Te Rau Hinengaro: The New Zealand Mental Health Survey

Chapter 4: Lifetime Prevalence and Lifetime Risk of DSM-IV Disorders

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4 Lifetime Prevalence and Lifetime Risk of DSM-IV Disorders

Key results

- It is common for a person to experience a mental disorder at some time in their life, with 39.5% of people aged 16 and over meeting criteria for a disorder at some time before interview.
- The lifetime prevalence estimates for disorder groups are: anxiety disorders, 24.9%; mood disorders, 20.2%; substance use disorders, 12.3%; and eating disorders, 1.7%.
- Most people first experience their disorder early in their lives. Half of all cases have started by age 18 and three-quarters by age 34. The median age of onset of a disorder is 13 years for anxiety disorders, 31 years for mood disorders, 18 years for substance use disorders, and 17 years for eating disorders.
- The estimated lifetime risk at age 75 for any disorder is 46.6%, which is 7.0% higher than the observed lifetime prevalence. By disorder group, the estimated lifetime risks are: anxiety disorders, 28.8%; mood disorders, 28.4%; substance use disorders; 13.8%; and eating disorders, 1.9%.
- More recent cohorts have higher prevalences of any disorder than earlier cohorts. Compared with the group aged 65 and over, the other age groups have significantly higher hazard ratios for lifetime anxiety, mood, substance use and eating disorders ($p < .0001$ for all comparisons). A gradient exists across the age groups, with younger age groups having higher hazard ratios than older groups.
- Females have higher prevalences of anxiety, mood and eating disorders than males. Males have higher prevalences of substance use disorders than females. With adjustment for ethnicity and age, females compared with males have higher hazard ratios for lifetime anxiety disorders, mood disorders, eating disorders and any disorder. Males have higher hazard ratios for lifetime substance use disorders compared with females.
- When adjustment is made for age and sex, Māori have significantly higher hazard ratios for lifetime risk of all disorder groups compared with the Other composite ethnic group. Māori also have higher hazard ratios for lifetime mood disorders and substance use disorders compared with Pacific people. Pacific people have higher hazard ratios for lifetime substance use disorders and eating disorders compared with Others.

4.1 Introduction

4.1.1 Lifetime prevalences from Christchurch Psychiatric Epidemiology Study

Only one previous community survey in New Zealand, the Christchurch Psychiatric Epidemiology Study (CPES), has provided information about the lifetime prevalence of specific mental disorders (Wells et al 1989a). That survey was undertaken in 1986 in the Christchurch urban area and the sampling frame was a non-institutional household sample of people aged 18–64. The diagnostic instrument used (the Diagnostic Interview Schedule (DIS)) (Robins et al 1981) was based on the DSM-III diagnostic system, which has been superseded by the DSM-IV (see 1.10.1). The DIS was the forerunner of the CIDI (Robins et al 1988) (see 1.10.2) and the two instruments differ in structure and content.

The differences in sampling frame, diagnostic criteria and questionnaire design between the CPES and this survey make comparisons of prevalences problematic. The CPES did not provide information about lifetime prevalence in Māori or Pacific people and it is doubtful whether the results can be generalised to the national population. It is also possible that, with the passage of time, prevalences of disorders may have changed.

Of CPES 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. The lifetime prevalences for the low prevalence disorders of schizophrenic disorders and eating (anorexia and/or bulimia) disorders were 0.4% and 1.2% respectively.

4.1.2 Lifetime prevalences from overseas studies

The Epidemiologic Catchment Area Study (ECA), a survey of more than 20,000 adults in five United States (US) communities, was completed between 1980 and 1984 (Robins et al 1991). This survey used the DIS to generate DSM-III diagnoses (Robins et al 1981). An overall lifetime prevalence rate of 32% was found. A decade after the ECA, the National Comorbidity Survey (NCS) (Kessler 1994; Kessler et al 1994) was undertaken. In this survey a nationally representative non-institutional sample of people aged 15–54 was used. The survey instrument was the CIDI, which generated DSM-IIIR diagnoses (Robins et al 1988). In the NCS, overall lifetime prevalence rates of DSM-IIIR disorders of 48% were found (Kessler et al 1994).

The Australian National Survey of Mental Health and Well-being (Andrews et al 1999b; Henderson et al 2000) was a nationally representative household survey completed in 1997. The sample included people aged 18 and over. The survey instrument was the CIDI version 2.1 and this generated ICD-10 and DSM-IV diagnoses, but only for disorders present in the 12 months before interview. Lifetime prevalences were not obtained. The CIDI version 2.1 also differs in structure and content from the CIDI version 3.0 used in this survey.

