Mental Health Problems in Family Medicine/General Practice

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Editorial

Mental Health Problems in Family Medicine/General Practice

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Mental health disorders represent a large proportion of the world’s disease burden, mostly due to depression and anxiety disorders, alcohol and drug abuse, and psychoses [1, 2].

In terms of disability-adjusted life years, depression ranks number one among noncommunicable diseases and is projected to become the most important overall contributor to the global disease burden by 2030 [3].

People with mental problems usually seek help from their general practitioner (GP), sometimes in combination with a psychiatrist [4]. In this current period of economic recession, delivering health care in an efficient and cost-effective way is particularly important. Primary health care teams are being asked to take on increased responsibilities in the implementation of strategies to help in the prevention and treatment of mild and moderate mental health problems and effective coordination with secondary care for more severe conditions.

Mental health disorders are very often comorbid with physical health disorders [5]. They can play an important role in the development of somatic diseases and vice versa. The burden of mental disorders is likely to be underestimated as a consequence of the inadequate recognition of the connection between mental and physical health. Indeed, as mental and physical health are correlated, there can be no health without mental health [2].

In this special mental health edition of the International Journal of Family Medicine we are pleased to present a selection of papers from 5 different European countries, looking in more depth at some of these important issues.

E. M. McMahon et al. investigated the functional impairment, service use, and costs of patients with chronic and recurrent depression recruited from UK primary care. These patients visited their GP more often than other patients and were also high users of hospital-based services (including both physical and mental health care), especially those patients with chronic major depression. This was a patient group with very significant morbidity and high costs, highlighting the need for effective interventions. A. Wallerblad et al. found that forty-seven percent of those affected by mild depression and/or anxiety had been seeking care for psychological symptoms within the last year. Those who had consulted their GP about their psychological problem and those who had also seen a psychiatrist, psychologist, or alternative health provider were more likely to have both depression and anxiety, and disability due to their psychological symptoms and so likely to be more severely affected. Among those not seeking care for their psychological symptoms, two-thirds had sought care for somatic symptoms, which might be linked with them, focusing on the physical symptoms which often accompany depression and anxiety and highlight the importance of GPs actively, also considering mental health problems in patients who present with physical symptoms [6].

How these and other determinants influence pathways of care and referral from primary care physicians (PCPs) to a Community Mental Health Centre (CMHC) in the context of a collaborative care programme for common mental disorders is discussed by P. Rucci et al., working in Bologna, Italy. In their study, of 8,570 patients diagnosed as having common mental health problems, 57.4% were referred by PCPs to CMHCs. Those less likely to be referred were living in urban areas, suffered from depression rather than anxiety, and were younger. However, once they had been referred and assessed, patients living in urban areas were more likely...
to receive “shared care”, with the consultant providing brief and focused therapeutic interventions to support the PCP management of psychiatric disorders. Prospective studies are needed to assess the optimum length, quantity, and quality of collaborative treatment to improve outcomes for common mental disorders delivered at any step of the care pathway.

A potential adverse consequence of undetected mental health problems is prolonged absence from work, with significant costs both for the individual and society. The two-phase study by H. J. Soegaard et al. from Denmark involved screening individuals classified as being on long-term sickness absence for undetected common mental health problems not given as a reason for their sick leave. Using the Present State Examination (PSE) with a subsample and extrapolating the results they found the frequencies of undetected mental disorders among sick-listed individuals to be 21% for any psychiatric diagnosis, with 14% diagnosed as having depression, 4% anxiety, and 6% somatoform disorder. Clearly it is very important to detect mental health problems in this population, in order to initiate the appropriate treatment and facilitate people’s return to work.

Finally, work from R. Ettner et al. from the Netherlands looks at the other side of the equation mentioned at the beginning of this editorial—how chronic stress or emotional difficulties may impact adversely on peoples’ physical health. The subjects were middle-aged genetic males, of which the group being investigated were gender dysphoric and seeking treatment for this, while the controls were normal males with no gender difficulties. Gender dysphoria is an uncomfortable and stressful situation which these subjects are likely to have experienced for several years before presenting for treatment. The groups did not differ in average BMI, alcohol intake, or smoking behavior and all subjects were of middle to upper class socioeconomic status, but the mean blood pressure readings in the gender dysphoric group were significantly higher than in the controls, adding to the evidence for a significant and positive association between measures of chronic stress and hypertension.

Coping with mental health problems is a major challenge for patients and their carers, physicians, the health care system, and the community. These interesting papers have highlighted current issues of under-detection and variable pathways for the care of people with common mental health problems in a range of European countries, but there remains a considerable challenge to improve access to health care, adequate and timely diagnoses, and cost-effective and appropriate treatment of all people with mental health problems.

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Literature supporting a relationship between emotions and regulation of blood pressure dates back to the early 1900s. Theoretical explanations of the pathophysiology of the correlation have centered on several possible trajectories, the most likely being cardiovascular reactivity to stress. Prospective studies have demonstrated that chronic stress and enduring traits such as defensiveness and anxiety, impacts the development of hypertension. An analysis of 195 genetic males seeking contrary hormones for treatment of gender dysphoria revealed a significantly increased prevalence of hypertension in this cohort. The authors attribute this increased prevalence to the known effects of emotional disclosure on health and conclude that the inhibition of emotional expressiveness is significant in the etiology and maintenance of essential hypertension in this population. As hypertension is associated with morbidity and mortality, the implications for the family medicine physician treating gender nonconforming individuals and other patients in the context of a general medical practice will be discussed.

1. Introduction

Early psychosomatic theorists proposed that anger, hostility, and depression gave rise to hypertension [1]. Recent well-designed prospective studies document that chronic stress, as well as personality characteristics and emotional states, are associated with essential hypertension [2]. One such study evaluated 4,861 participants, aged 45–70, who lived near a major airport for at least five years. Exposure to airport noise was associated with a 14% rise in risk of hypertension [3].

Hypertension is one of the most common worldwide diseases afflicting humans. Owing to the associated morbidity and mortality, and the cost to society, hypertension is an important public health challenge. Concerted effort on the part of the health care professionals has led to decreased mortality and morbidity rates from the multiple organ damage arising from years of untreated hypertension.

Prevalence rates of hypertension vary enormously, particularly between rural and urban populations, lending credence to the importance of environmental factors in the etiology of the disease process. Populations living in rural areas typically have lower prevalence rates of hypertension than those living in urban areas. In the USA, the prevalence rate of hypertension is approximately 21–24% in individuals between 20–80 years. This rate has remained unchanged since 1999. The lowest prevalence rate worldwide is among men living in rural India, the highest prevalence rate is found in women in Poland [4].

2. A Proposed Pathophysiology

Chronic stress leads to an increase in adrenocorticotropic hormone (ACTH) secreted by the pituitary gland. Due to this increase in ACTH, the adrenal gland secretes excess glucocorticoids (cortisol, cortisone). Excessive cortisol production and subsequent depletion with negative sequella to the immune system, electrolytes, renal, calcium, and phosphorous bone metabolism, result in endocrine function chaos. Increased epinephrine release results in sodium retention causing elevated blood pressure, and ultimately, hypertension [5, 6].
Studies that examine disclosure—whether an individual shares emotionally laden personal information or keeps it secret for fear of stigmatization and shame—conclude that nondisclosure due to fear of ostracism correlates with physiological changes in tissues and organs [7]. Manuck et al. demonstrated that patients with elevated blood pressure show larger cardiovascular reactions to common stressors produced in a laboratory than normotensive controls. They suggest that lower assertiveness is a measurable deficit that corresponds to this pattern of cardiovascular activity [8]. Consistent with this finding, was that of Wirtz et al., who found strong evidence for physiological hyperactivity to stress and low social support to be significant factors [9], and Hawkley et al., who found loneliness to be predictive of elevated blood pressure [10].

Inhibition of expression is known to be associated with hypertension. Roter and Ewart studied 542 patient-doctor interactions to see if there were significant differences between a group of patients diagnosed with hypertension and a normotensive group. Content analysis and observer ratings revealed that physicians paid less attention to the hypertensive patients, who asked fewer questions, raised fewer concerns, and volunteered less personal information, than patients who were normotensive. The authors referred to the hypertensive patients as having patterns of self-presentation marked by an inhibition of expression [11].

Individuals who experience distress about gender, that is, are gender nonconforming, experience severe gender dysphoria or transsexualism, learn early in life to suppress or inhibit feelings, and modify behavior to avoid disapproval, shame, or ostracism. Many such individuals spend years or decades engaging in “hypermasculine” behaviors or adopting stereotypical male roles and/or avocations to avoid discovery. Some persons keep their gender-variant identity a secret even from a spouse [12]. The authors hypothesized that this group would have a higher prevalence of hypertension than a control group of individuals who had not kept such a “secret” about a socially volatile topic for a protracted period of time.

3. Hypothesis

In Western society, gender nonconformity requires repressing feelings and behaviors in attempts to avoid social derision, and starts at a young age. Such repression, over time, creates a scenario of chronic secrecy and inhibition of expression. Inhibition of expression is a known risk factor for hypertension. Therefore, the investigators hypothesized that collectively, the transgender cohort will have elevated rates of hypertension compared to a matched control group.

4. Method

4.1. Subjects. The subjects were 195 genetic males seeking feminizing hormone treatment at a family practice clinic in an urban setting. The mean age was 40.9 years. The ethnicity of the group was 91% Caucasian, 2% African American, 5% Hispanic, and 2% Asian.

All of the gender dysphoric males were tested for endocrine abnormalities. Hormonal ranges were consistent with natal male normal reference ranges. One patient with disorder of sexual development (previously known as intersex) was excluded from the study.

The control group consisted of 216 men who sought general medical care at the same family practice clinic with no history of gender dysphoria. The mean age of this group was 39.1 years. The ethnicity of the group was 83% Caucasian, 10% African American, 5% Hispanic, and 2% Asian.

Subjects were excluded from participation if they had pathology including: stroke, myocardial infarction, pulmonary embolism, or kidney failure. Additionally, a history of alcohol or substance abuse was a basis for exclusion.

The groups did not differ in average BMI, alcohol intake or smoking behavior. All subjects were middle to upper class in socioeconomic status.

4.2. Data Collection. In this cross-sectional observational study, a retrospective chart review for evidence of hypertension was conducted. Hypertension was diagnosed by a blood pressure reading of greater than 139/89 on at least three separate office visits. The blood pressure measurement was systematically performed by the physician using the following protocol.

Patient is seated comfortably for five minutes prior to measurement: feet are on the ground and the back is supported, the arm is raised to heart level. Blood pressure is measured again at the end of the office visit.

Classifications of blood pressure measurements were based on the Seventh Report of the Joint National Committee of Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (expressed in mm Hg): normal: systolic lower than 120; diastolic lower than 80, prehypertension: systolic 120–139; diastolic 80–90, stage 1: systolic 140–159; diastolic 90–99, stage 2: systolic equal to or more than 160; diastolic equal to or more than 100 [13].

5. Results

There were no differences in age between the two groups. The control group had greater ethnic diversity (chi-square = 11.9, df = 1, P = 0.0005). There were no differences in average BMI measures between the two groups.

The control group had a rate of hypertension consistent with reports of the prevalence in the general population of the United States (21.3%). As expected, rates of hypertension were significantly associated with increasing age in both groups.

As hypothesized, and shown in Figure 1 the probands had rates of hypertension significantly greater than the controls (45.1%) (chi-square 25.4, df = 1, P < 0.00001).

6. Discussion

Essential hypertension contributes to morbidity and mortality and has been called the “silent killer.” It is, however, the most important modifiable risk factor for coronary heart disease (the leading cause of death in North America), stroke
(the third leading cause), congestive heart failure, end-stage renal disease, and peripheral vascular disease. Approximately 50 million people in the United States are affected by hypertension and approximately 20% of adults worldwide.

In a 2009 review of 82 studies, five out of seven found a significant and positive association between measures of chronic stress and hypertension. The authors conclude that “chronic stress and particularly nonadaptive stress are likely causes of sustained elevation of blood pressure [14].” The present study suggests that there is a strong association between gender dysphoria and elevated blood pressure. Such an association does not prove causality, and further studies are warranted.

However, this and other studies suggest that lifelong compensatory reactions to social threat may result in physiological changes involving extreme cardiovascular reactivity. Family medicine physicians will encounter patients who are reluctant to share personal information, or who do not view such information as relevant to their health status or medical care. Although the physician may take a detailed medical history and ask about sexual health and personal stressors, patients may feel uncomfortable sharing information, particularly if they fear disapproval.

Rodriguez and Kelly asked college students to write about a personal secret while imagining an accepting confidant. A second group was to imagine a nonaccepting confidant. The “accepting confidant” group reported fewer illnesses at eight-week followup than did the nonaccepting confidant group. The authors repeated the study and concluded that “when people keep personal secrets, they often do so because they fear being ostracized. …Revealing to an accepting confidant can reduce this feeling of alienation and, as a consequence, can lead to health benefits [15].”

7. Conclusion

Physicians who work in primary care settings must give sufficient time and encouragement to facilitate a dialogue with patients. A supportive medical ally will focus on emotional concerns and encourage patients to ask questions. The implications of this study suggest that it is, ironically, the patient who is least likely to verbalize problems who is the most in need of the attention of the physician. Providing a safe and comfortable setting wherein patients are encouraged to discuss concerns can override the impulse to minimize symptoms and difficulties. Over the long term, this may prove as important as medication and treatment compliance in decreasing hypertension and promoting health.

