

Mental health in the Dutch population and in general practice: 1987–2001

Peter FM Verhaak, Nancy Hoeymans, Anna A Garssen and Gert P Westert

ABSTRACT

Background

In the last 15 years, both the demand for and supply of specialised mental health care increased considerably in the Netherlands. Increased demand may reflect a change in psychological morbidity, but may also be a consequence of increased supply. Specialised health care in the Netherlands is accessible only through referral by a GP, and so it is important to consider the role of primary care in the diagnosis of mental health problems.

Aim

The aim of this study is to achieve a better understanding of the development of mental health status in the Dutch population and the consequent help-seeking behaviour in primary care.

Method

Using two comparable morbidity studies carried out in the Dutch population and in primary care, we compared data from 1987 and 2001 to assess the following: possible differences in mental health between 1987 and 2001; possible differences in prevalence of mental disorder as diagnosed by GPs in 1987 and 2001; possible differences in the sociodemographic determinants of mental health and mental disorder in primary care between 1987 and 2001.

Results

Our results show an increase in mental and social problems in the population between 1987 and 2001. However, GPs diagnosed fewer patients as having a mental disorder in 2001 than they did in 1987. The risk of mental disorders or social problems in several sociodemographic groups remained largely the same, as did the chance of receiving a psychological or social diagnosis.

Conclusion

We conclude that, while mental disorder in the population is increasing, the role of primary care has changed. Although GPs diagnose a lower percentage of mental problems as such, they refer an increasingly larger proportion of these to secondary care.

Keywords

diagnosis; mental health; referral rates.

INTRODUCTION

In the last few years, mental health care delivered by GPs in the Netherlands has been a subject of much discussion. The number of contacts in institutions of ambulatory mental health care increased by more than 21% between 1989 and 1996,¹ and within the Dutch health care system, the GP is an important filter in the access to ambulatory mental health care.² In respect to the latter point, the Netherlands is comparable to the UK, Denmark and Ireland.³

Such an increase of secondary mental health care may be due to increased need for help in the population, an improvement of GP's diagnostic skills, or a change in task division between primary and secondary care. To gain a better understanding of this, general practice dynamics should be studied, preferably using a longitudinal approach. In this way, the development of demand for mental health care can be studied, while also taking developments in both the population and in primary care into consideration.

Measuring instruments, classification and sample frames should ideally be identical for the different measurement periods, and the first and second Dutch national surveys of general practice (DNSGP1 and 2) enable such an approach to a large degree. The data for these Dutch studies were collected in 1987 and 2001 (the second study replicating the former) and include data on mental health in the population, on help-seeking and on GP diagnosis of mental health problems in primary care.^{4,5} Both studies used the same measuring instruments and study design, and a

PFM Verhaak, PhD, senior researcher, Netherlands Institute of Health Services Research (NIVEL), Utrecht, the Netherlands. N Hoeymans, PhD, senior researcher; AA Garssen, researcher; GP Westert, PhD, professor in health services research, National Institute of Public Health and the Environment, Bilthoven, The Netherlands. GP Westert is also affiliated to the University of Tilburg (Tranzo).

Address for correspondence

Dr PFM Verhaak, NIVEL, PO Box 1568, 3500 BN Utrecht, The Netherlands. E-mail: p.verhaak@nivel.nl

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Box 1. Sample sizes for the first and second Dutch National Surveys of General Practice (DNSGP1/2).

- ▶ Data collection period: (DNSGP1) 1987–1988; (DNSGP2) 2001–2002
- ▶ Population at risk (*n* of patients): 335 000; 400 000
- ▶ Practices (*n*): 104; 96
- ▶ GPs (*n*): 161; 195
- ▶ Responders to health interview (*n*): 8924; 9687
- ▶ Response (%): 76; 65

number of relevant patient characteristics (age, sex, marital status and education) were also assessed in identical ways with comparable classifications.