More recently, 28 countries have collaborated in undertaking national and regional mental health surveys under the auspices of the World Mental Health (WMH) Survey Initiative. This is a project of the Assessment, Classification and Epidemiology Group at the World Health Organization (World Mental Health Survey Consortium 2005). Several nations in the consortium have published results from their national surveys, including the European sites (the European Study of the Epidemiology of Mental Disorders (ESEMeD)) and the US (the National Comorbidity Survey Replication (NCS-R)). These two surveys were based on nationally representative non-institutional samples of adult people. Both the NCS-R and ESEMeD used the same diagnostic interview as used in Te Rau Hinengaro. This instrument, the CIDI 3.0 (Kessler and Ustun 2004) generates DSM-IV and ICD-10 diagnoses. However, the surveys differed in the types of specific disorder covered, questionnaire content, and age range of participants (18 years and over in the ESEMeD and NCS-R; 16 years and over in Te Rau Hinengaro).

In ESEMeD (Alonso et al 2004d; Alonso et al 2004f; Alonso et al 2002), 14.0% of participants reported a lifetime history of any mood disorder, 13.6% of any anxiety disorder and 5.2% of any alcohol disorder (Alonso et al 2004b). In the NCS-R (Kessler et al 2004b; Kessler and Merikangas 2004), the lifetime prevalences by groups of disorder were: anxiety disorders, 28.8%; mood disorders, 20.8%; and substance use disorders, 14.6% (Kessler et al 2005b). This study found that most people had an onset of disorder early in their lives and more recent cohorts had higher prevalences of disorder than earlier cohorts.

4.1.3 Lifetime prevalences and estimated lifetime risk

Lifetime prevalence estimates are based on those people who, at the time of the interview, had ever met criteria for a disorder. In contrast, estimated lifetime risk is a projected estimate of the proportion of people in the population who would ever have experienced a disorder by the end of their lifetime (Kessler et al 2005b), or by a specified age such as 75 years.

Lifetime risk is useful when considering the burden of disease in a population and for service planning purposes. It is not possible to obtain the actual lifetime risk from cross-sectional surveys, as at the time of interview many people will not yet have experienced disorders that will occur for them later. However, if the age of onset of disorder data is obtained, it is possible to estimate the lifetime risk using survival analysis (see 12.10.3). This has seldom been done in psychiatric surveys, in part because the techniques were not available for complex survey data. Hence, earlier surveys reported only lifetime prevalence and in this report lifetime prevalences are provided for purposes of comparison. However, in the NCS-R, projected lifetime risks to age 75 years were calculated. By disorder groups these were: anxiety disorder, 31.5%; mood disorder, 28.0%; and substance use disorder, 16.3%.

4.1.4 Content of this chapter

This chapter contains information on:

- lifetime prevalence (see 4.2)
- the distribution of the age of onset for each disorder and disorder group (see 4.3)
- separate lifetime risk estimates for each birth cohort to explore whether lifetime risk is highest for those born more recently (see 4.4)
- the relationship between lifetime risk of mental disorder and age, sex and ethnicity (see 4.5).

4.2 Lifetime prevalence

The lifetime prevalence estimates for individual DSM-IV disorders are presented in Table 4.1, overall and by age and sex. Lifetime prevalences for the Māori and Pacific populations are presented in chapters 9 and 10.

The experience of a mental disorder is relatively common, with a substantial minority of the sample (39.5%) meeting criteria for a disorder at some time before the interview. Although most people experience only one disorder (20.0%), comorbid mental disorders are common, with a minority experiencing two mental disorders (9.9%) or three or more mental disorders (9.7%).

