Chapter 3

How common is comorbidity?

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Introduction

Comorbidity is a term that means having more than one disorder at various times. Concurrent disorders are those that actually occur at the same time. Neither is a strange concept in medicine. The elderly, if lucky, will only suffer from glaucoma and arthritis, the young don’t mind if they have myopia and intermittent asthma. Having a disease is not uncommon; having two is not much less common.

Clinicians know this problem well. It is difficult to treat a person with schizophrenia whose psychotic symptoms are sometimes due to the psychosis and sometimes due to drug dependence. Likewise the combination of personality disorder and somatization disorder, or depression and anxiety, or any combination of the major groups of mental disorders produces more disability, makes the prognosis worse, the clinician’s task more difficult, and the family’s burden greater. Everyone calls for help when people have concurrent disorders. It can be an emergency, however judging things to be important from what forces itself upon our attention is a general type of human error. Our government swings into action following dramatic rural events like floods, and is slow to pay attention to insidious rural phenomena like the gradual loss of productive farmland by rising salinity, even though the burden of salinity is much greater than the burden of floods. So it is with comorbidity and concurrent disorders. Those that cause alarm will receive help; those that quietly destroy a person’s productivity will often be ignored.

The prevalence of comorbidity is often addressed on a disorder by disorder basis. Rates of substance use disorders are examined among those with psychosis (Mueser et al., 1990; Regier et al., 1990), and rates of depression among those with panic disorder (Kessler et al., 1998). If groups of disorders are taken into account, the focus is usually on the co-occurrence of mental disorders with substance use disorders — and the prevalence of one group among cases of the other is not insubstantial, often around 45–55% (Kessler et al., 1997; Kessler et al., 1996; Regier et al., 1990; Ross, 1995). However, in order to put such figures in context it is necessary to examine the prevalence and patterns of all comorbidities in the community, not merely those that come to the attention of health services. Data from population samples allows us to do this. The current chapter takes a population approach to comorbidity, firstly reviewing the findings on the patterns and prevalences of comorbidity from several major population surveys, including the Australian National Survey of Mental Health and Wellbeing (NSMHWB), restricting the review in general to large-scale nationally representative samples. It then uses data from the Australian survey in which a random sample of Australian adults could have their say about what disorder troubled them the most, to estimate the clinical significance of each group of mental disorders. The discussion focuses on the health service planning implications of taking a population approach to comorbidity.
International studies

Up until ten years ago, most of what we knew about comorbidity, its prevalence, patterns and significance, was derived from clinical samples. Early research using clinical data focused on the co-occurrence of symptoms and the implications of this for diagnostic hierarchies in psychiatric classification (e.g., Foulds & Bedford, 1975; Sturt, 1981). However, a major limitation of using clinical data to determine patterns of symptom co-occurrence is that these analyses are confounded by a treatment-seeking bias. Focussing on clinical samples restricts the range of symptom presentation to the more severe cases. The development of structured diagnostic interviews and their use in large-scale epidemiological surveys have made it possible to study the co-occurrence of symptoms and syndromes across the whole spectrum of severity.

The Epidemiologic Catchment Area (ECA) study, which was the first large-scale community survey of the prevalence of mental disorders, determined that 18% of the total population or 60% of those with at least one DSM-III disorder, also had at least one other psychiatric disorder in their lifetime (Robins & Regier, 1991). The National Comorbidity Survey (NCS), which studied a probability sample of the US population aged 18-54, reported strikingly similar rates of comorbidity. Fifty six per cent of respondents with a lifetime history of at least one DSM-III-R disorder also had at least one other lifetime disorder (Kessler, 1995). Stated another way, nine out of ten severe 12 month disorders occurred in the 14% of the sample with a lifetime history of three or more disorders (Kessler et al., 1994).

With the exception of these two surveys, most of the large-scale epidemiological surveys have presented data on co-occurrence of disorders within a one, six or 12 month period, rather than over a person’s lifetime. Similar findings emerge. The Netherlands Mental Health Survey and Incidence Study (NEMESIS, Bijl, Ravelli, & van Zessen, 1998) found over a 12 month period that 45% of people who met criteria for one disorder also met criteria for one or more additional disorders. In the Mental Health Supplement to The Ontario Health Survey, the figure was around 20% (Offord et al., 1996). When data from the ECA and the NCS are restricted to examine co-occurrence of disorders within a six month period the prevalence of comorbidity is similar (Kessler, 1995). In summary, multiple diagnoses, both current and past, are more common than expected from the prevalences of individual disorders and single diagnoses are less common, as though the burden of mental disorders tends to be concentrated in certain individuals.

