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The nature and prevalence of psychological problems in New Zealand primary healthcare: a report on Mental Health and General Practice Investigation (MaGPIe)

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The MaGPIe Research Group

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Results The study achieved a very high response rate among the GPs (90%). Nearly all eligible patients (93%) completed the GHQ screening, and their response rate was 70% for the first-phase interview. GPs thought that 54% of female and 46% of male patients had experienced some level of psychological problems in the past year. GHQ screening also found that more than half of those attending their general practitioner experienced some psychological symptoms at initial screening, and the CIDI interview found that more than one in three had a diagnosable mental disorder during the past 12 months. The most common mental disorders were depressive, anxiety and substance use disorders. These disorders were more common among younger than older general practice attenders, and comorbidity was high.

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Mental disorders are increasingly recognised as a major public health problem.[1,2] A World Health Organization (WHO) study of the global burden of disease has shown that mental disorders make up five of the ten leading causes of disability.[3] The provision of appropriate and effective mental healthcare is an important and challenging priority for New Zealand, especially in view of some measures of poor performance such as the rate of suicide among young people.[4]

While the general practice and primary care sectors provide an appropriate context for the detection and management of mental disorders, there is relatively little information about rates of presentation to primary care in New Zealand. There is no local research exploring how general practitioners and patients make decisions about diagnosis, management or referral of psychological problems.

In the general population of New Zealand, as in other Western countries,[5] over one quarter of the population have had a diagnosable mental disorder in the last six months. Three quarters of those with a recent mental disorder have attended a health (mainly general practice) service, but only about one third have sought help for their mental health problem from any agency.[6] One quarter of those who received any treatment got it from specialist mental health or addiction services, while GPs delivered three quarters of the treatment for mental disorders.[7]

In general practice, most studies of mental health have found that about one quarter of patients have had a diagnosable mental disorder. The WHO study of general practice attenders, conducted in 15 different centres across 14 countries,[8] found that 24% of general practice attenders had a current mental disorder reaching ICD-10 criteria, and another 9% had a sub-threshold disorder (clinically significant symptoms, but not meeting full criteria for ICD-10). The most common diagnoses were depression, generalised anxiety disorder, neurasthenia, and problems with alcohol.[9] Compared with the high prevalence of disorders in the general population,[10] only a small proportion of patients in New Zealand general practice settings present mental health problems to their doctor as the main reason for their consultation. Four studies have found that between 3.1% and 7.6% of patients had a mental health problem as the main presentation at the consultation.[11–14] The apparently low rate of presentation of common mental disorders to general practitioners may reflect a problem of access to healthcare by those with mental disorders resulting from New Zealand's fee-for-service system for access to general practice and other primary care services.[15]

The overall aims of this study were to describe the prevalence and nature of common mental disorders among patients attending New Zealand general practices, and to determine the degree of associated disability and other factors influencing recognition, management, course and outcome of these disorders. This paper describes the methods used in the study and reports selected key findings about the nature and prevalence of the psychological problems from the first phase of the MaGPIe study.

Methods

Setting and sampling
Participants were 70 randomly selected GPs in the Wellington, Kapiti and Manawatu areas of the North Island, New Zealand. Fifty eligible consecutive adult patients were recruited from the practice of each participating general practitioner.

Table 1. Instruments used in the MaGPIe study and main domains of assessment procedures

Stage Instrument (completed by)	Domain
Screening and selecting patients	
Eligibility and consent (all eligible attenders at selected GPs n=3687)	Consent or refusal, age, sex.
General health questionnaire (GHQ-12) (all eligible and consenting respondents n=3414)	Psychological symptoms.
Selection worksheet (all eligible consenting respondents n=3414)	Basis for assignment to GHQ strata.
Sampling general practitioners	
GP personal questionnaire (all participating GPs n=70)	Demographics of general practitioner; duration of practice; perception of barriers to care for patients; opinions on mental healthcare in general; opinions on mental healthcare in own practice.
General practitioner assessment of patient	
Encounter form (all eligible and consenting respondents n=3414)	GP's assessment of: main reason for contact; extent that presenting symptoms are psychological; overall rating of health; severity of physical illness; severity of psychological disorder.
GP patient questionnaire (all respondents selected and consenting to interview n=910)	GP's assessment of: relevance of psychological issues; diagnoses of mental disorders in last 12 months; duration of mental disorders; impact of psychological problems on functioning; treatment delivered/planned for psychological problems; expected outcome.
MaGPIe interview	
The MaGPIe patient interview (910 completed, 2 lost, final n=908)	Patient demographics revised for NZ conditions. CIDI (v2.1) components covering 12-month ICD10 and DSM-IV disorders:*[†] hypochondriasis, phobias, panic disorder, generalised anxiety disorder, obsessive-compulsive disorder and post-traumatic stress disorder, depression and dysthymia, alcohol and marijuana dependence and abuse disorders, neurasthenia; and (in women under 30 years) anorexia and bulimia nervosa. Psychological health dimensional scale SPHERE-34 (Somatic & Psychological Health Report). Disability measures including WHODAS II (WHO Disability Assessment Schedule); and disability resulting from particular disorders. Patient perceptions of 'barriers to care' and 'attitudes to GP'. Use of health services, including hospital, other health services, and use of psychotropic medications.

