

## Determinants of the help-seeking process: Goldberg and Huxley's first level and first filter

PETER F. M. VERHAAK<sup>1</sup>

*From the Netherlands Institute of Primary Health Care, Utrecht, The Netherlands*

**SYNOPSIS** This paper discusses minor psychiatric morbidity in the community and its relation to help-seeking. The research is aimed at identifying the demographic and social characteristics that enhance the likelihood of minor psychiatric morbidity, as measured by the General Health Questionnaire, and to reveal how these determinants relate to health status. In the second stage of the study, the same characteristics are related to their effect on the decision to consult a general practitioner and, more specifically, on presenting psycho-social problems to the GP. At the population level, the likelihood of a high GHQ score was greater for women, divorced persons and the unemployed, other variables remaining equal. However, GHQ score was contaminated by poor subjective health perception, especially for unemployed persons. Chronic physical illness did not have an independent effect on the GHQ score. Chronic physical illness did influence help-seeking. In addition, several socio-demographic characteristics showed an independent effect on consulting behaviour for both GHQ-positive and GHQ-negative patients. Women, unemployed persons and publicly insured patients with a minor psychiatric disturbance were more apt to visit their GP, regardless of their physical health status. However, no socio-demographic characteristics increased the likelihood that a GHQ-positive patient would present unambiguous psycho-social complaints as a reason to see their doctor.

### INTRODUCTION

The filter-model of Goldberg & Huxley was originally designed to describe 'the pathway to psychiatric care'. It depicts psychiatric morbidity encountered among patients on several levels (population, primary care, psychiatric settings). Moreover, it identifies points of decision, the so-called filters between the different levels: which psychologically disordered individuals will seek care; which ones will have their disturbances detected; who will be treated in a primary care setting and who will be referred for psychiatric care? (Goldberg & Huxley, 1980).

The model, however, might also be understood as a research programme. In this respect, much epidemiological research has been done already at the several levels and in different countries, e.g. the UK, USA, Australia, Spain and the Netherlands (the ECA-studies; Goldberg *et al.* 1976; Finlay-Jones & Burvill, 1977;

Marks *et al.* 1979; Goldberg & Bridges, 1987; Hodiamont *et al.* 1987; Vázquez-Barquero *et al.* 1987; Regier *et al.* 1988, 1993; Wilmlink, 1989; Bensing & Beerendonk, 1990; Ormel *et al.* 1990, 1991; Verhaak *et al.* 1990; Robins & Regier, 1991; Verhaak & Tjhuis, 1992; Verhaak, 1993).

In regard to the points of decision (the filters in the model) much attention has been directed to the second filter: recognition of mental illness by the general practitioner (Marks *et al.* 1979; Ormel *et al.* 1990; Sartorius *et al.*, 1990; Cooper & Eastwood, 1992). However, concerning the decision of the disturbed patient to seek care, a paucity of research literature on psychiatric morbidity in the community and its relation to help-seeking behaviour was reported as late as 1990 (Giel *et al.* 1990). In another review, Williams *et al.* (1990) discussed the weak theoretical foundation of research in this area; the authors recommended taking recourse to general models of health service utilization, as developed by Andersen & Newman (1973).

One of the few studies carried out according to this recommendation is the secondary analysis

<sup>1</sup> Address for correspondence: Dr Peter F. M. Verhaak, Netherlands Institute of Primary Health Care, PO Box 1568, 3500 BN Utrecht, The Netherlands.

by Williams *et al.* (1986) of the West London survey. They determined the joint effects of minor psychiatric morbidity (estimated by the GHQ-30), socio-demographic variables (gender, age, marital status, socio-economic group (SEG) and employment status), and health status (self-assessment, chronic illness and social impairment) on general practitioner consultation. Each of the health related variables (including GHQ score) had an independent effect; socio-demographic variables had no independent effects. The effect of minor psychiatric morbidity did not vary according to sex, marital status or another socio-demographic variable.

