Te Rau Hinengaro: The New Zealand Mental Health Survey

Introduction

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1 Introduction

1.1 Content of the chapter

This chapter provides the background to Te Rau Hinengaro: The New Zealand Mental Health Survey. It briefly describes the relevant mental health policy and strategic planning initiatives that provide the context in which the findings of the survey will be used. The origins and objectives of the survey are presented, then the main features of the survey itself. A detailed description of methods, including the survey design, the sampling frame, the questionnaire, the conduct of the fieldwork, data management and data analyses, is provided in chapter 12.

This chapter also presents the findings from previous community mental health surveys in New Zealand and from overseas, presents other New Zealand research and service provision data, illustrating the place of Te Rau Hinengaro in relation to this body of work.

Key terms used in this report are defined at the end of this chapter (see 1.10). The audience for this report is expected to be mainly mental health professionals, but to make it accessible to a wider audience a brief introduction to mental disorders is provided in Appendix A.

Te Rau Hinengaro literally translates as ‘the many minds’ and is a reference to how the mind may be thought of as having many different states or levels. It is used to capture the objective of the survey to measure mental disorder.

1.2 Survey overview

This report, *Te Rau Hinengaro: The New Zealand Mental Health Survey*, provides important and not previously available information about the prevalence of mental disorders, their patterns of onset and their impact for adults in New Zealand. The survey explored the relationship between mental disorders and that between mental disorders and physical disorders (comorbidity). In addition, it provided information about the patterns of health and non-health service use of people with mental health problems. It examined the relationship between sociodemographic factors and the probability of people meeting criteria for a mental disorder or accessing care. It also investigated suicidal behaviour.

Of particular note is that the survey design enabled the participation of sufficient numbers of Māori and Pacific people to allow estimates of acceptable precision for these ethnic groups.

1.3 Policy framework

In *Te Tāhuhu – Improving Mental Health 2005–2015: The Second New Zealand Mental Health and Addiction Plan*, it was noted that the provision of information about rates of mental disorder and health service use is important to inform policy makers, service funders, service providers, and consumers and their families (Minister of Health 2005). Good-quality information can assist in the development of an environment of transparency and trust, which will facilitate good decision making. *Te Rau Hinengaro* can contribute to the development of such an environment.

Te Tāhuhu – Improving Mental Health 2005–2015 highlighted the importance of improving Māori mental health and improving the responsiveness of services to Māori and Pacific people. Both *Te Puāwaitanga: Māori Mental Health National Strategic Framework* (Ministry of Health 2002), and *Whakatātaka: Māori Health Action Plan 2002–2005* (Minister of Health and Associate Minister of Health 2002), noted the probable excess burden attributable to mental disorders borne by Māori and the need for more population-based information to inform decision making. Similarly, in *Te Orau Ora: Pacific Mental Health Profile* (Ministry of Health 2005b), the lack of information about Pacific communities' mental health status was seen as limiting planning for those communities. This report addresses these information gaps.

Te Tāhuhu – Improving Mental Health 2005–2015 also stressed the importance of further developing primary mental healthcare and improving the alignment between the delivery of mental health services and other government-funded social services. This report provides information about health service use across the mental health, general medical, human services, and complementary and alternative medicine sectors. Such information will assist in the development of primary mental health services and inform the alignment of mental health and social services.

Te Tāhuhu – Improving Mental Health 2005–2015 recognised that the mental health needs of children, young adults and older people need increased attention. As this survey covered people aged 16 and over and asked about their lifetime experience, it provides information on young adults, which will supplement information from other New Zealand studies, and information on older people.

The first National Mental Health Plan (Minister of Health 1997; Ministry of Health 1994) prioritised the provision of care for the estimated 3.0% of the population who had a major mental health disorder. This estimate was based on projections from overseas studies (Andrews 1991). *Te Tāhuhu – Improving Mental Health 2005–2015* re-emphasises the importance of ensuring that people with the highest need can access specialist services, but it is also a plan that covers the mental health needs of all New Zealanders. This study provides estimates for serious, moderate and mild disorder based on nationally representative data. These data will assist with service planning for those with the highest need and the wider population.

Finally, the survey provides useful information on suicidal ideation, plans and attempts in order to supplement the information from other sources. Reducing the rates of suicide and attempted suicide is an important goal of the New Zealand Health Strategy (Minister of Health 2000).

1.4 Origins of the study

The Mental Health Research Development and Strategy Steering Committee initiated this study (originally called the New Zealand Survey of Mental Health and Wellbeing). It was funded by the Ministry of Health, with additional funding from the Health Research Council of New Zealand, Mental Health Research and Development Strategy, and Alcohol Advisory Council.

A research team, comprising researchers from the University of Auckland, the University of Otago, Massey University and Monash University, designed the study, oversaw the conduct of the survey fieldwork, analysed the data and produced this report. The research team included Māori and Pacific research groups. The members of the research team are contracted to Auckland UniServices of the University of Auckland, which manages the research team's contract with the Ministry of Health.

