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ORIGINAL PAPER

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Disability and the detection of mental disorder in primary care

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Abstract *Introduction* Despite the importance of disability associated with common mental disorders, research on the detection of mental disorders in primary care has scarcely explored its relevance. *Aims* To describe the disability burden of primary care patients with common mental disorders and subthreshold disorders and to examine the association between general practitioner (GP) recognition of mental disorder and disability. *Design* Cross-sectional survey of GPs and their patients. *Setting* General practices in the lower North Island of New Zealand. *Method* Participants were randomly selected: GPs (n=70) and their patients (n=3414, of whom a subset of 775 from the basis of this paper). Formal DSM-IV diagnoses were made with the Composite International Diagnostic Interview (CIDI), and psychosomatic and psychological symptoms were measured with the Somatic and Psychological Health Report. Disability was measured with the World Health Organisation's Disability Assessment Schedule-version II. GPs independently rated the severity of psychological symptoms and the presence or absence of disorder. *Results* The principal findings were (1) that disability was associated with both mental disorder and subthreshold disorder with no significant difference in the level of disability between these categories, and (2) that GPs were less sensitive to the presence of mental disorders as defined by the CIDI if there was little concomitant disability, and in subthreshold cases, the presence of disability increased the chance of GPs identifying clinically significant symptoms. *Conclusion* Studies of GP recognition of mental disorder have almost exclusively adopted the perspective of concepts of disorder as defined by psychiatry. This study provides some insight into the way GPs attend to both symptoms and functioning in their assessments of psychological syndromes. Disability is an important cue to recognition of mental health problems in the primary care setting, including those that are not recognised by standardised psychiatric assessment but which may still be relevant to patient suffering.

Key words primary health care – mental disorders – disability

Introduction

Disability is an important domain in the consideration of diagnosis, severity and prognosis of mental illness [1–7]. A large proportion of mental health problems are present in primary care, and people with psychological problems have high rates of attendance in primary care settings [8, 9]. There is ongoing debate about the "adequacy" of recognition of mental disorder [10–12] by general practitioners (GPs). Therefore, a consideration of disability in the primary care setting has potential to increase our understanding of the approach GPs take in determining the presence of mental health problems that warrant treatment.

Despite this, the role of disability in triggering GP recognition or treatment of mental illness has scarcely been explored. The severity of disability, its pattern across different mental disorders and within disability domains (such as occupational and social functioning and activities of daily living) may all be relevant to the detection of mental disorder in primary care. GPs are known to have a higher sensitivity (compared to a gold standard) for detection of more severe mental disor-

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ders (i.e. in patients with high symptom counts and/or comorbid mental disorders) [13, 14] in which disability levels are higher [5, 15].

Disability levels are known to vary with diagnosis. Depression [7, 15–20], anxiety disorders [7, 18] and comorbid conditions are associated with higher levels of disability and alcohol disorders with lower levels [7, 17, 20, 21]. Diagnoses derived from "gold standard" systems such as the Composite International Diagnostic Interview (CIDI) do not discriminate well between people who are and are not disabled by their symptoms [22]. Significant disability is associated with mental health problems below the diagnostic threshold particularly in the mood and anxiety symptom domains [16, 17, 23, 24], and there is a dose–response relationship between disorder severity and disability level [5]. A proportion of such people may benefit from an appropriate intervention delivered in the primary care setting. From a population health perspective, the significance of this group in terms of the total burden of disability carried at the population level should not be underestimated, as such syndromes are known to be prevalent [25, 26].

The importance of disability in the recognition of mental disorders by GPs is unclear. The MaGPIe study, a study of the prevalence, outcomes and management of common mental illness in New Zealand general practice, showed that GPs identified clinically significant psychological symptoms in 54% of patients with high disability scores who did not meet the threshold for "caseness" of a range of screening or diagnostic instruments [14]. This paper reports further investigation of the relationship between disability and GP recognition of mental disorder. The objectives of the study described here were to describe (1) the disability burden of patients with no psychiatric disorder, patients with subdiagnostic threshold disorder and past and current DSM-IV diagnosable disorders, and (2) the association between GP recognition of mental disorder and disability.