Longitudinal phase follow-up interviews	
Three-month (n=829), six-month, (n=804), nine-month (n=779) and twelve-month (n=753) telephone interviews	All four phone follow-up interviews explicitly covered 'the last three months' and contained an administrative section covering any changes of contact details or general notes. A short-form version of the SPHERE, consisting of nine questions. Recording number and nature of any GP visits, hospitalisations, any other health professional consultations (including alternative practitioners) and any new medications being used. A 'Barriers to Care' section identifying any reasons patient did not talk to their doctor despite having psychological problems. A section covering recent significant life events and the degree of upset caused. The nine-month phone follow-up interview checked that the GP at original contact was the respondent's regular doctor. The twelve-month phone follow-up interview also asked whether any medications were prescribed but not taken or completed.
Final MaGPIe interview (n=696)	Repeated MaGPIe interview, with changes to demographics and health service use to avoid unnecessary duplication of questions, and small improvements to fluency of wording in three sections.
GP final patient questionnaire (n= 676)	Nature and extent of the patient's psychological problems; effectiveness of the GP's management plan, if any, over the previous 12 months; frequency and appropriateness of the patient's consultations; barriers to care for that patient; 'heartsink' question addressing the GP's emotional response to that patient.
GP final personal questionnaire (n=68 participating GPs)	Impact of involvement in MaGPIe study; mental health training; barriers to providing care for mental health issues; interest in mental health issues, and confidence in diagnosis, treatment, and referral.
GP notes search (n=590 'complete' notes)	Date of consultations; reasons for consultations; medications prescribed; other treatment; referrals; investigations, lab tests ordered.

*At the time the study began, the 12-month version of CIDI was not available using the WHO ISHELL programme, so the lifetime version was adapted to assess the presence of the disorder in the last 12 months.

†DSM-IV applies a diagnostic hierarchy, such that if criteria for a 'lower' disorder are met at the same time as a 'higher' disorder, and these symptoms may occur as part of the 'higher' disorder, then the 'lower' disorder is not separately diagnosed. Because less common disorders such as organic mental disorder, schizophrenia, and bipolar disorder were not assessed in the version of the CIDI used in this study, only those hierarchical rules applying within anxiety disorder, depression and substance use could be applied.

Measures
The measures used (Table 1) were based on the World Health Organization's Collaborative Study of Psychological Problems in General Health Care.[8] The main modifications to this model were: the use of a 12-month version of the Composite International Diagnostic Interview (CIDI) version 2.1, with additional components added to determine syndromes common in primary care; the use of the World Health Organization's Disability Assessment Schedule (WHODAS) version II to determine disability;[16] use of the Somatic and Psychological Health Report (SPHERE-34)[17] as a dimensional measure of severity; and adaption of other sections, such as the demographics, general practitioner questionnaire, and encounter form, to fit them to the New Zealand context.

Procedures
Ethical approval
The Wellington and Manawatu-Whanganui Ethics Committees approved the methods and procedures used in the study.

Recruitment of general practitioners

GPs were selected at random from a list of all 299 known eligible general practitioners in a geographical area encompassing the administrative health districts around and between Wellington City and Palmerston North. Proportionality of selections from Wellington City, Palmerston North and small town/rural regions was maintained. Seventy GPs were recruited, 15 in Palmerston North, 16 in the small town/rural group, and 39 in Wellington City. GPs were eligible if they were currently practising a minimum of 0.5 full time equivalent per week, working in the geographical area for which they were selected, and working without restriction (eg, due to ill-health or compulsory supervision). After initial telephone contact, the Project Manager visited each practitioner to seek written consent to proceed, and arranged for data collection by the field interviewers to begin. GP participation in the study attracted a reimbursement of $1000, $800 payable after the initial data collection phase and a further $200 after the 12-month follow-up phase. Involvement in the study qualified doctors for at least 10 Maintenance of Professional Standards (MOPS) points and up to 30 MOPS points if they used the study as a self-audit activity.

Characteristics of general practitioners

Participating GPs completed a questionnaire outlining their own demographic details, background, and experience with mental health issues.