These two studies make it possible to compare mental health status and help-seeking behaviour between 1987 and 2001, and to assess possible differences in time with reference to the mental health status of the population, patient characteristics related to mental health status, differences in time in the prevalence of mental disorder as diagnosed by GPs and differences in the relationship between GPs' diagnoses and patients' mental health status.

METHOD

Sample and procedure

Both national surveys were carried out in samples of general practices in the Netherlands that are representative of all general practices (Box 1).^{4,5}

Measurement instruments

Approximately 5% of all listed patients were asked to participate in a face-to-face health interview. The following indicators of mental health were assessed during the health interview.

General Health Questionnaire (GHQ)

The GHQ is widely used in general practice to detect potential cases of psychiatric disorder.^{6,7} The 12-item version of the GHQ (GHQ-12) was used, with a cut-off point between 1 and 2. See Supplementary Tables 1–4 (Supplementary Tables 1 and 2 describe the prevalence of social problems, broken down into four specific areas. Supplementary Tables 3 and 4 give information on patients with a psychological or social diagnosis in relation to sociodemographic characteristics and mental health as measured by the GHQ).

Biographical Problem Inventory (BioPro)

In the interview, 10 items relating to social problems (such as financial problems, partner problems, housing problems, sexual problems) were listed,⁸ about which the responder (*n* = 4809, DNSGP2) indicated if they had been troubled with problems of

How this fits in

Many patients have feelings of mental distress that are undiagnosed by their GP, presumably because patients do not put forward demands for psychological help. The number of people with mental distress has increased, but psychological diagnoses by GPs have diminished during the past 15 years.

this kind during the past year. Four factors were derived from this list (Supplementary Box 1):

- family problems;
- problems in relationships with people outside the family;
- material problems; and
- work problems.

In addition to these mental health indicators, the sociodemographic characteristics of sex, age, educational attainment and marital status were known for all patients enrolled in the study.

Educational attainment is coded into primary education, lower secondary education, higher secondary education, college and/or university.

Marital status is coded into married/co-habiting, unmarried (never married), divorced and widowed.

Diagnosis of mental and social disorder in primary care

The GPs registered all contacts with all patients. GPs' diagnoses were coded for each separate contact, using the International Classification of Primary Care (ICPC).⁹ Patients with at least one symptom or diagnosis from the 'psychological' chapter (code P) or 'social' chapter (code Z) were counted as having a 'psychological' or 'social' diagnosis.

Differences between the first and second Dutch National Surveys of General Practice

In the first study, GP–patient contacts were recorded on registration forms. In the second study, data were automatically collected in general practices from computerised information systems.

In the first study, data in general practices (relating to GP–patient contacts) were collected for a period of 3 months; in the second study, data were collected for a period of 1 year. As a consequence, a 3-month sample was drawn from the contact registration (91 days following the day of the health interview) in the second study, to enable comparison of psychological and social diagnoses during primary care contacts in both studies.

The GHQ-30 was used in the first study, but was replaced by the GHQ-12 in the second study in order to shorten the interview. As all items of the GHQ-12 are

included in the GHQ-30, it was possible to compute GHQ-12 scores from the original GHQ-30 data.

In the second study, the BioPro was administered to a random half of the total sample.

Method of analysis

Univariate differences between the two time points were tested using the *t*-test for independent samples. Multivariate analysis was performed using binary logistic regression analyses in order to report on the relationship between sociodemographic variables and the mental health indicators, as well as between the mental health indicators and ICPC diagnoses controlled for sociodemographic variables. In this latter analysis, GHQ is used to predict psychological diagnoses by the GP as well as social diagnoses, while the four BioPro-factors are only used as predictors for social diagnoses. This relationship is expressed in odds ratios (ORs). The ORs were analysed while adjusting for the independent variables.

RESULTS

In Table 1, the proportion of responders scoring above threshold in 1987 and 2001 are compared.