This finding is independent of country or instrument and is unlikely to be artefact.

There is much discussion in the clinical and phenomenological literature about the possible causal mechanisms underlying the clustering of disorders in certain individuals. Andrews et al. (1996; 1990) studied the common neurotic disorders in volunteer twin and clinic samples and related comorbidity to the presence of a general vulnerability factor to these disorders. That is, while the clinical phenomenology may be distinct, the underlying disorders may not be. A full discussion of this issue is beyond the scope of this chapter and readers are referred to Chapter 2 in this monograph for a more detailed discussion.

When patterns of lifetime comorbidity were examined in the ECA and the NCS, three important findings emerged. Firstly, disorders within diagnostic categories
were generally more commonly comorbid than disorders from different diagnostic
groups. For example, major depression was most strongly associated with dysthymia
(OR = 12.8 in the NCS, OR = 14.3 in the ECA) and mania (OR = 16.9 in the
NCS, OR = 31.8 in the ECA) and least strongly associated with the substance use
disorders (OR = 1.9 – 2.4 in the NCS, OR = 1.9 – 3.5 in the ECA) and antisocial
personality disorder (OR = 2.0 in the NCS, OR = 2.6 in the ECA). Secondly, and a
notable exception to this finding, odds ratios within the anxiety disorder group were
generally lower than between the anxiety and affective disorders. Thirdly, despite the
strong focus in the clinical literature on comorbidity between substance use
disorders and affective or anxiety disorders, these were found to be among the
weakest lifetime comorbidities in both the ECA and the NCS.

When data from the ECA and the NCS was restricted to six month diagnoses,
patterns were similar, with six month associations between disorder pairs generally
stronger than lifetime associations. Again, anxiety and affective disorders are
reported as an exception to this rule. Both the ECA and the NCS report that
although six month associations of affective or anxiety disorders with substance use
disorder are generally higher than lifetime associations, they are not strikingly so.
When anxiety and affective disorders are comorbid with substance use disorders they
are likely to be concurrent, that is to be present at the same time. It should be
noted, however, that associations between anxiety and affective disorders were much
stronger than between either of these disorder groups and substance use disorders, a
pattern also observed in the UK National Survey of Psychiatric Morbidity (Jenkins
et al., 1997; Meltzer, Gill, Petticrew, & Hinds, 1995). In summary, patterns of
comorbidity observed across community samples indicate that despite the current
focus of treatment and policy initiatives, comorbidities between the common mental
disorders and substance use disorders are not the most prevalent comorbidities.

The Australian National Survey of Mental Health and Wellbeing
(NSMHWB)

NSMHWB was a national epidemiological survey of mental disorders that used
similar methodology to the NCS. It aimed to answer three main questions:

1. How many people meet DSM-IV and ICD-10 diagnostic criteria for the major
mental disorders?

2. How disabled are they by their mental disorders? and

3. How many have seen a health professional for their mental disorder?

The major findings of the survey have been reported elsewhere (Andrews,
& Hall, 2000; Teesson, Hall, Lynskey, & Degenhardt, 2000) and further analyses
have examined such issues as perceived need for care (Meadows, Burgess, Fossey, &
Harvey, 2000); and disability (Henderson, Korten, & Medway, 2001; Sanderson &
Andrews, 2002). Parallel surveys were conducted to examine the low prevalence
disorders (Jablensky et al., 2000) and the prevalence of mental disorders in children
and adolescents (Sawyer et al., 2000).
Data from the Australian survey of low prevalence disorders indicates that among people with psychotic illnesses, the prevalence of alcohol use disorders is 36% among men and 17% among women. The figures for drug use or dependence are 38% for men and 16% for women (Jablensky et al., 2000). Data from the adult survey indicates that 48% of females and 34% of males who met criteria for an alcohol use disorder also met criteria for another mental disorder in the previous 12 months (Teesson et al., 2000). Comorbidity between mental disorders and substance use disorders in the Australian population is not uncommon. However, such information does not tell us about whether such comorbidities are the most common or disabling in the community, nor about the prevalence of comorbidity as a general phenomenon.