Method

Data were collected as part of the cross-sectional phase of the MaGPIe study. Methods are described in detail elsewhere [8].

Seventy GPs were selected at random from a list of all 299 known eligible GPs in a geographical area encompassing the administrative health districts around and between Wellington City and Palmerston North in the lower North Island of New Zealand, yielding a mix of urban, small town and rural practices. GPs were eligible if they were currently practicing at least half time without restriction (e.g. due to ill health or compulsory supervision).

The GHQ-12 was completed by a total of 3,414 consecutive eligible adult patients, approximately 50 from the practice of each participating GP. Patients were eligible for screening if they were 18 years old or older, read English well enough to understand and complete the GHQ-12 screening instrument, and were about to consult with the index GP for their own health concerns. The GP completed an Encounter Form for every patient aged 18 or older who was seen during the study period. The Encounter Form included rating scales of the extent to which the presenting symptoms were physical or psychological and an assessment of the overall severity of the patient's physical and psychological disorders in the past 12 months.

Based on GHQ-12 strata, 8% of patients with scores of 0 or 1, 22% of patients with scores of 2 to 4 and all patients with scores of 5 or more were invited to participate in an in-depth interview and subsequent 12-month longitudinal study. Of those thus selected, 775 patients who both agreed to participate in the longitudinal study and consented to their GP disclosing information about their health status form the basis of this article. The measures used in the in-depth interview were based on the World Health Organisation's Collaborative Study of Psychological Problems in General Health Care [27] and included a computerised interviewer-delivered version of the CIDI version 2.1 (12-month version); the World Health Organisation's Disability Assessment Schedule-version II (WHODAS-II) [28] as an assessment of disability over the past 30 days; the Somatic and Psychological Health Report (SPHERE-12) [29] to detect psychosomatic and psychological symptoms over the past 4 weeks and designed for use in general practice settings; and a range of socio-demographic questions. GPs completed a more detailed Patient Management Questionnaire for each patient selected for the in-depth interviews and whom the GP considered had a psychological component to their consultation.

The WHODAS-II is a 36-item interviewer-administered questionnaire covering activity and participation limitations in six domains, irrespective of the nature of the health problem. These domains are: understanding and communicating, getting around, self-care, getting along with people, life activities, and participation in society. An overall functioning score is also generated.

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

Outcome measures

GP recognition "Levels" of psychological problems in the past 12 months were defined using data from two sources: the GP's Encounter Form rating of severity of psychological disorder, and the GP's Patient Management Questionnaire about psychological disorders diagnosed in the past 12 months. GP recognition of "clinically significant psychological symptoms" required identification as a mild, moderate or severe case of psychological disorder from the Encounter Form, or a report of any definite psychological disorder on the Patient Management Questionnaire. Unclear responses to this question were resolved by a consensus of opinion by the study team clinicians.

CIDI cases Interview responses were scored using WHO algorithms coded in SPSS to produce DSM-IV diagnoses from CIDI v2.1 with recency up to 12 months. Data reported in this paper are for CIDI diagnoses of 1-month recency.

Subthreshold cases Patients who did not reach the threshold for any CIDI diagnosed DSM-IV disorder, but who were defined as either a SPHERE psychosomatic or psychological case or both using PSYCH-6 and SOMA-6 scoring system [29].

Past history of psychological disorder Patients who were not SPHERE cases and did not reach the CIDI-DSM threshold (one-month recency) but who reached the threshold for a CIDI diagnosable disorder in the preceding 12 months.