Table 4.1: Lifetime prevalence of mental disorders,[1] by age and sex

Disorder groups	Total % (95% CI)	Age group (years) % (95% CI)				Sex % (95% CI)	
		16–24	25–44	45–64	65 and over	Male	Female
Anxiety disorders							
Panic disorder	2.7 (2.4, 3.1)	2.9 (2.1, 4.1)	3.5 (3.0, 4.1)	2.4 (1.9, 3.0)	1.4 (0.9, 2.1)	2.1 (1.7, 2.6)	3.3 (2.9, 3.9)
Agoraphobia without panic	1.2 (1.0, 1.4)	1.2 (0.7, 2.0)	1.5 (1.2, 2.0)	1.1 (0.8, 1.6)	0.5 (0.2, 0.9)	0.9 (0.6, 1.2)	1.5 (1.2, 1.9)
Specific phobia	10.8 (10.2, 11.5)	11.8 (9.9, 13.9)	12.5 (11.5, 13.6)	10.9 (9.8, 12.2)	5.3 (4.3, 6.5)	7.3 (6.4, 8.2)	14.1 (13.2, 15.1)
Social phobia	9.4 (8.8, 10.1)	9.6 (8.0, 11.5)	11.3 (10.2, 12.4)	9.7 (8.6, 11.0)	3.8 (3.0, 4.8)	8.7 (7.7, 9.7)	10.1 (9.3, 11.0)
Generalised anxiety disorder	6.0 (5.5, 6.6)	3.5 (2.5, 5.0)	6.8 (6.0, 7.7)	7.0 (6.0, 8.1)	4.6 (3.7, 5.7)	4.4 (3.8, 5.2)	7.5 (6.7, 8.3)
Post-traumatic stress disorder[2]	6.0 (5.4, 6.6)	4.4 (3.3, 5.9)	6.6 (5.7, 7.6)	7.0 (5.8, 8.4)	4.1 (2.7, 6.1)	3.7 (3.0, 4.6)	8.1 (7.2, 9.1)
Obsessive–compulsive disorder[2]	1.2 (1.0, 1.6)	2.3 (1.3, 3.8)	1.8 (1.4, 2.4)	0.5 (0.2, 0.8)	0.2 (0.0, 0.8)	1.1 (0.7, 1.6)	1.4 (1.1, 1.8)
Any anxiety disorder[2]	24.9 (23.6, 26.2)	23.9 (20.9, 27.3)	28.9 (26.8, 31.0)	25.4 (23.2, 27.7)	14.2 (12.0, 16.8)	19.9 (18.3, 21.7)	29.4 (27.7, 31.3)
Mood disorders							
Major depressive disorder	16.0 (15.2, 16.8)	15.1 (12.7, 17.7)	17.0 (15.7, 18.3)	18.4 (16.9, 19.9)	9.8 (8.5, 11.3)	11.4 (10.3, 12.5)	20.3 (19.2, 21.4)
Dysthymia	2.1 (1.8, 2.4)	2.0 (1.2, 3.3)	2.2 (1.7, 2.7)	2.5 (2.0, 3.2)	1.3 (0.8, 2.0)	1.6 (1.2, 2.1)	2.6 (2.2, 3.1)
Bipolar disorder	3.8 (3.4, 4.3)	5.6 (4.3, 7.1)	4.9 (4.2, 5.6)	3.2 (2.6, 3.9)	0.6 (0.3, 1.0)	4.1 (3.5, 4.8)	3.6 (3.1, 4.1)
Any mood disorder	20.2 (19.3, 21.1)	20.7 (18.1, 23.7)	22.2 (20.8, 23.7)	22.0 (20.4, 23.6)	10.6 (9.3, 12.2)	15.6 (14.4, 16.9)	24.3 (23.1, 25.6)
Substance use disorders							
Alcohol abuse	11.4 (10.7, 12.2)	16.7 (14.6, 19.0)	13.4 (12.3, 14.6)	9.7 (8.7, 10.9)	4.0 (3.1, 5.1)	16.3 (15.1, 17.6)	6.9 (6.2, 7.7)
Alcohol dependence	4.0 (3.6, 4.5)	6.5 (5.1, 8.2)	5.0 (4.3, 5.7)	3.1 (2.5, 3.8)	0.7 (0.3, 1.2)	5.6 (4.9, 6.4)	2.6 (2.2, 3.0)
Drug abuse	5.3 (4.8, 5.8)	11.3 (9.5, 13.4)	7.2 (6.4, 8.2)	2.2 (1.7, 2.8)	0.0 (0.0, 0.1)	7.3 (6.5, 8.2)	3.5 (3.0, 4.0)
Drug dependence	2.2 (1.9, 2.5)	4.1 (3.0, 5.5)	3.3 (2.8, 4.0)	0.7 (0.4, 1.1)	0.0 (0.0, 0.1)	2.9 (2.4, 3.5)	1.5 (1.2, 1.9)
Any substance use disorder	12.3 (11.6, 13.1)	18.8 (16.6, 21.2)	14.6 (13.4, 15.9)	10.0 (8.9, 11.2)	4.0 (3.1, 5.1)	17.3 (16.1, 18.6)	7.7 (6.9, 8.5)
Eating disorders							
Anorexia[2]	0.6 (0.4, 0.8)	0.7 (0.2, 2.0)	1.0 (0.6, 1.6)	0.2 (0.0, 0.5)	0.0 (0.0, 0.3)	0.1 (0.0, 0.2)	1.0 (0.7, 1.6)
Bulimia[2]	1.3 (1.1, 1.5)	1.3 (0.7, 2.2)	2.0 (1.6, 2.5)	0.9 (0.5, 1.4)	0.1 (0.0, 0.5)	0.5 (0.3, 0.8)	2.0 (1.6, 2.5)
Any eating disorder[2]	1.7 (1.5, 2.1)	2.0 (1.1, 3.2)	2.9 (2.3, 3.6)	1.0 (0.6, 1.5)	0.1 (0.0, 0.5)	0.5 (0.3, 0.9)	2.9 (2.3, 3.5)