Andrews et al, (Andrews, Slade, & Issakidis, 2002) used the Australian national survey data to show that even within a 12 month time frame, people with symptoms that met criteria for three or more disorders over the 12 months had ten times the risk of having a current disorder when compared with people who had had only one disorder in the past 12 months. In other words, similar to previous international studies, the Australian survey found that comorbidity is more frequent than expected based on the prevalence of individual disorders.

When patterns of associations were examined, within-disorder group associations were significantly larger than between-disorder group associations, a finding similar to that reported from the ECA and the NCS. Andrews et al (Andrews et al., 2002) extended the analysis to include clusters of personality disorder defined by ICD-10 and found a similar pattern of very strong associations between clusters within the personality disorder group. Again, anxiety disorders displayed strong associations with affective disorders and, similar to the ECA and the NCS, were sometimes stronger than those within the anxiety disorder group. It has often been argued that depressive disorders follow anxiety disorders and Kessler (1999) for example, again using data from the NCS, estimated that 10-15% of depression could be attributed to earlier social phobia. Obsessive compulsive disorder did not show elevated associations with the other anxiety disorders and there is continuing discussion as to whether it is best categorised as part of a separate group of disorders sometimes referred to as the obsessive compulsive spectrum disorders (Hollander & Wong, 1995). Patterns of association both between, and within, disorder groups have the potential to inform discussion of classification and aetiology of psychiatric disorders (see Bogenschutz & Nurnberg, 2000; Vella, Aragona, & Alliani, 2000).

Earlier in this chapter we presented findings from the ECA and the NCS that showed stronger associations between disorders within a six-month timeframe compared to over a person’s lifetime. Andrews et al (2002) used data from the NSMHWB to compare associations between disorders within a 12 month and one-month timeframe and found a similar pattern. Eighty three per cent of odds ratios for current associations between pairs of disorders were higher than those for a twelve-month timeframe. We suggested that this replicated finding raises the possibility that the occurrence of one disorder can be affected by the presence of another disorder. That is, the presence of one disorder might generate symptoms in an individual that could meet criteria for another disorder, or be sufficient to convert a sub-threshold secondary disorder into one that met diagnostic criteria.
In summary, data from community surveys of the Australian population indicates that comorbidity as a general phenomenon is common. Like previous epidemiological surveys, the most common associations are between disorders from the same diagnostic groups and between anxiety and affective disorders. Comorbid associations between the common mental disorders and substance use disorders are less so.

What are the most disabling comorbidities?

It is widely documented in community and in clinical samples that comorbidity is associated with high levels of disability (Bijl et al., 1998; Kessler et al., 1994). In the Australian survey, respondents with more than one disorder reported significantly higher levels of disability, distress and service utilisation, with levels increasing in a linear trend as the number of disorders increased (Andrews et al., 2002). However, what is not addressed in the literature is a way of determining which, if any, combinations of disorders are especially prevalent and disabling and how this information can be used to inform health planning. The following section presents a method for determining the clinical significance of the various groups of mental disorders.

As alluded to at the beginning of this chapter, comorbidity is a different issue to concurrence. Comorbidity refers to the clustering of mental disorders in certain individuals over time. That is, it refers to a history of disorders in the past as well as to the concurrence of disorders in the present (see Wittchen, 1996). The previous discussion has indicated that concurrent associations between disorders are often stronger than successive comorbid associations. Successive comorbidity, the presence of two or more disorders some time during an extended time period, is useful for discussing risk factors, disability or service utilisation but is less useful for determining service delivery priorities. Thus, the current analysis will focus on the prevalence and disability associated with concurrent disorders.