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Chronic and Recurrent Depression in Primary Care: Socio-Demographic Features, Morbidity, and Costs

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Background. Major depression is often chronic or recurrent and is usually treated within primary care. Little is known about the associated morbidity and costs. Objectives. To determine socio-demographic characteristics of people with chronic or recurrent depression in primary care and associated morbidity, service use, and costs. Method. 558 participants were recruited from 42 GP practices in the UK. All participants had a history of chronic major depression, recurrent major depression, or dysthymia. Participants completed questionnaires including the BDI-II, Work and Social Adjustment Scale, Euroqol, and Client Service Receipt Inventory documenting use of primary care, mental health, and other services. Results. The sample was characterised by high levels of depression, functional impairment, and high service use and costs. The majority (74%) had been treated with an anti-depressant, while few had seen a counsellor (15%) or a psychologist (3%) in the preceding three months. The group with chronic major depression was most depressed and impaired with highest service use, whilst those with dysthymia were least depressed, impaired, and costly to support but still had high morbidity and associated costs. Conclusion. This is a patient group with very significant morbidity and high costs. Effective interventions to reduce both are required.

1. Introduction

In the UK, clinically significant or major depression affects between 5% and 10% of people at any time, with most being treated within general practice [1]. The annual cost of depression has been estimated to be over £9 billion in England [2], with more than 100 million working days lost and over 2,500 deaths due to depression in 2000 [2].

Major depression is often a chronic or recurrent disorder, with an estimated 80% of people experiencing at least one recurrence, although one primary care study has reported recurrence rates as low as 40% after a first episode [3]. Approximately 12% follow a chronic course [4]. Results from other studies indicate that only 50% of those with major depression will have recovered at one year [5]. The risk of recurrence increases with each successive episode [6].

Primary care populations with chronic or recurrent depression, although clinically important, are rarely investigated as a distinct patient group [7]. Past work has shown that chronicity is associated with high mortality, greater psychological and social morbidity, high use of primary care services [8], and high social and financial costs [3]. However, we have little detailed information on the specific morbidity, functional impairment, health service use or costs of chronic or recurrent depression in primary care settings.

In this study, our aims were to examine socio-demographic characteristics, morbidity, service use, and associated costs for three main clinical groups of people...
Recurrent major depression was defined by participants having two or more episodes of major depression within a three-year period. An episode of major depression must last at least two weeks with a period of recovery lasting at least two months in between episodes and must interfere with the person's normal functioning.

Dysthymia lasts at least two years, with symptoms which are less severe than those of major depression, but which nonetheless impair the individual's functioning.

Chronic major depression
An episode of major depression which lasts for a full two year period without a break of two months or more in which the person could function normally.

Box 1: DSM-IV diagnoses included in the ProCEED study.

With depression. Our sample comprised people looked after in primary care who were diagnosed with chronic major depression, recurrent major depression, and dysthymia. We addressed three main questions as follows.

(1) What were the socio-demographic characteristics of people in these three groups, and were there differences between the groups?
(2) Were there differences in the associated morbidity?
(3) What services were used by these three groups, and what were the associated costs?

2. Methods

2.1. Recruitment. A total of 558 participants were recruited between November 2007 and July 2008 from 42 GP practices in England, Scotland, and Northern Ireland. The aim was to recruit a representative sample of practices from throughout the UK, including urban and rural areas and areas with diverse ethnic populations. Participants were identified to be part of multi-centre study to test whether regular proactive contact with a practice nurse would benefit people with chronic or recurrent depression [9]. Patients were eligible if they were over the age of 18, had a recent history of chronic or recurrent major depression or dysthymia based on the Composite International Diagnostic Interview (CIDI), and their symptoms indicated at least mild depression (scoring 14 or higher on the Beck Depression Inventory; BDI-II). Patients with impaired cognitive function, current psychotic symptoms, or incapacitating drug or alcohol dependence were excluded. All patients who met eligibility criteria and who consented to participate were included in the study. Recruitment procedures, inclusion/exclusion criteria, and outcome measures used have been fully described elsewhere [9]. The findings reported here are based on pooled data collected at baseline from both intervention and control participants before the intervention began.

2.2. Measures. Prior to enrolment, participants were interviewed by the practice/research nurse to check eligibility. The nurses had been trained to conduct the recruitment interview. Research questionnaires were completed by eligible participants immediately after the interview and prior to randomisation.

The CIDI was administered by the nurse to check eligibility. Eligible participants met criteria for one of three DSM-IV diagnoses as described in Box 1 [10]. The self-report questionnaires completed included assessment of severity of depressive symptoms using the BDI-II, a widely used 21-item questionnaire [11]. Functional impairment was measured using the Work and Social Adjustment Scale (WSAS), a 5-item measure of impairment attributable to an identified problem (e.g., depression) [12]. Service use was assessed using the Client Service Receipt Inventory (CSRI), a self-complete record of demographic data, medication, and health and community service use for the three months prior to recruitment [13].

Cost Calculations. The costs of service use for each person were calculated by identifying an appropriate unit cost for each contact and multiplying it by the number of contacts each person recorded on the CSRI. For most hospital, mental health and primary care services as well as social service interventions, unit costs were drawn from publicly available sources [14, 15]. The remainder was taken from previous studies or estimated using an equivalent method [16]. Where the number of service contacts was missing, the mean for the whole group or a minimum of one contact was used. All costs are presented in 2008 prices.

2.3. Data Analysis. Descriptive statistics were produced for socio-demographic characteristics, BDI II and WSAS, by each diagnostic group. Findings are presented as percentages for categorical variables and means, and standard deviations are used for continuous variables as the data were found to be approximately normally distributed.

The proportion of people using selected services and the contact rates are reported by diagnostic group. Costs are compared between diagnostic groups using t-tests with 1,000 bootstrap replications [17] using STATA version 10.0 and SPSS version 17.0 software.
Table 1: Socio-demographic and diagnostic characteristics.

| Diagnosis         | Chronic major depression | Recurrent depression | Dysthymia | Total |
|-------------------|--------------------------|----------------------|-----------|-------|
| Total sample      | 164 (29.8%)              | 297 (54%)            | 89 (16.2%)| 550   |

### Diagnosis by gender

| Gender   | Chronic major depression | Recurrent depression | Dysthymia | Total |
|----------|--------------------------|----------------------|-----------|-------|
| Male     | 51 (31.1%)               | 57 (19.2%)           | 31 (34.8%)| 139 (25.3%) |
| Female   | 113 (68.9%)              | 240 (80.8%)          | 58 (65.2%)| 411 (74.7%) |

### Age

| Mean (SD) [range] | Chronic major depression | Recurrent depression | Dysthymia | Total |
|-------------------|--------------------------|----------------------|-----------|-------|
| 50 (14) [18–85]   | 46 (12) [20–63]          | 52 (13) [23–77]      | 48 (13) [18–85]|

### Ethnic group (n = 543)

| Ethnic group       | Chronic major depression | Recurrent depression | Dysthymia | Total |
|--------------------|--------------------------|----------------------|-----------|-------|
| White              | 154 (96.3%)              | 283 (96.0%)          | 83 (94.3%)| 520 (95.8%) |
| Other              | 6 (3.1%)                 | 12 (4.0%)            | 5 (5.7%)  | 23 (4.2%) |

### Marital status (n = 546)

| Marital status                      | Chronic major depression | Recurrent depression | Dysthymia | Total |
|-------------------------------------|--------------------------|----------------------|-----------|-------|
| Married/cohabiting                  | 86 (53.1%)               | 160 (54.2%)          | 59 (66.3%)| 305 (55.9%) |
| Divorced/separated/widowed/single    | 76 (46.9%)               | 135 (45.8%)          | 30 (33.7%)| 241 (44.1%) |

### Living situation (n = 546)

| Living situation                          | Chronic major depression | Recurrent depression | Dysthymia | Total |
|-------------------------------------------|--------------------------|----------------------|-----------|-------|
| Partner/children                          | 113 (70.2%)              | 216 (72.7%)          | 67 (76.1%)| 396 (72.5%) |
| Other                                     | 48 (29.8%)               | 81 (27.3%)           | 21 (23.9%)| 150 (27.5%) |

### Housing (n = 541)

| Housing                                   | Chronic major depression | Recurrent depression | Dysthymia | Total |
|-------------------------------------------|--------------------------|----------------------|-----------|-------|
| Owner occupied                            | 103 (64.8%)              | 196 (66.7%)          | 64 (72.7%)| 363 (67.1%) |
| Rented/temporary accommodation            | 56 (35.2%)               | 98 (33.3%)           | 24 (27.3%)| 178 (32.9%) |

### Occupation (n = 545)

| Occupation                                | Chronic major depression | Recurrent depression | Dysthymia | Total |
|-------------------------------------------|--------------------------|----------------------|-----------|-------|
| Paid employment                           | 57 (35.2%)               | 165 (55.9%)          | 34 (38.6%)| 256 (47.0%) |
| Long term Sick/retired/homemaker/unemployed/other | 105 (64.8%)              | 130 (44.1%)          | 54 (61.4%)| 289 (53.0%) |

### 3. Results

#### 3.1. Characteristics of the Sample

**3.1.1. Socio-Demographic Characteristics.** Table 1 reports the demographic and diagnostic characteristics of the study sample; 54% of participants met criteria for recurrent major depression, 30% for chronic major depression, and 16% for dysthymia. The average age of the sample was 48 years, and 75% were female. Two thirds were owner occupiers of their homes. Just under half were in paid employment. A greater proportion of those with dysthymia were married or cohabiting (66%) compared to those with chronic major depression (53%) or recurrent depression (54%). Over half of those with recurrent depression were in paid employment (56%), compared to just 35% of those with chronic major depression and 39% of those with dysthymia.

**3.1.2. Depression and Functional Impairment.** Tables 2 and 3 report participants’ scores on measures of depression and functional impairment by diagnostic group. Higher scores on the BDI-II and WSAS scales indicate higher levels of depression and functional impairment. 62% of the entire sample were categorised as severely depressed [11] and 61% categorised as moderately or severely functionally impaired [12]. Those with chronic major depression had the highest mean BDI II score, and 76% of this group were severely depressed, compared with 57% of those with recurrent depression and 54% with dysthymia. Participants with chronic major depression also had the highest mean WSAS impairment score with 69% of this group at least moderately impaired.

**3.1.3. Service Use and Costs.** Costs were available for 549 participants, although we excluded one person who remained in hospital for the full period as no community or primary care services were used. Table 4 identifies service use patterns between the groups, showing in detail the use of GP, practice nurse, and mental health services and conflating others into five main categories. In the previous 3 months, 63% of the chronic major depression group had consulted a GP for depression, a higher proportion than either the recurrent depression or dysthymia groups. However, the dysthymia group had the highest proportion who reported any primary care consultations for all reasons in the past three months (89%). A minority of the total sample had seen a counsellor (15%) or a psychologist (3%).

Across the whole sample, a wide range of services was used although, with the notable exception of primary care, most services were only used by one or two people. Very few people across the whole sample had seen a secondary care mental health professional, either a psychiatrist (5%) or psychologist (3%), while around a sixth (15%) had had contact with a practice counsellor. Despite the differences in severity
Table 2: Severity of depression by diagnostic group.

| Diagnosis                  | Chronic major depression (n = 164) | Recurrent depression (n = 297) | Dysthymia (n = 89) | Total (n = 550) |
|----------------------------|------------------------------------|--------------------------------|-------------------|----------------|
| BDI-II total score         | Mean (SD)                          | 36.0 (10.7)                    | 31.4 (9.9)        | 29.76 (8.6)    | 32.52 (10.2) |
|                            | Range                              | 14–60                          | 14–57             | 14–49          | 14–60         |
| BDI-II depression severity | Mild depression                    | 11 (6.7%)                      | 39 (13.1%)        | 11 (12.4%)     | 61 (11.1%)    |
|                            | Moderate depression                | 29 (17.7%)                     | 88 (29.6%)        | 30 (33.7%)     | 147 (26.7%)   |
|                            | Severe depression                  | 124 (75.6%)                    | 170 (57.2%)       | 48 (53.9%)     | 342 (62.2%)   |

Table 3: Severity of functional impairment by diagnostic group.

| Diagnosis                  | Chronic major depression (n = 163) | Recurrent depression (n = 296) | Dysthymia (n = 88) | Total (n = 547) |
|----------------------------|------------------------------------|--------------------------------|-------------------|----------------|
| WSAS total score           | Mean (SD)                          | 24.97 (9.7)                    | 21.41 (9.4)       | 20.38 (8.4)    | 22.3 (9.5)    |
|                            | Range                              | 0–40                           | 0–40              | 3–38           | 0–40          |
| WSAS impairment severity   | Subclinical impairment             | 11 (6.7%)                      | 40 (13.5%)        | 10 (11.4%)     | 61 (11.2%)    |
|                            | Significant impairment             | 39 (23.9%)                     | 84 (28.4%)        | 29 (33.0%)     | 152 (27.8%)   |
|                            | Moderately severe or worse impairment | 113 (69.3%)               | 172 (58.1%)       | 49 (55.7%)     | 334 (61.1%)   |

Table 4: Service use over 3 months, by diagnostic group.