Disorder groups	Total % (95% CI)	Age group (years) % (95% CI)				Sex % (95% CI)	
		16–24	25–44	45–64	65 and over	Male	Female
Any disorder[2]							
Any disorder	39.5 (37.9, 41.2)	41.6 (37.4, 45.9)	45.1 (42.4, 47.9)	39.7 (36.9, 42.6)	22.4 (19.4, 25.6)	36.5 (34.2, 39.0)	42.3 (40.1, 44.5)
No disorder	60.5 (58.8, 62.1)	58.4 (54.1, 62.6)	54.9 (52.1, 57.6)	60.3 (57.4, 63.1)	77.6 (74.4, 80.6)	63.5 (61.0, 65.8)	57.7 (55.5, 59.9)
One disorder	20.0 (18.8, 21.3)	19.0 (16.1, 22.3)	22.0 (20.0, 24.1)	20.3 (18.2, 22.4)	15.4 (12.8, 18.3)	19.4 (17.6, 21.3)	20.6 (19.1, 22.2)
Two disorders	9.9 (9.2, 10.6)	11.3 (9.4, 13.5)	10.8 (9.7, 12.1)	10.6 (9.3, 12.0)	4.6 (3.7, 5.7)	8.7 (7.8, 9.8)	10.9 (10.0, 11.9)
Three or more disorders	9.7 (9.0, 10.4)	11.3 (9.4, 13.4)	12.3 (11.1, 13.6)	8.9 (7.8, 10.1)	2.4 (1.5, 3.6)	8.4 (7.5, 9.5)	10.8 (9.9, 11.8)

1 DSM-IV CIDI 3.0 disorders with hierarchy, see 12.4.1.

2 Assessed in the subsample who did the long form of the interview, see 12.4.2.

4.2.1 Overall lifetime prevalences

Of the diagnostic groups, anxiety disorders are the most prevalent (24.9%), followed by mood disorders (20.2%), substance use disorders (12.3%) and eating disorders (1.7%).

Within the anxiety disorders, specific phobia is the most prevalent disorder (10.8%), followed by social phobia (9.4%), GAD (6.0%), post-traumatic stress disorder (PTSD) (6.0%), panic disorder (2.7%), agoraphobia without panic disorder (1.2%) and obsessive–compulsive disorder (OCD) (1.2%).

Within the mood disorders, major depressive episode is the most prevalent disorder with an overall lifetime prevalence rate of 16.0%. The overall lifetime rate for dysthymia is 2.1%. Bipolar disorder has an overall lifetime rate of 3.8%.

Of the substance use disorders, alcohol abuse (with or without dependence) is the most prevalent disorder with a lifetime prevalence of 11.4%. Drug abuse is the second most prevalent disorder (5.3%), followed by alcohol dependence (4.0%) and drug dependence (2.2%).

Anorexia nervosa is an uncommon disorder, with an overall lifetime prevalence rate of 0.6%. The overall lifetime prevalence rate for bulimia is 1.3%.

4.2.2 Lifetime prevalences, by age

The highest prevalences of all disorders are found in the group aged 25–44 (45.1%), followed by the group aged 16–24 (41.6%), and the group aged 45–64 (39.7%). The lowest prevalences of disorder (22.4%) are found in the oldest age group (65 and over) ($p < .0001$).

Anxiety disorders are most prevalent in the group aged 25–44 (28.9%), followed by the group aged 45–64 (25.4%), then the group aged 16–24 (23.9%). The anxiety disorders are least prevalent in the oldest age group (14.2%; $p < .0001$). Generalised anxiety disorder (GAD) is most prevalent in the group aged 45–64 (7.0%; $p < .0001$); PTSD is most prevalent in the group aged 45–64 (7.0%; $p = .002$); and OCD is most prevalent in the group aged 16–24 (2.3%; $p < .0001$). Panic disorder (3.5%; $p < .0001$), agoraphobia without panic (1.5%; $p = .002$) and specific phobia (12.5%; $p < .0001$) are most prevalent in the group aged 25–44. All the individual anxiety disorders are least prevalent in the group aged 65 and over.