Method

Sample: The NSMHWB (Andrews, Henderson et al., 2001) was conducted by the Australian Bureau of Statistics under the terms of their Act that guarantees the privacy of respondents. The survey covered urban and rural areas across Australia. A multistage sample of private dwellings was drawn. Each state and territory was stratified and each dwelling within a stratum had an equal and known probability of selection. In all, 13,624 private dwellings were initially selected in the survey sample, and one adult member randomly selected as the possible respondent: 1,477 people refused, in 558 households contact could not be made with the identified respondent, and in 948 households no interview occurred because the identified respondent could not communicate, there was death or illness in the household, or the interview was prematurely terminated. The sample included people aged 18 years and over who were usual residents of households in the identified private dwellings. The sample did not include persons in hospitals, nursing homes, hotels, jails etc., or residents of households in remote and sparsely settled parts of the country. For this reason Aboriginal and Torres Strait Islander people were under-sampled and are not further identified in this paper. Ten thousand, six hundred and forty one people participated, a response rate of 78.1%. The age and sex characteristics of the sample were weighted to match the age and sex distribution in the national census.
Assessment: The whole interview was administered from a laptop computer. The Composite International Diagnostic Interview (Andrews & Peters, 1998; WHO, 1997) was used to determine, using ICD-10 and DSM-IV criteria, the presence of six anxiety disorders (panic disorder, agoraphobia, social phobia, [simple phobias were not identified], generalised anxiety disorder, obsessive compulsive disorder, post-traumatic stress disorder), two affective disorders (major depression, dysthymia), four substance use disorders (alcohol dependence and drug dependence for three classes of drugs). Screening questions were used to determine personality disorders (Loranger, Janca, & Sartorius, 1997) and an interview for ICD Neurasthenia (Tacchini, Janca, & Isaacs, 1995) was modified to reflect the CDC criteria for Chronic Fatigue Syndrome or DSM-IV undifferentiated somatoform disorder (Hickie et al., 1997). The CIDI module for schizophrenia generates false positive diagnoses (Kendler, Gallagher, Abelson, & Kessler, 1996) and a brief psychosis screener was used instead.

Disability was measured at the beginning of the interview by the Medical Outcomes Study Short Form-12 (SF-12, Ware, Kosinski, & Keller, 1996). The SF-12 is a generic measure of disability that has a mean of 50 and a standard deviation of 10. People who are disabled score less than 50, people who are very well score more than 50. The SF-12 produces two scores, a mental component scale score and a physical component scale score, the present data only refers to the former. It is reliable, valid and sensitive to change and the longer form (SF-36) has been widely used in Australia. We consider that it will become the standard health outcome measure in both mental and physical medicine. The mental health score relies on questions about vitality, social functioning, emotional role and mental health.

Training of Interviewers and Data Analysis: All interviewers were experienced interviewers employed by the Australian Bureau of Statistics. Supervisors for each State and Territory were trained to criterion at the WHO Training and Reference Centre for CIDI in Sydney and then had a subsidiary course on how to train field staff. Routine data analysis procedures were used but as a result of the complex sample design and weighting, special software was required to estimate standard errors (SE). The SE of prevalence estimates and proportions were estimated using delete-1 jackknife repeated replication in 30 design-based sub-samples (Kish & Frankel, 1974). These calculations used the SUDAAN software package (Shah, Barnwell, & Bieler, 1997).

Results

The data is presented in Table 1 and will be considered column by column. The first column is about the frequency of the diagnostic groups in the population. Anxiety disorders are the most common mental disorders and in any month, 739,000 Australian adults report symptoms that meet criteria for a DSM-IV anxiety disorder. People could have more than one anxiety disorder, say Post-Traumatic Stress Disorder (PTSD) and Obsessive Compulsive Disorder, but in this table they would still be counted as having an anxiety disorder. The frequency of personality disorders has never before been estimated in any population survey and while the prevalence (5.3%) is close to what was expected, more work is required to know exactly who was being identified. The diagnoses of affective, substance use and somatoform disorders are standard and as expected, and the rates are likely to be correct. Psychosis was the rarest disorder, 14 times less common than anxiety disorders. Although the rate of psychosis in this study (0.4%) was identified via a brief screening instrument, it is similar to that reported in the recent low prevalence survey (Jablensky et al., 2000) and is likely to be correct.
### Table 1: Population prevalence and relative disability for 1 month diagnoses, NSMHWB