Disability scores and disability grouping Data from the WHODAS were scored using a WHO-supplied scoring algorithm coded in SPSS syntax to produce a continuous variable for overall functioning between 0.00 and 99.99. The introductory section of WHODAS contains introductory overview questions about physical and emotional health which provided data about source of disability and which act as a filter so that those with no disability were spared unnecessary interview time. Thus, respondents who rated their physical health and their overall emotional health in the past 30 days as 'good' or 'very good', had little or no pain in the past 30 days and had little or

no worry about their health in the past 30 days were classified as having no disability, did not complete the remaining sections of the WHODAS and were designated as 'Zero Scorers'. Respondents who reported physical health problems but 'good' or 'very good' emotional health were classified as having a 'Physical Only' source of disability; those who reported no physical health problems but 'average', 'poor' or 'very poor' emotional health were classified as having a 'Psychological Only' source of disability. The remainder were classified as having 'Both Psychological and Physical' sources of disability.

Statistical methods

Statistical analyses were carried out using Statistical Analysis Software (SAS) version 8.2 and STATA version 8. Data were weighted to

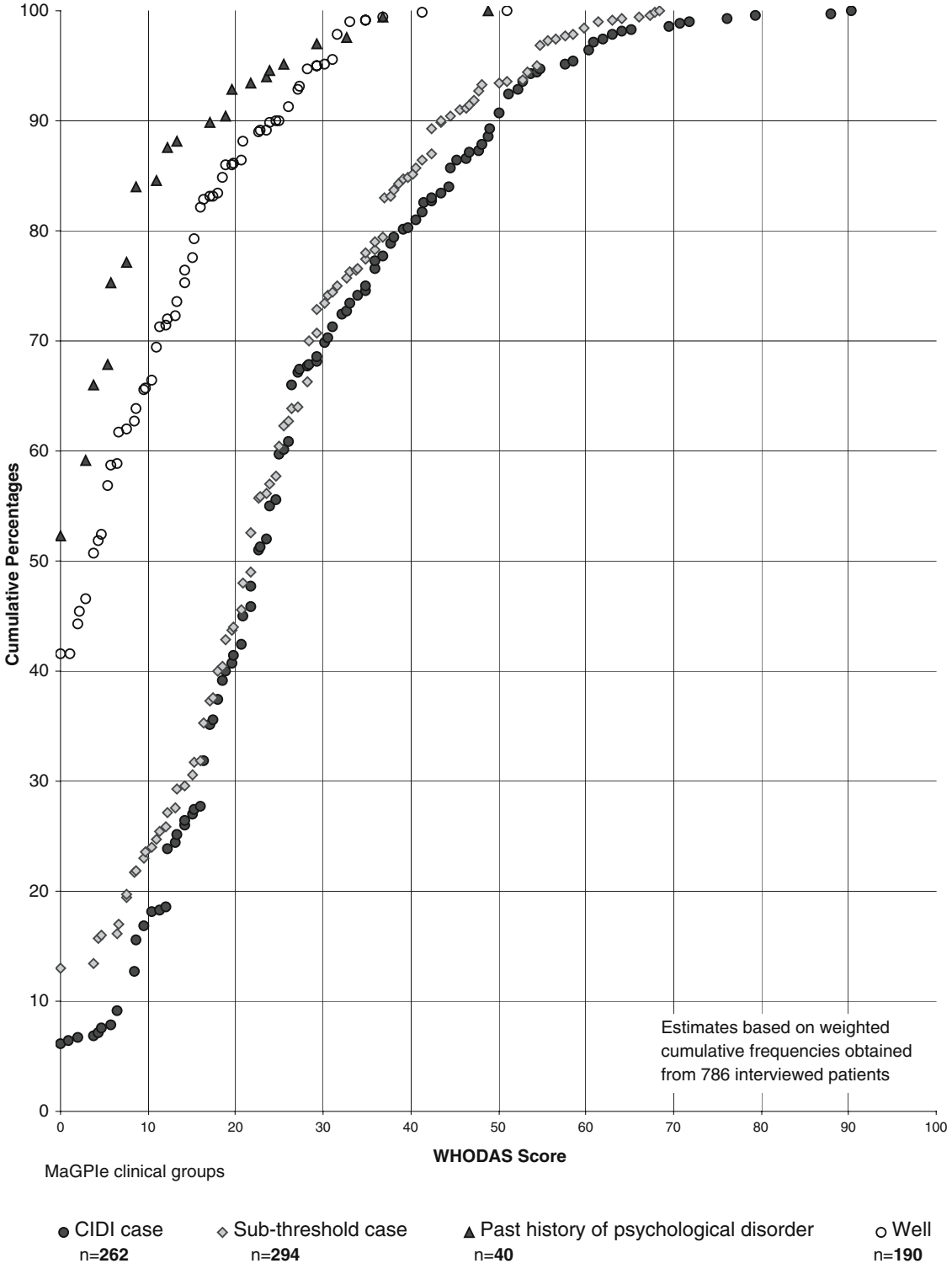

Fig. 1 Estimated WHODAS cumulative percentages for MaGPIe clinical groups

adjust for differences in probability of being sampled using the Kish method [30]. Prevalence estimates were derived using the SAS procedure SURVEYMEANS, which weighted proportions for the probability of selection, and adjusted 95% confidence intervals for the effects of clustering within GP. Relative risks were calculated in STATA to enable 95% confidence intervals to be adjusted for the effects of clustering.

Cumulative percentages were calculated using PROC FREQ in SAS with the 'weight' option to account for the different weighting of observations. The significance of differences between percentage