Vázquez-Barquero and his colleagues (Vázquez-Barquero *et al.* 1990) described minor psychiatric morbidity (measured by the GHQ-60) in the population. Psychiatric morbidity was higher for females than for males and increased with age. Previously married men had a higher rate of minor psychiatric morbidity than currently married or single men. Unemployed men had higher rates than employed men, as did poorly educated women compared to highly educated women. These investigators also examined the effect of psychiatric morbidity on the probability of being in contact with primary care physicians and the socio-demographic variables which influenced that effect. They found independent effects of a positive GHQ score and a number of socio-demographic variables (age, sex, marital status for females and employment status for men), but no interaction between GHQ status and socio-demographic variable, could be demonstrated. A more recent publication (Vázquez-Barquero *et al.* 1992), calls attention to the strong association between physical illness and medical consultation for people with probable minor psychiatric morbidity.

These investigations suggest a relatively high probability that patients with a minor psychiatric disorder (as expressed by the GHQ) will pass Goldberg & Huxley's first filter. Furthermore, a number of socio-demographic variables are related to the likelihood of a high GHQ score as well as that of consulting a general practitioner. In the latter case, however, those variables disappear as independent factors when minor psychiatric disorder and health status are considered together.

A number of issues remain unsolved, one of

these is the possible interrelationship of GHQ score and health status. As we recently found, patients with an elevated GHQ score felt less healthy, experienced more acute symptoms during the previous 2 weeks, reported more chronic diseases and had a higher level of absenteeism than patients with a low GHQ score. Also, they reported a higher level of medical attention over the previous year, mentioning not only an increased use of mental health services, but also of medical specialists, physiotherapists, and alternative medicine (Bensing & Verhaak, 1994). This is in line with the results of Vázquez-Barquero *et al.* (1992). One conclusion is that ill health is a consequence of mental distress; alternatively the GHQ may be sensitive to mental distress as well as to ill health. In the latter case, it is imperative to investigate whether ill health acts as a confounder in the relation between GHQ and other determinants.

The second issue to be discussed in this paper is the interrelation between health status, socio-demographic factors and the likelihood of consulting a GP. Vázquez-Barquero *et al.* (1990) do not consider health status in their study. The independent effects of socio-demographic variables that they found for GHQ-positive (GHQ+) as well as GHQ-negative (GHQ-) cases, might be attributed for example to a poorer healthy status of women or older patients. They did incorporate health status in an exploratory analysis in their recent study Vázquez-Barquero *et al.* (1992) and they found a sizeable effect of serious physical illness. Williams *et al.* (1986) also considered this interrelationship, but looked at the undivided sample, and treated the GHQ score as variable in their sample. In contrast to this approach, we followed GHQ+ as well as GHQ- cases, and have analysed each group for the influence of health status and socio-demographic characteristics on the decision to consult a GP.

A final objective of this paper is to specify the concept 'help-seeking behaviour'. In the research mentioned above, help-seeking was defined as visiting a doctor, or more specifically, a GP. Help-seeking behaviour was measured by asking the respondents if they had seen a doctor/GP during the last... weeks. The data provided here allow us to use a more specific measure. We have a 3 month registration of

doctor-patient contacts at our disposal. From these records we can determine with certainty whether there have been one or more contacts with the GP and whether the patient has presented any psycho-social symptoms during one of those contacts. Of course, this measure does not cover the whole concept of 'help-seeking behaviour'. A patient might express his distress in physical symptoms. Nevertheless, it might be a better approximation of help-seeking than the patient's response to direct questioning.

To elucidate the interrelationship mentioned above, we first considered the socio-demographic determinants of minor psychiatric morbidity, as expressed by the GHQ score. By adding indicators of health status subsequently, we analysed whether the GHQ measures 'health' as well as 'minor psychiatric morbidity'.

Secondly we considered the use of health services by two separate groups of patients: those with either high or low GHQ scores. Following the model of Andersen & Newman (1973), we used three groups of explaining variables: predisposing variables; enabling variables; and illness level. Thirdly we analysed the presentation of psychological and social symptoms by those two groups of patients. This third analysis was only carried out on the subsample of patients who actually visited their GP.

