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Predictors of incident care service utilisation for mental health problems in the Dutch general population

■ **Abstract** *Background*: The determinants of first-time ('incident') use of primary care and mental health care services for mental health problems have not been previously investigated. Such information is needed to identify new client groups and to gain a better understanding of causal factors. *Method*: Data were derived from the Netherlands Mental Health Survey and Incidence Study, NEMESIS, a prospective general population study of adults. Potential predictors of care use (psychiatric disorders, burden of illness, sociodemographic characteristics) were recorded in the first wave of the study, and the utilisation of care services in the second wave. Psychiatric diagnoses were based on the Composite International Diagnostic Interview (CIDI) 1.1. *Results*: Six of the ten indicators linked to the frequent utilisation of care were found not to be associated with incident use: higher age, lower income, living alone, paid employment, mood disorders and anxiety disorders. Four other indicators showed associations with both frequent and incident use: female gender, higher numbers of restricted activity days, poorer social functioning and unmet care needs. Two predictors of incident use only were lower educational attainment and being in treatment for a somatic disorder. *Conclusion*: New clients who come to primary health care or mental health care services with mental health problems are found in all age groups. They are more likely to be women, to have less education, to be in treatment for a somatic disorder and to have functional problems related to their mental health problems.

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Introduction

Much has still to be learned about the help-seeking behaviour of people with mental health problems. Predictors of first-ever (incident) care service utilisation and the determinants of increasing care consumption have not been previously investigated. Two important omissions have been the simultaneous assessment of risk indicators for care utilisation and the lack of any distinction between incident and repeated use.

Six large population studies have been carried out in the past 15 years on the prevalence of psychiatric disorders and the prevalence of care service utilisation in four countries: the Netherlands, Israel, Canada (two studies) and the United States (two studies). The research designs of the studies are broadly similar (Table 1). All analyse the relationship between care utilisation and the presence of mental health problems, degree of functioning and sociodemographic characteristics of subjects. Because these studies focus on the prevalence of care use, they record all people who have made use of care services within a specified period, whether for the first time or not.

Five of the studies found a clear link between the presence of a psychiatric disorder and the use of some sort of care provision, even after the influence of sociodemographic characteristics is taken into account (Gallo et al. 1995; Lin et al. 1996; Katz et al. 1997; Lefebvre et al. 1998; Bijl and Ravelli 2000). One study also linked care use to the presence of a chronic somatic disorder (Rabinowitz et al. 1999). Two studies linked care use to poor self-rated mental health or reduced functioning (Katz et al. 1997; Lefebvre et al. 1998). This indicates that a person's decision to seek

Table 1 Correlates of care utilisation for mental health problems in six population studies