The Public Health Assessing Committee of the Health Research Council of New Zealand reviewed and approved the study protocol.

The survey was undertaken with the assistance of the World Mental Health (WMH) Survey Initiative, which is sponsored by the World Health Organization (WHO) and Harvard University.

Ethics review and approval was obtained from all 14 New Zealand regional ethics committees.

The main survey was preceded by a pilot study, which involved community consultation (Oakley Browne et al 2000). The survey firm that undertook the survey did field testing to ensure the duration of the interview would be acceptable to participants and that an adequate response rate was likely to be achieved.

1.5 Objectives of the survey

The objectives of Te Rau Hinengaro were, for the total New Zealand, Māori and Pacific populations living in New Zealand, to:

- describe the one-month, 12-month and lifetime prevalence rates of major mental disorders among people aged 16 and over living in private households, by sociodemographic variables
- describe patterns of and barriers to health service use for people with mental disorders
- describe the level of disability associated with mental disorder
- provide baseline data and calibrate brief instruments measuring mental disorders and psychological distress to inform the use of these instruments in future national health surveys.

This survey falls under the classification of 'official statistics', which are defined as statistics produced by government agencies, including statistical surveys. *Protocols for Official Statistics* defines the principles official statistics must adhere to (Statistics New Zealand 1998). These principles include the requirement for objectivity and impartiality in the presentation of data and that 'releasing official statistics should be separate from the advocacy of policies' (Statistics New Zealand 1998: principles 8 and 9). Therefore, this report has been written to meet the aims of the survey and to interpret findings; it does not advocate actions or policies.

The results related to the fourth objective are not included in this report and will be released separately.

1.6 The survey

A much fuller account of the survey is given in chapter 12. Only the main features are reported in this introductory chapter.

Ethical approval was obtained from all 14 regional ethics committees, with the Auckland Y Committee as the lead committee. Signed consent was obtained from all participants before interview.

1.6.1 The interview

The New Zealand interview was based on the Composite International Diagnostic Interview (CIDI 3.0). The CIDI is a fully structured interview suitable for use by trained lay interviewers. Diagnoses of mental disorders were made from responses to the symptom questions. Laptops were used for computer assisted personal interviews; interviewers read questions off the laptop screen and entered responses.

Four groups of mental disorders were assessed: anxiety disorders (panic disorder, agoraphobia without panic, specific phobia, social phobia, generalised anxiety disorder, post-traumatic stress disorder and obsessive–compulsive disorder), mood disorders (major depressive disorder, dysthymia and bipolar disorder), substance use disorders (abuse of or dependence on alcohol or other drugs) and eating disorders (anorexia and bulimia).

Other modules assessed suicidal behaviours, health service use, chronic physical conditions, disability, psychological distress and alcohol use and its consequences in the past 12 months.

1.6.2 Survey design

The target population was people aged 16 and over living in permanent private dwellings throughout New Zealand. The survey design was for a nationally representative sample. A multi-stage area probability sample was selected. The first stage of selection involved sampling census meshblocks, small areas containing mostly around 40 to 70 dwellings. The second stage involved selecting dwellings within meshblocks. The final stage involved selecting one person per household.

To improve the precision of estimates for Māori and Pacific people oversampling was used. The number of Māori was doubled and the number of Pacific people was quadrupled compared with that expected without oversampling. Two techniques were used for oversampling: targeting and screening. For targeting, meshblocks with a high density of Pacific people were selected with a higher probability. Screening was carried out in the other meshblocks: in some households everyone aged 16 years and over was eligible, in some households only Māori or Pacific people were eligible, and in the remaining households only Pacific people were eligible. Targeting is efficient for fieldwork but leads to less precision in estimates, whereas screening is statistically efficient but requires extensive door-knocking.

Even with oversampling, unbiased estimates for the whole population could be made because of the appropriate weighting of participants.

1.6.3 Fieldwork

The fieldwork was carried out by the National Research Bureau in late 2003 and throughout 2004.

1.6.4 Response rate

A total of 75,340 dwellings were approached for this survey. Because of screening, many dwellings were approached but were found to be ineligible: 79% of households screened for Māori and Pacific people had no one eligible (over 13,000 households) and 88% of those screened for Pacific people only had no one eligible (over 37,000 households). These numbers show something of the additional fieldwork associated with doubling the number of Māori and quadrupling the number of Pacific people.

The overall response rate was 73.3%. Ethnic-specific response rates could not be calculated directly because while the ethnicity of participants was known, the ethnicity of non-participants was not known, except for screened households where a listing of the ethnicity of household members had been obtained.

1.6.5 The sample

The total number of interviews was 12,992. The number of participants who reported Māori ethnicity was 2,595 and the number reporting Pacific ethnicity was 2,374. There were 138 participants who reported both Māori and Pacific ethnicity.

1.7 Findings from community mental health studies

Only a small number of community studies of mental disorder have been done in New Zealand. In contrast, other countries have strong psychiatric epidemiology research traditions, especially in Europe and North America.