| Service                     | Chronic major depression (n = 163) | Recurrent depression (n = 296) | Dysthymia (n = 89) | Total (n = 548) |
|-----------------------------|------------------------------------|--------------------------------|-------------------|----------------|
| % using service             | Mean number contacts               | % using service                | Mean number contacts | % using service | Mean number contacts |
| GP (depression)             | 63%                                | 1.16                           | 57%                | 1.16           | 59%                | 1.16 |
| GP (other reason)           | 61%                                | 1.38                           | 57%                | 1.16           | 60%                | 1.25 |
| Practice nurse (depression) | 9%                                 | 0.12                           | 5%                 | 0.06           | 7%                 | 0.09 |
| Practice nurse (other)      | 33%                                | 0.51                           | 31%                | 0.49           | 31%                | 0.49 |
| Any primary care            | 85%                                | —                              | 88%                | —              | 87%                | —    |
| Psychiatrist                | 4%                                 | 0.13                           | 5%                 | 0.08           | 5%                 | 0.09 |
| Psychologist                | 7%                                 | 0.31                           | 1%                 | 0.03           | 3%                 | 0.11 |
| Counsellor                  | 16%                                | 0.93                           | 16%                | 0.92           | 15%                | 0.82 |
| Any mental health contacts  | 28%                                | —                              | 28%                | —              | 26%                | —    |
| Any hospital services       | 40%                                | —                              | 35%                | —              | 37%                | —    |
| Any alternative therapy     | 7%                                 | 0.21                           | 11%                | 0.78           | 9%                 | 0.48 |
| Any other health and        | 26%                                | —                              | 25%                | —              | 26%                | —    |
| community services          | —                                  | 37%                            | 27%                | —              | 26%                | —    |
| Anti-depressants            | 80%                                | —                              | 72%                | —              | 74%                | —    |
| Other medications           | 77%                                | —                              | 63%                | —              | 70%                | —    |

1Significant difference between dysthymia and chronic major depression groups.
2Significant difference between dysthymia and recurrent depression groups.
3Significant difference between recurrent depression and chronic major depression groups.
Table 5: Average costs over three months, by service category and diagnostic group.

| Service category           | Chronic major depression (n = 163) | Recurrent depression (n = 296) | Dysthymia (n = 89) | Total (n = 548) |
|---------------------------|-----------------------------------|-------------------------------|-------------------|-----------------|
|                           | Mean costs (SD)                   | Mean costs (SD)               | Mean costs (SD)   | Mean costs (SD) |
| Primary care              | £96 (80)                          | £88 (77)                      | £92 (67)          | 91 (77)         |
| Mental health             | £147 (401)                        | £107 (317)                    | £40 (136)         | 105 (325)       |
| Hospital                  | £176 (463)                        | £154 (520)                    | £107 (230)        | 153 (467)       |
| Alternative therapy       | £9 (48)                           | £33 (235)                     | £0 (4)            | 21 (175)        |
| Other health and community services | £67 (232) | £54 (213) | £57 (218) | 58 (219) |
| Anti-depressants          | £12 (20)                          | £12 (21)                      | £11 (19)          | 12 (20)         |
| Other medications         | £17 (13)                          | £12 (14)                      | £15 (15)          | 14 (15)         |
| Total costs               | £523 (784)                        | £460 (787)                    | £322 (386)        | 457 (738)       |

1See Table 4 for services included in each category.
2Significant difference between dysthymia and recurrent depression groups.
3Significant difference between dysthymia and chronic major depression groups.

of depression and levels of functional impairment, a similar proportion of people in each of the three groups had used each of the services with two exceptions. Table 4 shows that, compared to the other groups, those with dysthymia were less likely to be in contact with any mental health services and a higher proportion those with recurrent depression had seen an alternative (complementary) therapist.

The majority of the sample (74%) had been prescribed anti-depressant medication in the previous 3 months, including 80% of those with chronic major depression, 72% of those with recurrent depression, and 70% with dysthymia. Anti-depressants were by far the most commonly prescribed medication in this population.

Table 5 shows the costs of support for each diagnostic group over the 3-month period. Hospital costs account for the highest proportion of total costs for the total sample and also within each diagnostic group (around a third), followed by primary care and mental health services. Cost differences between groups generally reflect the service use patterns (Table 4). Average costs for primary care and other health and community services were similar in each group.

Bootstrapped t-tests found significantly higher mean costs for the recurrent depression and chronic major depression groups compared to those with dysthymia for mental health services, alternative therapy, and total costs. Those with recurrent depression also had higher costs for alternative therapy and significantly lower costs for “other medications” than those with chronic major depression.

4. Discussion

Three groups were identified among this sample of primary care patients based on the DSM-IV diagnostic criteria for chronic major depression, recurrent depression, or dysthymia. The sample as a whole was characterised by very high levels of depressive symptoms and functional impairment, and the majority had been prescribed anti-depressants in the preceding three months. Those with chronic major depression were the most depressed and impaired of the three groups. Compared to the other two groups, they had the highest costs for mental health service use and the costs for their full service package were also highest (final row, Table 5). People with dysthymia were the least depressed and had less severe functional impairment; their total service costs were lowest, as was the proportion in contact with mental health services.

All three groups made considerable use of GPs, with on average slightly more than one GP consultation for depression and more than one consultation for other reasons in the previous three months. If the three months prior to interview are representative of the full year, these suggest higher contact rates than in the population as a whole. National data show women have an average of five GP appointments per year for all reasons and men have four [18].

Levels of depression were much higher among our sample than reported in another primary care study of recurrent depression which used the BDI-II as an outcome measure [7], but this may be due to the eligibility criterion for this study (above 14 on the BDI-II) which was intended to ensure inclusion of those with at least minor depression at the point of recruitment. However, our findings support previous research showing reductions in functioning and well-being for depressed patients that equal or exceed those of patients with other chronic illnesses [19].

The percentage of participants in paid employment was lower than reported in other studies of primary care patients with depression [20], reflecting the greater impairment likely to be associated with chronic or recurrent depression. In line with other findings, the participants with chronic major depression were least likely to be in paid employment. In our sample, men reported significantly higher functional impairment than women, but the severity of their depression was similar. Notably, more than three-quarters of participants had received a prescription for anti-depressants within
the past three months, but most continued to have very high levels of depression and associated functional impairment, which suggests that anti-depressant therapy is far from optimal in this group. Around a quarter had seen a mental health professional in the past three months, but most of these contacts were with a counsellor.

A limitation of this study is that participants were specifically recruited for a research study and may not therefore be representative of the whole population of people with chronic or recurrent depression in primary care. There were fewer GP practices from inner city areas participating in the study, and our sample therefore under-represents populations from these areas. This may affect the generalisability of our findings to more ethnically and socially diverse inner city populations. Nonetheless, our large study sample comprises a rigorously selected group of patients and indicates the high levels of morbidity and functional impairment associated with chronic major depression, recurrent major depression, and dysthymia, as well as the differences between these three diagnostic groups.

People with chronic/recurrent major depression and dysthymia form clinically important patient groups for primary care practitioners. Nearly two-thirds of our sample had severe depressive symptoms and high functional impairment, despite the majority receiving anti-depressant treatment. Most were being treated entirely in a primary care setting where regular followup and review may be lacking [21, 22]. The chronic nature of their problems and high rates of attendance in primary care suggest they are particularly challenging for GPs to work with. Moreover, one in four of those in our study with chronic major or recurrent depression had also seen a mental health professional, at least one in three of the whole sample had attended a hospital-based service, and one in four had contact with at least one other health or community care service during the three months prior to the start of the main study. Further data collected prospectively for this sample within the overarching trial will allow us to test whether a structured proactive practice nurse-led intervention is an effective form of intervention for this group.

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Research Article

Integration between Primary Care and Mental Health Services in Italy: Determinants of Referral and Stepped Care

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This study, carried out in the context of a collaborative care program for common mental disorders, is aimed at identifying the predictors of Primary Care Physician (PCP) referral to Community Mental Health Center (CMHC) and patterns of care. Patients with depression or anxiety disorders who had a first contact with CMHCs between January 1, 2007–December 31, 2009 were extracted from Bologna Local Health Authority database. A classification and regression tree procedure was used to determine which combination of demographic and diagnostic variables best distinguished patients referred by PCPs and to identify predictors of patterns of care (consultation, shared care, and treatment at the CMHC) for patients referred by PCPs. Of the 8570 patients, 57.4% were referred by PCPs. Those less likely to be referred by PCPs were living in the urban area, suffered from depressive disorder, and were young. As to the pattern of care, patients living in the urban area were more likely to receive shared care compared with those living in the nonurban area, while the reverse was true for consultation. Predictors of CMHC treatment were depression and young age. Prospective studies are needed to assess length, quantity, and quality of collaborative treatment for common mental disorder delivered at any step of care.

1. Introduction

Mental disorders are very common in primary care setting: the WHO Collaborative Study on Psychological Problems in General Health Care (PPGHC) reported a global prevalence of 24.0% [1]. In this study, that excludes schizophrenia spectrum disorders, the most frequent disorders were Depression (10.4%) and Generalized Anxiety Disorder (7.9%). The crucial role of primary care in the recognition and the management of mental disorders is receiving growing attention, and collaboration projects between Primary Care and Mental Health sectors are underway in many countries following models developed in the United Kingdom and in the USA [2–5].

In Italy, primary care is placed at the heart of the health care system. Primary care physicians (PCPs) are independent contracted professionals who operate under the control of Local Health Authorities (LHAs).

On average, LHAs are responsible for the overall health of, and for the services offered to, a target population of 350,000 inhabitants. PCP are the first contact for the most common health problems and act as gatekeepers for drug prescription and for access to specialty and hospital care.

Specifically, PCP are involved in delivering various primary care services like health promotion and preventive care activities, diagnosis, treatment, and followup of noncomplex, acute, and chronic conditions. They also have an increasing role as coordinators of services provided to patients with chronic diseases [6]. Essential health services are provided free of charge, or at a minimal charge. The extension of universal health care coverage to the whole population is in fact a key characteristic of the Italian health care system.
Mental health care in Italy is currently delivered by Mental Health Departments (MHDs) that are in charge of the management and planning of all medical and social activities related to prevention, treatment, and rehabilitation in a defined catchment area. Within the departments, Community Mental Health Centers (CMHCs) cover all activities pertaining to adult psychiatry in outpatient settings and manage therapeutic and rehabilitation activities delivered by day care services and nonhospital residential facilities [7]. Public in-patient care is provided by general hospital psychiatric units, university psychiatric clinics, and community mental health centers operating 24 h a day [8].

Among the existing attempts to promote the integration between primary care and mental health services, the “G. Leggieri” Program was started in 2000 as an effort of the Health Government of Emilia-Romagna Region to coordinate initiatives of primary care-mental health cooperation undertaken since the 1980's. A steering group of representatives of local health authorities, mental health and primary care departments, scientific associations, and academic institutions was established in order to deliver specific recommendations about the organisation of collaborative activities. In particular, two main objectives were identified and pursued: (1) to improve the quality of treatment for patients with common psychiatric disorders in primary care; (2) to modify the pathways of care, supporting the management of common psychiatric disorders in primary care and focusing mental health services’ activities towards severe or difficult-to-treat cases.

In the framework of this program, regional recommendations were delivered according to the stepped care model proposed in the NICE guidelines for depression and anxiety [9,10]. Stepped care is a system of health care based on treatments of differing intensity graded to the patient’s needs, so that the least intrusive or restrictive intervention is first provided. For the management of common mental disorders five steps were devised: PCP treatment, PCP treatment supervised by CMHC, consultation with CMHC, shared care between PCP and CMHC, and treatment at the CMHC. These steps are ordered along a dimension of increasing CMHC involvement and decreasing PCP responsibility; referral of patients to CMHC is envisaged from the third step upwards.

Within this regional context, local models of collaborative care have been gradually refined [11–13]. This paper deals with the experience carried out at the LHA of Bologna, an urban-rural catchment area including the metropolitan area of Bologna.

The specific aims of present study are (1) to determine in which proportion patients with common mental disorders who have a first contact with the CMHCs are referred by PCPs; (2) to identify the predictors of PCP referral versus other referral sources; (3) to predict the pattern of care of patients referred by PCPs, as a function of their diagnosis and demographic characteristics.

2. Materials and Methods

2.1. Setting and Data Source. The data source for this study is the mental health information system of the Bologna LHA. The Bologna LHA is one of the largest in the country and serves approximately 850,000 inhabitants, roughly one fifth of the regional population.

The mental health information system was implemented in 2007 for administrative and clinical-epidemiological purposes. All patients who had at least one contact with community-based mental health services were recorded in the database since then, reflecting the total secondary mental health care in the area. Data include, in addition to patient’s ID number, demographic characteristics, the patient’s PCP name, the ICD-9 CM diagnosis, information on each type of intervention administered, and the number and type of staff involved in the intervention.

2.2. Study Sample. Demographic and diagnostic information of patients who had their first contact with one of the 11 CMHCs of the LHA between January 2007 and December 2009 was extracted from the database. Patients who were not living in Bologna province, those with a missing diagnosis or with fewer than 18 years of age were excluded from the analyses.

ICD-9 CM diagnoses were classified into 9 groups: schizophrenia (295, 297, 298 excl. 298.0, 299), depression (296.2-3, 296.9, 298.0, 300.4, 309.0, 309.1, 311), bipolar disorders (296.0, 296.1, 296.4–8), personality disorders (301, 302, 312), alcohol and substance use disorders (291, 292, 303, 304, 305), dementia and organic mental disorders (290, 293, 294, 310), anxiety and somatoform disorders (300 excl. 300.4), 306, 307.4, 307.8–307.9, 308, 316), mental retardation (317, 318, 319), and other mental disorders (301.0–307.3, 307.5–307.7, 309.2–309.9, 313, 314, 315).