Country	Authors	Year	Respondents: number and age	Instrument	Classification system	Response (%)	Definition of care utilisation	Correlates of care utilisation
Netherlands	Bijl and Ravelli 1998	1996–1999	7076 18–64 years	CIDI	DSM-III-R	70	Help sought from primary care, mental health care or informal care services for emotional or substance use problems in past 12 months	Controlled for gender, age and DSM-III-R disorders: Gender (female) Age (35–44 years, 45–54 years) Urbanicity (urban) Household composition (single or single-parent households) Occupational status (unemployed, disability benifit) Not significant: education, income
Montreal, Canada	Lefebvre et al. 1998	1992–1993	893 18–64 years	DISSA	DSM-III-R	63	Help sought from primary care, mental health care or informal care services for emotional or substance use problems in past 12 months	(Multivariate): Psychiatric disorder (yes) Self-rated mental health (fair/poor) Gender (female) Household composition (living without a partner) Not significant: age, occupational status, income
USA, Canada	Katz et al. 1997	1990–1991	5393 USA 6261 Canada 18–54 years	CIDI	DSM-III-R	82 USA 70 Canada	Help sought from primary care, ambulatory mental health care or informal care services for emotional problems in past 12 months	Controlled for gender, age, urbanicity, education and country: Psychiatric disorder (yes) Self-rated mental health (fair/poor) Disability (fair/poor)
Ontario, Canada	Lin et al. 1996		9953 15–64 years	CIDI	DSM-III-R		Help sought from primary care, mental health care or informal care services for emotional or substance use problems in past 12 months	(Multivariate): Psychiatric disorder (yes) Gender (female) Age (25–44 years) Marital status (divorced, widowed) Public assistance (yes) Not significant: education, immigrant status, region
Israel	Rabinowitz et al. 1999	1995	1394 22 years or older			85	Help sought from primary care, mental health care or informal care services for emotional problems at some time in life	(Bivariate): Gender (female) Age (35–55 years) Marital status (divorced, widowed) Urbanicity (urban) General health status (fair/poor) Chronic illness (yes) Not significant: education, language spoken, year of immigration, occupational status, income
New Haven, Baltimore, St Louis, Durham, Los Angeles, USA	Marino et al. 1995; Gallo et al. 1995	1981–1984	13,400 18–96 years	DIS	DSM-III	76–80 second wave	Help sought from primary care or mental health care services for emotional or substance use problems in past 12 months	Controlled for gender, age, self-reported ethnicity, socioeconomic status, availability of a usual source of medical care, past use of mental health care services, region, coincident psychiatric disorders: Incident psychiatric disorder (yes)

professional help may be related to how they perceive their health situation and their personal functioning, beyond their illness as such. Three studies have shown that women, after the influence of any psychiatric disorder is allowed for, are significantly more likely than men to make use of some kind of care for mental health problems. Two studies found a greater use of care by single householders, divorced people and urban dwellers. The relationship between care utilisation and the indicators age and employment status is less clear-cut.

These research findings are all based on the total prevalence figures for care service utilisation in connection with mental health problems. Such data allow no interpretations about the causality of the relationships found. Long-term involvement with care services could, for one thing, adversely affect the quality of life of the clients in question. The only study of incident care utilisation we know of is that by Olfson et al. (1998), which assessed the time span between the onset of a psychiatric disorder and the first treatment contact. It sought to explain how psychiatric disorders can influence a person's timing in seeking professional help.

Our article analyses data from the Netherlands Mental Health Survey and Incidence Study, NEMESIS. These longitudinal population data enabled us to establish the time sequence of events, and thus to pinpoint the first use of care services. We investigate here the determinants (differentiated, as in other studies, by psychiatric disorders, burden of illness and demographics) of a subject's first decision to seek professional care ('incident care utilisation') and compared them to determinants of care service use in general.

In the Netherlands, every person subject to income taxation is covered by the Exceptional Medical Expenses Act, funded by a compulsory premium; benefits include comprehensive psychiatric care. Patients receiving psychotherapy pay a fixed (low) fee per visit. The Social Health Insurance Act, a statutory insurance for employees earning less than 30,000 Euros per year, covers normal medical expenses not included by the Exceptional Medical Expenses Act. In the Netherlands, for the 35% of people who are not covered either by the Social Health Insurance Act or by specific plans for public employees, private health insurance is an available option. Social and psychiatric services are stratified so that specialty mental health care ususally requires referrals from general practitioners, who retain an integral role in the mental health care of the patient. The Netherlands has a broad concept of mental health that encompasses psychosocial problems, and additional policies regarding health promotion and disease prevention, such as outreach programmes (from Alegria et al. 2000). On the whole, there are no, or at most small, financial barriers to access to mental health care in the Netherlands.