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Population Prevalence '000 (%)</th>
<th>Mean SF-12 Deviation</th>
<th>Population Disability Units '000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective</td>
<td>518 (3.8)</td>
<td>1.7</td>
<td>881</td>
</tr>
<tr>
<td>Anxiety</td>
<td>739 (5.5)</td>
<td>1.1</td>
<td>813</td>
</tr>
<tr>
<td>Substance Dependence†</td>
<td>297 (2.2)</td>
<td>0.6</td>
<td>178</td>
</tr>
<tr>
<td>Personality</td>
<td>709 (5.3)</td>
<td>0.8</td>
<td>566</td>
</tr>
<tr>
<td>Psychosis*</td>
<td>56 (0.4)</td>
<td>1.0</td>
<td>56</td>
</tr>
<tr>
<td>Somatoform</td>
<td>164 (1.2)</td>
<td>1.5</td>
<td>245</td>
</tr>
<tr>
<td><strong>[Sum of the above]</strong></td>
<td><strong>2483 (18.4)</strong></td>
<td></td>
<td><strong>2739</strong></td>
</tr>
<tr>
<td><strong>Any mental disorder</strong></td>
<td><strong>1660 (12.3)</strong></td>
<td>0.8</td>
<td><strong>1494</strong></td>
</tr>
</tbody>
</table>

† People who met criteria for abuse without dependence are not included in this analysis.

* If a weighting of severe disability for psychosis is used the population disability units are: 3.0 x 56 = 168,000.

The second column is about disability. The results in column 2 are the mean SF-12 deviations from the population mean in standard deviation units. For illustrative purposes, 0–1 is considered to indicate mild disability, 1–2 moderate disability and a score of more than 2 severe disability. Remember that these are group means, and individual scores will be distributed above and below the mean value. In this column the affective disorders generate the highest scores and the substance use disorders the lowest. We have evidence that such self-report measures do not accurately represent the true disability associated with psychosis and have arbitrarily assigned a score of 3 (severe disability) to cases of psychosis. The significance of this decision will become apparent in later tables.

The third column is about the total disability in the Australian population attributed to people with the various disorders. When the number of cases is multiplied by the average level of disability of those cases, the affective and anxiety disorders are principal causes of disability in the community and, psychosis aside, substance use and somatoform disorders the least. But even if one substitutes an SF-12 value of 3 for all persons with psychosis, psychosis still generates less total disability than any other group of disorders, simply because it is a rare disorder. The lowest disability score of any individual in the national mental health survey was 4.2 standard deviations below the mean of 50, thus an average score of 3 for the whole psychosis group is very low indeed.

The bottom row shows that 1.7 million (1,660,000) people in Australia met criteria for any current mental disorder, their average SF-12 score is 0.8 and the product of these scores is 1.5 million disability units. In the sub-total line above, we show the...
total number of diagnoses as 2.5 million (50% greater) as though half the people had symptoms that meet criteria for two diagnosis groups. Actually some meet criteria for three or four diagnoses and rather fewer have two diagnoses. In the right hand column the population disability units are 2,739,000, twice as high as in the bottom or ‘any disorder’ row, demonstrating that people with comorbid disorders are more likely to have higher disability scores, higher even than the concurrence of two diagnoses would suggest.

Table 2a: Prevalence and disability of concurrent 1 month diagnoses, NSMHWB.

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Affective '000</th>
<th>Anxiety '000</th>
<th>Substance '000</th>
<th>Psychosis '000</th>
<th>Personality '000</th>
<th>Somatoform '000</th>
<th>Total '000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective</td>
<td>183</td>
<td>245</td>
<td>64</td>
<td>185</td>
<td>20</td>
<td>74</td>
<td>518</td>
</tr>
<tr>
<td>SF-12 deviation</td>
<td>1.4</td>
<td>1.8</td>
<td>1.9</td>
<td>1.8</td>
<td>1.9</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>–</td>
<td>324</td>
<td>77</td>
<td>241</td>
<td>15</td>
<td>89</td>
<td>739</td>
</tr>
<tr>
<td>SF-12 deviation</td>
<td>–</td>
<td>0.6</td>
<td>1.5</td>
<td>1.5</td>
<td>1.9</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>Substance Dep.</td>
<td>–</td>
<td>–</td>
<td>165</td>
<td>72</td>
<td>†</td>
<td>18</td>
<td>297</td>
</tr>
<tr>
<td>SF-12 deviation</td>
<td>–</td>
<td>–</td>
<td>0.1</td>
<td>1.2</td>
<td>†</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Personality</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>378</td>
<td>16</td>
<td>57</td>
<td>708</td>
</tr>
<tr>
<td>SF-12 deviation</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.3</td>
<td>1.8</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Psychosis</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>23</td>
<td>†</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>SF-12 deviation</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>3.0</td>
<td>†</td>
<td>47</td>
<td>164</td>
</tr>
<tr>
<td>Somatoform</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.8</td>
<td></td>
</tr>
</tbody>
</table>