Mental health, as indicated by the GHQ, was worse in 2001 than in 1987 (*t* = -8.14; *P*<0.001).

When the cut-off point is laid between 1 and 2, 16.8% (95% confidence interval [CI] = 16.1% to 17.5%) of the responders score above threshold in 1987, while this figure was 22.8% (95% CI = 22% to 23.6%) in 2001. The increase in the percentage of persons scoring above GHQ cut-off score can be observed in all sociodemographic categories.

In both years, the odds of a higher GHQ are lower in men, in older people (>45 years), and among married people. These relationships have not changed between the two studies, but a change can be observed where the effect of education is concerned. In the first study, people with the highest level of education (college and/or university level) were more at risk of an above-threshold GHQ score than those with secondary education. In the second study, people with the lowest level of education were more at risk than people with the highest level.

Social problems in relation to patient characteristics in 1987 and 2001 are presented in Table 2.

Family problems were reported by 6.1% of responders in 1987 and 7.9% in 2001, representing a significant increase over time (*t* = -4.1; *P*<0.001). The report of problems in relationships with other people also increased significantly, rising from 13.9% to 15.8% (*t* = -2.96; *P*<0.005). Problems with work were reported with comparable frequency (6.5% and 6.2% respectively), while the report of material problems decreased between 1987 and 2001 from 12.8% to 10.1% (*t* = 5.12; *P*<0.001).

In general, women, younger people, those with less education, divorcees and widows/widowers ran higher risks of having social problems, with some exceptions: men reported more problems regarding work, and older and higher educated persons reported more family problems in 1987 than in 2001.

The associations between sociodemographic characteristics and the report of social problems remained the same in 2001 as they were in 1987 except the following: in 1987, those with a higher educational background were at significantly more risk of having family problems, but in 2001 those with only basic education were more at risk; differences between men and women regarding work problems in 1987 (more men reporting them) had disappeared in 2001.

GPs' diagnoses of psychological and social morbidity in 1987 and 2001 and their connection with patients' mental and psychosocial health are given in Table 3.

Contrary to self-rated mental health, as assessed using the GHQ, the prevalence of psychological diagnoses made by GPs decreased between 1987 and 2001 (*t* = 8.848; *P*<0.001). In cases of high GHQs, GPs made a psychological diagnosis 18% of the time in 1987 and 9% of the time in 2001.

The risks for several sub-categories of patients

Table 1. Prevalence of mental problems according to the General Health Questionnaire in relation to sociodemographic characteristics in the first and second Dutch National Survey of General Practice.

	DNSGP1			DNSGP2		
	<i>n</i>	% GHQ≥2	OR	<i>n</i>	% GHQ≥2	OR
Total	8924	16.8		9687	22.8	
Sex:						
Male (reference)	4354	13.5	1.00	4317	19.2	1.00
Female	4570	20.0	1.54 ^a	5369	25.7	1.40 ^a
Age (years):						
18-24 (reference)	1237	17.5	1.00	739	25.0	1.00
25-44	4059	17.7	1.05	3424	25.6	1.22
45-64	2407	15.9	0.90	3534	22.0	1.00
65-74	833	14.2	0.67 ^a	1142	16.6	0.61 ^a
≥75	388	16.6	0.70 ^a	845	21.1	0.70 ^b
Education:						
Primary	2411	17.5	0.93	1434	25.2	1.34 ^b
Lower	3711	15.4	0.74 ^a	3259	22.3	1.01
Secondary	1798	16.5	0.79 ^b	2931	21.1	0.87
Higher (reference)	1004	19.3	1.00	2056	23.5	1.00
Marital status:						
Married (reference)	5335	15.0	1.00	6403	20.0	1.00
Unmarried	2891	17.9	1.22 ^b	2040	27.7	1.50 ^a
Divorced	256	29.4	2.31 ^b	496	34.5	2.02 ^a
Widowed	442	21.1	1.71 ^b	745	25.8	1.58 ^a

^a*P*< 0.005. ^b*P*< 0.05. DNSGP1 = First Dutch National Survey of General Practice. DNSGP2 = Second Dutch National Survey of General Practice. GHQ = General Health Questionnaire. OR = odds ratio.

hardly changed at all, however. GHQ score remained the strongest predictor, although its predictive power had diminished (odds decreased from 4.22 to 2.94). In both periods, the odds for women, elderly and widowed patients were higher than those for men, younger and married patients. The odds for people with less education (compared with people with a university background) and for divorced people were still higher in 2001, but were no longer significant.