Subjects and methods

NEMESIS is a prospective cohort study in the Dutch general population aged 18–64, with three waves in 1996, 1997 and 1999. A total of 7076 respondents were interviewed in the first wave and 5618 respondents (79.4%) in the second wave. Depending on the method of calculation, the response rate for the first wave was 64.2% (of the households eligible for interviewing) or 69.7% (of the adults eligible for interviewing) (Bijl et al. 1998). The respondents well reflected the Dutch population in terms of gender, civil status and degree of urbanicity (Bijl et al. 1998), and only the 18–24 age group was significantly underrepresented. In the sample, 8.4% was 18–24 years of age, whereas in the population 14.1% was 18–24 years of age. With sociodemographic characteristics held constant, sample attrition in NEMESIS has been found not to be significantly associated with psychopathology (de Graaf et al. 2000).

The primary diagnostic instrument is the Composite International Diagnostic Interview (CIDI), version 1.1 (Smeets and Dingemans 1993), developed by the World Health Organization (Robins et al. 1988; World Health Organization 1990). It is a fully structured interview for diagnosing psychiatric disorders, and it can be administered by trained interviewers who are not clinicians. Clinically relevant symptoms are later analysed by a computer programme to reach either DSM-III-R or ICD-10 diagnoses. The CIDI is now being used worldwide, and WHO research has found high interrater reliability (Cottler et al. 1991; Wittchen et al. 1991), high test-retest reliability (Semler et al. 1987; Wacker et al. 1990) and high validity for practically all diagnoses (Wittchen et al. 1989; Farmer et al. 1991; Wittchen 1994). The following DSM-III-R diagnoses were recorded in the NEMESIS dataset: mood disorders (depression, dysthymia, bipolar disorder), anxiety disorders (panic disorder, agoraphobia, simple phobia, social phobia, generalised anxiety disorder, obsessive-compulsive disorder), psychoactive substance use disorders (alcohol or drug abuse and dependence, including sedatives, hypnotics and anxiolytics), eating disorders, schizophrenia and other non-affective psychotic disorders. The hierarchical rules as prescribed by DSM-III-R are applied in the analyses described here.

In this article we have calculated care service utilisation with data from the first two waves. Incident care users were defined as respondents who used primary care or mental health care services for emotional, alcohol or drug problems for the first time in their lives during the time frame between the first and second wave. Frequent care users are respondents who had used primary care and/or mental health care services for emotional, alcohol or drug problems at both waves. Primary care includes general practitioners, company doctors, crisis centres, community social work, home care and district nursing. Mental health care includes community mental health care institutes, psychiatric clinics, ambulatory addiction care, psychiatrists, psychologists and psychotherapists in private practice, part-time psychiatric treatment and hospitalisation in a mental hospital.

The following potential predictors of care utilisation, all recorded at the first wave, were included in the analyses. Care utilisation was recorded at the second wave.

Demography

The sociodemographic variables included were: gender, age, education, income, urbanicity of place of residence, household composition and employment status. Income was calculated as the

average net income per person in the family or other entity the respondent lived in.

Disorders

1. Psychiatric disorders: prevalence of main DSM-III-R diagnostic groupings in the past 12 months
2. Presence of one or more of 31 somatic disorders, treated or monitored by a physician in the past 12 months.

Burden of illness

1. Disability days: two questions that record the number of days of reduced activity and days of bedrest in the past 12 months resulting from mental health problems
2. Quality of life: assessed with the social functioning scale of the MOS Short Form Health Survey (Stewart et al. 1988; Ware and Sherbourne 1992)
3. Unmet care needs: a felt need for professional help for mental health problems, though no help was sought.

■ Statistical analysis

This article analyses data from the first two waves of NEMESIS. By combining the information about care utilisation from both waves, we obtained four groups of respondents with greater or lesser frequencies of care utilisation. Group 1 had no experience at all with primary care or mental health care in connection with mental health problems. Group 2 consisted of subjects who used care for the first time in the year between the two interviews (incident care users). Group 3 did not use either type of care for mental health problems in that year, but had done so one or more times previously. Group 4, the frequent care users, used care services for mental health problems in both periods.