Phase 1a: recruitment of patients/index consultation

The aim was to screen 50 eligible patients per participating GP using the GHQ-12 as a screening instrument. Usually this took two to three working days, but was continued for a maximum of ten days. There were four practices with fewer than 50 persons screened after ten days.

Patients were eligible for screening if they were 18 years old or over, read English well enough to understand and complete the GHQ-12 screening instrument, and were about to consult with the index GP (ie, not just accompanying someone else, seeing the nurse or seeing a different GP). During the appointed surgery days, the field interviewer approached consecutive patients until 50 eligible patients had been recruited. Reception staff assisted in this procedure. A record was kept of reasons for ineligibility or refusal.

Patients were primarily selected for interview and follow up by GHQ-12 score. Each field interviewer was supplied with a numbered sequence of 50 GHQ-12 forms per GP. The interviewer would introduce themself to the patient, briefly explain the study and ask if they would fill out the GHQ. On completion, the interviewer would score it and determine if the patient was selected for follow up by comparing the patient's score to a cut-off value pre-printed on the form headers in order to yield the following sampling strata: 100% of those with high GHQ scores of 5 or more were selected; those with medium scores (2–4) had a 30% probability of selection; while those with low scores (0–1) had an 8% probability of selection. If selected, a follow-up appointment time was made immediately, or by phone as soon as possible.

An Encounter Form was completed by the GP for every patient aged 18 or over who was seen that day. The Encounter Form included an assessment of psychological health. In addition to those selected by GHQ screening as described above, a random 50% of those *not* selected by GHQ but whom the GP had identified on the Encounter Form as having psychological problems, were also selected. Patients selected for follow up by this method were then contacted by telephone to arrange an interview.

For each patient who was selected for follow up and consented to participate, the GP was also asked to complete a more detailed questionnaire covering their care and treatment over the previous 12 months.

Phase 1b: first MaGPIe patient interview

Responses to the structured patient interview were entered by the interviewer directly into a laptop computer using the World Health Organization's ISHELL software. The interview was usually carried out in the patient's home, but occasionally at another site selected by the patient. Before beginning the interview, the interviewer gave detailed verbal and written information about the study and gained written consent from the participant.

Phase 2: longitudinal phase of the MaGPIe study

Follow-up telephone interviews with patients were conducted every three months and a second face-to-face interview was conducted at 12 months. The GP was also re-interviewed at 12 months, and GP notes for each selected patient audited to determine diagnosis, management and referral.

Statistical methods

All statistical analyses were carried out using Statistical Analysis Software (SAS) version 8.2. Data were weighted to adjust for differences in probability of being sampled using the method of Kish.[18] Weighted prevalences were derived using the SAS procedure 'surveymeans', which adjusted standard errors for the effects of clustering within GPs.

Results

Response rates

General practitioner response rates

Of the 78 eligible GPs approached, 70 (90%) agreed to participate.

Patient response rates

GHQ screening questionnaires were completed by 3414 of 3687 eligible general practice attenders (93%). Of the 1334 selected for interview, 357 refused further contact, 27 became ineligible for the more demanding interview (because of limited language skills or worsening illness), 37 were not traceable, and 3 were lost through operational error, yielding 910 interviews. This represented a response rate of 70% for completion of the initial MaGPIe interview. Two interviews were lost after completion, leaving 908. During the year of follow up, a further 62 respondents became ineligible, with 696 completing the final interview – 82% of those undertaking the first interview.

Characteristics of general practitioners

Fifty six of the randomly selected GPs were male (80%), and their mean age was 48.1 years (SD 8.9). Nearly two thirds identified themselves as New Zealand European/Pakeha (64.3%), one was Maori (1.4%), 18.6% were from Europe, and the remainder mainly from India or China, with a smaller number from other parts of Asia or South Africa. Most had trained in New Zealand (73%), with smaller numbers training in UK and Eire (12%), South Africa (9%), or Asia (5%).

Mean length of time practising as a GP was 17.5 years (SD 9.0, range 1–43 years). Forty three GPs (62%) were Fellows of the Royal New Zealand College of General Practitioners, 29% were Associate Members, and 9% did not belong to the College.

One third of the GPs (33%) had worked in posts in mental health services, most commonly as house officers for periods of less than a year. In the previous two years, 20 GPs (29%) had undertaken a training course in mental health, most commonly as part of a programme organised by their independent practitioners association. Just over half the GPs (54%) had no specific education or training about mental health since their undergraduate degree.