The prevalence of social diagnoses made by the GP has decreased ($t = 3.617$; $P < 0.001$). In both periods, GHQ score and having family problems were the strongest predictors. Being divorced or having work problems, which were significant factors in 1987, were no longer statistically significant in the second study.

DISCUSSION

Summary of main findings

Mental problems, as indicated by the GHQ, have increased between 1987 and 2001, as have family problems and problems with relationships. GPs, on the other hand, diagnose fewer patients as suffering from psychological illness or as having family or social problems. Broadly speaking, the risk groups remain the same through time.

Table 2. Prevalence of social problems in the first and second Dutch National Survey of General Practice.

	DNSGP1		DNSGP2	
	%	95% CI	%	95% CI
Family problems	6.1	5.6 to 6.6	7.9	7.2 to 8.7
Material problems	12.8	12.2 to 13.5	10.1	9.2 to 10.9
Work problems	6.5	6.0 to 6.9	6.2	5.6 to 6.9
Problems in relationships with others than family	13.9	13.3 to 14.6	15.8	14.7 to 16.8

DNSGP1 = First Dutch National Survey of General Practice. DNSGP2 = Second Dutch National Survey of General Practice.

However, there are differences between 1987 and 2001. In 1987, those with the highest level of education ran the highest risk of psychopathology as indicated by the GHQ, while in the second study the less educated had the highest risk. The same phenomenon could be observed with regard to family and social problems.

Where work problems were concerned, these tended to be experienced by men in the first study, but this sex inequality had disappeared by 2001. The significantly higher odds of a psychological diagnosis in divorcees and people with less education had disappeared in the second study, although the differences still demonstrated the same tendency.

Table 3. Patients with a psychological diagnosis in relation to sociodemographic characteristics and mental health as measured by the General Health Questionnaire.

	DNSGP1				DNSGP2			
	n	% P diag	OR	95% CI	n	% P diag	OR	95% CI
Total	8924	7.2			9685	4.2		
Sex:								
Male (reference)	4354	5.0	1.00		5357	2.9	1.00	
Female	4570	9.1	1.54 ^a	1.29 to 1.84	4328	5.3	1.69 ^b	1.36 to 2.11
Age (years):								
18–24 (reference)	1237	3.9	1.00		745	2.7	1.00	
25–44	4059	5.0	0.99	0.69 to 1.42	3428	3.4	1.27	0.75 to 2.15
45–64	2407	9.5	1.81 ^a	1.25 to 2.63	3525	4.5	1.80 ^b	1.04 to 3.11
65–74	833	11.5	2.03 ^a	1.33 to 3.10	1146	4.8	1.73	0.95 to 3.17
≥75	388	15.6	2.59 ^a	1.62 to 4.14	841	7.3	2.20 ^b	1.18 to 4.08
Education:								
Primary	2411	10.6	1.50 ^b	1.07 to 2.12	1436	6.9	1.37	0.98 to 1.92
Lower	3711	7.0	1.37	0.99 to 1.90	3256	3.9	0.92	0.68 to 1.24
Secondary	1798	5.2	1.12	0.77 to 1.62	2927	3.6	1.02	0.75 to 1.39
Higher (reference)	1004	4.5	1.00		2053	3.8	1.00	
Marital status:								
Married (reference)	5335	7.3	1.00		6396	3.8	1.00	
Unmarried	2891	3.9	0.55 ^a	0.43 to 0.70	2039	3.6	1.10	0.81 to 1.51
Divorced	256	14.6	1.72 ^a	1.19 to 2.50	496	6.5	1.37	0.93 to 2.02
Widowed	442	19.7	1.44 ^b	1.07 to 1.95	745	8.6	1.50 ^b	1.06 to 2.12
GHQ < 2	7446	5.0	1.00		7454	3.0	1.00	
≥2	1478	17.6	4.22 ^a	3.54 to 5.02	2202	8.6	2.94 ^a	2.40 to 3.61