For any mood disorders, the prevalence rate pattern across age groups is the same as for anxiety disorders: 25–44 years, 22.2%; 45–64 years 22.0%; 16–24 years, 20.7%; and 65 years and over, 10.6% ($p < .0001$). Major depressive disorder is most prevalent in the group aged 45–64 (18.4%) and least common in the group aged 65 and over (9.8%) ($p < .0001$). The prevalences for dysthymia follow the same pattern across age groups as major depressive disorder, with the highest prevalences in the group aged 45–64 (2.5%) and the lowest prevalences in the oldest age group (1.3%) ($p = .02$). The prevalences for bipolar disorder are highest in the youngest age groups: 16–24 years, 5.6%; and 25–44 years, 4.9%. The oldest age group has the lowest prevalences (0.6%; $p < .0001$).

Substance use disorders are most prevalent in the youngest age group (16–24 years) with prevalences of 18.8%, followed by groups aged 25–44 (14.6%), then 45–64 (10.0%). Substance use disorders are relatively uncommon (4.0%) in the oldest age group ($p < .0001$). Across all four disorders, the youngest age group has the highest prevalences of for all specific substance use disorders, while the oldest has the lowest prevalences of for all specific substance use disorders ($p < .0001$).

Eating disorders are uncommon across all four age groups, but the highest prevalences are found in the group aged 25–44 (2.9%) followed by the groups aged 16–24 (2.0%), then 45–64 (1.0%), and 65 and over (0.1%) ($p < .0001$). For anorexia nervosa, cases were found in the groups aged 16–24 (0.7%), 25–44 (1.0%) and 45–64 (0.2%) ($p < .0001$). For bulimia nervosa, the group aged 25–44 has the highest prevalences (2.0%), followed by the groups 16–24 (1.3%), 45–64 (0.9%), and 65 and over (0.1%) ($p < .0001$).

4.2.3 Lifetime prevalence, by sex

Females have higher ($p < .001$) overall prevalences of any disorder (42.3%) than males (36.5%).

Females have higher prevalences of anxiety disorders (29.4%) than males (19.9%) ($p = .0003$). Females compared with males have higher prevalences of specific phobia (14.1% compared with 7.3%; $p < .0001$), GAD (7.5% compared with 4.4%; $p < .0001$), PTSD (8.1% compared with 3.7%; $p < .0001$), agoraphobia without panic disorder (1.5% compared with 0.9%; $p = .002$) and social phobia (10.1% compared with 8.7%; $p = .02$). The prevalences of OCD are very similar and not statistically significantly different in females and males (1.4% compared with 1.1%; $p = .3$).

Females also have higher prevalences of mood disorders than males (24.3% compared with 15.6%; $p < .0001$). Females have higher prevalences than males for both major depressive disorder (20.3% compared with 11.4%; $p < .0001$) and dysthymia (2.6% compared with 1.6%; $p = .002$). The prevalences of bipolar disorder for females and males are very similar and not statistically significantly different (3.6% compared with 4.1%; $p = .2$).

Males have higher prevalences of substance use disorders than females (17.3% compared with 7.7%; $p < .0001$). Males have higher prevalences than females of alcohol abuse (16.3% compared with 6.9%; $p < .0001$), alcohol dependence (5.6% compared with 2.6%; $p < .0001$), drug abuse (7.3% compared with 3.5%; $p < .0001$) and drug dependence (2.9% compared with 1.5%; $p < .0001$).

Females have higher prevalences than males for both anorexia nervosa (1.0% compared with 0.1%; $p < .0001$) and bulimia (2.0% compared with 0.5%; $p < .0001$).

4.3 Age of onset of disorder

The ages at selected percentiles on the age of onset distributions of disorders are presented in Table 4.2. The table also includes projected lifetime risk at age 75. Calculation of projected lifetime risk for older age groups was not undertaken as the small numbers in older age groups would make such estimates inaccurate. All of these estimates were based on survival analyses (see 12.10.3).

Most people experience onset of their disorders early in their lives. For example, for panic disorder 25% of all cases will have experienced panic disorder by age 17, 50% by age 30 and 75% by age 56. Specific phobia has the earliest onset (50% by age 7) and GAD and major depressive disorder have the highest median onset ages (32 years). Half of all people who will develop any disorder have experienced disorder by age

18 and three-quarters by age 34. Median age of onset is 13 years for anxiety disorders, 32 years for mood disorders, 18 years for substance use disorders and 17 years for eating disorders.