Our first step was to perform chi-square tests and one-way analyses of variance to compare these four groups in terms of disorders, burden of illness and demography. Second, we used logistic regression to determine predictors of incident care utilisation. Respondents who had never used primary care or mental health care services for mental health problems served as the comparison group (0 = no experience with care; 1 = first-ever experience with care). Third, we carried out logistic regression analyses to determine predictors of frequent care utilisation, using the same comparison group (0 = no experience with care; 1 = experience with care at both waves). In a final series of logistic regression analyses, we used the frequent care users as the comparison group to determine specific predictors of incident care utilisation. These analyses revealed which groups had an increased likelihood of incident care utilisation, in contrast to the frequent users.

Results

Table 2 shows that the more experience our respondents had with care services, the more somatic and mental health problems they had and the more unfavourable their social situation was. Incident care users were less likely than frequent users to have a mood disorder (6.2% vs 37.6%), they had fewer problems on average with social functioning (86.4 vs 72.8) and fewer restricted activity days per year (1 vs 34), they were less likely to live in urban areas (80.7 vs 87.5), were less likely be living alone (19.9 vs 29.7),

and were more likely to be in paid employment (64.6 vs 55.7).

■ Incident care utilisation

Of the respondents who reported at the first interview that they had never previously sought primary care or mental health care for mental health problems, 4.4% (161 of 3691) did report having done so by the second interview. Some 81.4% ($n = 131$) of these incident care users visited primary care providers only, 5.6% ($n = 9$) visited mental health care providers only, and 13.0% ($n = 21$) visited both types of services.

Table 3 summarises the determinants of incident care utilisation (primary care, mental health care or both). The first column shows the bivariate correlations between incidence of care use and each potential predictor, and the second column shows the multivariate correlations. Among the sociodemographic characteristics, gender and education were significantly associated with incident care use in both the bivariate and the multivariate analyses. Women were 2.3 times more likely than men to be incident care users. The less education people had, the more chance of incident care use, with probability increasing by 0.14 (1/0.88 − 1) per educational attainment level. The adjusted odds ratios diverged little from the crude odds ratios.

Mood disorders and anxiety disorders were bivariately associated with incident care use, but fell just short of significance in the multivariate analysis. The bivariate associations were lost when influences from all other determinants of care use, such as burden of illness and demographics, were taken into account. The presence of an alcohol or drug disorder did not predict incident care use. The presence of a somatic disorder currently being treated by a physician was significantly associated with incident care use in both the bivariate and multivariate analyses. The crude odds ratio shows that such somatically ill subjects were 1.9 times more likely to have sought care for the first time for a mental health problem than people without a somatic disorder. After adjustment for the influence of other determinants, the chance declined slightly to 1.5.

Three of the indicators for general functioning – restricted activity days, social functioning and unmet care needs – were significantly associated with incident care use in both the bivariate and the multivariate analyses; number of bedrest days showed no association. The more days people limited their activities because of mental health problems, the greater their incidence of care use. These odds ratios are expressed in days: the probability of incident care use increased by 0.08 for each restricted activity day (adjusted odds ratio). The odds ratios for social

Table 2 Characteristics of four groups of care users for mental health problems among 5618 respondents in the Netherlands Mental Health Survey and Incidence Study (NEMESIS) (group 1. no experience with care; group 2. first-ever experience with care; group 3. previous experience with care; group 4. experience with care at both waves)