† < 10,000

Table 2a shows exactly the same people as in Table 1, now cross tabulated according to their concurrent diagnoses. In the top row 183,000 Australians met criteria for an affective disorder only and their mean disability score was 1.4; 245,000 Australians met criteria for concurrent anxiety and affective disorders and their mean disability score was 1.8 and so on. On the diagonal, in bold, are the disability scores for people who met criteria for only one current diagnosis. The top two disability values were psychosis (remember we re-scored all of them as severely disabled) and affective disorders. The least disabling single disorders were substance dependence and personality disorders, respondents with substance dependence and no other disorder returning an average score of 0.1 standard deviation drop on the SF-12. Thus while some might have regarded themselves as very well and others as disabled, it was the average of the group that was close to zero, not that all individuals with substance use disorders as their only mental disorder scored close to zero.

The cumulative disability associated with each single and double disorder is shown in Table 2b in the same population disability units as used in Table 1 column 3. In
fact the total disability scores by diagnosis are exactly the same as in the right hand column in Table 1. The largest contributor to disability at the population level is the combination of anxiety and affective disorders. The least significant is substance dependence alone (we have ignored cells with less than 10,000 people because the numbers in the survey on which they were based are too small to be reliable). While it is easy to identify the highest and the lowest single diagnoses, and the highest and lowest combinations of diagnoses that contribute to psychiatric disability, it is very difficult to form a judgement about the totality of the data in Table 2b, important as it is.

Table 2b: Population disability units for concurrent 1 month diagnoses from the NSMHWB.

<table>
<thead>
<tr>
<th>Concurrent Diagnoses</th>
<th>Affective</th>
<th>Anxiety</th>
<th>Substance Dep.</th>
<th>Personality</th>
<th>Psychosis</th>
<th>Somatoform</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>'000</td>
<td>'000</td>
<td>'000</td>
<td>'000</td>
<td>'000</td>
<td>'000</td>
<td>'000</td>
</tr>
<tr>
<td>Affective</td>
<td>256</td>
<td>441</td>
<td>122</td>
<td>333</td>
<td>38</td>
<td>163</td>
<td>881</td>
</tr>
<tr>
<td>Anxiety</td>
<td>–</td>
<td>194</td>
<td>116</td>
<td>362</td>
<td>29</td>
<td>160</td>
<td>813</td>
</tr>
<tr>
<td>Substance Dep.</td>
<td>–</td>
<td>–</td>
<td>17</td>
<td>86</td>
<td>†</td>
<td>38</td>
<td>178</td>
</tr>
<tr>
<td>Personality</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>113</td>
<td>29</td>
<td>114</td>
<td>566</td>
</tr>
<tr>
<td>Psychosis</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>69</td>
<td>†</td>
<td>168</td>
</tr>
<tr>
<td>Somatoform</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>38</td>
<td></td>
<td>245</td>
</tr>
</tbody>
</table>

† < 10,000

The prevalence and mean disability scores for people with only one current diagnosis are displayed in the first column of Table 3a and the population disability units in the first column of Table 3b. They are exactly the same numbers that were on the diagonals in Tables 2a and 2b.

In clinical practice, patients prioritise their symptoms and emphasise the symptoms that trouble them the most. It is that group of symptoms that is the focus of treatment. In the survey, once all diagnoses had been established, each person who was likely to meet criteria for more than one of the listed diagnoses was asked, “you mentioned having problems like (listing their groups of symptoms). Which troubled you the most?” Their response to this question was recorded as the main problem for those with concurrent disorders, and the numbers of people, and their mean disability and total disability units are displayed in column two of Tables 3a and 3b.