Patients with depression or anxiety and somatoform disorders, who are the target of Leggieri Program, were retained for the classification tree analyses.

2.3. Patterns of Care. As mentioned above, there are 3 steps that entail direct CMHC involvement after referral by PCP.

2.3.1. Consultation. This includes the establishment of a psychiatric diagnosis, significant life events, and the description of possible dysfunctional coping behaviors. The evaluation is followed by suggestions for the treatment plan, which is delivered by the PCP. Information is then forwarded to the PCP in a typed report designed to be thorough, but concise.

2.3.2. Shared Care. After the assessment, the consultant provides brief and focused therapeutic interventions to support the PCP management of psychiatric disorders. Written communications are accompanied by telephone communication or interpersonal contacts in order to increase understanding and cooperation between psychiatrists and PCPs. For example, the psychiatrist could start pharmacological treatment and furthermore evaluate the initial treatment response and patient compliance. In other cases, a brief psychological intervention can be provided (counseling).

2.3.3. Treatment at the CMHC. Severe and complex cases are referred to the CMHC that takes full responsibility for psychiatric management.
2.4. Statistical Analyses. In this study, patients referred to the CMHCs of Bologna area with a diagnosis of anxiety or depressive disorder were classified into two mutually exclusive groups according to the referral source (PCPs versus other sources).

To determine which combination of demographic and diagnostic variables best distinguished patients referred by primary care physicians from those referred by other sources, data were analyzed using a classification and regression tree (CART) procedure.

This procedure was also used to determine which characteristics (and combination of characteristics) predicted the pattern of care of patients referred by primary care physician (consultation, shared care, and treatment at the CMHC).

In contrast to traditional statistical models, CART is a nonparametric analysis that simultaneously examines interactions between continuous or categorical variables to create a decision tree. Researcher bias is limited as CART can use large numbers of variables to create a decision tree and cutoff on continuous variables that are defined by the procedures.

To date, there are no studies that employed these methods to predict outcomes such as referral to PCP or patterns of care in patients referred to CMHC, but this method has been recently used in psychiatry [14, 15] and other medical fields, including for instance cardiology and nephrology [16, 17]. Because of its ability to identify significant interactions, it has been used to analyse the influence of gene-environment interactions in lung cancer [18].

The CART procedures build decision trees beginning with a root node that includes all cases, then the tree branches into two subgroups (or nodes) and grows iteratively by identifying optimal cut points for continuous discriminating variables in the predictor set. Categories of nominal variables (such as diagnosis or marital status) are merged by the procedure if they contribute significantly to subtyping cases into homogeneous groups. Variables not useful to discriminate cases do not enter into the procedure. The tree grows until a stopping criterion is met or no further significant improvement in the classification of study participants is possible. At the end of the procedure, the study population is partitioned into terminal nodes that are as homogeneous as possible with respect to the categories of the dependent variable. The final tree is “pruned” to avoid model overfitting. This is done by a procedure that, after the tree is grown in its full depth, trims it down to a smaller subtree that has an acceptable risk of misclassification (defined as 1 standard error with respect to the risk in the full tree). All analyses were carried out using SPSS, version 17.0 (Chicago, IL).

3. Results and Discussion

3.1. First Tree: Predictors of PCP Referral. 8570 patients with depression or anxiety and somatoform disorders, that constituted 56.4% of first contacts at the CMHC were included in the classification tree analysis. The proportion of patients with these disorders referred by primary care physicians to the CMHCs was 57.4%.

The proportion of PCP referrals increased from 51.5% to 62.2% in the period 2007–2009.

The classification tree analysis included as independent variables diagnosis, age, gender, educational level, marital status, nationality (Italian versus other), and area of residence (urban versus nonurban).

Results (Figure 1) indicate that patients living in a nonurban area (node 1) were more likely to be referred by PCP than those living in the urban area (node 2, 60.5% versus 52.9%). In the latter subgroup, patients were further split according to an age cutoff of 63 years, that separated those who were more likely to be referred by PCPs compared to younger patients (59.4% versus 50.6%). In patients with an age <63 years, a diagnosis of anxiety disorder (compared to depressive disorder) proved to be a significant predictor of PCP referral (54.1% versus 47.9%). Among patients with depression (node 6), another split was related to age. In fact depressed patients with an age >30 years were more likely to be referred by PCP compared to younger patients (50% versus 31.1%).

In summary, among patients with common mental disorders in contact with CMHCs, those less likely to be referred by PCPs were living in the city, suffered from a depressive disorder, and were young. This suggests that young urban depressed patients could face barriers in help-seeking for a variety of factors. As widely recognized [19, 20], the young and the depressed have unmet needs of care, most often in urban environments, and this deserves greater attention in next phases of the Leggieri Program implementation.

3.2. Second Tree: Predictors of Pattern of Care. Of the 4913 patients referred by PCPs, 1276 (26%) received a consultation, for 765 (15.6%) shared care was agreed between the CMHC and the PCP and for the remaining 2872 (58.5%) the CMHC was exclusively in charge of the intervention. A strong increase in the shared care pattern was observed from 2007 to 2009, paralleled by the decrease of treatment at the CMHC (Table 1).

The classification tree analysis (Figure 2), using the same independent variables as in the first tree, indicated that residence area was again the most important discriminator of pattern of care. Patients living in the urban area were more likely to receive shared care compared with those living in nonurban area (21.6% versus 11.9%), while the reverse was true for consultation (19.3% versus 30.1%). On the contrary, the proportion of patients treated at the CMHC was similar between urban and nonurban areas. Still, in the subgroup of patients living in nonurban areas, there was a differential pattern of care according to the diagnosis. Depressed patients were more likely to be treated at the CMHC compared with patients with anxiety disorders (62.2% versus 49.4%). In this latter subgroup of patients with anxiety disorders and living in nonurban areas, consultation was more likely if their age was ≥50.5 years (node 6) and treatment at the CMHC more likely if their age was ≤50.5 years (node 5).

In summary, we observed a different pattern of collaborative care in urban compared with nonurban areas. Consistent
Figure 1: Classification tree analysis showing the predictors of PCP referral versus other referral sources.
Figure 2: Classification tree showing the predictors of pattern of care among patients referred by PCPs.
with our expectations, predictors of CMHC treatment were depression versus anxiety disorders and young age versus older age.

### 4. Conclusions

Our results should be interpreted keeping in mind that the focus is on patients with common mental disorders referred to CMHCs. Therefore, the present study does not allow either to estimate the prevalence of common mental disorders in primary care or to determine the proportion of patients actually treated by the PCPs. Still, the availability of the LHA mental health data offers the unique opportunity to analyze the type of care provided to patients once they are referred to the CMHC and the extent to which collaborative care between PCPs and community-based services is actually delivered.

Patients with common mental disorders (anxiety or depression) comprised 56.4% of referrals, more than half of them (57.4%) were referred by PCPs with a trend rapidly growing over time (from 51.5% to 62.2%). The pathway from PCP to CMHC appears to have strengthened in comparison to that reported in other previous Italian investigations, such as in South-Verona, where PCP referrals accounted for 40% of new cases in 2000 [21]. Since then the PCPs’ gatekeeper role has been even more recognised as a priority in improving access to specialized mental health care. Multiple integration strategies could further help this evolution, like face-to-face communication, counselling in collocated accommodation, training in small groups and regular feed-back between PCP and mental health professionals. In 2007, the steering group of the “G. Leggieri” Program developed a document with recommendations for the management of common mental disorders between primary care and mental health services. Besides this initiative, the institution of a formal Primary Care Department and of “functional” primary care groups of about 15–20 PCPs made the liaison and the training more easy to organize.

The classification tree analysis suggests that the residence area plays an important role in the PCP referral process that appears to be more active in the nonurban compared to the urban area. In our opinion this finding is partially related to the organizational characteristics of Primary Care Services. In fact, urban PCPs often run individual practices, whilst nonurban PCPs are frequently associated in group practices, located in the same outpatient clinic. This organization fosters access, continuity of care, training opportunities and plays a part in the integration with mental health services. Moreover, nonurban practitioners have traditionally stronger links with their community and other health services (including mental health services), which favors their role of gatekeepers to secondary care [22].

In the urban area older patients had increasing odds to be referred to CMHCs compared with younger patients. A possible interpretation is that patients with an age of 63 years or more are probably more familiar with their PCP and more inclined to endorse their psychological complaints during the visit. Among patients <63 years of age, PCP referral was more common for anxiety than for depressive disorders. Of note, among depressed patients an age <30 years seemed to further disfavor PCP referral.

By and large, these data highlight possible barriers that young people have to face in accessing health services and their unmet needs especially in urban areas. As many authors have noted [23, 24], enough is known to recommend as a priority the provision of innovative and well assessed youth-friendly primary and mental health services.

As to the pattern of care of patients referred by PCPs, examined in the second classification tree, we found that shared care was more frequent in urban than in nonurban areas. Increasing either consultation or shared care was a targeted priority of the Leggieri Program, but in both areas a nearly 60% of common mental disorders referred by PCPs still receive specialized treatment at the CMHC, although this percentage was decreasing over the investigated three-year period (from 71.5% in 2007 to 44.8% in 2009). However, in the next future we expect a further decrease of this pattern of care for common mental disorders, as a result of increasing cooperation and PCP training.

It is remarkable that other demographic characteristics such as gender, marital status, educational level, and nationality, that traditionally play a role in the help-seeking behaviors and in service utilization patterns [25], did not emerge as predictors, neither for type of referral nor for pattern of care.
Overall, our findings provide a preliminary evidence on the implementation of the Leggieri Program in Bologna LHA. Future perspectives include the design of policies aimed at removing barriers in accessing mental health services for young people, mainly in the urban environment. Moreover, prospective studies using the Bologna LHA mental health database are needed to assess length, quantity, and quality of treatment delivered at any step of care in order to ensure that patients with common mental disorders receive appropriate and effective integrated care.

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Clinical Study

Undetected Common Mental Disorders in Long-Term Sickness Absence

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Background. Undetected Common Mental Disorders (CMDs) amongst people on sick leave complicate rehabilitation and return to work because appropriate treatments are not initiated. Aims. The aim of this study is to estimate (1) the frequencies of CMD, (2) the predictors of undetected CMD, and (3) the rate of return to work among sick listed individuals without a psychiatric disorder, who are registered on long-term sickness absence (LSA). Methods. A total of 2,414 incident individuals on LSA were identified for a two-phase study. The subsample of this study involved individuals registered on LSA who were sick-listed without a psychiatric sick leave diagnosis. In this respect, Phase 1 included 831 individuals, who were screened for mental disorders. In Phase 2, following the screening of Phase 1, 227 individuals were thoroughly examined by a psychiatrist applying Present State Examination. The analyses of the study were carried out based on the 227 individuals from Phase 2 and, subsequently, weighted to be representative of the 831 individuals in Phase 1. Results. The frequencies of undetected mental disorders among all sick-listed individuals were for any psychiatric diagnosis 21%, depression 14%, anxiety 4%, and somatoform disorder 6%. Conclusions. Undetected CMD may delay the initiation of appropriate treatment and complicate the rehabilitation and return to work.

1. Background

Common Mental Disorders (CMDs) impose suffering on and reduce quality of life of the individuals. They also place economic burdens on society, primarily due to indirect costs in regards to sickness absence, early retirement, and early death [1,2]. In addition, depressive disorders significantly influence the outcome of comorbid medical illnesses such as cardiac diseases, diabetes, and cancer [3]. Furthermore, the emergence of a depression in an individual is likely to cause family dysfunction and risks of mental and physical illnesses among family members as well [4].

The burden of CMD may be even heavier than estimated in previous studies of this kind because CMDs are overlooked. This has been documented in primary care [5–12], in work places [13], in granting of disability pension [14], and among patient populations such as patients with, for example, chronic musculoskeletal pain [15], and in writing sick leave certificates [16–18]. Undetected mental disorders in primary care and sick leave certificates apply to the present study because the study is based on sickness absence and because sick leave certificates for the most part are certified in primary care.

The objective of the study of undetected CMD was to analyse the implications of undetected mental disorders in long-term sickness absence (LSA). The perspective was to provide an account of all new undetected mental disorders in LSA within one year by identifying all incident individuals on LSA within a well-defined region along with the application of methods to detect undetected psychiatric diagnoses.

2. Aim

On the basis of LSA, the aims were to (i) estimate the frequencies of undetected CMD: depression, anxiety, and
somatoform disorders; (ii) identify sociodemographic predictors of CMD among individuals who were sick-listed minus a psychiatric sick leave diagnosis. (iii) identify sociodemographic predictors of return to work for CMD among individuals who were sick listed minus a psychiatric sick leave diagnosis.