Knowledge about the general population epidemiology of mental disorders before the 1980s was based largely on community surveys of non-specific psychological distress. These surveys used questionnaires that generated scores on continuous scales of psychological distress, but did not provide diagnoses or numbers of ‘cases’ (Dohrenwend and Dohrenwend 1982). These early studies did not provide information about the prevalence rates of specific disorders, age of onset and course of disorders, and provided only limited information about patterns of health service use. The absence of this information limited the usefulness of these studies for policy making and service planning.

1.7.1 Epidemiologic Catchment Area Study (United States of America)

This situation changed in the early 1980s with the development of the Diagnostic Interview Schedule (DIS) (Robins et al 1981), the first fully structured diagnostic interview capable of being used by an interviewer who was not a clinician. The use of trained lay interviewers made large-scale community surveys feasible. With the DIS it was possible to make acceptably accurate diagnostic distinctions across a range of DSM-III diagnoses (see 1.10.1 about the *Diagnostic and Statistical Manual of Mental Disorders*) and to obtain information about age of onset, course, recency, disorder-specific impairments and comorbidity.

The DIS was used in the Epidemiologic Catchment Area (ECA) Study (Robins and Regier 1991), a landmark survey of nearly 20,000 people living in private dwellings and institutions in five United States (US) communities. The methods used in the ECA Study were subsequently used in several parallel surveys carried out in other countries, including Christchurch, New Zealand (the Christchurch Psychiatric Epidemiology Study or the CPES (Oakley Browne et al 1989; Wells et al 1989a)).

Studies based on the ECA Study instruments and methodology generated a great deal of information that helped reorient thinking about the place of mental disorders in the larger landscape of health and illness. Among the most important findings were:

- a very large minority of people in the community experience a mental disorder at some time in their lives (Robins et al 1984; Wells et al 1989a)
- many people meet criteria for more than one disorder (Boyd et al 1984)
- the age of onset of disorder is typically early in life (Christie et al 1988)
- only a minority of people with a mental disorder obtain professional help (Hornblow et al 1990; Narrow et al 1993; Regier et al 1993).

1.7.2 Community mental health studies in New Zealand

Christchurch Psychiatric Epidemiology Study

The CPES was a regional community survey carried out in the Christchurch urban area between April 1986 and December 1986. The household sample consisted of about 1500 adults aged 18–64. Trained lay interviewers used the DIS, which provided DSM-III diagnoses (Oakley Browne et al 1989; Wells et al 1989a).

Of participants, 14.7% had experienced an affective (mood) disorder at some time in their lives, 21.0% a substance use disorder and 10.5% an anxiety disorder. Within the 12 months before interview, 10.4% of participants had had an affective disorder, 10.5% a substance use disorder and 9.1% an anxiety disorder. The lifetime rates for the low prevalence disorders of schizophrenic disorders and eating disorders (anorexia and/or bulimia) were 0.4% and 1.2% respectively. In the six months before interview, 14.0% of the sample had visited a health service for help with mental health problems. Of participants with a mental disorder in the six months before interview, only 29.0% had visited a health professional or service for a mental health consultation over the same period, although 75% had sought healthcare. About half of those who made mental health visits went to general practitioners only and most of the rest saw a mental health specialist (Hornblow et al 1990).

Studies based on the ECA Study's methodology had limitations. The most important limitations of the CPES were:

- the survey was carried out in the Christchurch urban region and did not provide a nationally representative sample
- the adult population sampled did not have sufficient numbers of Māori and Pacific people to generate useful data for these groups
- no information on disability was obtained
- the information on service use was limited.

Despite these limitations, the key findings from this study have often been used to make estimates of national rates for New Zealand.

Otago Women's Health Study

One other major study has been undertaken in a New Zealand community: the Otago Women's Health Study (Romans-Clarkson et al 1990). This study yielded useful data on rates of mental disorder among rural and urban women and associated risk factors (Romans-Clarkson et al 1988). This study used a two-stage sampling design and different instruments to generate likelihood of caseness than the CPES used. However, the study had the same limitations as described for the CPES.

1.7.3 National Comorbidity Survey (United States)

Although no other community surveys of the adult population have been undertaken in New Zealand, important studies have been completed in other countries. A decade after the ECA, the US National Institutes of Mental Health funded the National Comorbidity Study (NCS) (Kessler 1994; Kessler et al 1994) to fill some of the information gaps in the ECA.

The three main advances of the methodology for the NCS were as follows.

- A nationally representative sample was used.
- More detailed information about risk factors and the social consequences of mental disorder was collected.
- An improved diagnostic instrument, the CIDI, was used, which generated DSM-III-R and International Classification of Diseases revision 9 (ICD-9) diagnoses (Robins et al 1988). The CIDI included modifications to the DIS, which improved participants' cooperation, attention and accuracy of responses throughout the interview. These improvements lessened the likelihood of bias in prevalence estimates (Regier et al 1998).