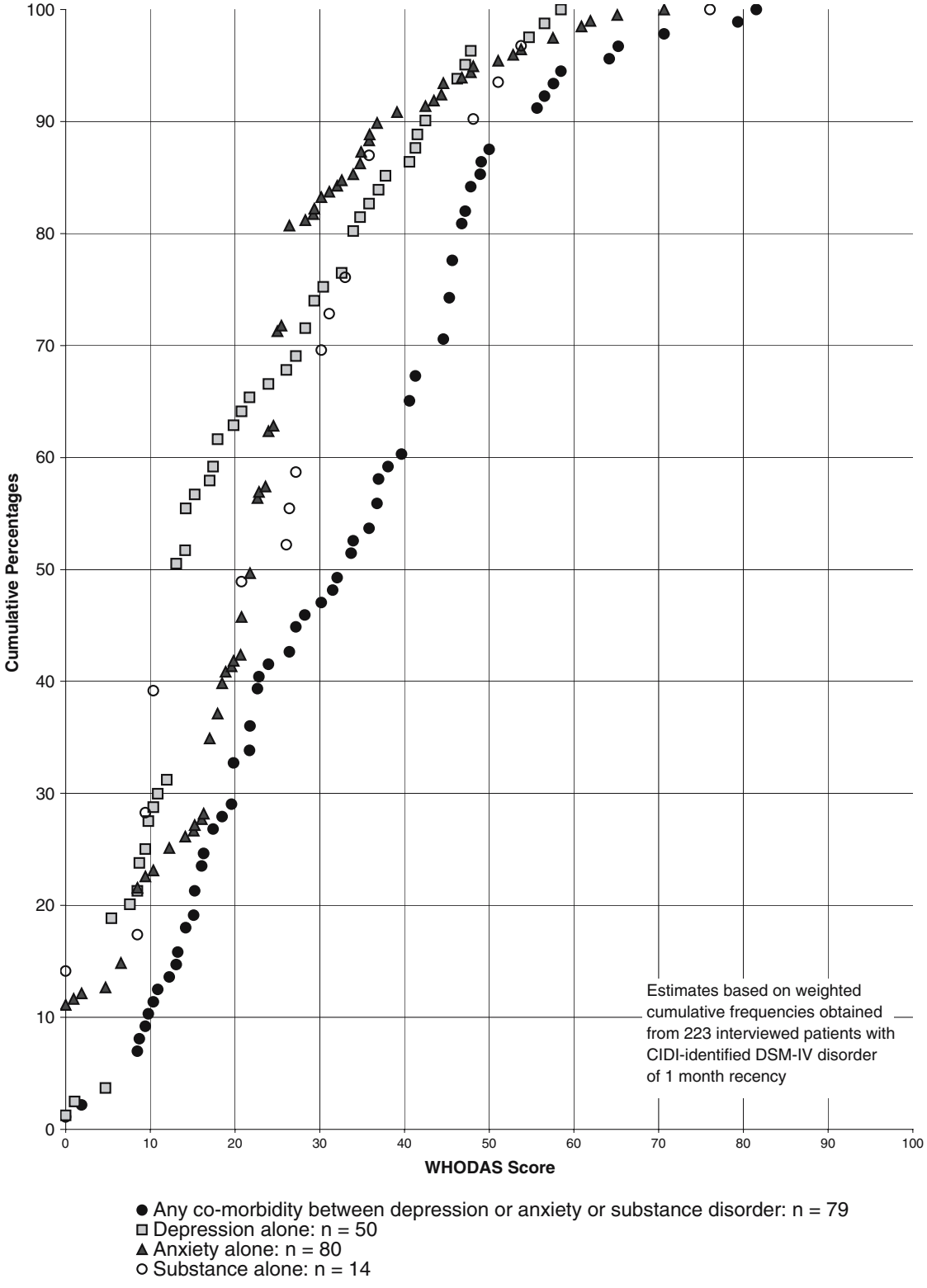

Fig. 2 Estimated WHODAS cumulative percentages for CIDI-identified DSM-IV groups

distributions was tested using the Kolmogorov–Smirnov two-tailed two-sample test.

Results

The response rates were 90% for the randomly selected GPs and 70% for patients. The cumulative percentages of WHODAS scores for patients with no mental disorder, patients with a disorder in the past 12 months who were currently well and patients with current disorders are illustrated in Fig. 1. Patients with mental disorder had significantly more disability than those with no mental disorder ($p<0.001$). There was no significant difference in the disability burden between