When people have two or more disorders, what proportion chose a particular group as their main disorder? At some level this gives an indication of what they might seek treatment for or the disorder they would most like to be without, not necessarily what might disable them the most. Seventy-seven per cent of people with a concurrent anxiety said that was their main complaint, 61% of people with psychosis and 54% of people with affective disorders said likewise. These three disorders were of greatest importance to the sufferer. Forty per cent of people with a concurrent substance use dependence chose it as their main complaint, 28% of people with a
personality disorder and 27% of people with a concurrent somatoform disorder did likewise. That is, in these three groups of disorders, other comorbid disorders were judged to be more troubling. Mostly these were the comorbid disorders listed in Table 2a, but sometimes people identified a concurrent physical disorder as their main complaint.

Table 3a: Prevalence and disability of only or main problem diagnosis, NSMHWB.

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Diagnosis as Only Main Problem</th>
<th>Other Diagnosis as Main Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ONLY</td>
<td>MAIN</td>
</tr>
<tr>
<td>Affective</td>
<td>183</td>
<td>192</td>
</tr>
<tr>
<td>Anxiety</td>
<td>324</td>
<td>324</td>
</tr>
<tr>
<td>Substance Dep.</td>
<td>165</td>
<td>53</td>
</tr>
<tr>
<td>Personality</td>
<td>378</td>
<td>99</td>
</tr>
<tr>
<td>Psychosis</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Somatoform</td>
<td>47</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 3b. Population disability units for only or main problem diagnosis, NSMHWB

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>PDU’s: Diagnosis as Only Main Problem</th>
<th>Relative Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Only '000</td>
<td>Main '000</td>
</tr>
<tr>
<td>Affective</td>
<td>256</td>
<td>365</td>
</tr>
<tr>
<td>Anxiety</td>
<td>194</td>
<td>389</td>
</tr>
<tr>
<td>Substance Dep.</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Personality</td>
<td>113</td>
<td>89</td>
</tr>
<tr>
<td>Psychosis</td>
<td>69</td>
<td>60</td>
</tr>
<tr>
<td>Somatoform</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td>TOTAL</td>
<td>687</td>
<td>956</td>
</tr>
</tbody>
</table>
In Table 3b we list the population disability units for single or only disorders, for the identified main disorder when there were two or more present, and the total for the two classes. Nobody is counted twice. The total gives the sum of population disability units attributable to each group of disorders. The total, 1,643,000 population disability units, is greater than the sum of the averages in Table 1, because now we include only the disorders that the respondents see as primary, presumably most severe. However, it is less than the subtotal in Table 1 because there is no double counting of disability. The affective and anxiety disorders are the largest, accounting for 38% and 35% of the population total of disability respectively, or 73% in all. The remaining 27% is divided among the other three classes: personality disorders 12%, psychosis (even with the higher loading) 8%, somatoform disorders 4%, and substance use disorders 2%.

**Discussion**

The current analysis takes a population approach to determining the prevalence, disability and clinical significance associated with comorbid disorders. As shown in Table 2a, the disability associated with comorbidity among any two disorder groups is generally higher than that associated with any disorder group alone. These findings are not necessarily new. As mentioned in the introduction, results from the NCS and the NEMESIS epidemiological surveys of mental disorders showed that, regardless of disorder combinations, as the number of disorders increases so too does the level of functional disability (Bijl et al., 1998; Kessler et al., 1994). When the disability is combined with the prevalence of each comorbid disorder group combination the resultant population disability units show that the combination of affective with anxiety disorders or personality disorders with affective disorders or personality with anxiety disorders produce the greatest population burden (Table 2b). When the analysis was restricted to a single nominated main problem for each respondent it can be seen that affective and anxiety disorders are again the most prevalent and most disabling and therefore account for the highest amount of population disability (Tables 3a and 3b).