The NCS confirmed many of the ECA Study's findings, such as the high proportion of the adult population who met criteria for a DSM or an ICD mental disorder (Kessler et al 1994) and the small proportion of these adults who obtained treatment (Kessler et al 2005d; Kessler et al 1997c).

The NCS disconfirmed some ECA results. For instance, it showed ECA data on 12-month prevalence substantially underestimated the proportion of the population who have a clinically significant mental disorder in the course of a year (Regier et al 1998) and that the ECA data on post-traumatic stress disorder had special problems (Kessler et al 1995b).

The NCS went beyond the ECA in several important ways, including analyses of disorder subtypes (Kessler et al 1998c), comorbidities (Judd et al 1998; Kessler et al 1997b; Kessler et al 1999b; Kessler et al 1998b), and adverse social consequences of mental disorders (Kessler et al 1997a; Kessler et al 1995a; Kessler et al 1998d).

1.7.4 National Survey of Mental Health and Well-being (Australia)

In 1995, the Australian Commonwealth Department of Health and Aged Care funded an Australian national study, the National Survey of Mental Health and Well-being (Andrews et al 1999b; Whiteford 2000). The study was established to gather baseline information for policy making and planning about the prevalence of mental disorders and associated disability and patterns of health service use.

The study comprised three surveys:

- a general population survey of high-prevalence disorders in adults aged 18 and over (Andrews et al 2001; Henderson et al 2000)
- a general population survey of childhood high-prevalence disorders in children aged 4–17 (Sawyer et al 2000)
- a two-phase survey of low-prevalence disorders (psychoses) conducted in four urban sites (Jablensky et al 2000).

Like the NCS, the Australian general population survey of high-prevalence disorders was based on a nationally representative sampling frame. The version of the CIDI used provided one-month and 12-month prevalence rates, but not lifetime rates, for ICD-10 and DSM-IV diagnoses. The CIDI was programmed into a computer-assisted interview, which was administered by trained lay people. Experienced field staff of the Australian Bureau of Statistics interviewed a national household sample of 10,600 people aged 18 and over.

The key findings from this survey were as follows.

- In the past year, 17.7% of Australian adults had experienced an ICD-10 anxiety, affective or substance use disorder. Anxiety disorders were the most prevalent, followed by substance use and affective disorders.
- Disorders were more prevalent in young and middle-aged adults.
- Comorbidity was common.
- Mental disorders were associated with significant disablement in daily life.
- Of all cases in the past year, 64.6% had had no contact with health services in the previous year. Of those who had had contact, 29.4% had seen general practitioners and 7.5% had seen psychiatrists.

1.7.5 World Mental Health Survey Initiative

After the Australian national survey, other nations decided to undertake national or regional mental health surveys. Many of the lead investigators in these projects sought advice and assistance from the WHO, which took a lead role in coordinating their efforts.

The WMH Survey Initiative is a project of the Assessment, Classification and Epidemiology Group at the WHO (World Mental Health Survey Consortium 2005). This group is responsible for coordinating the implementation and analysis of general population epidemiologic surveys of mental disorders, substance use disorders and behavioural disorders in countries in all WHO regions.

The WMH Survey Initiative developed out of the findings of the WHO Global Burden of Disease Study (Murray and Lopez 1996b, 1996c). This study showed that mental and substance use disorders are among the most burdensome in the world, and this burden is projected to increase. The WMH Survey Initiative was established to provide data to confirm and refine the findings of the Global Burden of Disease Study and to inform the development of public health initiatives to address the burden of mental and substance use disorders.

As the findings of the Global Burden of Disease Study are based largely on a small number of limited studies and literature reviews, rather than cross-national epidemiologic surveys, the major task of the WMH Survey Initiative is to facilitate the conduct of general population mental health surveys. Through these surveys the initiative aims to obtain:

- accurate cross-national information about the prevalence rates of mental, substance use, and behavioural disorders
- descriptions of the impairments, adverse social consequences and patterns of help-seeking associated with these disorders.

More than 28 countries are undertaking or have undertaken nationally or regionally representative surveys and are contributing to the initiative. The participating countries are collectively known as the WMH Surveys Consortium. Of note is that all the participating countries' surveys use similar survey methodology, the same diagnostic interview and the same quality control measures. For instance, all surveys are based on probability samples, with standardised training and supervision of the interviewers. The interviews are carried out face to face by trained lay interviewers, who administer the CIDI 3.0 (Kessler and Ustun 2004), a fully structured diagnostic interview, to assess disorders and treatment. This questionnaire generates DSM-IV and ICD-10 diagnoses. More details about the design and methods of WMH surveys are in chapter 12.

Te Rau Hinengaro is collaborating in the WMH Survey Initiative. This collaboration was recommended by the research team that undertook the pilot study for the national survey (Oakley Browne et al 2000) and included in the project tender to the Ministry of Health, the Health Research Council of New Zealand research grant application, and all applications to the regional ethics committees. Collaboration with the WMH Survey Initiative permitted the research team to access and use the consortium's technical expertise and resources. It also allows comparisons of the data from the New Zealand study with data from other nations.