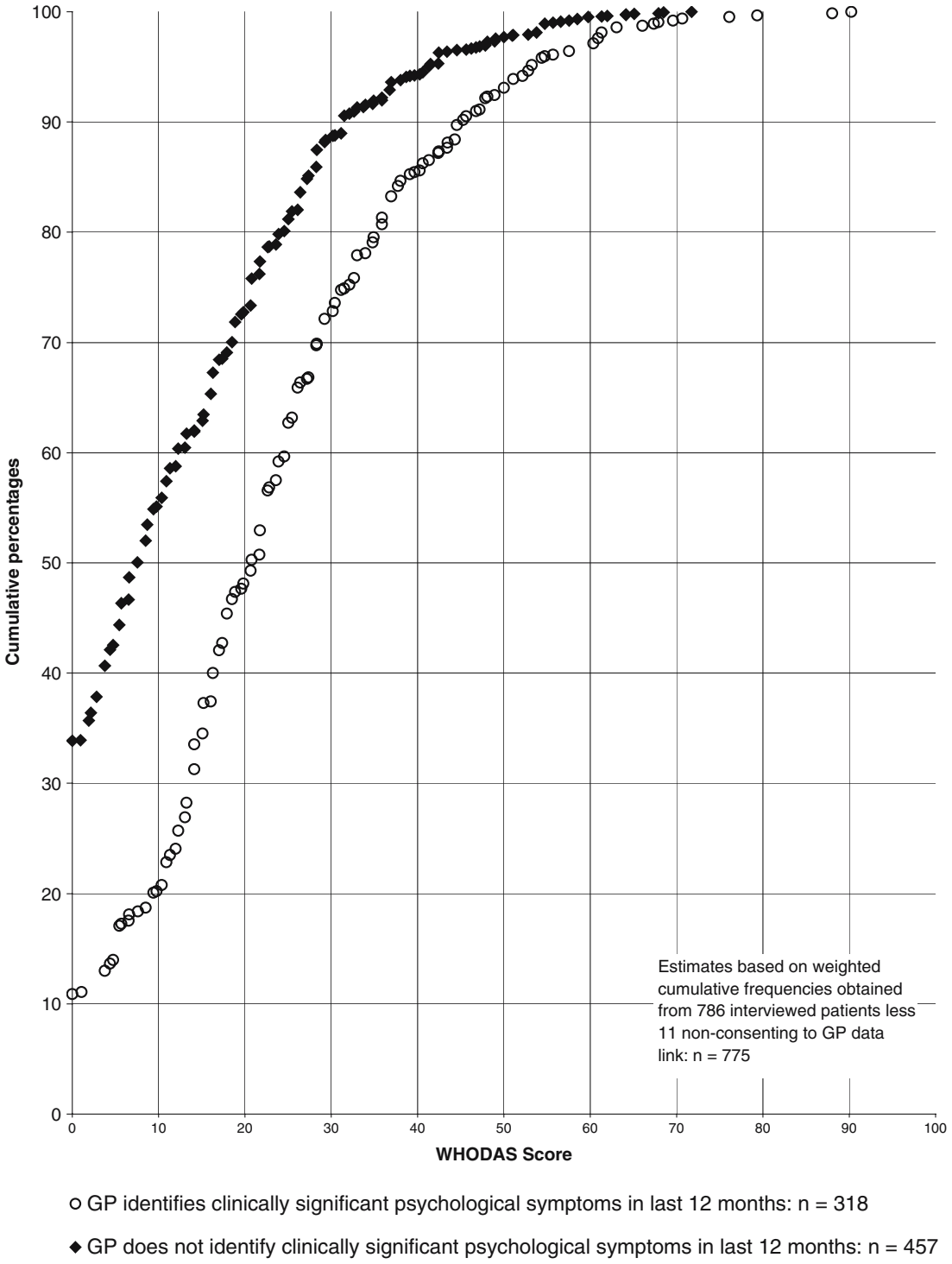

Fig. 3 Estimated WHODAS cumulative percentages for GP identification of clinically significant psychological problems

Table 1 Disability and GP recognition of psychological disorder

	GP identifies clinically significant psychological symptoms								
		Unadjusted			Adjusted for age, gender			Adjusted for number of consultations	
WHODAS Group	*n*	RR	95% CI*	*n*	RR	95% CI*	*n*	RR	95% CI*
Zero scorer (reference)	104	1	–	104	1	–	102	1	–
Physical only	195	[2.01][a]	0.89–4.53	195	[2.06][a]	0.92–4.58	194	[1.43][a]	0.64–3.20
Psychological only	125	3.14	1.40–7.06	125	3.43	1.51–7.76	123	2.69	1.28–5.66
Both psychological and physical	351	4.64	2.28–9.45	351	4.52	2.20–9.28	347	2.82	1.39–5.71
Total	775			775			766[b]		

* 95% confidence intervals adjusted for clustering within GP
[a] Relative risk figures in square brackets thus [ ] should be interpreted with caution due to small cell size and wide confidence interval
[b] 9 missing data are consultation frequency data

patients with subthreshold disorder and patients with CIDI-identified DSM diagnosable disorder ($p>0.1$).

When type of disorder is considered, patients with comorbid categories of disorder have significantly higher levels of disability than patients with any single category of disorder ($p<0.001$) (Fig. 2).

GP recognition of clinically significant mental health symptoms was associated with increased WHODAS scores ($p<0.001$) (Fig. 3).

When compared with the WHODAS zero scoring group (patients with no physical or psychological disability), patients with any psychological disability were more than two and a half times more likely to be recognised by GPs as having a mental disorder (RR=2.69; 95%CI 1.28–5.66) after controlling for age, gender and frequency of consultation (Table 1). If there was also a physical component to the disability, the likelihood of being recognised by GPs as having a mental disorder was further increased (RR=2.82; 95% CI 1.39–5.71).