Table 2. Age and gender of patients attending New Zealand general practices

Gender	Age group	Overall (n=3414)	
		%	**SE***
Male	**Overall 18+**	**38.9**	1.6
	18–24	3.0	0.5
	25–44	11.7	0.8
	45–64	13.5	0.8
	65+	10.6	1.0
Female	**Overall 18+**	**61.1**	1.6
	18–24	6.8	0.9
	25–44	23.6	1.9
	45–64	17.1	0.9
	65+	13.6	1.1

*SE adjusted for clustering within GPs

Characteristics of patients

Demographic characteristics

Almost two thirds of the general practice attenders were women, and the age distribution is shown in Table 2. Sociodemographic characteristics of the participating patients are shown in Table 3. Six people out of ten lived with a partner, and two thirds had one or more children. Eight out of ten had some school or post-school educational qualification and half were in paid employment. Seven per cent were unemployed for health reasons and four out of ten had a community services card.

**Table 3. Demographic characteristics of general practice attenders by gender**

	Overall n=908		Male n=313		Female n=595	
	%*	SE†	%*	SE†	%*	SE†
Marital status						
Living with a partner	59.2	2.8	62.1	4.7	57.5	3.5
Not living with a partner	40.8	2.8	37.9	4.7	42.5	3.5
Educational qualifications						
No qualification	19.7	2.3	19.6	3.9	19.9	2.5
School qualification only	22.4	2.6	16.9	3.8	25.6	3.2
Any post-school qualification	57.8	2.8	63.6	4.4	54.5	3.4
Number of children						
No children	34.4‡	3.3	34.2§	4.8	34.5	4.1
One child	11.1‡	1.6	9.5§	2.4	12.0	2.0
Two children	23.9‡	2.5	26.9§	4.1	22.1	3.2
Three children	16.3‡	2.4	17.0§	3.7	15.9	2.7
Four or more children	14.3‡	2.4	12.4§	3.1	15.5	2.8
Employment status						
Salary/self employed < 30hrs	8.9	1.4	3.6	1.3	12.0	2.0
Salary/self employed >= 30hrs	41.3	3.3	56.0	4.9	32.7	3.8
Home-maker/voluntary unpaid	12.9	1.9	0.8	0.4	20.0	2.8
Student	4.4	2.2	1.0	0.4	6.4	3.2
Retired	21.7	2.7	23.8	3.7	20.6	3.1
Unemployed for health reasons	7.1	1.2	9.6	2.1	5.7	1.4
Unemployed	3.1	0.9	5.0	2.1	2.1	0.6
Other	0.3	0.2	0.2	0.2	0.4	0.2
Other						
Usually speak English at home	98.7	0.6	99.1	0.4	98.5	0.8
Community services card	40.8	3.0	32.2	4.3	45.8	3.6
High user card	10.3	1.9	11.1	3.0	9.8	2.2
Access to car	86.1	1.9	94.3	2.0	81.3	2.8
Access to telephone	98.5	0.6	98.2	0.6	98.7	0.8

*estimated for the population by weighting the sample according to probability of selection; †SE adjusted for clustering within general practitioners; ‡n= 907 because of missing data; §n=312 because of missing data

Psychological health status

Figure 1 shows that half of general practice attenders currently experienced psychological symptoms, and about one in five had GHQ scores of 5 or greater.