^a $P < 0.005$. ^b $P < 0.05$. *DNSGP1 = First Dutch National Survey of General Practice. DNSGP2 = Second Dutch National Survey of General Practice. OR = odds ratio. P diag = psychological diagnosis.*

Limitations of the study

Response bias should be considered. To what extent can we assume that our samples represent the Dutch population at risk? If bias occurred, did it occur in both studies to the same degree and direction? The response to the survey interview in 1987 (76%) was extremely high for a population survey on this scale; the response to the 2001 interview (64.5%) was lower but still acceptable. Response to the 1985 British Health and Lifestyle Survey was 66.9%,¹⁰ response to the 1996 Netherlands Mental Health and Intervention Study (NEMESIS), was 64.2%,¹¹ response to the Dutch LASA study among 3805 responders (age group 55–85 years) was 62.3%.¹² In both Dutch surveys on morbidity in general practice, populations were representative of the Dutch population.^{4,5} Both national surveys recruited their participants (practices, patients and responders to the health interview) in exactly the same way. The difference in data collection in general practice (registration forms in the first study, electronically in the second one) may have led to differences, but if that were the case, we would have expected the electronic way of data collection to be more accurate, hence leading to an artificial increase of mental health diagnoses instead of a decrease (as we observed). Therefore, we assume response bias, if it occurred at all, to be limited and occurring to a comparable degree in both studies.

Another difference between both studies is the GHQ-12, which was used in the first study embedded within the GHQ-30. As it appears to be common practice to use the items within the GHQ-30 that comprise the GHQ-12 to study the validity of the GHQ-12,¹³ we do not consider the difference between our first and second study critical in this respect.

Neither a GHQ score nor a GP diagnosis can be assigned absolute value as an indicator of mental illness in the population or in general practice. Our purpose, however, was not to estimate the real proportion of mental disorder in the population or in general practice, but to estimate a development through time. Our data are suitable for this purpose, because both the GHQ-scores and the GP assessments from 1987 and from 2001 are to the same degree subject to the same 'error'.

Comparison with existing literature

Our results are a replication of many previous studies with reference to the sociodemographic determinants of a high GHQ score.^{4,15–19} The GHQ as a predictor of psychological diagnoses by GPs was reported by Raine *et al.*²⁰

The international literature provides several estimates of mental distress in the population based on the GHQ-12. Andrews *et al.*¹⁴ reported 19.2% of the Australian population scoring above a threshold of one

to two. In the 1996 Dutch population survey on mental disorder (NEMESIS), the GHQ-12 was administered in addition to the Composite International Diagnostic Interview (CIDI), which resulted in 24.4% scoring above the one to two threshold. Koeter and Ormel⁷ reported population scores of between 23% and 31% above this threshold for men and between 26% and 41% for women.

These last scores in particular, which come from four population surveys from the late 1980s, are considerably higher than the scores reported in Supplementary Table 1. Our results are more or less comparable with the Australian and the Dutch NEMESIS results. A possible explanation for our low scores may be the fact that the GHQ was 'hidden' in a health interview lasting one and a half hours, instead of being the central issue in a relatively short questionnaire.

Implications for clinical practice

We conclude from our results that mental and social problems seem to have increased in the Netherlands in the last decade.