Cross-national findings from World Mental Health Survey Initiative

Several nations in the consortium have published results from their national surveys. The publications are listed on the WMH Survey Initiative website (http://www.hcp.med.harvard.edu/wmh/publications.php). The European sites have published papers and the results of these are briefly described in the following section. The US has also published results from its national survey and the key findings from this survey are also presented below.

The initial cross-national findings from the first 14 countries in the consortium have been published (Demyttenaere et al 2004) and are as follows.

- The 12-month prevalence rate for any WMH-CIDI/DSM-IV disorder varied widely across countries, with an inter-quartile range of 9.1%–16.9%.
- The inter-quartile range for serious disorders was 1.1%–1.7%, moderate disorders 2.9%–6.1% and mild disorders 4.5%–6.4%.
- Serious disorders were associated with substantial disability.
- Disorder severity was correlated with the probability of treatment in most countries, although 35.5%–50.3% of serious cases in developed countries and 76.3%–85.4% in less-developed countries received no treatment in the 12 months before the interview.

European Study of the Epidemiology of Mental Disorders Project

The European Study of the Epidemiology of Mental Disorders (ESEMeD) is a cross-sectional community mental health survey undertaken in six European countries (Belgium, France, Germany, Italy, the Netherlands and Spain). The study explored the prevalence rates, associated disability and correlates of mental and substance use disorders, and the patterns of service use by people with such disorders (Alonso et al 2004a, 2004b, 2004e; Alonso et al 2002). The sample consisted of 22,000 adults aged 18 and over. Trained lay interviewers, using the CIDI 3.0, interviewed all participants in their homes. The survey was carried out in January 2001 and August 2003.

Fourteen percent of participants reported a lifetime history of any mood disorder, 13.6% any anxiety disorder, and 5.2% a lifetime history of any alcohol disorder. In the 12 months immediately before the interview, 6.0% reported any anxiety disorder, 4.2% any mood disorder, and 1.0% any alcohol disorder. Mental disorders were found to be important determinants of work role disability and quality of life (Alonso et al 2004a). Of the total sample, 6.4% had consulted formal health services in the previous 12 months. Of participants with a 12-month mental disorder, 25.7% had consulted a formal health service during that period and of these about two-thirds had contacted a mental health professional (Alonso et al 2004e).

National Comorbidity Replication Survey (United States of America)

The National Comorbidity Survey Replication (NCS-R) was a nationally representative community mental health survey carried out in the US between February 2001 and April 2003.

Trained lay interviewers used the CIDI 3.0 to conduct face-to-face interviews with participants in their own homes. The household-based sample consisted of 9,282 adults aged 18 and over (Kessler et al 2004b; Kessler and Merikangas 2004).

Twenty-eight percent of participants reported a lifetime history of any anxiety disorder, 20.8% any mood disorder, 20.8% any impulse-control disorder and 14.6% any substance use disorder. In the 12 months before interview (ie, the 12-month prevalence), 18.1% of participants met criteria for an anxiety disorder, 9.5% a mood disorder, 8.9% an impulse-control disorder and 3.8% a substance use disorder. Of these 12-month cases, 22.3% were classed as serious, 37.3% as moderate and 40.4% as mild (Kessler et al 2005c).

Of people with a disorder 12 months before the interview, 41.1% had received some treatment within that same period. Of those who received treatment, 12.3% had had contact with a psychiatrist, 16.0% with a non-psychiatrist mental health professional, 22.8% with a general medical provider, 8.1% with a human services provider and 6.8% with a complementary and alternative medicine provider (Wang et al 2005b). For people who had experienced a disorder at some time in their lives, delays to treatment contact averaged more than 10 years, although 80.1% eventually made treatment contact (Wang et al 2005a).

1.8 Information from other data sources and studies within New Zealand

There are other sources of quantitative information about rates of mental disorders in New Zealand. Two major ongoing longitudinal studies, the Dunedin Multidisciplinary Health and Development Study (DMHDS) and the Christchurch Health and Development Study (CHDS), recruited participants at birth. The methodology of such longitudinal studies makes it possible to explore the causal pathways for mental disorders, whereas a cross-sectional study such as Te Rau Hinengaro can only describe correlations with mental disorder. As the participants in such longitudinal studies are interviewed at repeat intervals, the dating of symptoms or episodes of mental disorder and any associated events or circumstances is less susceptible to bias due to problems with recall, compared with cross-sectional studies such as Te Rau Hinengaro.

Both of these studies are ongoing and have produced a large number of publications. The participants in these studies are now in adulthood (late twenties and early thirties). It is beyond the scope of this report to produce a full review of the findings of the two studies and only those results relevant to prevalence rates in late adolescence, when the participants were aged 18, are briefly presented, although both studies have produced data on mental disorders among study participants at later ages. The results at age 18 are focused on because it is the usual lower age for inclusion in most mental health surveys of adults; thus, presentation of these results complements the presentations of results from other surveys of adults.