The gap between the lifetime prevalence estimates and the projected lifetime risk estimates varies by disorder: for those disorders that typically have onset early in life, the gap is small; whereas for disorders that have onset through middle or late adulthood, the gap is larger. For instance, social phobia tends to begin early in life, with the median age of onset being 12 years and three-quarters developing the disorder before age 16. For social phobia, the lifetime prevalence is 9.4% and the lifetime risk is 10.0%, a gap of only 0.6%. This suggests only a very small number of participants, who had not experienced social phobia ever in their lives at the time of the survey interview, can be expected to develop social phobia at some time before they reach 75 years. In contrast, major depressive disorder tends to have onset through the lifespan: the median age of onset is 32 years and three-quarters will experience an episode by age 49. Consequently, for major depressive disorder, the gap between the lifetime prevalence estimates (16.0%) and the lifetime risk estimates (25.7%) is larger (approximately 10.0%). These data should be interpreted with caution, as the estimate of lifetime risk is a composite estimate derived from estimates of lifetime risk for different cohorts and it is assumed each cohort has an equal risk. When there are marked cohort effects (ie, a significant variation in risk by cohort), the lifetime risk will tend to be underestimated for younger birth cohorts and overestimated for older birth cohorts. As will be discussed in 4.4, this sample has significant cohort effects.

Table 4.2: Projected lifetime risk at age 75 and age at selected percentiles on the age of onset distributions of mental disorders

Disorder groups[1]	LT risk[2] %	Ages at selected age of onset percentiles (years)							
		5	10	25	50	75	90	95	99
Anxiety disorders									
Panic disorder	3.8	7	11	17	30	56	86	86	86
Agoraphobia without panic	1.4	4	5	12	16	25	36	45	50
Specific phobia	11.4	4	4	4	7	13	29	40	79
Social phobia	10.0	4	5	7	12	16	27	37	56
Generalised anxiety disorder	8.9	10	13	20	32	46	58	70	77
Post-traumatic stress disorder[3]	8.8	5	8	16	29	49	70	70	78
Obsessive–compulsive disorder[3]	1.4	8	12	14	18	26	40	63	65
Any anxiety disorder[3]	28.8	4	4	6	13	30	50	59	78
Mood disorders									
Major depressive disorder	25.7	12	14	20	32	49	63	74	86
Dysthymia	2.8	8	12	16	30	52	85	85	85
Bipolar disorder	4.8	12	13	17	23	37	49	62	75
Any mood disorder	28.4	12	14	19	31	48	64	75	86
Substance use disorders									
Alcohol abuse	13.0	14	15	16	19	25	39	45	61
Alcohol dependence	4.5	14	15	16	19	25	35	39	46
Drug abuse	5.6	14	14	16	18	21	25	29	37
Drug dependence	2.3	13	14	16	18	22	26	30	38
Any substance use disorder	13.8	13	14	16	18	24	37	45	61
Eating disorders									
Anorexia[3]	0.6	14	14	15	17	21	28	28	32
Bulimia[3]	1.4	10	13	15	18	23	38	46	56
Any eating disorder[3]	1.9	12	13	15	17	24	34	40	56
Any disorder[3]	46.6	4	5	10	18	34	53	67	78

1 DSM-IV CIDI 3.0 disorders with hierarchy, see 12.4.1.

2 LT risk = projected lifetime risk at age 75.

3 Assessed in the subsample who did the long form of the interview, see 12.4.2.

The estimates for lifetime risk, for any disorder, by age 75, for the total sample is 46.6%. This is approximately 7% more than the lifetime prevalence of 39.5%. In a later section in this chapter the probabilities of developing any disorder by age 75 will be considered by ethnicity, age and sex (unadjusted and adjusted for each of these three demographic correlates).

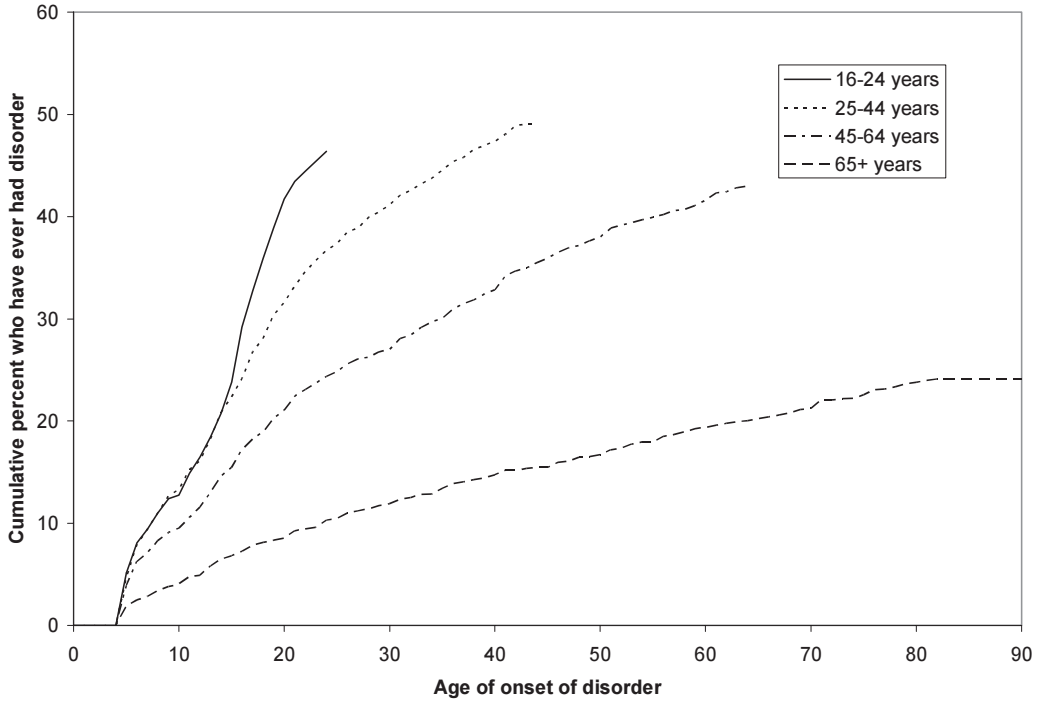
4.4 Lifetime risk across different birth cohorts