Figure 1. Distribution of GHQ-12 scores for the first-stage sample

GHQ-12 score
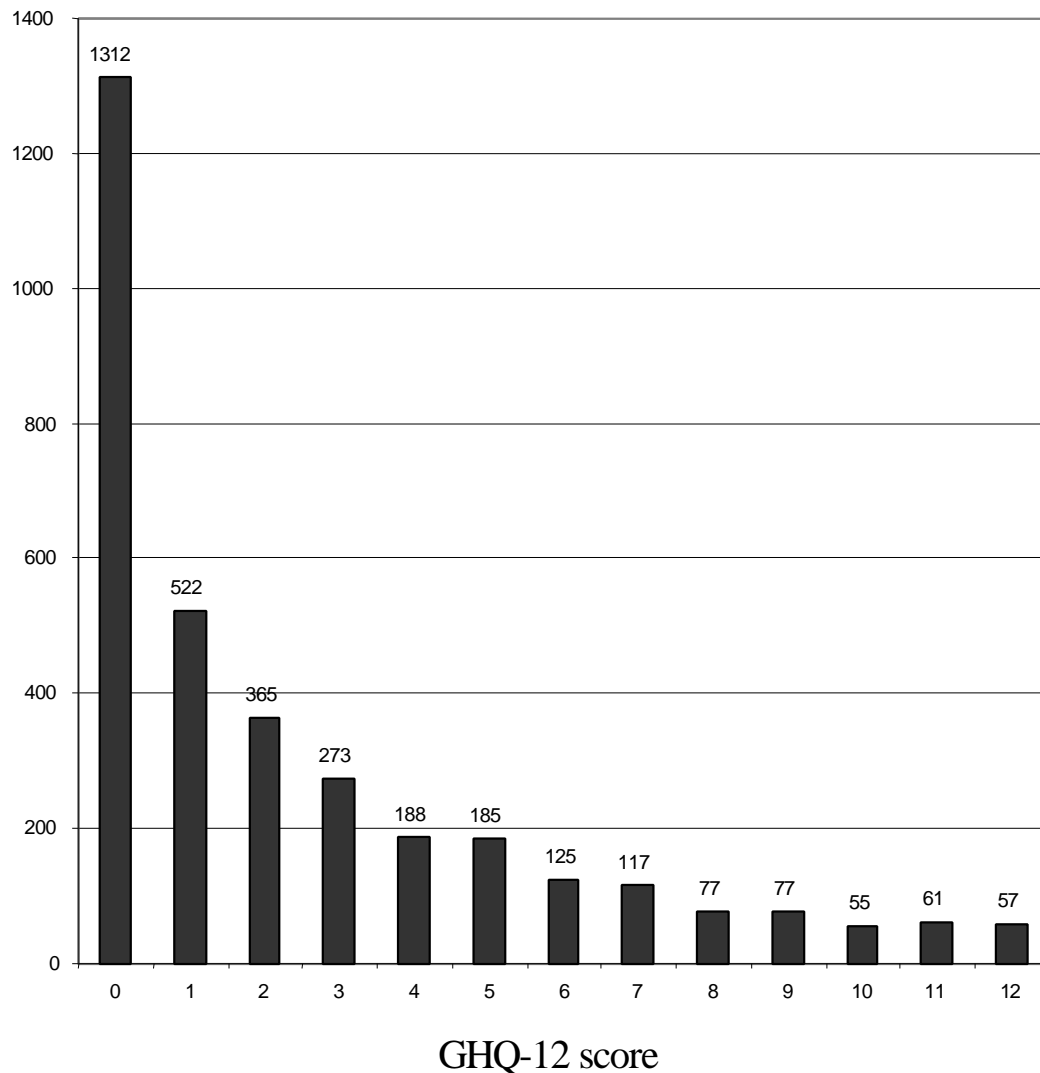
Frequency of consultations

One third of male and 42% of female patients had five or more consultations in the year preceding the index consultation. These proportions increased with the age of the patient: among patients aged 65 or over, half the men and nearly two thirds of the women had attended five or more times (Table 4).

General practitioner assessment of severity of psychological disorder

GPs recognised that about half their patients had experienced psychological problems in the past year, although they considered that these were moderate or severe in about only one in ten of their patients. GPs reported that another one in ten patients had a mild psychological disorder and, furthermore, more than one quarter of all age groups

were thought to have psychological distress but at a 'sub-clinical' level of severity (Table 5).

Table 4. Number of general practice consultations in last 12 months

Gender	Age group	Overall		18–24		25–44		45–64	
		%*	SE[†]	%*	SE[†]	%*	SE[†]	%*	SE[†]
Male	Frequency[‡]	n=1320		n=104		n=400		n=456	
	None	14.2	1.3	26.9	5.0	25.3	2.6	11.2	1.7
	1 or 2 times	21.2	1.5	38.5	5.3	28.3	2.8	20.4	2.1
	3 or 4 times	30.7	1.7	22.1	3.1	25.3	2.6	34.0	2.8
	5 or more times	33.9	2.1	12.5	3.1	21.3	2.4	34.4	2.7
Female	Frequency[‡]	n=2053		n=229		n=789		n=577	
	None	10.2	1.0	21.0	3.3	12.4	1.4	8.8	1.5
	1 or 2 times	19.8	1.2	26.2	2.6	22.4	1.7	21.8	2.0
	3 or 4 times	28.1	1.4	25.3	3.8	30.9	2.2	27.6	1.9
	5 or more times	41.9	2.2	27.5	3.9	34.2	2.8	41.8	2.8

*percentages are unweighted rates based on n=3414 pre-selection sample minus 41 with incomplete data; [†]SE adjusted for clustering within GPs; [‡]frequency of consultations

Table 5. General practitioner opinion about severity of psychological disorder in last 12 months among general practice attenders