1.8.1 Dunedin Multidisciplinary Health and Development Study

The DMHDS is a longitudinal study of 1,037 children born in Dunedin's Queen Mary Hospital between April 1972 and March 1973 (Feehan et al 1994). In the DMHDS, assessments were carried out when the participants were aged 18 between April 1990 and June 1991. These interviews included the DIS (version III-R), which provided DSM-III-R diagnoses. The most prevalent disorders over the 12 months before interview were major depressive disorder (16.7%), alcohol dependence (10.4%) and social phobia (11.1%).

The titles of publications generated from the study are available on the study's website (http://dunedinstudy.otago.ac.nz/).

1.8.2 Christchurch Health and Development Study

The CHDS is a longitudinal study of a cohort of 1,265 children born in the Christchurch urban region during a four-month period in mid-1977 (Horwood and Ferguson 1998). The participants were interviewed at age 18 with a questionnaire that included the CIDI, which provided DSM-IV diagnoses for the period 16–18 years. Over this period, the most common disorders were substance use disorders (24%), mood disorders (22%) and anxiety disorders (17%). Females had higher rates of mood and anxiety disorders than males; males had higher rates of substance use and conduct disorders than females. Māori had significantly higher rates than non-Māori for anxiety disorders, conduct disorders and substance use disorders. Less than a quarter of those meeting criteria for a mental disorder had sought treatment, with the most common source of treatment being general practitioners and counsellors.

Publications from this study are listed on the study website (http://www.chmeds.ac.nz/research/chds).

The data obtained from participants in late adolescence in both studies confirm the findings of cross-sectional surveys in adults: mental disorders are common and have early onset in the life span.

1.8.3 Mental Health and General Practice Investigation

The Mental Health and General Practice Investigation (the MaGPIe study) is a study of the prevalence and types of common mental disorders among patients attending New Zealand general practices.

Based on CIDI (version 2.1) interviews that generated DSM-IV diagnoses, the 12-month prevalence rates of general practice attendees were 11.3% for any substance use disorder, 18.1% for any depressive disorder and 20.7% for any anxiety disorder.

Depression and anxiety disorders were more common in females than males; substance use disorders were more common in males than females. Rates of disorder were highest in people aged under 44 (MaGPIe 2001, 2003).

1.8.4 New Zealand National Prison Study

The New Zealand National Prison Study explored the rates of disorder in a representative sample of prison inmates (Brinded et al 2001; Simpson et al 1999).

The CIDI was used in interviews and provided DSM-IV diagnoses. The results indicated markedly elevated prevalence rates for mental disorders in the prison population compared with the wider community.

1.8.5 New Zealand Health Survey 2002/03

The New Zealand Health Survey 2002/03 was the third national health survey of New Zealanders (Ministry of Health 2004b). It was a representative national community survey in which all people aged 15 and older residing in permanent private dwellings were eligible for selection. A separate survey of people living in institutions was also undertaken. Māori, Pacific and Asian people were oversampled. A total of 12,929 persons were interviewed face to face. The survey included self-reported physical or mental chronic illnesses which had lasted or were expected to last six months or more, although the illness could be intermittent or episodic. If someone reported having such an illness they were presented with a list on which the only mental disorders were bipolar disorder and schizophrenia. However, there was a space to specify any ‘Other’ illness. Overall, 2.5% of the population reported having had a serious mental disorder (ie, a depressive disorder, a bipolar disorder or schizophrenia). Depressive disorders were the most common serious mental disorder (1.9%), followed by bipolar disorder (0.5%) and schizophrenia (0.2%). The self-reports in this health survey do not generate DSM or ICD diagnoses, so it is not possible to compare these results with those of community surveys that provide prevalence rates for DSM or ICD disorders.

1.8.6 New Zealand Health Information Service information

Through the New Zealand Health Information Service, it is possible to obtain information about outpatient and inpatient attendances at specialist mental health services (New Zealand Health Information Service 2004). This information includes service contacts by age, sex and ethnicity. Broad categories of source of referrals and types of services received are also provided.

As this information does not include mental health visits at primary care, other general medical services, all non-governmental organisations, or complementary and alternative medicine providers, it captures only a proportion of the services provided for people with mental disorders. It is also not possible to calculate community prevalence rates from visits at specialist mental health services. However, it is important to note that the information available shows Māori males have the highest age-standardised contact rates compared with males from other ethnic groups.

1.9 Conclusions

A large number of mental health surveys have now been completed throughout the world. The methodology of such surveys is now well established, and improvements in questionnaire design, data acquisition and management techniques and data analysis have made the conduct of large-scale community mental health surveys possible for many countries. Te Rau Hinengaro was undertaken because there are limitations in the New Zealand data obtained from other surveys or routinely collected data.

The use of the prevalence of disorder alone as a measure of need for service has been criticised (Mechanic 2003). Other factors such as the severity of symptoms, associated disability, duration and recurrence of disorder, and likely benefit from treatment also need to be considered (Mechanic 2003).