	Primary care (pc) or mental health care (mhc) ever sought for mental health problems?				Significance
	No Help sought from pc or mhc services in past year?		Yes Help sought from pc or mhc services in past year?		
	No $n = 3530$ (group 1)	Yes $n = 161$ (group 2)	No $n = 1496$ (group 3)	Yes $n = 431$ (group 4)	
Demography (percentages or means)					
Female	47.8	68.3	61.7	66.1	***
Age (years)	40.6	41.1	42.1	40.7	**
Education (1–7)[a]	4.0	3.6	4.0	3.9	**
Income (1–3)[b]	2.0	2.0	2.0	1.9	*
Urbanicity of residence	81.3	80.7	84.4	87.5	**
Living alone	16.0	19.9	22.5	29.7	***
Paid employment	65.8	64.6	60.8	55.7	***
Disorders (percentages)					
Mood disorder	1.8	6.2	12.7	37.6	***
Anxiety disorder	6.1	14.9	19.3	39.9	***
Substance use disorder	6.7	5.6	7.7	10.2	*
Somatic disorder	35.8	51.6	46.6	55.2	***
Burden of illness (percentages or means)					
Bedrest days	0	0	1	5	***
Restricted activity days	0	1	6	34	***
Social functioning (0–100)	92.7	86.4	86.5	72.8	***
Unmet care needs	2.2	10.6	11.2	21.3	***

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$
[a] Levels of educational attainment range from 1 (primary) to 7 (university)
[b] Levels of income range from 1 (lowest 25%) to 3 (top 25%)

Table 3 Determinants of incident care utilisation for mental health problems (0 = no experience with care; 1 = first-ever experience with care) among 3691 respondents: crude and adjusted odds ratios (OR) and 95% confidence intervals (CI), 1997[a] (significant ORs shown in *bold*)

	Crude OR, 95% CI	Adjusted OR[b], 95% CI
Demography		
Female	**2.35 (1.68–3.30)**	**2.26 (1.54–3.32)**
Age (years)	1.00 (0.99–1.02)	0.99 (0.98–1.01)
Education (1–7)	**0.86 (0.78–0.94)**	**0.88 (0.79–0.98)**
Income (1–3)	0.93 (0.74–1.16)	0.98 (0.74–1.30)
Urbanicity of residence	0.96 (0.65–1.44)	0.91 (0.59–1.39)
Living alone	1.30 (0.87–1.94)	1.21 (0.76–1.93)
Paid employment	0.95 (0.68–1.32)	1.41 (0.95–2.11)
Disorders (12-month prevalence)		
Mood disorder	**3.59 (1.81–7.12)**	2.05 (0.95–4.46)
Anxiety disorder	**2.71 (1.72–4.28)**	1.65 (1.00–2.74)
Substance use disorder	0.82 (0.41–1.63)	1.03 (0.49–2.15)
Somatic disorder	**1.91 (1.39–2.62)**	**1.55 (1.09–2.20)**
Burden of illness		
Bedrest days	0.95 (0.70–1.27)	0.81 (0.53–1.25)
Restricted activity days	**1.08 (1.03–1.14)**	**1.08 (1.02–1.13)**
Social functioning (0–100)	**0.98 (0.97–0.99)**	**0.99 (0.98–1.00)**
Unmet care needs	**5.16 (2.98–8.94)**	**2.92 (1.55–5.52)**

[a] Determinants recorded in 1996, care utilisation in 1997
[b] Controlled for the influence of all variables in the Table

functioning show that the more limitations people experienced in their normal social activities, the more likely they were to have approached care services for the first time. These odds ratios are expressed in scores: the chance of incident care use decreased by 0.01 (adjusted odds ratio) for each unit on a 0-to-100 social functioning scale (higher scores indicating better functioning). The crude odds ratio for unmet

care needs shows that people who had considered, but not sought, professional care for mental health problems in the year prior to the first interview were 5.2 times more likely to actually use care for the first time in the following year than people not reporting such unmet care needs. Adjusted for the influence of other determinants of care use, this probability was 2.9 times greater.

Altogether the multivariate analysis revealed six determinants of incident care use: the presence of a somatic disorder, three different adverse functional consequences of mental health problems, and two sociodemographic characteristics.

■ Frequent care utilisation

Of the respondents reporting professional care for mental health problems at both interviews (the frequent care users), 53.6% ($n = 231$) had used only primary care, 17.9% ($n = 77$) had used only mental health care and 28.5% ($n = 123$) had used both types.