Cumulative lifetime risk curves for the onset of any mental disorder are presented in Figure 4.1. Separate onset curves are provided for the groups aged 16–24, 25–44, 45–64, and 65 and over at the time of the interview. These groups represent different birth cohorts, with the youngest age group having been born between 1978 and 1987 and the oldest age group having been born before 1939. The onset curves show that younger age groups have higher probabilities of disorder at any particular age compared with older age groups. For example, the percentages of people who have experienced any disorder by age 21 are: 43% for the group aged 16–24; 33% for the group aged 25–44; 23% for the group aged 45–64; and 9% for the group aged 65 and over.

Although this pattern may reflect a true difference in risk of disorder for younger cohorts compared with older cohorts, it is also possible that these differences are attributable to four systematic biases. These biases are as follows.

- Clear evidence exists from longitudinal studies that people often forget earlier episodes. As current disorder tends to be more prevalent in younger people, and older people have had more time to forget their earlier episodes, this can lead to older people apparently having been less likely to ever experience disorder.
- There is also a general 'telescoping' effect for all people asked to recall past episodes of disorder: episodes are brought forward in memory to a time closer to the time of the interview. For older age groups, this leads to an apparent lower risk earlier in their lives as they have 'moved' episodes in memory from earlier times in their lives to more recent times.
- It is possible different age cohorts have different conceptualisations or explanations for episodes of psychological distress or clusters of mental symptoms. People from more recent cohorts may be more likely to interpret such episodes as attributable to mental disorder, while people from older cohorts may interpret such episodes as expected reactions to circumstances and not perceive them as indicative of mental disorder.
- It is possible the degree of trust in the interviewers and associated willingness to disclose symptoms or behaviours varies by age cohort. For instance, younger people may be more prepared to admit to illicit drug use or problematic alcohol use than older people.

Figure 4.1: Onset of any disorder,[1] by age group



1 DSM-IV CIDI 3.0 disorders with hierarchy, see 12.4.1.

Unfortunately, in a cross-sectional survey such as this, it is not possible to determine how much of the estimated increased risk of disorder among more recent cohorts is attributable to a 'true' difference and how much is attributable to bias.

4.5 Age, sex and ethnicity as predictors of lifetime risk

In this section sociodemographic correlates are considered as predictors of lifetime risk of any anxiety disorder, mood disorder, substance use disorder, eating disorder and any disorder. The sociodemographic factors considered are age, sex and ethnicity. Hazard functions are calculated to consider the influence of these factors on the instantaneous risk of onset of a disorder throughout a person's life.

A hazard is estimated as the proportion of individuals who have experienced an event (in this study, the onset of a disorder) in a particular time interval, given that they are known to have not experienced it previously (Everitt 1995).

The hazard ratio is a ratio of two hazards, at a defined point in time, for two groups of individuals. In these analyses, one subgroup is chosen as the reference group for the calculation of the ratios. The hazard ratio in this reference group is set to equal 1.0. For comparisons of the influence of age, the age group '65 and over' is the reference group. For sex, the reference group is males. For ethnicity the reference group is the Other composite ethnic group. If the hazard ratio for a group is higher than 1.0 then that group is at higher lifetime risk of disorder.

Table 4.3 shows the hazard ratios for lifetime disorders by ethnicity, age and sex. Ethnicity is presented both unadjusted and adjusted by age and sex. There is no adjustment for education and household income because these were measured at the time of interview and were not known throughout for the whole span of the participants' lives.