Some of the variation in prevalence rates found in the earlier ECA studies and the later NCS has been attributed to the different ways in which the studies defined the clinical significance of disorder. Establishing the clinical significance of disorders in the community is essential for estimating need for treatment (Narrow et al 2002).

This New Zealand study and other WMH surveys have benefited from the experience and data obtained in earlier studies, and the CIDI 3.0 includes questions to ascertain clinical significance, severity, disability, duration and recurrence of disorder. This will allow a more valid estimation of the extent of met and unmet need for treatment. This information has not previously been available for New Zealand.

1.10 Key terms

This report includes a very detailed outline of the study’s methodology and explanations of technical terms (chapter 12). However, to help the reader the following key terms, which are used frequently throughout the report, are defined below:

- *Diagnostic and Statistical Manual of Mental Disorders* (DSM) (see 1.10.1)
- Composite International Diagnostic Interview (CIDI) (see 1.10.2)
- lifetime disorder, 12-month disorder and one-month disorder (see 1.10.3)
- prevalence (see 1.10.4)
- oversampling (see 1.10.5)
- prioritised ethnicity (see 1.10.6)
- severity of disorder (see 1.10.7)
- statistical terms (see 1.10.8).

An introduction to what is meant by different disorders is provided in Appendix A. This should be consulted by readers who are unsure what is meant by a diagnosis of, for example, panic disorder or major depressive disorder or substance use dependence.

1.10.1 *Diagnostic and Statistical Manual of Mental Disorders*

To diagnose disorders it is necessary to specify criteria so that diagnoses are comparable. The criteria for mental disorders have been refined over the past century, with major clarification occurring in the late 1970s and further refinement since then. In New Zealand, clinicians use what are known as DSM criteria. The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) is the American Psychiatric Association's official classification system for defining mental disorders (APA 1980, 1987, 2000).

The version of the DSM classification system is indicated by the roman numerals after the DSM abbreviation (so DSM-IV is the fourth revision of the manual).

Different survey questionnaires have used different versions of the DSM to generate prevalence rates of mental disorders. For instance, the DIS, which was used in the ECA studies, generated DSM-III diagnoses, and the NCS used the CIDI-NCS to generate DSM-III-R diagnoses. The questionnaire used in this study generated DSM-IV diagnoses. In the report, it is sometimes made explicit that a mental disorder is defined with a particular version of the DSM.

1.10.2 Composite International Diagnostic Interview

Large-scale surveys are required because the prevalence of individual mental disorders is low. Neither the personnel nor the money required are available to carry out such surveys using fully trained clinical staff. Two solutions have been used for the assessment of participants. One is to use two-phase sampling: lay interviewers administer a screening questionnaire and a proportion of participants are subsequently interviewed by trained clinical staff. This approach is used in national surveys in the UK (Jenkins et al 1997a, 1997b). The second approach has been the development of fully structured interviews that can be used by trained lay interviewers. This is the approach used in this survey and in most other surveys reported in 1.7.

The questionnaire used in this survey to make DSM-IV diagnoses is the CIDI. The CIDI is a fully structured questionnaire that asks about symptoms and their onset and offset in order to determine whether a DSM mental disorder has occurred within specific periods such as ever in someone's life before interview or in the past 12 months.

Different versions of the CIDI have been used in surveys over the past decade. This survey used the WMH-CIDI and the WHO has now accepted this as the official WHO CIDI 3.0. Throughout this report, the questionnaire is referred to as the CIDI 3.0.

1.10.3 Lifetime disorder, 12-month disorder and one-month disorder

The CIDI 3.0 generates DSM-IV diagnoses by determining whether the person has ever in their lifetime met criteria for the disorder, then determines the last time the person had an episode or key symptoms of the disorder. Throughout this report it is stated that this person (or people) had ‘a lifetime disorder’. This is a short way of stating that at the time of the interview, the person had met criteria for a DSM-IV mental disorder, as ascertained with the CIDI 3.0, at some previous time in their life.

If the person has ever met criteria for a DSM-IV disorder, as ascertained with the CIDI 3.0, and experienced an episode or symptoms in the 12 months before the interview, then this is described as a ’12-month disorder’. Similarly if the person ever met criteria for a DSM-IV disorder, as ascertained with the CIDI 3.0, and experienced an episode or symptoms in the month before the interview, this is described as a ‘one-month disorder’.

1.10.4 Prevalence

The prevalence of a disorder is the proportion of people with the disorder in a specified population at a designated time. As the CIDI 3.0 generates DSM-IV diagnoses and determines the period in which people met criteria, it is possible to aggregate data across people to calculate prevalence. In this report, data on three prevalence periods are provided.

- *Lifetime prevalence* is the proportion of people known to have met criteria at some time in their lives before the interview.
- *Twelve-month prevalence* is the proportion of people to have ever met criteria for a disorder and to have experienced an episode of disorder or key symptoms in the 12 months before the interview.
- *One-month prevalence* is the proportion of people to have ever met criteria for a disorder and to have experienced an episode of disorder or key symptoms in the month before the interview.