The association between disability and GP recognition was compared with an independent assessment of patients' psychological health (Table 2). Of patients with current CIDI-indicated DSM disorder, those with no disability (zero WHODAS scores) or physical disability only were less likely to be recognised by their GP as having clinically significant psychological problems. In well patients and patients with subthreshold

Table 2 GP recognition of clinically significant psychological symptoms compared with independent assessment (MaGPIe clinical groupings)

Independent assessment of psychological status		GP recognises clinically significant psychological symptoms	
	**WHODAS Group	%	95% CI*
CIDI case[a]			
n=256	Psychological only	51.6	30.1–73.2
	Physical only	32.6	5.7–59.5
	Both psychological and physical	61.9	49.9–73.9
	Zero scorers	[42.0][b]	Unreliable
Subthreshhold[c]			
n=290	Psychological only	27.8	12.7–42.9
	Physical only	24.4	10.3–38.5
	Both psychological and physical	44.4	30.0–58.9
	Zero scorers	[23.3]	Unreliable
Past history of psychological disorder[d]			
n=40	Psychological only	[34.10]	Unreliable
	Physical only	[16.5]	Unreliable
	Both psychological and physical	[31.40]	Unreliable
	Zero scorers	[17.80]	Unreliable
Well[e]			
n=189	Psychological only	[6.3]	Unreliable
	Physical only	18.3	6.7–29.9
	Both psychological and physical	47.6	21.0–74.3
	Zero scorers	[4.8]	Unreliable

n=786−11 non-consenters=775
* 95% confidence intervals adjusted for clustering within GP
** Self-reported source of disability
[a] CIDI-indicated DSM-IV disorder, 1-m recency
[b] Prevalence estimates in square brackets thus [ ] should be interpreted with caution due to small cell size and wide confidence interval
[c] CIDI negative but SPHERE case positive
[d] CIDI 1-m negative, SPHERE case negative, but CIDI-indicated DSM-IV disorder of 12-m recency
[e] CIDI 1-m negative, CIDI 12-m negative, SPHERE case negative

DSM disorders, levels of GP recognition were higher for patients with both physical and psychological disability.

Discussion

The two principal findings were (1) that disability was clearly associated with the presence of both mental disorder and subthreshold disorder with no significant difference in the level of disability between these categories, and (2) that GPs were less sensitive to the presence of mental disorders as defined by the CIDI if there was little concomitant disability, and in subthreshold cases, the presence of disability increased the chance of GPs identifying clinically significant symptoms. Our results are broadly consistent with other studies describing patterns of disability with disorder severity and comorbidity. There was a suggestion that patients with alcohol or drug abuse disorder alone may have lower levels of disability than patients with depression or anxiety alone, although there were insufficient numbers to test this statistically.

Studies of GP recognition of mental disorder have almost exclusively adopted the perspective of concepts of disorder as defined by psychiatry. However, we have previously argued that a single "gold standard" for the identification of common mental disorders is unlikely to ever exist [14].

Therefore, a strength of this study is that we used two indicators of mental disorder, the CIDI and the SPHERE. An assumption underpinning the design of the SPHERE was that people presenting in primary care frequently have combinations of somatic and psychological symptoms and may not meet the threshold for psychiatric diagnostic systems. In order to be confident that overlap between physical and psychological disability would not affect our findings, we separated these out conservatively, despite the evidence that, even in the presence of physical illness and chronic physical illness, the impact of psychiatric illness on disability remains substantial. We were thus able to explore the relevance of disability to GP recognition of psychological morbidity from a perspective likely to be more meaningful in a primary care setting. The high response rates mean that these findings are likely to be generalisable to primary care patients in New Zealand. A comparison between participating patients and patients selected but declining showed little difference in GHQ score or demographic profile. Therefore, the effect of correcting it for non-response would make no substantive difference to the conclusions.