Table 4 shows the determinants of frequent care utilisation (primary care, mental health care or both). A comparison with Table 3 reveals that most determinants of incident care use coincide with those of frequent use: gender, restricted activity days, social functioning and unmet care needs. Women were more likely than men to report both incident and frequent care use. The greater the burden of illness from the mental health problems (assessed in terms of restricted activity days, social functioning and unmet care needs), the greater the likelihood of either incident or frequent care use.

Six determinants of frequent care use, however, were not encountered in the multivariate analysis of incident use: age, income, household composition, employment status, mood disorders and anxiety disorders. The older people were and the less they earned, the more likely they were to be frequent care consumers; the probability grew by 0.02 per year of age and by 0.41 per income group. People living alone were 1.9 times more likely to be frequent utilisers than those sharing households. Paid employment was negatively associated with frequent care use in the bivariate analysis, but positively associated in the multivariate analysis. After the influence of other determinants was taken into account, people in paid employment were 1.5 times more likely to be frequent care users than those outside paid employment. The reversal of direction is attributable mainly to mood disorders, anxiety disorders and social functioning. The implication is that employed people may receive more inducement to seek help when they experience mental health problems; for example their employer may recommend they see a company health officer. Mood disorders and anxiety disorders were positively associated with frequent care utilisation, although the adjusted odds ratios (8.1 and 3.5 respectively) were substantially lower than the crude ratios (32.6 and 10.3). The weakened associations can be attributed mainly to the influence of a second psychiatric disorder (mood or anxiety), to restricted activity days and to social functioning.

Two of the determinants of incident care use, somatic disorder and education, were not significantly associated with frequent care use in the multivariate analysis. The presence of a somatic disorder currently

Table 4 Determinants of frequent care utilisation for mental health problems (0 = no experience with care; 1 = experience with care at both waves) among 3691 respondents, crude and adjusted odds ratios and 95% confidence intervals, 1997[a] (significant odds ratios shown in *bold*)

	Crude OR, 95% CI	Adjusted OR[b], 95% CI
Demography		
Female	**2.13 (1.72–2.62)**	**1.71 (1.28–2.29)**
Age (years)	1.00 (0.99–1.01)	**1.02 (1.00–1.03)**
Education (1–7)	0.95 (0.90–1.00)	1.08 (0.99–1.17)
Income (1–3)	**0.84 (0.73–0.97)**	**0.71 (0.56–0.89)**
Urbanicity of residence	**1.61 (1.19–2.16)**	1.15 (0.79–1.68)
Living alone	**2.22 (1.77–2.78)**	**1.90 (1.34–2.68)**
Paid employment	**0.65 (0.53–0.80)**	**1.51 (1.10–2.07)**
Disorders (12-month prevalence)		
Mood disorder	**32.61 (23.80–44.68)**	**8.06 (5.33–12.18)**
Anxiety disorder	**10.29 (8.12–13.04)**	**3.50 (2.48–4.94)**
Substance use disorder	**1.58 (1.13–2.22)**	0.88 (0.49–1.56)
Somatic disorder	**2.22 (1.81–2.71)**	1.30 (0.98–1.72)
Burden of illness		
Bedrest days	**1.21 (1.15–1.28)**	1.09 (0.98–1.22)
Restricted activity days	**1.25 (1.18–1.32)**	**1.12 (1.07–1.18)**
Social functioning (0–100)	**0.96 (0.95–0.96)**	**0.98 (0.97–0.99)**
Unmet care needs	**11.85 (8.60–16.34)**	**4.37 (2.83–6.74)**

[a] Determinants recorded in 1996, care utilisation in 1997
[b] Controlled for the influence of all variables in the Table

being treated did show a significant association with frequent care use in the bivariate analysis.

To summarise, ten determinants of frequent care utilisation emerged from the multivariate analysis: the presence of a mood or anxiety disorder, three functional effects of mental health problems, and five sociodemographic characteristics.

