0.8	*2.9	—	—	9.0
Not applicable in cared accommodation	**0.2	**0.1	24.2	72.7	46.5	42.1	*6.6	49.4	*2.6	*7.5	174.9
Not applicable in household	—	**0.5	**1.9	—	*5.1	**1.4	**2.1	*8.1	—	—	18.9
Survey component											
Cared accommodation	**0.2	**0.1	24.2	72.7	46.5	42.1	*6.6	49.4	*2.6	*7.5	174.9
Household	12.2	32.3	50.8	22.6	120.3	97.1	119.9	315.5	16.7	*6.9	961.6
Type of class or school											
Ordinary class	**1.4	17.1	**1	—	*3	**0.7	22.6	**1.4	**1.2	**0.7	73.7
Special class	**1.6	*6.9	**0.3	—	**0.5	**1.6	*2.9	**0.6	*2.7	—	32.1
Special school	*6	**1.8	**0.6	—	**1.7	**0.3	*3.3	—	*2.8	—	21.7
Not applicable in cared accommodation	**0.2	**0.1	24.2	72.7	46.5	42.1	*6.6	49.4	*2.6	*7.5	174.9
Not applicable in household	*3.2	*6.5	48.8	22.6	115.1	94.5	91.1	313.4	10.0	*6.2	834.1
Whether completed Year 12											
Year 12 completed	—	**0.3	*4.7	*2.7	20.6	11.7	13.8	48.1	**0.8	**2.1	147.6
Year 12 not completed	**1.5	*4.2	25.1	*5.3	35.4	37.9	38.5	117.3	*6.0	*3.5	352.7
Not applicable in cared accommodation	**0.2	**0.1	24.2	72.7	46.5	42.1	*6.6	49.4	*2.6	*7.5	174.9
Not applicable in household	10.7	27.8	21.0	14.6	64.2	47.5	67.5	150.0	9.9	**1.3	461.3

(continued)

Table A6.3 (continued): Characteristic of persons with severe or profound disability by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(c)]
Post-school education											
Bachelor+	—	—	**1.7	—	*7.9	*3.3	*2.9	15.5	**0.4	**1.1	50.2
Diploma	—	—	**0.9	**0.7	*6.4	*3.1	*4.6	16.2	**0.3	**0.2	43.3
Vocation	—	**1.2	12.3	*4.4	28.7	23.7	20.0	75.8	**0.5	**0.7	194.5
Not applicable in cared accommodation	**0.2	**0.1	24.2	72.7	46.5	42.1	*6.6	49.4	*2.6	*7.5	174.9
Not applicable in household	12.2	31.1	35.9	17.5	77.3	67.0	92.4	207.9	15.5	*4.9	673.6
Labour force											
Employed	—	**1.8	*6.3	—	*7.2	*6.2	19.0	39.7	**1.7	**1.8	155.7
Unemployed	—	—	**1.4	—	**0.9	**0.5	*3.2	*5.2	—	**0.7	19.2
Not in labour force	**1.5	*4.6	41.7	22.6	106.8	88.0	63.5	268.6	*6.7	*3.7	643.1
Not applicable in cared accommodation	**0.2	**0.1	24.2	72.7	46.5	42.1	*6.6	49.4	*2.6	*7.5	174.9
Not applicable in household	10.7	26.0	**1.3	—	*5.5	**2.3	34.2	**2.0	*8.4	**0.7	143.6
Duration of unemployment											
1–26 weeks	—	—	**0.7	—	—	**0.5	**1.8	**1.0	—	—	*8.8
27–52 weeks	—	—	**0.7	—	—	—	—	**0.3	—	**0.7	**2
53–103 weeks	—	—	—	—	—	—	—	**0.5	—	—	**1.3
104+ weeks	—	—	—	—	**0.9	—	**1.4	*3.4	—	—	*7
Not applicable in cared accommodation	**0.2	**0.1	24.2	72.7	46.5	42.1	*6.6	49.4	*2.6	*7.5	174.9
Not applicable in household	12.2	32.3	49.4	22.6	119.4	96.6	116.7	310.3	16.7	*6.2	942.4
Number of conditions											
1	*5.4	18.3	**2.2	*4.3	*6.9	*5.4	14.4	21.7	**1.5	*2.6	250.5
2	*4.7	9.2	*6.6	10.0	16.6	15.6	31.6	45.1	*7.1	**1.9	239.5
3	**0.7	**1.5	13.1	16.8	31.7	24.8	18.3	79.9	*3.9	**2.1	208.8
4	**0.7	**2.1	15.3	17.5	27.7	21.0	22.8	71.2	*2.6	**2.0	158.6
5+	**0.8	**1.3	37.9	46.7	83.9	72.3	39.4	146.9	*4.2	*5.8	279.1
Whether use aids/home modification											
Yes	*5.0	12.5	53.1	76.6	134.5	114.4	105.6	280.8	14.2	13.2	766.9
No	*7.3	20.0	21.9	18.7	32.3	24.7	20.9	84.1	*5.1	**1.2	369.6

(continued)

Table A6.3 (continued): Characteristic of persons with severe or profound disability by selected 10 health conditions (based on all conditions), 1998 (number '000)

Data item	Autism	ADHD	Depression	Dementia	Total vision disorders	Stroke	Asthma	Arthritis	Cerebral palsy	Paralysis	Total[(c)]
Number of aids used											
0	*7.2	19.5	21.0	16.0	30.0	21.6	21.4	76.2	*4.1	**0.9	349.1
1	**2.4	*8.8	15.7	11.2	20.3	16.7	48.7	70.5	**2.0	**1.4	247.7
2	**1.4	*3.2	*5.0	*5.2	17.8	14.8	20.1	46.2	**2.0	**0.6	122.5
3	—	**0.3	*7.8	*5.3	20.8	11.3	10.0	37.8	**0.2	**0.4	85.9
4	—	**0.4	*5.0	*6.9	16.3	10.9	9.2	30.3	**1.2	**0.6	79.7
5+	**1.4	**0.4	20.6	50.6	61.6	63.8	17.1	103.8	9.8	10.4	251.6
Amount of assistance received from carers											
Cared accommodation	**0.2	**0.1	24.2	72.7	46.5	42.1	*6.6	49.4	*2.6	*7.5	174.9
40+ hours/week	*7.9	*6.6	10.8	11.0	24.5	31.5	19.1	44.3	10.5	**1.5	153.5
20–39 hours/week	**0.6	**1.4	*3.2	**0.2	11.2	*6.6	*5.4	18.9	**0.1	**0.9	58.6
Under 20	**0.7	**0.6	*5.5	**0.9	12.0	10.2	11.0	37.4	**1.6	**1.7	105.5
Have main providers	*3.1	23.3	30.2	10.6	72.4	47.2	80.5	211.9	*4.5	*2.7	631.3
No main providers	—	**0.5	**1.1	—	**0.3	**1.6	*3.9	*3.0	—	—	12.7

(c) Estimate of the total Australian population with a severe or profound disability.

Notes

1. Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be used with caution.
2. The symbol '—' means nil or rounded to zero (including null cells).

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

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