At the same time, Dutch GPs have become more reluctant to make psychological diagnoses. If we consider the psychological diagnosis made by a GP in a person scoring above the GHQ threshold as being indicative of the GP's 'awareness of the existence of mental distress', the awareness rate was more than halved. Of those scoring above the GHQ threshold, 17.6% were diagnosed with psychological diagnoses in 1987, against 8.6% in 2001.

This decrease cannot be attributed to the low cut-off point used for the GHQ: firstly because the same low cut-off point was used for the 1987 data; secondly because higher cut-off points do not really change the differences. With a cut-off between GHQ-score 3 and 4, 23% of those above threshold would have got a psychological diagnosis in 1987 and 11% in 2001.

The decrease in psychological diagnoses may indicate a higher standard used by GPs for making a psychological diagnosis. However, this is not particularly plausible, given the increased need in the population (according to the GHQ).

It may indicate a decrease in patients' tendency to attend their GPs for psychological problems, which again is not very likely, given the 'gate keeping' function of the GP, the increased need mentioned above and the increased demand for help in secondary mental health care.

From our point of view, the best explanation for our findings is GPs' reduced 'task perception' between 1987 and 2001 with regard to the treatment of psychological problems.²¹ Both surveys measured these task perceptions among participating GPs,

using an identical measuring instrument. In 1987, a majority of GPs largely considered the discussion of relational problems, working problems, advice about child upbringing and support for the chronically mentally ill to be tasks for the GP. In 2001, 20–40% of responders agreed that these were GP tasks.

This reduced task perception with regard to mental health care is not an isolated phenomenon. General practice in the Netherlands is facing a general crisis, a situation reflected by complaints on the part of GPs about large workloads, demanding patients and the long working hours that have resulted in an increasing shortage of GPs. Although the number of GPs has increased with population increase in recent decades, the growing popularity of part-time work in general practice has led to a 10% *de facto* increase in the number of patients per full-time equivalent GP between 1987 and 2001.²¹ In these circumstances, GPs seem to choose two lines of defence where mental health care is concerned. At the entrance to the primary care filter, they seem to become more reluctant to recognise psychological problems as such, and at the exit they choose to increase referrals. We reported in 2000 that mental health referrals were about 4.5 times as high in 1995 as they were in 1975.²²

The growing number of patients seeking help in ambulatory care therefore seems to reflect a real increase in the need for psychological care. This is partly a supply-induced phenomenon because the greater availability of specialised mental health care provides primary care with an opportunity of relieving its burden. We may therefore conclude that the probability of mental disorder as well as the prevalence of psychosocial problems has increased in the last 15 years, when the primary care filter has let more patients through to secondary care than before. We should be aware, however, that this process is finite. The potential number of persons with mental distress in the population is far too great to be treated in specialised mental health care; primary care must, therefore, find other solutions for the increased demand for mental health care. Delegation of tasks to practice nurses, collaboration with social workers, psychiatric nurses or primary care psychologists, as well as more liaison psychiatry, are all possible solutions to be pursued in solving problems associated with the workload of primary care doctors.

Supplementary information

Additional information accompanies this article at <http://www.rcgp.org.uk/journal/index.asp>

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Ethics committee

Study carried out in accordance with Dutch privacy legislation. Privacy rules and regulations were deposited at the Dutch Data Protection Authority

Competing interests

None.