■ Incident care use compared to frequent care use

Table 5 depicts the groups of care service clients who were relatively more likely to be first users rather than frequent users of care. People without mood disorders were 4.35 times (1/0.23) more likely to report incident rather than frequent care use than people with mood disorders. People without anxiety disorders were 2.22 times (1/0.45) more likely to report incident rather than frequent use than people with anxiety disorders. Finally, the less education clients had, the more likely they were to report incident rather than frequent care use; the chances decrease by 0.25 (1/0.80 − 1) for each increasing educational attainment level.

Discussion

Our findings suggest that many of the links reported in the literature between sociodemographic characteristics and the use of care services do not automatically apply for incident care utilisation. Six of the ten indicators we found to be associated with frequent care use were not linked to first use. This shows how important it is to distinguish within the prevalence data for care utilisation between new care use and repeated care use – a differentiation that has hitherto been neglected.

The differences between our findings and those of previous population studies lie mainly in our definition of care utilisation (new and/or repeated use). Many studies have also defined care utilisation as any help received for emotional, alcohol or drug problems. We have restricted ourselves to primary health care and mental health care (thus excluding informal care). Our method of analysis was also different. Scarcely any of the other studies controlled simultaneously for the influence of psychiatric and somatic disorders, burden of illness and demographics. Since the numbers of frequent users far exceed the numbers of new users, the determinants described in the literature for the prevalence of care utilisation are more likely to apply to frequent care use than to new use.

Six predictors of frequent care use were found in our study not to predict incident use.

Mood disorders and anxiety disorders. Four population studies (leaving aside the NEMESIS findings reported by Bijl and Ravelli, 2000) found significant associations between the use of care services and the presence of a psychiatric disorder (substance use disorders excepted) (Marino et al. 1995; Lin et al. 1996; Katz et al. 1997; Lefebvre et al. 1998). Our findings show that it is not so much the psychiatric disorder itself that is related to seeking primary or mental health care for the first time, but primarily the burden that the disorder places on their daily lives. For the frequent care users, both the disorder itself and the burden of illness were part of

Table 5 Determinants of incident versus frequent care utilisation (0 = experience with care at both waves; 1 = first-ever experience with care) among 592 care users, crude and adjusted odds ratios and 95% confidence intervals, 1997[a] (significant odds ratios shown in *bold*)

	Crude OR, 95% CI	Adjusted OR[b], 95% CI
Demography		
Female	1.10 (0.75–1.63)	1.25 (0.78–2.01)
Age (years)	1.00 (0.99–1.02)	0.98 (0.96–1.00)
Education (1–7)	0.91 (0.82–1.01)	**0.80 (0.69–0.91)**
Income (1–3)	1.11 (0.85–1.45)	1.37 (0.96–1.95)
Urbanicity of residence	**0.60 (0.37–0.98)**	0.77 (0.44–1.36)
Living alone	**0.59 (0.38–0.91)**	0.61 (0.35–1.05)
Paid employment	1.45 (1.00–2.11)	1.02 (0.62–1.68)
Disorders (12-month prevalence)		
Mood disorder	**0.11 (0.06–0.21)**	**0.23 (0.11–0.47)**
Anxiety disorder	**0.26 (0.16–0.42)**	**0.45 (0.25–0.80)**
Substance use disorder	0.52 (0.25–1.09)	1.59 (0.64–3.94)
Somatic disorder	0.86 (0.60–1.24)	1.16 (0.74–1.80)
Burden of illness		
Bedrest days	**0.64 (0.41–0.99)**	0.72 (0.46–1.14)
Restricted activity days	**0.94 (0.91–0.98)**	0.97 (0.94–1.00)
Social functioning (0–100)	**1.03 (1.02–1.04)**	1.01 (1.00–1.02)
Unmet care needs	**0.44 (0.25–0.76)**	0.70 (0.37–1.33)

[a] Determinants recorded in 1996, care utilisation in 1997
[b] Controlled for the influence of all variables in the Table

the explanation. These people may have been more aware of the nature of their problems than the people using care for the first time.