These results have implications for the Global Burden of Disease (GBD) project. Murray and Lopez (1996) showed that mental disorders were the principal cause of Years lived with disability and that, because of this, mental disorders ranked high in any table of the global burden of disease. It actually may have overestimated the burden of mental disorders because it did not control for concurrent disorders, and hence, while they took care to attribute years of life lost to only one disease, years lived with a disability were multiply attributed to all diseases a person currently had. There have been a number of attempts to rectify this (Andrews, Sanderson, & Beard, 1998). The recent Australian Burden of Disease study (Mathers & Vos, 1999) took a straightforward approach, apportioning the average disease weight between all disorders present. For this reason, as well as for other methodological changes, it calculated the burden of mental disorders in Australia at 15% of the total, third in importance after heart disease and cancer, a proportion that indicates the public health importance of mental disorders. Burden of disease calculations and health service planning require concurrent comorbidity to be addressed, and concurrent comorbidity is what the clinician must deal with. The current chapter presents one method for addressing the problem of concurrent comorbidity.
The results shown in Table 3b are not dissimilar to the years lived with disability proportions in the Australian Burden of Disease study. Mathers et al, (1999, Annex Table G) estimated that the affective disorders accounted for 38% of the years lived with a disability due to a mental disorder, the anxiety disorders 26%, the substance use disorders 21%, personality disorders 6% and psychosis 6%. They did not estimate the disability attributable to somatoform disorder. The disability weights used in that study came, not from self-report, but from judgements made by experts as to the impact of each disorder on the functioning of the average sufferer. The main difference between those results and the present results based on self-report is that people with substance use disorders underestimate the impact of them on their functioning. Both studies agree about the importance of the affective and anxiety disorders, and both note that psychosis is not the pre-eminent cause of disability attributed to mental disorders, because even though disabling, it is a rare disorder.

The size of the disability attributed to a particular disease group may not be a perfect indicator of relative importance. Merikangas et al, (1998) analysed data from seven community surveys in six countries and concluded that while there are strong comorbidities between mental disorders and substance use disorders, the mental disorders typically have an onset at an earlier age and are significant predictors of subsequent substance use disorders — probably by hastening the progression from use to problem use and from problem use to dependence. Simulations on the basis of this data suggest that about half of all drug dependence is associated with prior mental disorder: conduct disorder/adult antisocial behaviour in men, and conduct/antisocial behaviour and anxiety and mood disorders in women. These findings raise the possibility of prevention of substance use by early intervention with the mental disorder before the onset of the substance use disorder.

Australia spends 5% to 7% of its total health budget (public and private practice, specialist and general practitioner, in-patient and outpatient, veterans’ affairs and the pharmaceutical benefits scheme) on mental health. This is half of the amount of money per capita that Canada and the United Kingdom spend. About half this money is spent on psychosis and substance dependence treatment: disorders that produce a substantial amount of individual suffering but do not account for a great deal of the total human suffering or disablement. If we were to respond to suffering or to the public health approach of relieving the burden of disease, we would prioritise both the anxiety and the affective disorders. The preferential funding of psychosis and substance use exists because, in a democracy, funds are allocated partly in response to voter demand. Families of young people who develop psychosis or substance dependence are rightly affronted by the visible suffering in their loved one. Other families are afraid their children might develop these disorders. Together, they form a potent advocacy group. But the wider society is also sensitive to these concerns. Fear of the ‘crazed psychotic’ or ‘drug addict’ is rightly, or wrongly, an important societal concern and protection from this perceived fear is seen as legitimate expenditure of taxes.

Rosenheck (1999) edited a series of articles on the ‘care of the least well off’. He agreed that the relatively small number of people with the most serious illnesses (psychosis) consume a disproportionately large volume of health care services. He argued that there should be a balance between improving efficiency and maintaining intensive services for those with the greatest needs and put forward seven principles that could be used to guide resource allocation decisions. He rightly argued for the
autonomy of individual patient welfare “...that one should never withhold treatment from a patient to achieve some other goal”, even if it is the potential to receive more benefit from the same resources. The argument between equity and efficiency has just been joined and there is no obvious solution. What is obvious is that data now exists to inform the argument and that advocacy alone is no longer sufficient (Andrews & Henderson, 2000).

Conclusions

This monograph arose from a cooperative endeavour between the Mental Health Branch and the Drug Strategy Branch whose concerns were centred on the epidemic comorbidity between psychosis and substance dependence. Data from epidemiological surveys both here and overseas suggests the main burden of concurrent disorders is elsewhere. WHO has argued that, as there are insufficient funds to provide health care to all, we might prioritise diseases of greatest burden and diseases in which there are cost effective treatments. On both grounds the anxiety and affective disorders rank higher than the other mental disorders. Earlier we noted the human tendency to respond to emergencies, to prefer flood mitigation to salinity control. At present our health system struggles to respond to the emergencies posed by substance use and psychosis. Responding to the quieter problem posed by anxiety and affective disorders will be a difficult task.

References