Gender	Age group	Overall		18–24		25–44		45–64		65+	
		%*	SE[†]	%*	SE[†]	%*	SE[†]	%*	SE[†]	%*	SE[†]
Male	Severity[‡]	n=1312		n=101		n=398		n=453		n=360	
	None	54.4	2.9	62.4	5.0	56.8	3.6	51.7	3.7	53.1	3.9
	Sub-clinical	26.5	2.0	22.8	3.7	23.1	2.9	28.0	2.7	29.4	3.2
	Mild	9.0	1.1	[5.0]	2.7	10.3	2.0	9.1	1.7	8.6	1.9
	Moderate	8.2	1.1	8.9	3.3	7.3	1.2	8.8	1.7	8.1	1.7
	Severe	1.9	0.4	[1.0]	1.0	2.5	0.8	2.4	0.7	[0.8]	0.5
Female	Severity[‡]	n=2048		n=225		n=787		n=574		n=462	
	None	45.8	2.5	60.0	3.9	49.8	2.7	39.7	3.0	39.4	3.9
	Sub-clinical	29.8	1.7	23.1	2.8	26.2	1.9	33.3	2.3	34.8	3.1
	Mild	13.1	1.2	9.8	3.0	12.5	1.3	12.9	1.8	16.0	2.0
	Moderate	9.4	1.0	5.8	1.4	9.4	1.3	11.1	1.3	8.9	2.3
	Severe	2.0	0.4	[1.3]	1.0	2.2	0.7	3.0	1.0	[0.9]	0.5

*percentages are unweighted rates based on n=3414 pre-selection sample minus 54 with incomplete data; [†]SE adjusted for clustering within general practitioners; [‡]severity of psychological disorder
NB: percentages in [ ] should be interpreted with caution as standard error is high (mean +/- (SE * 1.96) <0 or >100)

CIDI-DSM-IV disorder overall

Over one third of patients had experienced a DSM-IV diagnosable disorder in the 12 months prior to the consultation. One in five had experienced an anxiety disorder, nearly one in five a depressive disorder, and more than one in ten a substance use disorder (Table 6).

Table 6. Twelve-month overall prevalence of mental disorder among general practice attenders

Disorder*	Overall		
	n[†]	%[‡]	SE[§]
Any substance use/dependence	905	11.3	1.7
Any depressive disorder	907	18.1	1.9
Any anxiety disorder	907	20.7	2.2
Any DSM-IV disorder	908	35.7	2.8

*DSM-IV disorder assessed by CIDI v2.1; [†]n varies from 910 interviewed because of incomplete data; [‡]rates of disorder are estimated for the population by weighting the sample according to probability of selection; [§]SE adjusted for clustering within GPs

Specific CIDI-DSM-IV disorders by gender

Substance use disorders were twice as common among males as females (16.6% vs 8.2% in the last year); anxiety disorders twice as common among females as males (25.7% vs 12.2%), and depression also much more common in females than males (21.6% vs 12.1%). Among both male and female GP attenders, over half of those under the age of 44 had one or more mental disorders. Those over the age of 65 had the lowest rates of disorder of any age group (Table 7).

Table 7. Twelve-month prevalence of groups of mental disorder among general practice attenders by age and gender

Gender	Age group	Overall		18–24		25–44		45–64		65+	
	Disorder*	%[†]	SE[‡]	%[†]	SE[‡]	%[†]	SE[‡]	%[†]	SE[‡]	%[†]	SE[‡]
Male		n=313		n=16		n=114		n=122		n=60	
	Any substance use/dependence	16.6[§]	3.3	40.3	19.2	25.3[§]	6.9	16.5	5.1	[0.9]	1.0
	Any depressive disorder	12.1[§]	2.0	[22.6]	12.9	22.0[§]	4.8	8.6	2.3	[2.1]	1.4
	Any anxiety disorder	12.2[§]	2.2	[19.4]	11.1	19.9[§]	5.1	9.3	2.4	4.9	2.1
	Any DSM-IV disorder	31.5	3.9	50.0	22.3	50.4	6.3	28.0	5.8	7.6	2.6
Female		n=595		n=62		n=253		n=165		n=114	
	Any substance use/dependence	8.2[ǀ]	1.9	18.9	4.7		3.8	16.0[§]	0.3	0.0	0.0
	Any depressive disorder	21.6	2.8	33.9	9.6	27.6	4.5	23.1	5.0	4.8	1.6
	Any anxiety disorder	25.7	2.7	26.6	7.4	34.6	4.9	27.5	5.1	7.8	2.8
	Any DSM-IV disorder	38.2	3.4	58.0	7.8	49.4	5.1	37.3	6.0	12.1	3.3

*DSM-IV disorder assessed by CIDI v2.1; [†]rates of disorder are estimated for the population by weighting the sample according to probability of selection; [‡]SE adjusted for clustering within GPs; [§]n=(n-1), and [ǀ] n=(n-2) because of incomplete data
NB: prevalence figures in [ ] should be interpreted with caution as standard error is high (mean +/- (SE * 1.96) <0 or >100)

Most substance use disorders were related to alcohol consumption, with disorders related to cannabis much less frequently encountered. The majority of the depression was represented by a single episode of moderate or severe intensity. Phobic anxiety disorders were extremely common in women and the prevalence of generalised anxiety disorder was also high (Table 8).