In this study we have asked the following questions.

1 Which demographic and social characteristics are related to minor psychiatric morbidity in the population, as measured by the GHQ?

2 In what way are these relationships modified by perceived health status?

3 Which demographic, social and enabling characteristics are related to help-seeking by patients with either an elevated or a low GHQ score?

4 How does perceived health status interfere in this respect?

5 Which demographic, social and enabling characteristics are related to the presentation of psycho-social symptoms by patients with an elevated GHQ score who visit their GP?

## METHOD

### Data collection

The data were derived from the Dutch National Study of Morbidity and Interventions in General Practice. During this nationwide survey, 161 GPs registered all their doctor-patient contacts over a period of 3 months. Participating practices were randomly selected according to a stratification procedure that guaranteed a sufficient number of practices from each region and each level of urbanization. For a detailed description of this morbidity survey, see Foets *et al.* (1982).

General practitioners in The Netherlands have fixed lists, as is the case in the UK. For each participating GP, approximately 100 patients were selected from these lists at random. In total 17342 patients were approached; with 13340 of them a 2 h health interview was held, resulting in a positive response rate of nearly 77%. The main reasons for non-participation were patients having moved, patients not found at home on several occasions, and refusal. There is a slight over-representation among the respondents of the 25-44 age group, compared with the Dutch population as a whole. However, the sample can be considered representative of the Dutch population with respect to age and sex. Interviews took place during the second month of the morbidity registration.

### Variables used in the analysis

This National Survey was designed to provide data for an extensive array of health services research questions. For the aim of this present study, only a small number of variables gathered in the survey have been used. The health interviews provide excellent data to answer the first two research questions. The first dependent variable considered is 'minor psychiatric morbidity'. The score on the General Health Questionnaire (30-items-version) was used as an indicator of mental illness. The GHQ was in fact developed as a first-stage screening instrument. Taking a psychiatric clinical instrument as a reference standard, specificities between 0.74 and 0.86 and sensitivities between 0.72 and 1.00 have been established (Goldberg, 1985). The usual cut-off point between 4 and 5 'positive' items was used to discriminate between 'cases' and 'non-cases'.

Table 1. Proportion of respondents scoring high on the GHQ, according to socio-demographic characteristics

	N (10305)*	GHQ+ (N = 1293) (%)	$\chi^2$	P
Age (years)				
15-24	2005	10.8	9.67	< 0.05
25-44	4342	12.8		
45-64	2605	13.6		
65-75	912	11.6		
≥ 75	62	14.1		
Sex				
Male	5092	9.3	98.56	< 0.0001
Female	5213	15.8		
Marital status				
Married	6469	11.5	82.63	< 0.0001
Divorced	370	25.6		
Widowed	606	18.2		
Never married	2833	12.0		
Employment status				
Homemaker	1404	16.1	73.16	< 0.0001
Unemployed	227	18.5		
Incapacitated	317	24.0		
Retired	1296	12.3		
Working/student/ military service	7061	11.1		
Education				
Primary	5510	13.0	2.80	NS
Secondary	3265	11.8		
Higher	1053	12.2		
Insurance				
Public	6924	13.4	13.64	< 0.001
Private	3310	10.8		

\* For most variables N will not add up to 10305, due to missing values.

The following predisposing, enabling and illness variables (Andersen & Newman, 1973) were assessed in the course of the interview. Predisposing/demographic variables were: age, sex, marital status (married/co-habiting, divorced, widowed, never married). Predisposing/social variables were: employment status (house-wife/husband, unemployed, incapacitated, retired, working (including students and the military)); and education level, primary (primary school, technical and vocational training for 12-16 years), secondary (technical and vocational training for 16-18 years, secondary schools), and higher (technical and vocational training for ≥ 18 years, university). Enabling variables were: health insurance, private/public. Illness variables were: general health feeling (a 5-point scale, stating 'my health status in general is: very good/good/not good/not bad/bad/very

bad); number of acute symptoms and complaints during the previous 2 weeks (the respondent had to mark each of the symptoms from a list of 45 which had given trouble during the previous 2 weeks); number of chronic conditions (the respondent had to mark each chronic condition from which he/she suffered from a list of 28).