3. Methods

3.1. Study Population. Figure 1 is a flowchart representing (1) the total of 2,414 individuals that were sick listed on LSA within one year, (2) the selection procedures to reach the eligible individuals for this study, and (3) the categories of nonparticipation. LSA was defined as continuous sickness absence exceeding eight weeks. The study took place in six Danish municipalities with a total of 118,000 inhabitants of whom 50% were living in the urban municipality of Herning. In Denmark, the social services are responsible for sickness benefits after two weeks of continuous sickness absence. Due to this setup of sick individuals receiving benefits from the social services, it was possible to identify all new coming individuals on LSA who had their first day of sickness absence between the 30th of August 2004 and the 29th of August 2005. Furthermore, this registration facilitated the identification of individuals entering LSA. On a weekly basis, the Danish social services provided this study with information regarding sick listed individuals based on public registers. Irrespective of their reasons for being sick-listed, the 2,414 individuals comprise individuals who were sick-listed from full-time work, part-time work, or adjusted work as well as unemployed individuals who became ill and changed registered status from receiving unemployment benefits.

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**Figure 1**: Flowchart of sick-listed individuals on LSA, target population, eligible individuals, selection criteria, and nonparticipation.
benefits to receiving sickness benefits. If an individual was registered as being on LSA more than once within the year current for this study, only the first period was registered. The following individuals were excluded: individuals below 18 years at the day when the sickness absence period exceeded eight weeks, individuals on maternity leave, and non-Danish speakers.

3.2. Two-Phase Study and Definition of Concepts. The study was carried out as a two-phase investigation. In Phase 1, all 2,414 sick listed LSA individuals were asked to fill out a screening questionnaire. Out of the 2,414 individuals, 1,121 (46.4%) responded, and, subsequently, 831 individuals presented without a psychiatric sick leave diagnosis. The individuals of primary concern in this study were these 831 individuals minus a psychiatric sick leave diagnosis referred to as sick listed minus a psychiatric sick leave diagnosis (MPSD) (shown in bold in Figure 1). 290 individuals were sick listed plus a psychiatric sick leave diagnosis (PPSD). In Phase 2, MPSD individuals, who underwent a psychiatric examination and presented with a psychiatric diagnosis, constitute a group referred to as verified psychiatric diagnosis (VPD). For individuals sick listed MPSD and PPSD, the total number of VPD was 188.

3.3. Phase 1. The screening for mental disorders in Phase 1 was carried out by means of the subscales in Common Mental Disorders-Screening Questionnaire (CMD-SQ) according to the criteria mentioned in Figure 1 [19]. Along with the return of the questionnaire, written informed consent was given to participate in the study. In Phase 1, sick leave diagnoses were provided from social services.

3.4. Phase 2. Prior to Phase 2, 122/98 individuals returned to work and, thus, were no longer on LSA and, thereby, no longer eligible to participate in the study. In addition, 22/17 did not want to participate any further (Figure 1). This resulted in 844/589 individuals who had scored at a high level of psychological distress on the initial questionnaire of Phase 1. Half of this group was, by a research assistant, randomly allocated to Phase 2 (423/289). Furthermore, in order to ensure that an adequate number of individuals with low scores in the subscales of CMD-SQ were taken out for a diagnostic verification, 10% of the individuals who had not returned to work and who presented with a low level of psychological distress were randomly allocated to a psychiatric verification. This group turned out to be as low as 11/11 individuals. Following, it appears from Figure 1 that along the process some individuals returned to work before a psychiatric examination could be arranged, others did not want to participate in the examination, and 1 did not participate for another reason. Finally, Phase 2 constituted 337/227 individuals. After being allocated to the psychiatric examination, the individuals gave informed written consent to participate in an examination as well as consent to inform their general practitioners and social services about the results of the examination.

3.5. Data

3.5.1. Verified Psychiatric Diagnoses (VPD). VPD was identified for MPSD and PPSD by means of a psychiatric examination by a psychiatrist (the investigator HJS) who made use of the computerised SCAN version 2.1, programme version 1.0.4.6, Present State Examination as the gold standard (ICD-10 diagnoses) [20]. SCAN covers somatisation, anxiety disorders, affective disorders, dependence, and psychotic disorders. Disorders not covered by SCAN were diagnosed by the investigator (HJS) according to ICD-10 [21]. The psychiatric examinations were carried out by the investigator without any knowledge of the screening results, and they were conducted as quickly as possible subsequent to the participants having exceeded eight weeks of sickness absence, 10% within 19 days, 50% within 27 days, 90% within 44 days, and all within 68 days.

3.5.2. Return to Work. The rate of return to work was analysed by means of survival methods by which the observation period was defined as the period from the first day of entering LSA until the payment of sickness benefits was stopped. An event was defined as return to normal full-time work, normal part-time work, and for unemployment if the registered sickness benefits status changed to unemployment benefits status. Normal part-time work was included as an event since this was often planned as a gradual return to work under normal conditions. Other reasons for terminating sickness benefits were defined as censoring. The dates for the beginning and termination of sickness benefits were recorded from social services registers.

3.5.3. Sociodemographic Data. In addition to CMD-SQ, the questionnaire contained questions about sociodemographic characteristics. Table 1 shows the categories and frequencies of the sociodemographic variables for individuals who were sick listed MPSD.

3.5.4. Common Mental Disorders Screening Questionnaire, CMDQ-SQ. CMDQ-SQ is a symptom scale with six subscales concerning mental symptoms related to the diagnostic categories of depression, anxiety, somatoform disorders, and alcohol dependence [19]. The items are primarily derived from SCL-90/SCL-92 [22, 23]. SCL-SOM (12 items) covers somatisation [23], SCL-8 (8 items) emotional distress in general [24], SCL-ANX4 (4 items) anxiety, [19], and SCL-DEP6 (6 items) depression [19]. Some items belong to more subscales. In addition, the 7-item subscale, Whiteley-7, covers illness worry and conviction, and it is derived from the Illness Behaviour Questionnaire [25, 26]. Finally, the 4-item subscale CAGE [27] covers alcohol dependence.

CMDQ-SQ consists of 37 items of which 36 were relevant for this study. Items 1–32 are scored 0 to 4 on 5-point Likert scales, whereas items 33–36 are dichotomised items. Higher score indicate higher severity of symptoms.

A 13-item dichotomised component scale, SCL-8AD, composed of the items in SCL-ANX4, SCL-8, and SCL-DEP6...
Table 1: Frequencies of sociodemographic characteristics including 95% confidence intervals (CI) for each frequency among individuals minus a psychiatric sick leave diagnosis.

| Sociodemographic characteristics | Frequency | %   | 95% CI       |
|----------------------------------|-----------|-----|--------------|
| Gender                           |           |     |              |
| Men                              | 47.9      | 44.5–51.3 |
| Women                            | 52.1      | 48.7–55.5 |
| Age                              |           |     |              |
| −29 years                         | 10.8      | 8.6–12.9 |
| 30–39 years                      | 19.2      | 16.5–21.9 |
| 40–49 years                      | 29.5      | 26.4–32.6 |
| 50–59 years                      | 33.6      | 30.4–36.8 |
| 60 years +                       | 6.9       | 5.1–8.6   |
| Municipality                     |           |     |              |
| Urban                            | 50.7      | 47.3–54.1 |
| Rural                            | 49.3      | 45.9–52.7 |
| Household                        |           |     |              |
| Living with partner              | 81.0      | 78.3–83.7 |
| Living without partner           | 19.0      | 16.3–21.7 |
| Living with children below 18 years | 48.5    | 45.1–52.0 |
| Not living with children below 18 years | 51.5   | 48.0–54.9 |
| General education                |           |     |              |
| General: primary and lower secondary school | 72.9   | 69.8–76.0 |
| General: more than primary school | 27.1   | 24.0–30.2 |
| Specific education               |           |     |              |
| Unskilled worker                 | 28.9      | 25.5–31.6 |
| Skilled worker                   | 50.7      | 47.2–54.1 |
| Theoretical ≤ 4 years beyond primary school | 17.1  | 14.6–19.7 |
| Theoretical > 4 years beyond primary school | 1.7    | 0.8–2.6   |
| Other specific education         | 3.6       | 2.4–4.9   |
| Employment                       |           |     |              |
| Self-employed                    | 8.4       | 6.5–10.3  |
| White-collar/civil servant       | 34.5      | 31.2–37.7 |
| Skilled worker                   | 11.2      | 9.1–13.5  |
| Unskilled worker                 | 28.1      | 25.1–31.2 |
| Other                            | 17.7      | 15.1–20.3 |
| Employment situation             |           |     |              |
| Full-time employment             | 71.2      | 68.1–74.3 |
| Part-time employment             | 17.4      | 14.8–20.0 |
| Unemployed                       | 11.4      | 9.2–13.6  |

was created by dichotomising the items between 0 and 1. This scale turned out to have the best predictive properties when it came to the identification of CMD, for which reason it was used in the weighted analyses [28]. Furthermore, the screening criteria, indicated in Figure 1, were also based on dichotomised component scales of the other subscales of CMD-SQ.

3.5.5. Sick Leave Diagnoses. Data about sick leave diagnoses were obtained from social services records in the form of transcriptions from sick leave certificates, discharge records, other medical documents, and in the form of declarations from sick-listed individuals. The sick leave diagnoses were based on the diagnostic information which was available to social services up to three months after the first day of sickness absence. The sick leave diagnoses were coded as ICPC diagnoses by the investigator (HJS) [29]. The only differentiation of sick leave diagnoses was whether the individual had a psychiatric sick leave diagnosis or not.

3.6. Statistical Analyses. The analyses were carried out in Phase 2 and made representative of Phase 1 by weighting [30]. As Phase 2 consists of subgroups with different variance, the confidence intervals were calculated by jackknife procedures [30]. The frequencies of verified CMD among all sick-listed individuals were analysed in regards to all 227 individuals in Phase 2 and weighted up to the 1,121 individuals in Phase 1. With regard to the frequencies of CMD among individuals minus a psychiatric sick leave diagnosis, the analyses were carried out on the 227 individuals in Phase 2 and weighted up to the 831 in Phase 1. Finally, the estimation of the frequencies of undetected CMD among individuals with a verified diagnosis were based on all the 188 individuals in Phase 2 who presented a verified diagnosis whether sick-listed PPSD or MPSD.

The socio-demographic predictors of VPD were estimated by weighted logistic regression based on the 227 individuals in Phase 2 sick-listed MPSD. This was also the case for the uncontrolled rates of return to work which was analysed by weighted Poisson regression and the socio-demographic predictors of return to work by weighted Cox-regression. The multivariable logistic regressions and Cox-regression were reduced by the forward stepwise procedure. This procedure was continued until a significant change in the log likelihood function reached the 5% level. To analyse the differential effects, interaction variables were created as VPD * socio-demographic characteristic. The confidence limits (CI) were estimated by the jackknife procedure in Phase 2 [31].

The statistical analyses were performed by STATA 10.0.

The study was approved by the local ethics committee, but was not found to be within the framework of the ethic committees (The Ethic Committee for Ringkjøbing, Ribe, and Sønderjylland counties ref. number 2607-04). Moreover, the study was approved by the Danish Data Protection Agency. The ethical considerations were discussed in a previous paper [17].

4. Results

4.1. Frequencies of Undetected Psychiatric Diagnoses. Table 2 shows that among all sick-listed individuals the frequencies of undetected mental disorders were as follows: any psychiatric disorder 21.4%, depression 14.2%, anxiety 4.4%, and somatoform disorder 6.4%. In addition the frequencies among individuals sick-listed MPSD and among individuals with a VPD are presented.
Table 2: Frequencies of undetected CMD in the entire sick-listed population, in individuals minus a psychiatric sick leave diagnosis, and in individuals with a verified psychiatric diagnosis including 95% confidence intervals (CI) for each proportion.

| Psychiatric diagnosis | Weighted frequencies of CMD among all sick-listed individuals based on Phase 2 | 95% CI | Weighted frequencies of CMD among individuals minus psychiatric sick leave diagnosis | 95% CI | Weighted frequencies of CMD among individuals with a verified diagnosis | 95% CI |
|-----------------------|--------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------|--------|
|                       | N = 337                                                                        | %      | N = 227                                                                          | %      | N = 188                                                                    | %      |
| Any psychiatric diagnosis | 21.4                                            | 17.5–25.9 | 30.2                                                                  | 24.8–36.2 | 44.4                                                                       | 37.4–51.6 |
| Depression            | 14.2                                             | 11.0–18.2 | 19.9                                                                  | 15.4–25.3 | 40.2                                                                       | 32.3–48.7 |
| Anxiety               | 4.4                                              | 2.7–7.2   | 6.4                                                                   | 3.9–10.3 | 30.0                                                                       | 19.3–43.5 |
| Somatoform disorder   | 6.4                                              | 2.9–13.6  | 8.9                                                                   | 4.1–18.4 | 86.5                                                                       | 73.5–93.7 |

Table 3: Predictors of verified depression, anxiety, and somatoform disorder among individuals sick-listed minus psychiatric sick leave diagnosis including 95% confidence intervals (CI) for each odds ratio (OR). ORs are significant when the 95% confidence limits not include 1.

| Psychiatric diagnosis | Risk factor | OR       | 95% CI       |
|-----------------------|-------------|----------|--------------|
| Depression            | Female      | 2.53     | 2.42–2.65    |
|                       | Constant    | 0.15     | 0.14–0.15    |
| Anxiety               | —           | —        | —            |
| Somatoform disorder   | Female      | 3.20     | 2.63–3.89    |
|                       | Employment—Other | 5.27 | 4.81–5.77 |
|                       | Constant    | 0.04     | 0.03–0.05    |

4.2. Predictors of Common Psychiatric Diagnoses. Table 3 illustrates that the Female gender was a significant predictor of depression and Female gender and Employment, others were significant predictors of somatoform disorder.