Higher age. Two studies (Lin et al. 1996; Rabinowitz et al. 1999) found a greater likelihood of some care utilisation amongst respondents in their 30s or 40s, but no such association was found in another study (Lefebvre et al. 1998). Our assumption had been that young adults would be more open to the use of mental health care than older ones, and that many new clients would therefore come from younger age groups. Instead we encountered new care users in all age groups, even in older groups, where the likelihood of first care use would seem lower in the first place. Hence, age does not sufficiently explain why people seek professional help for mental health problems for the first time in their lives.

Lower income. Two other studies (Lefebvre et al. 1998; Rabinowitz et al. 1999) found no association between income and prevalent care utilisation. Our findings show that low income level is related to repeated care utilisation but not to incident use.

Living alone. Like the study by Lefebvre et al. (1998), we found a positive association between living alone and the frequent, but not the incident, use of care services.

Paid employment. Two population studies (Lefebvre et al. 1998; Rabinowitz et al. 1999) found no relationship between employment status and prevalent care use. The findings we made after adjusting for influences such as psychiatric or somatic disorders and burden of illness suggest that employed people, more than those outside paid employment, may receive more incentives to seek help for mental health problems, for example from their employers.

The determinants of incident care utilisation give us an indication of which new groups are being reached by primary care and mental health care services, as well as to which groups an increase in the consumption of care might be attributed. Two indicators – education and somatic disorder – were found to be associated with incident care use only. The following four other indicators were linked to both incident and frequent care utilisation.

Less education. Two studies (Lin et al. 1996; Rabinowitz et al. 1999) found no association between education and the prevalence rate of care utilisation. Our results have shown that the lower the level of educational attainment, the greater the likelihood of incident care use. In other words, people with less education constitute one of the new client groups for primary and mental health care in connection with mental health problems.

Somatic disorder. One population study (Rabinowitz et al. 1999) linked the presence of a somatic disorder to the prevalence of care utilisation. Our results suggest that being in medical treatment for a somatic disorder may lower people's threshold to seek care for mental health problems for the first time in their lives. At the same time, it does not appear to increase their likelihood of repeated care use.

Gender. Our findings on the relationship between gender and prevalent care use were similar to those in other studies (Lin et al. 1996; Lefebvre et al. 1998; Rabinowitz et al. 1999). Women showed a greater probability of both incident and frequent care use, even after adjustment for the influence of other determinants. Possibly women acknowledge mental health problems and accept professional care more readily than men do, and are hence more likely to seek help.

Restricted activity days, *social functioning*, *unmet care needs*. Like the study by Katz et al. (1997), our results appear to confirm how important the burden of illness is for explaining both incident and frequent care use. The greater the burden that subjects experience from their mental health problems, the more likely they are to utilise care services, even after adjustment for the effects of other determinants.

In sum, new clients who seek primary care or mental health care for mental health problems are found in all age groups. They are more likely to be women, to have less education, to be in treatment for a somatic disorder, and to experience impairment from mental health problems in their daily functioning.

Three cautionary remarks may be made with regard to our findings. The first is that certain groups in the population are underrepresented in the NEMESIS data, including people with an insufficient mastery of Dutch, people of no fixed abode and people undergoing prolonged stays in institutions. We believe this underrepresentation will have had little effect on the size of the incidence rates found, because the first group is small and the other two groups are unlikely to be in the risk group for new care use. The underrepresentation probably did result in underestimation of the numbers of frequent care users, a problem common to most population studies on care utilisation.

The second word of caution involves the sample attrition in the second wave of the study. Most probably this attrition does not affect the validity of our results, because it was not strongly associated with poorer mental or physical health (see, for example, de Graaf et al. 2000), which might be a factor in greater care utilisation.

A third qualification applies to the relatively short period between the recording of the predictor variables and the assessment of the incidence of care use. Conclusions about causality would ideally require a longer time frame.

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