To answer the third, fourth and fifth research questions, a link has to be made between minor psychiatric morbidity and perceived health status assessed during the health interview and consulting behaviour as registered during the morbidity registration respectively. Consulting behaviour was defined operationally as a patient having had at least one consultation or home visit with a general practitioner during the 3 month registration period.

All reasons for a health visit initiated by the patient in the contacts registered during this registration period, were recorded in the words of the patient and coded according to the International Classification of Primary Care. If any of these reasons for visit of a patient was classified within the chapter Psyche or Social, the patient was considered as presenting psychosocial symptoms.

As the health interview took place during the second month of registration, only registration data from this second month have been used. In this way, assessment of GHQ status and perceived health took place within a few weeks of the index consultation.

#### Analysis

To answer the first two questions descriptive statistics were first computed for each of the questions. The influence of the socio-demographic variables and health status on GHQ score was then evaluated by logistic regression. First, the influence of all socio-demographic variables was estimated by step-forward selection. Subsequently health status variables were added to the significant socio-demographic determinants. SPSS routine logistic regression was used.

To control any interaction effect between the significant socio-demographic determinants and health status, the following model was fitted:

$$\ln(p/[1-p]) = \text{constant} + \text{socdem} + \text{hlth} + \text{socdem} * \text{hlth},$$

where  $p$  is the proportion of GHQ cases re-

spectively of people who visit their general practitioner, soodem is the socio-demographic variable under consideration and hlth is health status of the patient, as assessed by the patient.

To answer questions three and four, the same procedure was followed, for patients with a high and a low GHQ score separately. For patients with a high GHQ who actually visited their GP, logistic regression was carried out with socio-demographic factors as independent variables. This should supply us with the answer to question five.

## RESULTS

Approximately 12.5% of the population at large are likely to be mentally ill, according to the GHQ. This probability increases gradually with age, with a decline for the 65-74 year age group. About twice as many women as men have high GHQ scores. People suffering a loss, either through divorce or widowhood, are clearly apt to have a high GHQ score, as are the unemployed and the incapacitated. GHQ cases are fairly evenly distributed among the different levels of education. More publicly than privately insured people are found among the GHQ 'cases'.

Logistic regression with GHQ 'caseness' as the dependent variable and the socio-demographic measures as independent variables resulted in the effects depicted in Table 2 (first three columns). The relationships that seem to be the strongest in the bivariate cross-tabulations also remain the most important ones in the multi-

variate analysis. Other variables being equal, it is women, divorced and widowed people, the unemployed and the incapacitated who are more at risk of being mentally ill, as indicated by the GHQ.

The logistic regression analysis was repeated, this time including the health indicators mentioned above, in order to assess the degree of confounding caused by this relationship. The results are shown in the last three columns of Table 2. Two out of three health indicators have a significant effect on GHQ 'caseness': patients with a subjective feeling of ill health and patients who had experienced acute complaints during the last 2 weeks have a higher chance of a positive GHQ score. Reported chronic (physical) illness does not have a significant effect.

Furthermore, this analysis indicates weaker effects of the determinants that were previously strong: being a woman or being divorced. These effects are still significant, however. The effects of being unemployed or incapacitated disappear when general health status is held constant. However, negative effects of being married or having retired appear. In other words, the chances that these groups would have a high GHQ score decrease when general health status is held constant.

There were no significant interactions between health status on the one hand and sex, employment status or marital status on the other.