4.3. Return to Work. The rate of return to work was highest by a rate of 118.5 individuals/1000 sick-listed individuals/30 days for individuals who did not have a VPD. This was followed by anxiety (101.7), depression (60.8), and somatoform disorder (41.2) (not shown in tables).

Table 4 shows the result of a multivariable weighted Cox regression indicating the hazard rate ratios of return to normal work. The reference group for the psychiatric disorders depression, anxiety, and somatoform was no psychiatric diagnosis. Depression showed a significantly lower rate of return to work and anxiety showed a significantly higher rate. Somatoform disorder showed a significantly higher rate of return to work except for individuals who were white collar/civil servant where the rate was significantly lower.

| Category                        | HR  | 95% CI       |
|---------------------------------|-----|--------------|
| Depression                      | 0.59| 0.54–0.64    |
| Anxiety                         | 1.50| 1.29–1.74    |
| Somatoform disorder             | 1.43| 1.18–1.74    |
| White collar/civil servant      | 1.40| 1.36–1.44    |
| Somatoform + White collar/civil servant | 0.07| 0.03–0.19 |
| Employment-Skilled worker       | 2.25| 2.11–2.39    |
| Age 60 years +                  | 1.94| 1.77–2.13    |
| Unemployed                      | 0.33| 0.28–0.38    |

5. Discussion

5.1. Perspective of the Study. The perspective was to detect all CMD by taking the following issues into account: (1) the identification of all sick-listed individuals and (2) the detection of undetected mental disorders among sick-listed individuals. The unique identification of all sick-listed individuals is, in contrast to non-Scandinavian countries, possible in Denmark because compensation for sickness absence beyond two weeks is paid for by the social services and, therefore, based on entries in public registers. Prior to the present study, a Norwegian study [32] within the field of LSA was carried out. This study was also based on national registers for sickness benefits; however, it did not apply methods for the detection of undetected mental disorders as the diagnoses were based on the sick leave diagnoses. In other studies, methods for the detection of mental disorders have only been applied in selected samples [5, 13–16, 18]. A single study has taken both issues into consideration making a comprehensive account for the frequencies of mental disorders in the field of LSA possible [17]. The present study, which focuses specifically on individuals with undetected CMD, is based on the cohort of the latter study.

5.2. Frequencies of Psychiatric Diagnoses. Among individuals with a VPD, the frequencies of undetected psychiatric diagnoses were 44%, 40%, 30%, and 87%, respectively. These frequencies are in accordance with studies in primary care showing that less than 50% of the individuals with a mental disorder were detected [5–12]. These studies agree that it is the fairly well-functioning individuals who are undetected
as these individuals experience less severe symptoms; they have a higher social status, and a higher level of education. Furthermore, the individuals with undetected CMD only mention somatic symptoms as the reason for GP contact [6–12]. The same explanation may be applicable to LSA since the major part of sick leave diagnoses relies on the assessments of general practitioners. However, more factors may be involved. One factor may be that the primary care physicians to a high degree rely on functional rather than diagnostic criteria. Another factor may be that the physicians only diagnose a patient with a psychiatric disorder if they consider the patient to be in need of psychiatric medical treatment [7]. In addition, the patients’ resistance against diagnosis may be of importance which also applies to the patients’ willingness to treatment and adherence to treatment [7, 33]. It is also probable that diagnostics in primary care to a higher degree is based on a psychosocial approach than the more biomedical approach in ICD-10 or DSM-IV. This hypothesis is supported by a Swedish study that has identified psychosocial stressors as indicators in early detection of depression [32]. The differences of this study compared to others may also derive from a methodological bias, as the sick leave diagnoses originated from the beginning of the sickness absence period, whereas the verified diagnoses were established after eight weeks of sickness absence, and it is probable that some disorders have evolved after the sick listing.

5.3. Predictors of Verified Psychiatric Diagnoses. Female gender was the only predictor of depression. The two categories female gender and other employment were predictors of somatoform disorder. This is in accordance with population studies [34–41]. In addition, population studies have found the risk of mental disorders decreasing with increasing age [34, 35, 37, 38, 40]. Furthermore, population studies have found that urbanity, living alone, and unemployment are associated with high frequencies of mental disorder [34–44]. As it appears, the number of predictors was lower in the present study when compared to population studies. The reason for this may be that the present study focused on incident individuals on LSA, whereas population studies dealt with prevalence. Another explanation may be that this study was controlled for each of the socio-demographic characteristics. Finally, the lower number of predictors may be due to the fact the individuals with mental disorders in the cohort of MPSD have newly developed mental disorders. Consequently, the study may indicate that female gender may be a predictor of the development of depression, whereas socio-demographic indicators such as living alone and unemployment may be a consequence of having developed a mental disorder. It is important to emphasise that the study design does not guarantee that individuals without a psychiatric sick leave diagnosis at the beginning of the study have not previously had a mental disorder. However, it is likely that individuals with newly developed mental disorders occur more frequently in this subsample.

5.4. Return to Work. Individuals without verified psychiatric diagnosis were shown in the uncontrolled analyses to have the highest rates of return to work, whereas individuals with verified depression and verified somatoform disorder had the lowest. This finding is in agreement with other studies which show that the duration of sickness absence for individuals with mental disorders is comparable with that of chronic disabling conditions [45–48]. As it was the case for predictors of mental disorders, the predictors of return to work are relatively few in numbers in this study compared to other studies. Other studies indicate that increasing age is a predictor of long-term sickness absence [18, 49–55]. This is contrary to the findings in this study. The contrast between this study and others may reflect the possibility of retiring at the age of 60 years in Denmark, and it is likely that the healthiest individuals are the ones to persist in the labour market. In other studies, unemployment, as in this study, is associated with long-term lower return to work [50, 52, 53]. Most studies indicate that females have a higher number of sickness absence periods than men, whereas males have longer period than females [16, 18, 49, 51, 53–56]. In this study, however, gender was of no significance. Employment as a skilled worker was a strong predictor of a high rate of return to work. An explanation could be that blue-collar workers can often work despite a minor mental problem, whereas a similar problem may cause sickness absence for white-collar workers. However, in this study this was only the case when white collar workers had a somatoform disorder. Otherwise, they showed a significantly higher rate of return to work. The discrepancies with other studies may be explained by the fact that the individuals in this study had newly developed mental disorders. This issue needs further clarification, but if it is so, rehabilitation and return to work may be somewhat different with newly established disorders compared to more developed disorders.

5.5. Strengths and Limitations. One of the strengths of this study is that it accounts for all sick-listed individuals in a population without incomplete coverage. Another strength is that a subgroup of individuals had their psychiatric diagnoses verified.

The total nonresponse (53.6%) in Phase 1 may bias the generalisability with regard to all the 2,414 individuals. Firstly, men were represented at a lesser frequency among the participants than among the nonparticipants. Secondly, the participants were older than among the nonparticipants.

The delay concerning the completion of the psychiatric examinations may have induced a bias since the mental disorder could have developed after the sick-listing. This will overestimate the incidence of undetected CMD at the beginning of the sickness absence period. However, the presence of CMD, whether it presented itself before or after the beginning of the sickness period, may still influence the rehabilitation process which usually begins six to eight weeks after the sick-listing.

With regard to the estimation of the frequency of undetected disorders, the methodology in the present study is different from studies within primary care. In the studies of primary care the GPs diagnosed the patients under standardised conditions, whereas the information with regard to sick leave diagnoses in this study was gathered in
a less standardised way, from medical documents. The less standardised conditions may lower the reliability of the sick leave diagnoses. However, the validity may be higher than in the studies of primary care due to the fact the standardised conditions increase the GPs awareness of giving a psychiatric diagnosis. Consequently, the present study does to a higher degree reflect the ordinary clinical setting.

The ICPC coding of sick leave diagnoses was done by the investigator which may have biased the coding as the research questions was known by the investigator [29]. This is unlikely, however, due to the fact that the information was gathered from medical records. Some information specifying a sick leave diagnosis may have been lost, and, therefore, some sick leave diagnoses may have been coded as symptom diagnoses even if a specific somatic disorder was present. Moreover, the study did not include a diagnostic verification of somatic diagnoses. Finally, some individuals who at the time of the coding of sick leave diagnoses were still under diagnostic examination for a somatic disorder may later have gotten a verified somatic diagnosis. Consequently, some individuals with a specific somatic diagnosis may have been registered with unspecific somatic symptom diagnoses. With respect to this study the only differentiation in the sick leave diagnoses was between somatic and psychiatric diagnoses. It is unlikely that somatic disorders were coded as psychiatric disorders, whereas it is more likely that psychiatric disorders were coded as unspecific somatic disorders. Consequently, a possible misclassification is not of much concern for this study.

The models for interaction between VPD and the predictors implied a large number of significance tests for which reason some of the significant associations may have occurred by chance. However, the 95% confidence limits were for all results far from 1 for which reason this bias in unlikely.

6. Conclusions

Among all sick-listed individuals on LSA, 21% had an undetected mental disorder. Females had significantly increased risks of CMD compared to males. Individuals who were employed as skilled workers had a significantly higher rate of return to work. Unemployment had a significantly decreased rate of return to work. The predictors of a CMD and return to work. Unemployment had a significantly decreased rate of return to work. The predictors of a CMD and return to work. Unemployment had a significantly decreased rate of return to work.

Conflict of Interests

The authors declare that there is no conflict of interests.

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Research Article

Care-Seeking Pattern among Persons with Depression and Anxiety: A Population-Based Study in Sweden

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Background. In primary care, a vast majority of patients affected with depression and anxiety present with somatic symptoms. Detection rate of psychiatric symptoms is low, and knowledge of factors influencing care seeking in persons affected by depressive and anxiety disorders on a population level is limited. Objective. This study aims to describe if persons, affected by depression and anxiety disorders, seek care and which type of care they seek as well as factors associated with care seeking.

Method. Data derives from a longitudinal population-based study of mental health conducted in the Stockholm County in 1998–2010 and the present study includes 8387 subjects. Definitions of anxiety and depressive disorders were made according to DSM-IV criteria, including research criteria, using validated diagnostic scales. 2026 persons (24%) fulfilled the criteria for any depressive or anxiety disorder.

Results. Forty-seven percent of those affected by depression and/or anxiety had been seeking care for psychological symptoms within the last year. A major finding was that seeking care for psychological symptoms was associated with having treatment for somatic problems.

Conclusions. As a general practitioner, it is of great importance to increase awareness of mild mental illness, especially among groups that might be less expected to be affected.

1. Introduction

Mental health problems, such as depression and anxiety disorders, are often underrecognized and untreated. Bijl et al. [1] showed that the prospect of being treated increases with the severity of the illness, but also that half of those affected by a serious mental illness remained untreated. It is easy to understand that a serious condition needs treatment to avoid complications such as suicide, need of inpatient care, and disability. However, studies have shown that the risk of such complications did not differ significantly between mild forms of mental illness compared to moderate forms [2]. In several studies, around half of those affected by psychological distress or psychiatric diagnoses had not been seeking care [3–9]. However, even if they seek, the detection rate of psychiatric symptoms is low. A recent meta-analysis of studies regarding general practitioners ability to recognize mild depression showed a detection sensitivity of 56.5% [10]. This emphasizes the importance of further increasing the awareness of mild cases of mental illness.

In primary care, a vast majority of patients affected by depression and anxiety present with somatic symptoms [11, 12]. Somatic complaints include changes in appetite and libido, lack of energy, sleep disturbances, dizziness, palpitations, dyspnoea, and general aches, and pains such as headache, back and other musculoskeletal pain, and gastrointestinal disturbances.

Identifying persons affected by mental illness, but seeking care for somatic symptoms, is a major difficulty especially in the primary care setting, due to both patient-related issues as well as physician-related issues [13]. It is of importance that somatic symptoms associated with mental health disorders are not confused with somatoform disorders (i.e., conversion, somatization, hypochondriasis, and somatization disorder).

The knowledge of factors influencing care seeking in persons affected by depressive and anxiety disorders in the population is limited. Hence, it is important to elucidate factors associated with care seeking in these groups, over all,
and factors associated with not seeking care for psychological symptoms. Knowledge about factors associated with seeking care could support early identification.

2. Objectives

This study aims to describe the prevalence of care seeking among persons with depression and anxiety disorders using data from a population-based study in Sweden. First, we aim to study whether affected persons seek care and if care seeking is associated with socioeconomic factors and health status. Further, we aim to study if those who seek care for psychological symptoms at the general practitioners differ compared to those who seek care from other health care facilities or do not seek at all.

3. Material and Methods

3.1. Study Sample. This study is based on the PART study (an acronym in Swedish for Mental ill-health, Work, and Relationships). PART is a longitudinal population-based study of mental health conducted in the Stockholm County, Sweden. In 1998-1999, 19742 randomly selected Swedish citizens aged 20–64 years, residing in the Stockholm County, were invited to participate and 10441 persons (response rate 53%) responded to the self-administrated questionnaire (baseline) that included questions on demographic and socioeconomic characteristics, somatic and psychiatric health, and use of drugs. Three years after they had answered the first questionnaire (baseline) those who answered were reassessed with another similar questionnaire including questions on health care seeking; 8700 persons participated (retention rate 83%). Both data collections were supplemented with interviews in a subgroup of the respondents. Psychiatrists performed interviews using Schedules for Clinical Assessment in Neuropsychiatry (SCAN) [14], in order to validate the answers of the questionnaires. A comparison between depressions according to the Major Depression Inventory (MDI) used in the questionnaire and SCAN showed good compliance [15]. Non-participation analysis, using national registers, performed after the first two waves, revealed that the association between gender, age, income, education, country of birth, and psychiatric diagnoses in the national registers was similar among participants and nonparticipants [16, 17]. For detailed information about the PART study see the technical report [18].