REFERENCES

- de Rijk K, Verhaak P, Tiemens B, *et al*. *Achtergrondstudie bij de beleidsvisie GGZ* [Primary and secondary mental health care]. Utrecht: Trimbos-instituut/Nivel, 1999.
- Goldberg D, Huxley P. *Common mental disorders*. London: Routledge, 1992.
- Boerma WGW, Verhaak PFM. The general practitioner as the first contacted health professional by patients with psychosocial problems: a European study. *Psychol Med* 1999; **29**: 689–696.
- Foets M, van der Velden J. *Een nationale studie van ziekten en verrichtingen in de huisartspraktijk. Meetinstrumenten en procedures* [A national study of morbidity and interventions in general practice: measurement instruments and procedures]. Utrecht: Nivel, 1990.
- Westert GP, Schellevis FG, de Bakker DH, *et al*. Monitoring health inequalities through general practice: the second Dutch National Survey of General Practice. *Eur J Public Health* 2005; **15**(1): 59–65.
- Goldberg DP. *Detection of psychiatric illness by questionnaire (Maudsley Monograph)*. Oxford: Oxford University Press, 1972.
- Koeter MWJ, Ormel J. *General Health Questionnaire; Nederlandse bewerking [Dutch version]*. Lisse: Swets and Zeitlinger, 1991.
- Hosman CMH. *Psychosociale problematiek en hulpzoeken. Een sociaal-psychologische studie ten behoeve van de preventieve geestelijke gezondheidszorg* [Psychosocial problems and help seeking. A social-psychological study for preventive mental health care]. Lisse: Swets & Zeitlinger, 1983.
- Lamberts H, Wood M, eds. *International classification of primary care*. Oxford: Oxford University Press, 1988.
- Lewis G, Wilkinson G. Another British disease? A recent increase in the prevalence of psychiatric morbidity. *J Epidemiol Community Health* 1993; **47**: 358–361.
- Bijl RV, van Zessen G, Ravelli A. Psychiatrische morbiditeit onder volwassenen in Nederland: het NEMESIS-onderzoek I: Opzet van Nemesi [Psychiatric morbidity among adults in the Netherlands: the NEMESIS-Study I: Objectives, design and methods]. *Ned Tijdschr Geneesk* 1997; **141**: 2453–2460.
- Kriegsman DMW, Penninx BWJH, van Eijk JT, *et al*. Self-reports and general practitioner information on the presence of chronic diseases in community dwelling elderly. *J Clin Epidemiol* 1996; **49**(12): 1407–1417.
- Goldberg DP, Gater R, Sartorius N, *et al*. The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychol Med* 1997; **27**: 191–197.
- Andrews G, Hall W, Teesson M, Henderson S. *The mental health of Australians*. Canberra: Mental Health Branch, Commonwealth Department of Health and Aged Care, 1999.
- Bijl RV, van Zessen G, Ravelli A. Psychiatrische morbiditeit onder volwassenen in Nederland: het NEMESIS-onderzoek II: Prevalentie van psychische stoornissen [Psychiatric morbidity among adults in the Netherlands: the NEMESIS-Study II: Prevalence of psychiatric disorders]. *Ned Tijdschr Geneesk* 1997; **141**: 2453–2460.
- Finlay-Jones RA, Burvill PW. The prevalence of minor psychiatric morbidity in the community. *Psychol Med* 1977; **7**: 475–489.
- Williams P, Tarnapolsky A, Hand D, Shepher M. Minor psychiatric morbidity and general practice consultations: the West London Survey. *Psychol Med Monogr Suppl* 1986; **9**: 1–37.
- Jenkins R, Lewis G, Bebbington P, *et al*. The National Psychiatric Morbidity Surveys of Great Britain — initial findings from the household survey. *Psychol Med* 1997; **27**: 775–789.
- Vazquez-Barquero JL, Wilkinson G, Williams P, *et al*. Mental health and medical consultation in primary care settings. *Psychol Med* 1990; **20**: 681–694.
- Raine R, Lewis L, Sensky T, *et al*. Patient determinants of mental health interventions in primary care. *Br J Gen Pract* 2000; **50**: 620–625.
- van den Berg M, Kolthof E, de Bakker D, van der Zee J. *De werkbelasting van huisartsen beschreven en verklaard* [Workload of GPs described and explained]. Utrecht: Nivel, 2003
- Verhaak PF, van der Lisdonk EH, Bor JH, Hutschemaekers GJ. GPs' referral to mental health care during the past 25 years. *Br J Gen Pract* 2000; **50**(453): 307–308.