With regard to research questions 1 and 2, we can conclude that sex and marital status exert effects on GHQ status, independent of the effect of health status. Persons who have lost their job,

Table 2. Determinants of GHQ 'caseness', before and after adding health indicators

Determinant	Before adding health			After adding health			In respect of
	B	P	Odds	B	P	Odds	
Marital status							Never married
Married	-0.10	NS	0.91	-0.14	NS	0.87	
Divorced	0.76	0.000	2.15	0.50	0.001	1.64	
Widowed	0.35	0.009	1.42	0.12	NS	1.13	
Sex							Female
Male	-0.59	0.000	0.56	-0.31	0.000	0.73	
Employment status							Employed
Unemployed	0.56	0.002	1.74	0.34	NS	1.40	
Incapacitated	1.03	0.000	2.79	0.06	NS	1.06	
Retired	-0.07	NS	0.93	-0.42	0.000	0.66	
General health feeling	—	—	—	0.55	0.000	1.73	
N of acute complaints	—	—	—	0.55	0.000	1.73	

Table 3. Socio-demographic characteristics of people scoring high and low on the GHQ, visiting or not visiting a doctor

	GHQ+				GHQ-			
	Visit + (N = 352) (%)	Visit - (N = 941) (%)	$\chi^2$	P	Visit + (N = 1400) (%)	Visit - (N = 7612) (%)	$\chi^2$	P
Age (years)								
15-24	14	18	14.18	> 0.01	16	20	60.15	< 0.0001
25-44	40	44			36	43		
45-64	28	27			29	24		
65-75	10	7			12	8		
≥ 75	8	4			6	4		
Sex								
Male	29	39	12.73	< 0.001	45	52	25.45	< 0.0001
Female	71	61			55	48		
Marital status								
Married	59	57	13.92	< 0.01	66	63	25.39	< 0.0001
Divorced	8	7			3	3		
Widowed	12	7			8	5		
Never married	21	29			24	28		
Employment status								
Homemaker	23	15	50.59	< 0.0001	16	13	129.97	< 0.0001
Unemployed	3	3			2	2		
Incapacitated	8	5			4	3		
Retired	19	10			20	11		
Working/student/ military service	46	67			58	72		
Education								
Primary	66	56	10.07	< 0.01	61	55	19.91	< 0.0001
Secondary	26	33			31	34		
Higher	8	11			8	11		
Insurance								
Public	80	69	13.39	< 0.001	70	66	8.33	< 0.01
Private	20	31			30	34		

be it because of ill health or other reasons, are more likely to have a high GHQ score. But this risk is plausible, as these persons are also less healthy in general.

Table 3 shows the relationship between visits to the doctor (by GHQ 'cases' and 'non-cases') and socio-demographic variables and health status. People who had not visited their general practitioner in a 3-month period are more likely to be young, male, never married, privately insured, working, and better educated than those who did visit their GP in the same time period. These factors are the same for GHQ+ as for GHQ- cases, although GHQ+ cases in general have a higher consultation rate than GHQ-.

In the case of a probable mental illness (GHQ+), logistic regression demonstrated that when the effects of the socio-demographic variables are taken in conjunction, gender, employment status and insurance have the strongest independent effects (see Table 4).

Variables indicating health status were added to the model, as they were for the prediction of GHQ 'caseness' in Table 2. Only one of the indicators - the number of chronic illnesses - had a small additive effect, but the  $\beta$ s or odds ratios were not substantially changed. There were no interactions between sex, employment status and insurance sector. We therefore conclude that for GHQ 'cases', the chances of visiting a doctor are higher for the publicly insured, for females and for people without regular work, regardless of their health status.