As this study uses a complex survey design, the survey data are ‘weighted’ and the calculation of prevalence is not simple (this is discussed in detail in chapter 12). In the text and tables, ‘weighted’ prevalences are presented as proportions of the total population or specified subpopulations.

1.10.5 Oversampling

As previously discussed, very limited data exist about mental disorder in the community for Māori and Pacific people. An important aim of the study was to obtain data about the prevalences of mental disorders, and the associated disability and health service use for Māori, Pacific people and Other people in the New Zealand population. If Māori and Pacific people were eligible for selection and sampled from the population on the basis of their proportions in the population, there would be insufficient numbers of Māori and Pacific participants to provide estimates of disorders and service use of acceptable precision. For this reason, Māori and Pacific people were 'oversampled'. That is, the sample design was such that the probability of Māori and Pacific people being selected for participation in the study was higher than the probability of their being selected based simply on their proportions in the New Zealand population. This is explained briefly in 1.6.2 and in detail in chapter 12.

In 'weighting' the sample, these differential probabilities of eligibility for participation are taken into account, such that the estimates obtained are representative of the New Zealand adult population and the Māori, Pacific and Other subpopulations.

1.10.6 Prioritised ethnicity

To determine ethnicity, participants were asked the same questions as asked by Statistics New Zealand in the 2001 Census of Population and Dwellings. The relevant questions are in Appendix B. These questions allow participants to identify themselves as belonging to more than one ethnic group. However, for most analyses participants were assigned to one of three mutually exclusive ethnic groups.

This report used the standard New Zealand system for prioritising ethnicity: Māori ethnicity was prioritised over Pacific ethnicity; and Pacific ethnicity was prioritised over other ethnicities. That is, people who stated they identified as Māori *and* stated they identified with other ethnic groups were classified as belonging to the Māori ethnic group. People who identified as Pacific, but not Māori, were classified as Pacific people regardless of whatever other ethnicities they may also have reported. Prioritised Māori ethnicity is used in the analyses for all chapters, except when stated explicitly otherwise in chapter 10. In chapter 10 many analyses are reported for *all* Pacific people including those who also mentioned Māori ethnicity.

1.10.7 Severity of disorder

In this report, results are sometimes reported by severity of disorder. Participants who experienced any disorder in the past 12 months are classified into three levels of severity: serious, moderate or mild. Twelve-month prevalence estimates by severity are presented in chapter 2. An extended description of the severity classification is provided in 12.12.3.

There is no internationally accepted definition of ‘serious’, ‘severe’ or ‘major’ mental disorder and the terms are used interchangeably. In the US ‘serious mental illness’ (SMI) is defined by statute. The US definition requires that the person have at least one 12-month DSM disorder, other than a substance use disorder, and have serious impairment (Kessler et al 2003a; Kessler et al 2001). ‘Serious impairment’ is defined as a Global Assessment of Functioning score of less than 60 (APA 1994). When this definition was applied to data from the NCS, 6.2% of the US population were found to have met criteria for SMI within the past 12 months (Kessler et al 2001).

It is important to note that the use of the term ‘serious’ in this report is not equivalent to the use of the term ‘major mental health disorder’ (Minister of Health 1997) as used in previous mental health plans. The first National Mental Health Plan set a benchmark of 3.0% of the general adult and youth populations and their families as requiring access to specialist mental health services (Minister of Health 1997; Ministry of Health 1994). This 3.0% benchmark was derived from adaptations, for the New Zealand population, of estimates provided in the Australian Tolkien report (Andrews 1991). The author of this report used the available data, from international studies, on one-month prevalence estimates and health service use in the previous six months, to derive an estimate of 2.6% of the whole population (adults, youth and children) who currently require access to general mental health services (excluding forensic services, alcohol and drug treatment, and services for older people). The structure of the CIDI 3.0 is such that, in this report, estimates of severity can be provided only for 12-month disorder and cannot be provided for one-month disorder. In the CIDI 3.0, service use is assessed over 12 months and not six months. Consequently, it is not possible in this study to derive an estimate, based on the definition used in the Tolkien report, of ‘major mental health disorder’.

1.10.8 Statistical terms

The precision of the survey results is indicated by the 95% confidence intervals (CIs). If multiple survey samples were obtained, even at the same time, they would provide results that differed. The 95% CI is the interval that would be expected to contain the true population value 95% of the time if many samples were taken.

Conventionally differences are said to be statistically significant if the probability (p) is less than .05. The smaller the p-value the more evidence that there is a real difference in the population, not just in the sample. However, p is affected by both the size of the difference and the size of the sample, so it is important to inspect the results themselves to ascertain if the difference is small or large.

If the 95% CIs for two groups do not overlap then the results for the two groups are statistically significantly different at the .05 level. However, the 95% CIs may overlap to some extent when p is less than .05, which is one of the reasons p-values are sometimes quoted in this report. In addition, it is possible for some multi-valued variables such as age group to have a significant effect even when individual age groups do not differ, and this is conveniently indicated by a p-value.