The literature on GP recognition of mental disorder has long focussed on the apparent failure of GPs to detect cases [10–13, 32]. However, recognition is a complex process in which GPs use taxonomies other than DSM-IV or ICD-10 [33, 34]. Our results provide some insight into the way GPs attend to both symptoms and functioning in their assessment of psychological syndromes. In our study, GPs appeared to use the presence or extent of disability as part of their diagnostic formulation of mental health problems. In the absence of severe symptoms, disability may take a person over the GP's diagnostic threshold, whereas absence of disability in the presence of symptoms makes GP diagnosis less likely. Familiarity with the patient is also an important contributor to GP recognition of mental disorder [9, 35]. Given that the more disabled patients may consult their GPs more often, it might be assumed that familiarity would make it more likely for GPs to detect mental disorder in those people. Elsewhere we have reported that GPs are five times as likely to make an explicit diagnosis in patients who have consulted five or more times in the past year, compared to patients who have not previously consulted in the past year [9]. However, familiarity is only part of the explanation as, even after controlling for the number of consultations, we found an association between disability and detection of mental disorder. A further important clinical implication of the presence of disability is that it is a predictor of recurrence of common mental disorders such as depression [36].

The issue of disability also has relevance for those who make primary care policy. Primary care studies in a range of countries have shown that mental disorders are associated with greater levels of disability than other illnesses [17, 25, 37]. The high prevalence of mental disorders in primary care patients (around 25% internationally [38] and 35% in New Zealand [8]) means that the community burden of this disability is considerable [5, 7, 20] particularly where disorders are chronic [3, 16]. Finally, it has been argued that disability should be taken into account in the consideration of eligibility for treatment, even where symptom constellations do not meet the threshold for diagnosis using systems such as DSM [25]. In order to establish this on a systematic basis (for both evidence-based practice and resource allocation requirements), a dimensional approach to case identification would be required, rather than our current system of classification of people as "cases" or "non-cases" [22]. However, it is debatable whether the significant numbers of people in the general population who are tolerant of symptoms of mental disorder [22] (especially at the subthreshold level), but who have no disability [31], should be encouraged to seek treatment when resources are limited. Because occupational functioning is more affected by mental illness than by physical illness [17], prioritising disability or level of functioning as a domain to be explored by GPs in their clinical assessments would reinforce something they already appear to be doing intuitively.

A potential limitation of our study is that introduced by operational confounding. Psychiatric disorders are defined by the presence of symptoms and by

the degree of impairment, which is part of the disability spectrum. However, it has been shown that disability-related criteria have a minimal role in the diagnostic process and for disorders most likely to show this confounding (alcohol use disorders and somatization), the associated disability is low [17]. The reverse is true for depression and anxiety disorders that are thus less likely to be confounded. The use of self-rated disability measures and self-reported diagnostic measures is unlikely to have influenced our findings. If this were the case, the observed variation of disability level by diagnosis would not be expected [7]. The relationship between mental disorder and disability is robust irrespective of whether disability is self-rated or observer-rated [5].

A second potential weakness arises from the differences in the social distribution of psychiatric symptoms and deficits in performance of activities of daily living in the general population. For example, given the same level of psychiatric symptoms, men are more impaired than women [31]. However, psychological problems are actually more likely to be managed by GPs when the patients are female and middle-aged. GPs clearly use an awareness of a range of patient factors as part of their diagnostic formulation of mental health problems and as part of their decision making about whether to initiate treatment. Our study did not have sufficient power to explore the influence of such social factors, but they have been shown to be much weaker predictors of disability than psychiatric disorder in a community sample [7].

Finally, we only have data on prior mental health status for patients who had attended the GP prior to the commencement of the study and in whom the GP had recognised psychological problems prior to the study. Therefore, we are unable to determine the proportion of subthreshold cases that represent those who have long-term needs for mental health care.

Conclusion

Most studies of disability and mental health have been limited to the reporting of disability prevalence and patterns of association between different disorders and disability, and to cross-national comparisons. This study provides some insight into the way GPs attend to both symptoms and functioning in their assessments of psychological syndromes. In the primary care setting, disability appears to be an important cue to GP identification of clinically significant psychological problems, dipping into an important pool of morbidity that is not detected by a purported "gold standard" and is associated with reduced functioning. The disability construct therefore also has potential relevance for development of policy about service provision for mental health in primary care. It is possible that the presence or absence of disability influences the way treatment options are chosen by GPs. This will be reported in an analysis of the longitudinal phase of the MaGPIe study.

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