The same analysis was carried out for people who were not GHQ cases. The same socio-demographic variables were selected by step-forward selection, but all health status indicators were accepted in the second stage (see Table 5). For persons who, on account of their GHQ scores, are not considered to be possible 'cases' of mental illness, health variables, especially the general feeling of health are of greater weight

Table 4. Determinants of visiting a doctor given GHQ 'caseness', before and after adding health indicators

Determinant	Before adding health			After adding health			In respect of
	B	P	Odds	B	P	Odds	
Insurance							
Private	-0.44	0.005	0.64	-0.40	0.011	0.67	Public
Sex							
Male	-0.33	0.026	0.72	-0.32	0.031	0.72	Female
Employment status							
Homemaker	0.61	0.000	1.86	0.51	0.004	1.66	Employed
Unemployed	0.16	NS	1.17	0.14	NS	1.16	
Incapacitated	0.89	0.000	2.43	0.71	0.007	2.04	
Retired	1.00	0.000	2.70	0.79	0.000	2.20	
N of chronic conditions	—	—	—	0.16	0.000	1.17	

Table 5. Socio-demographic determinants of visiting a doctor, given non-GHQ 'caseness' (health status added)

Determinant	B	P	Odds	In respect of
Sex				
Male	-0.16	0.012	0.85	Female
Employment status				
Homemaker	0.33	0.000	1.39	Employed
Unemployed	0.19	NS	1.10	
Incapacitated	0.25	0.000	1.29	
Retired	0.55	0.000	1.79	
Number of acute complaints	0.05	0.009	1.05	
Number of chronic conditions	0.09	0.000	1.10	
General health feeling	0.33	0.000	1.38	

and socio-demographic differences are less important than they are for patients who are considered to be 'cases'.

Logistic regression on the presentation of psychosocial symptoms or complaints, among patients with minor mental disturbance (GHQ+) who actually visited their GP in the 3-month period, with all socio-demographic variables as possible determinants, did not reveal any significant effect.

## DISCUSSION

Approximately 13.0% of the population may be called 'mentally disturbed' according to their scores on the GHQ. Women, divorced persons, widows and widowers, and those who are unemployed, either as a result of illness or for other reasons, are more likely to have a high

GHQ score. The initial high risk of patients with compulsory insurance or a lower level of education disappears after other socio-demographic variables have been taken into account. The high GHQ score of these groups seems partly to be a result of perceived inferior health, since the effects of the socio-demographic variables decrease after general health indicators have been added. It must be stressed that only health indicators with a strong subjective component (health feeling, number of acute symptoms experienced) appeared to be related to a high GHQ score. The presence of chronic physical illness was not related to the GHQ score. The GHQ score seems to be more closely related to the feeling of illness than to the presence of disease.

The likelihood of visiting a doctor is higher for women, unemployed people and those with compulsory insurance. The effect of these socio-demographic variables is stronger for persons who are considered to be mentally ill according to their GHQ scores. Furthermore, health status does less to explain why a doctor was consulted in the case of a high GHQ. The only health status variable with a significant effect is the 'hard' operationalization, that is to say the presence of chronic disease. Incidentally, this is the health status variable which is least contaminated with the GHQ. In other words, in the event of mental illness, a contact with the doctor depends more upon socio-demographic variables than upon subjective health status. It may be possible that, given the relationship between subjective health status and GHQ, the GHQ+ subgroup is too homogeneous with respect to

subjective health status to permit any further effect of this variable on help-seeking behaviour. In the GHQ- subgroup, the subjective perception of general health status has a greater impact. Although some socio-demographic variables seem to affect the decision to visit a general practitioner, they have no further impact on the presentation of the psycho-social problems in the event of a consultation.

The prevalence of mental illness as measured by the GHQ is less than that reported by most other population studies using similar instruments. Finlay-Jones & Burvill (1977) reported 16.3% of their respondents scoring above the threshold level; Vázquez-Barquero *et al.* (1990) reported 18.5%; and Hodiament *et al.* (1987) found 22.7%. Only Goldberg *et al.* (1976) arrived at a comparable 11.3%. One explanation for this may be that the GHQ was administered unobtrusively among many other questionnaires in the course of a comprehensive interview. Apparently the threshold at which our respondents could get a positive GHQ score was relatively high. This may have had consequences for the severity of selected cases.