The hazard ratios do differ significantly for anxiety, mood, substance use and eating disorders across all three ethnic groups, both unadjusted ($p < .0001$ for all comparisons) and adjusted for age and sex ($p < .001$ for all comparisons). When pairwise comparisons are made between ethnic groups for specific disorders, with adjustment for age and sex, Māori have significantly higher hazard ratios for anxiety ($p < .0001$), mood ($p = .0008$), substance use disorders ($p < .0001$) and eating disorders ($p = .003$) than Others. Pacific people have higher hazard ratios for substance use ($p < .0001$) and eating disorders ($p < .0001$) compared with Others. Māori have significantly higher hazard ratios for mood ($p = .0004$) and substance use disorders ($p < .0001$) compared with Pacific people.

Table 4.3: Hazard ratios for lifetime disorders,[1] by age, sex and ethnicity (unadjusted and adjusted for the influence of age and sex)

	Hazard ratio for lifetime disorders % (95% CI)				
	Any anxiety disorder	**Any mood disorder**	**Any substance use disorder**	**Any eating disorder**	**Any disorder**
Ethnicity (unadjusted)					
Māori	1.5 (1.3, 1.7)	1.5 (1.4, 1.7)	3.1 (2.7, 3.5)	2.4 (1.6, 3.5)	1.7 (1.5, 1.9)
Pacific	1.3 (1.1, 1.5)	1.1 (1.0, 1.3)	1.8 (1.6, 2.2)	3.5 (2.3, 5.5)	1.4 (1.3, 1.6)
Other	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)
Ethnicity (adjusted for age and sex)[2]					
Māori	1.3 (1.2, 1.5)	1.2 (1.1, 1.4)	2.6 (2.3, 3.0)	1.8 (1.2, 2.6)	1.4 (1.3, 1.6)
Pacific	1.1 (1.0, 1.3)	0.9 (0.8, 1.0)	1.5 (1.3, 1.8)	2.7 (1.7, 4.2)	1.2 (1.1, 1.4)
Other	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)

	Hazard ratio for lifetime disorders % (95% CI)				
	Any anxiety disorder	Any mood disorder	Any substance use disorder	Any eating disorder	Any disorder
Age group in years (adjusted for ethnicity and sex)[2]					
16–24	3.3 (2.6, 4.1)	17.4 (13.7, 22.2)	11.3 (8.6, 14.9)	76.7 (22.5, 260.8)	5.5 (4.5, 6.8)
25–44	3.2 (2.6, 3.9)	6.8 (5.6, 8.2)	5.1 (3.9, 6.5)	71.4 (22.6, 225.7)	4.1 (3.4, 4.9)
45–64	2.2 (1.8, 2.7)	3.5 (2.9, 4.1)	2.8 (2.1, 3.6)	19.6 (6.0, 64.5)	2.6 (2.1, 3.1)
65 and over	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)
Sex (adjusted for ethnicity and age)[2]					
Male	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)	1.0 (1.0, 1.0)
Female	1.6 (1.4, 1.8)	1.6 (1.5, 1.8)	0.4 (0.4, 0.5)	5.5 (3.6, 8.4)	1.2 (1.1, 1.3)

1 DSM-IV CIDI 3.0 disorders with hierarchy, see 12.4.1.

2 For the method of adjustment, see 12.10.2.

Table 4.3 also shows hazard ratios for age and sex. Compared with the group aged 65 and over, the other age groups have significantly higher hazard ratios for any disorder, anxiety, mood, substance use and eating disorders ($p < .0001$ for all comparisons). There is a gradient across the age groups, with younger age groups having higher hazard ratios than older age groups. Females have higher hazard ratios compared with males for any disorder ($p = .0003$). For the disorder groups, females have higher hazard ratios than males for any anxiety, mood and eating disorders, but a lower hazard ratio for substance use disorder ($p < .0001$ for all comparisons).

4.6 Conclusions

These results confirm those of other studies: mental disorders are relatively common and tend to have early onset. The New Zealand lifetime prevalence rates for the major diagnostic groups (anxiety, mood and substance use disorders) are higher than the aggregated results from the six European countries involved in the ESEMeD, but very similar to those obtained in the US NCS-R.

The estimates of lifetime risk for the New Zealand population are also similar to the estimates of lifetime risk obtained in the NCS-R. As in the NCS-R, this study found that most disorders have early age of onset and younger cohorts are at higher risk of lifetime disorder than older cohorts.

As in past and recent community studies, females have higher lifetime prevalence estimates and hazard ratios for lifetime disorder for anxiety, mood and eating disorders than males.

This study is unique in that it provides prevalence rates and hazard ratios for lifetime risk of disorder for Māori and Pacific people. The hazard ratios for lifetime disorder for Māori and Pacific people suggest these populations have an excess burden of lifetime mental disorder compared with other ethnic groups, even when adjustment is made for these ethnic groups' different population structures.