For the purpose of this study we restricted our analyses to the 8387 subjects that participated in both baseline and the first followup, with information on symptoms of depression and anxiety.

3.2. Psychiatric Disorders. Definitions of anxiety and depressive disorders were made according to DSM-IV criteria, including research criteria, using validated diagnostic scales based on the questionnaire. The included scales were the Sheehan Patient-Rated (Panic) Anxiety Scale [19] and the Major (ICD-10) Depression Inventory, MDI [20]. Social phobia was assessed using the avoidance part of an instrument developed by Marks and Mathews [21] and for obsessive-compulsive disorders screening questions suggested by the Swedish Psychiatric Association and Swedish Institute for Health Services Development [22] were used. Anxiety disorders included panic syndrome with agoraphobia, agoraphobia without panic syndrome, social phobia, obsessive-compulsive disorder, panic syndrome without agoraphobia, anxiety syndrome due to somatic cause, specific phobia, posttraumatic stress syndrome, general anxiety disorder, and acute stress syndrome. Depressive disorders included major depressive disorder, dysthymia, and minor depressive disorder. Some of the persons affected by major depressive disorder may have a bipolar disorder since there was no scale for manic episodes in the questionnaire. Three mutually exclusive groups were created: any depressive disorder (n = 465), any anxiety disorder (n = 751), and coexistent depressive and anxiety disorder (n = 810). In total 2026 persons (24%) fulfilled the criteria for any depressive or anxiety disorder. This corresponds well to other studies [7, 23–25].

3.3. Care Seeking. The Swedish health care system is mainly taxpayer funded and largely decentralized. Health care is accessible to everyone living in Sweden, and because of tax subsidies, costs are limited for individuals. Both private- and public-funded outpatient clinics are under the same regulations and the patient can choose their preference for the same cost, with exception for those private clinics without affiliation to the public health care system. With regards to psychologists and psychotherapists, there are also private practices without affiliation, and thus not subsidized, a more expensive alternative for the patient. When it comes to alternative care, it is always to a nonsubsidized cost. The health care system is organized with a broad base of easily-accessible primary care in health centers, where a variety of health professionals (doctors, nurses, physiotherapists, psychologists, counsellors, and other staff members) work. The usual path to seek care is to turn to the health centre to see a specialist in general medicine (General Practitioner, GP). The major part of patients is taken care of at this level, but in case the patient needs to see another specialist, he or she is referred by the GP. The GP can also refer the patient to a psychologist or likewise. Within the psychiatric sector, it is also possible to directly take contact with an outpatient psychiatric clinic, if it is obvious that the mental problems are severe enough to belong to the psychiatric care. If not, the patient will be redirected to the primary health care centre.

Care seeking was evaluated using two questions based on the questionnaire. The first was “Have you, due to sleeping problems, personal problems or psychological symptoms, been in contact with one or more of the following during the last 12 months?” The following response alternatives were given: “psychiatrist public or private,” “psychologist/psychotherapist public or private,” “general practitioner public or private,” “other medical/psychological treatment,” and “alternative medical treatment.” Seeking care for psychological symptoms was defined as having checked one or more of the response alternatives. The second question was “Have you, due to bodily symptoms or somatic illness, been in contact with one or more of the following during the last 12 months?” with the following response alternatives:
“general practitioner public or private,” “specialist public or private,” “other medical treatment,” and “alternative medical treatment.” Seeking care for somatic symptoms was defined as having checked one or more alternatives. Multiple responses were possible for both questions.

3.4. Characteristics. Data on country of origin and education was derived from the baseline questionnaire, and all other data was retrieved from the followup.

Hazardous alcohol use was evaluated using AUDIT (Alcohol Use Disorders Identification Test) [26, 27]. The cut-off ≥ 8 was used for men and ≥ 6 for women [28]. Education was categorized into three groups: basic compulsory education (≤ 9 years), upper secondary education (10–12 years), and higher education (college/university, ≥ 13 years). Data from the second wave included household composition, children in household (permanently or more than half of the time were considered as living with children). Labour market position included employment/own business, on leave (studies and parental leave), unemployed or in labour market policy measures, disability pension or sick leave for more than a month, and retirement. Having a close friend included the answers entirely or fairly true to the question if there was a special person the person felt he/she could get support from. Disability last 30 days included those who had been so affected by psychological symptoms/problems that they had not been able at all to pursue the ordinary tasks. Somatic illness was measured by a list of 26 somatic disorders, and only those currently treated by a doctor were considered as exposed to somatic illness.

3.5. Statistical Methods. The statistical analyses aimed to describe presence of care seeking and possible factors associated with such among persons affected with depression or anxiety disorders. Also, the analyses describe what factors could be associated with seeking different types of care. This was done by using cross-tabulation in IBM SPSS Statistics 19.0 on different kinds of care seeking to describe the prevalence of care seeking by demographic, socioeconomic, and psychiatric factors. Pearson chi-square tests were used to test for statistical significance. Additionally, to analyse differences between persons seeking different kinds of care, one-way analysis and Bonferroni tests were used. Partially missing answers were treated as missing values in the analyses (varying from 0.04% on born abroad to at most 2.4% for seeking somatic care).

4. Results

A description of the study sample, stratified by depressive and/or anxiety disorders, is presented in Table 1. Persons with depression were more often female, young, single, living without children, less often having a close friend and less educated. They reported more often to be on sick leave/disability pension, unemployed, treated for somatic illness, having hazardous alcohol use and were more often affected by disability, compared with those without depression and anxiety. Persons with anxiety were more often female, younger and more often had hazardous alcohol use, compared with those without depression and anxiety. Persons with comorbid depression and anxiety showed similar differences as those affected by depression and also reported more often having country of origin outside Sweden.

4.1. Care Seeking for Psychological Symptoms. Of those affected by depression and/or anxiety, 47.1% of the persons stated that they had been in contact with some type of health care facility within the last year due to psychological symptoms; see Table 2. Persons who had been seeking help for psychological symptoms were more often female, older, singles, born abroad, or outside the labour market. Additionally, they more often had comorbidity factors such as somatic illness, or both depression and anxiety, were more severely affected by depression and more often disabled due to psychological symptoms.

When it comes to type of care, 30.4% of the persons affected with depression and/or anxiety had been seeking help for their psychological symptoms at a GP, and 33.5% had been seeking help at other caregivers; see Table 3. About thirteen percent had reported a GP as their only care provider.

In the group that went to the GP, there was an overrepresentation of persons with both depression and anxiety, and disability due to psychological symptoms as well as somatic illness compared to those that did not seek care. This was applicable for both those who had the GP as their only provider, as well as those who also had seen a psychiatrist, psychologist, or other (alternative/other medical or psychological). Seeking care to a greater extent to psychiatrists or psychologists was also the case for those with comorbid anxiety and depression, and disability due to psychological symptoms. When it came to those with hazardous alcohol use, there was an overrepresentation among those who had seen both a GP and a psychiatrist/psychologist, compared to the persons that had only attended GP or had not been seeking at all.

Those that had been seeking GP were also older and more often they had less education, than those who were more likely to not seek care at all, or to seek only a psychiatrist or psychologist. At the GPs, persons outside the labour market, on sick leave or disability pension were overrepresented, as well as persons born in another country, both among those who had the GP as their only care provider or in combinations. Persons born abroad were also less likely to only have a psychiatrist or psychologist as their only provider.

Regarding the group that turn only to alternative care or other medical/psychological treatment, there seemed to be no differences among groups except for persons born abroad and less educated persons that were underrepresented.

5. Discussion

In the present study we found that 52.5% of those affected by depression and/or anxiety disorders did not seek care for psychological symptoms. Among those not seeking care for psychological symptoms, two-thirds had sought care for somatic symptoms. One reason for seeking for somatic symptoms might be that they primarily have identified the somatic
Table 1: Description of the study sample and stratified by depressive or anxiety disorder status \((n = 8387)\).

|                          | All \((n = 8387)\) | No depression and/or anxiety \((n = 6361)\) | Depression \((n = 465)\) | Anxiety \((n = 751)\) | Depression and anxiety \((n = 810)\) |
|--------------------------|--------------------|---------------------------------------------|---------------------------|---------------------|-----------------------------------|
| **Gender**               |                    |                                             |                           |                     |                                   |
| Male                     | 42.4               | 45.3                                        | 33.8                      | 38.2                | 28.8                              |
| Female                   | 57.6               | 54.7                                        | 66.2                      | 61.8                | 71.2                              |
| **Age**                  |                    |                                             |                           |                     |                                   |
| 23–35 years              | 28.7               | 26.9                                        | 36.4                      | 34.4                | 33.0                              |
| 36–55 years              | 44.8               | 44.7                                        | 42.7                      | 44.8                | 47.9                              |
| 56–68 years              | 26.4               | 28.4                                        | 20.9                      | 20.8                | 19.1                              |
| Median                   | 45 years           | 46 years                                    | 40 years                  | 43 years            | 43 years                          |
| **Born abroad**          | 9.3                | 8.7                                         | 10.3                      | 10.7                | 12.8                              |
| **Household composition**|                    |                                             |                           |                     |                                   |
| Living with partner      | 67.7               | 70.5                                        | 54.8                      | 66.2                | 54.1                              |
| Living with parents      | 2.4                | 2.4                                         | 1.9                       | 2.3                 | 2.8                               |
| Living with other        | 2.2                | 2.0                                         | 2.4                       | 3.5                 | 2.6                               |
| Single                   | 27.7               | 25.0                                        | 40.9                      | 28.1                | 40.5                              |
| **Children in household**|                    |                                             |                           |                     |                                   |
| Basic compulsory education or less | 15.5 | 14.8                                        | 19.8                      | 13.3                | 20.6                              |
| Secondary school         | 40.0               | 39.9                                        | 41.3                      | 39.7                | 39.6                              |
| University or college    | 44.5               | 45.3                                        | 38.9                      | 47.0                | 39.8                              |
| **Labour market position**|                   |                                             |                           |                     |                                   |
| Employment/self-employed/on leave/studies/parental leave | 85.7 | 87.2                                        | 80.9                      | 87.7                | 76.2                              |
| Unemployment/labour market policy measures | 2.7 | 2.1                                         | 3.9                       | 2.9                 | 6.8                               |
| Retirement pension       | 6.1                | 6.9                                         | 4.1                       | 3.3                 | 3.3                               |
| Sick leave/disability pension | 4.4 | 2.9                                         | 10.1                      | 5.2                 | 12.6                              |
| Other                    | 0.8                | 0.8                                         | 0.9                       | 0.7                 | 1.0                               |
| **Close friendship**     | 94.4               | 95.9                                        | 89.7                      | 93.9                | 86.4                              |
| **Somatic illness**      | 32.0               | 28.6                                        | 42.4                      | 36.4                | 48.3                              |
| **Hazardous alcohol use**| 19.6               | 16.3                                        | 29.2                      | 26.7                | 33.8                              |
| **Depression severity**  |                    |                                             |                           |                     |                                   |
| Minor depression         | 3.5                | 37.2                                        | 18.3                      |                     |                                   |
| Major depression         | 2.1                | 62.8                                        | 33.6                      |                     |                                   |
| **Disability last 30 days due to psychological symptoms** | 7.6 | 3.1                                         | 19.5                      | 8.4                 | 35.0                              |

All differences within each variable showed significance when tested with chi-square.

Symptoms that often accompany depression and anxiety, which has been reported in several previous studies [12, 29, 30]. One-third of the affected had not been seeking care at all. Comparison with other studies is somewhat difficult due to different measures on both mental health and of outcomes such as care seeking or treatment. In our study, the proportion seeking care was 47.1%. Several other studies have showed prevalence for seeking care for psychological distress or a variety of psychiatric diagnoses (such as depression, dysthymia, GAD, panic disorder, phobias), ranging from 36 to 60% [3–9]. This shows that the problem with people in need who does not seek help is widely spread.