Another methodological problem discussed here is the probable time span of a few weeks between the health interview and the index consultation. In order to reduce this time span to a minimum we have restricted ourselves to consultations during the second month of registration. This approach yields the same results as an analysis in which the whole registration period was taken into account. Limiting the possible time span between health interview and index consultation to 2 weeks makes no difference for the GHQ group (Table 5), but it does leave us with too few cases in the GHQ+ group. As a result, in that analysis the effect of 'sex' as a determinant for a doctor's visit cannot be replicated. For the other factors, the results remain exactly as they were.

Most of the relationships found, however, are compatible with those described by Vázquez-Barquero *et al.* (1990) and Williams *et al.* (1986): women and divorced or unemployed people are more at risk of mental illness. Results from former studies with respect to age are inconclusive: Finlay-Jones & Burvill (1977) reported a peak for men between 30 and 39 years; Williams *et al.* (1986) noted a peak for men younger than 30 years; and Myers *et al.* (1984)

saw a sharp decline in DIS cases from 45 years onward; Vázquez-Barquero *et al.* (1992) detected an increase for older people. Our data appear to support the latter finding, although age effects disappeared after considering other socio-demographic variables jointly.

As we expected, however, a high score on the GHQ was contaminated by poor health, especially by the patient's subjective self-assessment. As subjective health measures had a higher impact than chronic physical disease, we might conclude that GHQ is contaminated less with disease but more with subjective feeling of illness. The result that divorced people and women remain at a relatively high GHQ level after taking health perception into account suggests that these categories at least are in any event susceptible to mental illness. In addition, GHQ 'cases' had a relatively high medical consumption, regardless of health status. This result tends to support the use of the GHQ as an instrument that does not merely indicate health status. Likewise, Vázquez-Barquero *et al.* (1992), reported a strong effect of physical illness on consulting behaviour of GHQ-positive patients and they defined physical illness as 'non-transient disorder of a serious nature: the majority of those affected had a chronic... disorder' (p. 501). In other words, their measurement was comparable to our 'chronic disease', which indeed exerted an effect on consulting behaviour.

In the terminology of Andersen & Newman (1973), the type of insurance acts as an enabling variable and determines part of a person's medical consumption regardless of health status. This effect is particularly so for individuals with a minor psychiatric disturbance. Gender and employment status are clearly predisposing variables, that operate in a way that is comparable to health insurance. Of course this mechanism, especially the role of insurance, is restricted to the Dutch health-care system. Its effects cannot be extrapolated indiscriminately to other health-care systems. Nevertheless, the discrepancy with the results of Williams *et al.* (1986) (they did not find any independent effect of socio-demographic variables after holding physical and mental health status constant) cannot be explained by different health care systems alone. The only real difference between our approach and theirs is that we fitted the



model for GHQ- and GHQ+ groups separately. However, when we tried to fit their model to our data (using insurance as a replacement for their variable 'socio-economic group', and without their health-related variable 'social impairment'), we found comparable effects of GHQ status, subjective health feeling and chronic illness, and also independent effects for gender and employment status. The interaction effects reported by Williams *et al.* (1986) of gender with marital status, employment status and health feeling, and a three-way interaction of gender, insurance and GHQ status could not be replicated.

On the evidence presented, women and unemployed or disabled people combine a high risk of mental illness with a high tendency (in the case of mental illness) to consult a doctor. Divorced and widowed people, on the other hand, are also at higher risk. But if they do become mentally ill, the chance of their seeing a doctor is no better than average. In this respect, they form that segment of the population which most deserves extra attention.

A general practitioner should generally be aware of the higher risks of problems among people who are deprived in one way or another: the unemployed, widowed and divorced people, and people from lower socio-economic classes. He/she should also be aware of the possible attribution of the general feeling of misery to physical dysfunction. Perhaps their affliction is not strictly a mental health problem but a difficult life. A possible interpretation of the contamination of GHQ and ill health might be that the complaints of GHQ+ people do not indicate their objective physical status but rather their urge to complain in general. And given most of the risks associated with high GHQ - unemployment, divorce, ill health, low socio-economic status - they may indeed have good reason to complain.

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