Table 8. Twelve-month prevalence of specific mental disorders among New Zealand general practice attenders by gender

Disorder*	Overall		Male		Female	
	%[†]	SE[‡]	%[†]	SE[‡]	%[†]	SE[‡]
	n=908		n=313		n=595	
Alcohol abuse without dependence	3.5[§]	1.0	7.0[|]	2.6	[1.4][¶]	0.8
Alcohol dependence without abuse	2.8[§]	0.8	2.1[|]	0.7	3.2[¶]	1.1
Alcohol dependence and abuse	4.1[§]	1.0	5.9[|]	1.9	3.0[¶]	1.1
Cannabis abuse without dependence	0.8**	0.2	1.2[¶]	0.5	0.6[¶]	0.3
Cannabis dependence without abuse	[0.3]**	0.2	[0.4][¶]	0.4	[0.2][¶]	0.2
Cannabis dependence and abuse	0.5**	0.2	0.8[¶]	0.3	[0.3][¶]	0.2
Any substance use/dependence	11.3[§]	1.7	16.6[|]	3.3	8.2[¶]	1.9
Depression single episode mild	6.2[§]	1.2	3.6[¶]	0.8	7.6[|]	1.9
Depression single episode moderate	5.8[§]	1.3	5.0[¶]	1.7	6.2[|]	1.8
Depression single episode severe	3.8[¶]	1.0	2.7[¶]	0.7	4.4	1.4
Depression recurrent mild	0.6[¶]	0.1	0.0[¶]	0.0	0.9	0.2
Depression recurrent moderate	0.8[§]	0.2	[0.2][¶]	0.1	1.1[|]	0.4
Depression recurrent severe	0.6[¶]	0.2	[0.2][¶]	0.1	0.8	0.3
Dysthymia	0.8[§]	0.3	0.4[|]	0.2	1.1[¶]	0.4
Any depression mild	6.7[¶]	1.2	3.6[¶]	0.8	8.5	1.9
Any depression moderate	6.6[§]	1.3	5.2[¶]	1.7	7.3[|]	1.8
Any depression severe	4.4[¶]	1.0	2.9[¶]	0.7	5.2	1.4
Any depressive disorder	18.1[|]	1.9	12.1[|]	2.0	21.6	2.8
Hypochondria	1.8	0.6	1.0	0.5	2.3	0.8
Phobia – social	3.7	1.2	2.2	0.7	4.5	1.8
Phobia – animal	3.6[|]	1.1	[0.9][|]	0.5	5.2	1.7
Phobia – blood	3.2[|]	0.8	1.7	0.6	4.1	1.1
Phobia – natural phenomena	3.9[|]	0.8	1.6	0.6	5.2	1.2
Phobia – situational	2.4[|]	0.7	1.0	0.5	3.2	1.0
Agoraphobia without panic	[0.2][|]	0.1	0.0[|]	0.0	[0.3]	0.2
Any phobia	13.0	2.0	5.2[|]	1.1	17.5	2.8
Panic with agoraphobia	[0.2][|]	0.1	0.0[|]	0.0	[0.3]	0.2
Generalised anxiety disorder	6.6[§]	1.1	4.1[¶]	0.9	8.0[¶]	1.5
Obsessive compulsive disorder	2.9**	0.9	[2.1][¶]	1.4	3.4[¶]	1.1
Post-traumatic stress disorder	3.4[††]	0.9	2.1[††]	0.6	4.2[††]	1.3
Panic without agoraphobia	2.0[|]	0.7	[2.3][|]	1.3	1.8	0.5
Any anxiety disorder	20.7[|]	2.2	12.2[|]	2.2	25.7	2.7
Bulimia[††]	[1.9][††]	1.0			[1.9]	1.0
Any DSM-IV disorder	35.7	2.8	31.5	3.9	38.2	3.4

*disorders determined using DSM-IV criteria by CIDI v2.1; [†]rates of disorder are estimated for the population by weighting the sample according to probability of selection; [‡]SE adjusted for clustering within GPs; [§]n=(n-3), [|] n=(n-1), [¶]n=(n-2), **n=(n-4) because of missing or incomplete data; [††]bulimia assessed only among 131 women aged 18–30 years; PTSD in 573 women, 306 men, n=879 overall
NB: prevalence figures in [ ] should be interpreted with caution as standard error is high (mean +/- (SE * 1.96) <0 or >100)

Comorbidity of CIDI-DSM-IV disorder

There was considerable overlap of DSM-IV disorders. More people with anxiety disorders had a comorbid depression than had an anxiety disorder alone. Similarly, depression without anxiety was less common than depression with a diagnosable anxiety disorder. Substance use with either depression or anxiety disorder was as common as substance use alone (Figure 2).