In the present study, persons less likely to seek help were male, younger, born in Sweden, living with a partner, employed/on leave for studies or parental leave, retired or had higher education. Several studies have reported that prejudices in the general population against male persons affected by mental disorders are higher than against affected females [31]. This might make men less prone to identify their psychological symptoms. Having a job, being a student, or on parental leave might imply less daytime available in to be spent seeking care. When it comes to labour market position, being on sick leave might be a promoting factor but also a result of care seeking per se and an indicator of severity.
Table 2: Proportion care seeking for psychological symptoms, among persons affected by depression and/or anxiety (n = 959).

|                        | Proportion seeking care for psychological symptoms | P value* |
|------------------------|---------------------------------------------------|----------|
| **Disorder**           |                                                   |          |
| Depression             | 40.9 (%) 190                                      | 0.000    |
| Anxiety                | 36.8 (%) 276                                      |          |
| Depression and anxiety | 60.9 (%) 493                                      | 0.01     |
| **Gender**             |                                                   | 0.01     |
| Male                   | 43.3 (%) 293                                      |          |
| Female                 | 49.4 (%) 666                                      |          |
| **Age**                |                                                   | 0.000    |
| 23–35 years            | 41.7 (%) 288                                      |          |
| 36–55 years            | 47.9 (%) 440                                      |          |
| 56–68 years            | 54.9 (%) 223                                      |          |
| **Born in Sweden**     |                                                   | 0.033    |
| Yes                    | 46.5 (%) 833                                      |          |
| No                     | 53.9 (%) 125                                      |          |
| **Household composition** |                                              | 0.000    |
| Living with partner    | 41.8 (%) 497                                      |          |
| Living with parents    | 46.9 (%) 23                                       |          |
| Living with other      | 46.6 (%) 27                                       |          |
| Single                 | 56.5 (%) 412                                      |          |
| **Children in household** |                                              | 0.054    |
| Yes                    | 44.3 (%) 370                                      |          |
| No                     | 49.5 (%) 587                                      |          |
| **Education**          |                                                   | 0.004    |
| Basic compulsory education or less | 54.0 (%) 194 |          |
| Secondary school       | 43.6 (%) 354                                      |          |
| University or college  | 48.0 (%) 411                                      |          |
| **Labour market position** |                                              | 0.000    |
| Employment/self-employed/on leave/studies/parental leave | 42.9 (%) 709 |          |
| Unemployment/labour market policy measures         | 61.1 (%) 58                                       |          |
| Retirement pension     | 45.1 (%) 32                                       |          |
| Sick leave/disability pension | 79.8 (%) 150 |          |
| Other                  | 52.9 (%) 9                                        |          |
| **Close friendship**   |                                                   | 0.452    |
| Having a close friend  | 46.9 (%) 855                                      |          |
| Not having a close friend | 51.2 (%) 103 |          |
| **Somatic illness**    |                                                   | 0.000    |
| Currently treated      | 59.6 (%) 513                                      |          |
| Currently not treated  | 38.3 (%) 446                                      |          |
| **Hazardous alcohol use** |                                              | 0.159    |
| Yes                    | 48.4 (%) 268                                      |          |
| No                     | 44.8 (%) 579                                      |          |
| **Depression severity** |                                                  | 0.001    |
| Minor depression       | 37.3 (%) 109                                      |          |
| Major depression       | 46.8 (%) 81                                       |          |
| **Disability last 30 days due to psychological symptoms** | | 0.000 |
| Yes                    | 69.2 (%) 301                                      |          |
| No                     | 41.3 (%) 653                                      |          |

*P value for chi-square testing.
Table 3: Proportion care-seeking among persons with depression and/or anxiety by combination of health care units (n = 2005). Only those having complete information on the care seeking questions were included.

|                                      | Only GP n = 270 | GP and psychiatrist/psychologist n = 169 | GP and other n = 170 | Psychiatrist/psychologist n = 242 | Only other n = 91 | No care seeking n = 1063 |
|--------------------------------------|----------------|-----------------------------------------|----------------------|-----------------------------------|------------------|------------------------|
|                                      | % (n)          | % (n)                                   | % (n)                | % (n)                             | % (n)            | % (n)                  |
| **Diagnosis**                        |                |                                         |                      |                                   |                  |                        |
| Depression (459)                     | 13.9 (64)      | 5.9 (27)                                | 6.3 (29)             | 10.2 (47)                         | 4.1 (19)         | 59.5 (273)*            |
| Anxiety (746)                        | 11.4 (85)      | 5.2 (39)                                | 5.4 (40)             | 9.7 (72)                          | 5.0 (37)         | 63.4 (473)*            |
| Depression and anxiety (800)         | 15.1 (121)*    | 12.9 (103)*                             | 12.6 (101)*          | 15.4 (123)*                       | 4.4 (35)         | 39.6 (317)             |
| **Gender**                           |                |                                         |                      |                                   |                  |                        |
| Male (668)                           | 12.7 (85)      | 7.6 (51)                                | 7.0 (47)             | 11.4 (76)                         | 4.0 (27)         | 57.2 (382)*            |
| Female (1337)                        | 13.8 (185)     | 8.8 (118)                               | 9.2 (123)*           | 12.4 (166)                        | 4.8 (64)         | 50.9 (681)             |
| **Age**                              |                |                                         |                      |                                   |                  |                        |
| 23–35 years (683)                    | 9.1 (62)       | 7.0 (48)                                | 6.0 (41)             | 14.6 (100)*                       | 4.8 (33)         | 58.4 (399)*            |
| 36–55 years (909)                    | 12.8 (116)     | 9.0 (82)                                | 8.9 (81)             | 12.5 (114)                        | 4.3 (39)         | 52.5 (477)             |
| 56–68 years (354)                    | 22.6 (80)*     | 9.0 (32)*                               | 11.9 (42)*           | 7.6 (27)                          | 4.8 (17)         | 44.1 (156)             |
| **Born in Sweden**                   |                |                                         |                      |                                   |                  |                        |
| Yes (1778)                           | 12.8 (228)     | 8.2 (145)                               | 8.0 (143)            | 12.4 (220)*                       | 4.8 (86)*        | 53.8 (956)*            |
| No (226)                             | 18.1 (41)*     | 10.6 (24)*                              | 11.9 (27)*           | 9.7 (22)                          | 2.2 (5)          | 47.3 (107)             |
| **Household composition**            |                |                                         |                      |                                   |                  |                        |
| Living with partner (1181)           | 13.0 (154)     | 7.3 (86)                                | 6.8 (80)             | 10.6 (125)                        | 3.9 (46)         | 58.4 (690)             |
| Living with parent (48)              | 10.4 (5)       | 16.7 (8)                                | 6.2 (3)              | 10.4 (5)                          | 4.2 (2)          | 52.1 (25)              |
| Living with other (56)               | 14.3 (8)       | 5.4 (3)                                 | 7.1 (4)              | 10.7 (6)                          | 7.1 (4)          | 55.4 (31)              |
| Single (720)                         | 14.3 (103)     | 10.0 (72)                               | 11.5 (83)*           | 14.7 (106)*                       | 5.4 (39)         | 44.0 (317)*            |
| **Children in household**            |                |                                         |                      |                                   |                  |                        |
| Yes (828)                            | 12.7 (105)     | 9.3 (77)                                | 7.6 (63)             | 11.1 (92)                         | 3.3 (27)         | 56.0 (464)             |
| No (1171)                            | 14.1 (165)     | 7.9 (92)                                | 9.1 (106)            | 12.7 (149)                        | 5.5 (64)         | 50.8 (595)             |
| **Education**                        |                |                                         |                      |                                   |                  |                        |
| Basic compulsory education or less (356) | 22.8 (81)*   | 9.3 (33)                                | 10.1 (36)            | 7.3 (26)                          | 3.9 (14)         | 46.6 (166)             |
| Secondary school (804)               | 10.9 (88)      | 7.8 (63)                                | 7.6 (61)             | 12.6 (101)*                       | 4.4 (35)*        | 56.7 (456)*            |
| University or college (845)          | 12.0 (101)     | 8.6 (73)                                | 8.6 (73)             | 13.6 (115)*                       | 5.0 (42)*        | 52.2 (441)*            |
| **Labour market position**           |                |                                         |                      |                                   |                  |                        |
| Employment/self-employed/on leave/studies/parental leave (1638) | 11.7 (191) | 7.1 (116)                               | 7.0 (115)            | 12.3 (201)                        | 4.6 (76)         | 57.3 (939)*            |
| Unemployment/labour market policy measures (93) | 19.4 (18) | 10.8 (10)*                              | 14.0 (13)*           | 12.9 (12)                         | 4.3 (4)          | 38.7 (36)              |
| Sick leave/disability pension (184)  | 21.7 (40)*     | 20.7 (38)*                              | 17.9 (33)*           | 14.7 (27)                         | 3.8 (7)          | 21.2 (39)              |
| Retirement (70)                      | 27.1 (19)*     | 4.3 (2)                                 | 7.1 (5)              | 1.4 (1)                           | 4.3 (3)          | 55.7 (39)*             |
| **Close friendship**                 |                |                                         |                      |                                   |                  |                        |
| Having a close friend (1804)         | 13.35 (243)    | 8.3 (150)                               | 8.4 (151)            | 11.9 (214)                        | 4.5 (81)         | 53.5 (965)             |
| Not having a close friend (200)      | 13.5 (27)      | 9.5 (19)                                | 9.5 (19)             | 13.5 (27)                         | 5.0 (10)         | 49.0 (98)              |
| **Somatic illness**                  |                |                                         |                      |                                   |                  |                        |
| Currently treated (853)              | 20.0 (171)*    | 10.9 (93)*                              | 13.6 (116)*          | 9.6 (82)                          | 5.2 (44)         | 40.7 (347)             |
| Currently not treated (1152)         | 8.6 (99)       | 6.6 (76)                                | 4.7 (54)             | 13.9 (160)*                       | 4.1 (47)         | 62.2 (716)*            |
| **Hazardous alcohol use**            |                |                                         |                      |                                   |                  |                        |
| Yes (551)                            | 12.0 (66)      | 11.3 (62)*                              | 9.1 (50)             | 12.2 (67)                         | 3.6 (20)         | 51.9 (286)             |
| No (1279)                            | 13.8 (176)     | 6.9 (88)                                | 7.7 (98)             | 11.6 (148)                        | 4.7 (60)         | 55.4 (709)             |
| **Depression severity**              |                |                                         |                      |                                   |                  |                        |
| Minor depression (172)               | 13.2 (38)      | 4.5 (13)                                | 5.2 (15)             | 9.4 (27)                          | 4.9 (14)         | 62.7 (180)             |
| Major depression (287)               | 15.1 (26)      | 8.1 (14)                                | 8.1 (14)             | 11.6 (20)                         | 2.9 (5)          | 54.1 (93)              |
Summarizing, in the group of persons less likely to seek care there is an overrepresentation of individuals that perhaps are less likely to be suspected of being affected of mental problems due to lower load of risk factors as well as assumed to be well adjusted in society.

Those with milder symptoms and less disability due to psychological symptoms were also less likely to seek. Evidently this could be due to less need of care, and it could be argued that minor depression and distress could be resolved without professional help [32, 33]. However, mild disorders are increasingly considered clinically significant [34] and detecting them in an early stage might prevent them from turning into serious cases in the future [2, 35, 36].

Having been seeking care both at the GPs and at the psychiatrists or psychologist/psychotherapists could mean, with regards to how the health care system is organized in Sweden, that the GP has referred the patient. This is especially the case when it comes to persons with a hazardous alcohol use that more often had been seeing a GP and a psychiatrist/psychologist. In this study we lacked information on type of clinical specialization but it is likely that it was referrals from GPs to clinics specializing in alcohol dependence.

There was no gender difference for the category that had seen a GP and a psychiatrist/psychologist/therapist. This could possibly stand for that there is no gender difference when it comes to proportional referrals from the GP, which is gratifying.

Persons with higher education were less likely to seek care at all, and if they did, they were more likely to turn to a psychiatrist/psychologist. This could possibly stand for a perceived need for a more specific treatment, higher ability to interpret their symptoms as psychological, or more knowledge on possible places to go. That persons under the age of 35 years show the same pattern could maybe stand for partly the same, as in a perceived need for a more specific treatment, but perhaps also for less stigmata surrounding mental problems. The opposite is shown for persons born abroad; characteristics of migrants’ pathways to psychiatric care have been reported to be delays in seeking professional help, a lower probability of medical referral, frequent involvement of the police and emergency services, and high proportions of compulsory and secure-unit admissions [37].

Persons on sick leave, with a disability pension, or unemployed were more likely to see a GP, alone or in combination with psychiatrist/psychologist or other and more likely to seek care. It could be argued that having a long-term psychological health problem might be preceding poorer social functioning resulting in unemployment or sick leave/disability pension. Also, contact with a GP or a psychiatrist is a necessity for the medical certificates needed for the social insurance system initiating a sick leave or disability pension, which in part could explain the overrepresentation among these groups. But also, it could stand for a more severe psychological health status or a greater need of treatment. Studies have shown that unemployment [38], as well as sick leave or disability pension per se, can have a negative effect on psychological health [39].

An important factor for not seeking care for psychological symptoms seems to be not having any treatment for somatic illness. This could be an important finding; if a person has treatment for any somatic problems, he or she already established a relationship to the physician or care-giving facility, which might make bringing up psychological problems easier. Older people might also have an easier access to care due to a prior relationship with their GP based on somatic illness or plainly longer experience of care seeking.

The category turning only to alternative care seemed to have less to do with the mental illness per se, not varying with severity of illness or disability, but instead with socioeconomic factors that could be argued possibly related to limitations such as high cost or less knowledge of such.

### 6. Study Strengths and Limitations

In the present population-based study, validated diagnostic scales for assessing anxiety and depression were used [40–42].

One limitation is the cross-sectional design, which limits the possibilities to draw causal conclusions. The self-reported care seeking was measured retrospectively one year back from filling in the questionnaire. The scales measuring symptoms of depression cover the last 14 days and for anxiety the last 30 days, respectively. It could therefore be argued that persons might have symptoms but not yet contacted health care or that persons might fall out of the depression and/or anxiety group population because they have had symptoms previously but not during the last month. However, when examining reports of the duration of symptoms, we found that, of those having any form of depression, one-third had it...
more than two years, one-third since more than six months, and one-third between two weeks and six months. Among those with anxiety, all had had symptoms for more than a month according to the used scale.

7. Conclusions

As a general practitioner, it is of great importance to further increase awareness of mild cases of mental illness, especially among groups that might be less expected to be affected by mental illness.

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