Figure 2. Comorbidity of anxiety, depression and substance use disorders in the last 12 months among New Zealand general practice attenders
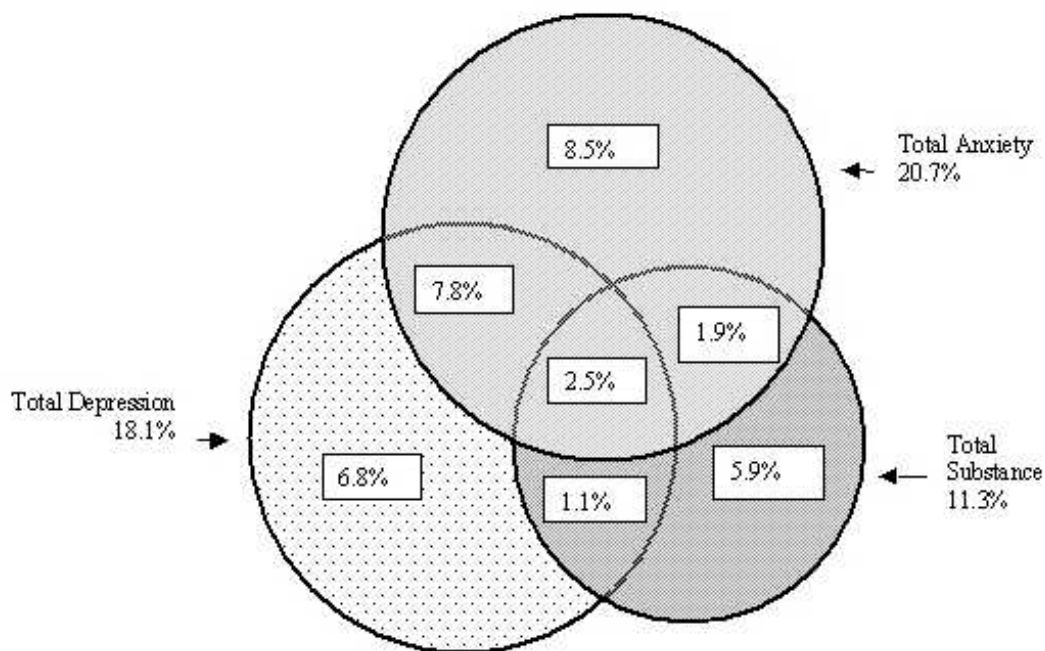
NB: percentages are estimates of proportion of general practice attenders with these characteristics, weighted for probability of selection. Disorders were determined by CIDI v 2.1 using DSM-IV criteria

Discussion

The response rate from the randomly selected GPs is higher than achieved in comparable research, and provides some assurance of the representativeness of the practices sampled. However, some aspects of the setting for this study may limit its use to make generalisations: it includes the more affluent areas of Wellington City, and the study has a greater proportion of New Zealand educated doctors than found elsewhere in the country. The acceptable response rate from patients suggests data from this study provide a reasonably representative picture of psychological morbidity in New Zealand general practice.

More than one third of people attending their GP had a diagnosable mental disorder during the previous 12 months. The most common disorders identified by accepted and well-validated psychological instruments were anxiety disorders, depression, and substance use disorders. There was high comorbidity of these three groups of

disorder, with the experience of mixed pictures as common as disorders occurring alone.

Many of the patterns of disorder varied with age and gender. The high prevalence of mental disorder in both males and females under the age of 44 years highlights the difficulty facing the GP who has most frequent contact with those with the lowest rates of disorder and less frequent contact with the age groups with highest rates of disorder.

Strategies to improve treatment of mental disorders in primary care should include an appropriate consideration of not just GP behaviour but a wider consideration of the patient, the doctor and the health system.[19] Relatively high direct costs to the patient may be a barrier to consultation about symptoms of mental disorder, especially when those symptoms may not be identified by patient or doctor as requiring medical attention. Time pressure on GPs within consultations may limit the scope for the lengthier assessments required for mental health issues. However, this paper challenges some accepted views about low rates of identification of mental disorders in primary care.[20–24] In fact, GPs thought that about half their patients had some type of psychological problems in the past year, although they considered that these were moderate or severe in about only one in ten of their patients. We anticipate that further analysis of MaGPIe study data will provide important information about relationships between the nature and severity of disorder and disability, and between recognition of disorder, management and outcome. This will provide a sound basis for discussions of future service developments in a wider context, considering the patient, the doctor and the health system as a whole, rather than individual, unrelated elements.

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