The Outpatient Provision of Care for Mental Disorders in a Rural Area: An Analysis of Reimbursement Claims in Mecklenburg-West Pomerania*

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Abstract

Mental disorders cause a substantial amount of the burden of disease. Although they are less frequent in rural areas, their provision of care is disproportionately lower. Reimbursement claims in the federal state of Mecklenburg-West Pomerania of the years 2006/2007 serve as the basis for the descriptive distribution of subgroups on the total number of mental disorders and their outpatient care. Of all claims, 35.3% were allotted to neurotic, stress-related and somatoform disorders, 24.2% to affective disorders and 12.5% to substance use disorders. Claims for reimbursement were made for 44.7% by general practitioners, 15.1% by neurologists and psychiatrists, 12.6% by gynaecologists, and 8.1% by internists. Psychotherapists claimed 3.1%. These results cause considerations regarding the establishment of psychotherapeutic and neurological / psychiatric practices as well as the significance of mental disorders in the training of general practitioners.

Key words: mental disorders, provision, rural areas

Introduction

Mental disorders cause a substantial proportion of the burden of disease in the general population. Neuropsychiatric disorders rank second in the list of disability adjusted life years (DALY) in Europe, preceded only by cardio-vascular diseases. They are also responsible for the largest part of causes for years lived with disability (YLD), and account for 19.5% of DALYs and 40% for YLD1-3.

An overview over 27 studies on the prevalence of mental disorders in Europe yielded an estimate of 27% of the adult population between 18 and 65 years, who fulfilled criteria of at least one mental disorder3). Prevalence rates between studies ranged considerably, with highest prevalence rates for a) affective disorders with a median (md) rate of 6.9%, b) specific phobias, md = 6.4%, c) somatoform disorders, md = 6.3%, d) substance use disorders, md = 2.4%, and e) social phobias, md = 2.3%. All other groups of disorders showed median prevalence rates of less than 2%.

In Germany point-prevalence (four weeks) is estimated with 20%, the 12-months-prevalence with 31%, and lifetime prevalence with 43%. The most frequent disorders are affective, somatoform, substance-use and panic disorders4, 5). The morbidity is related to geographical characteristics. In rural areas, prevalence is estimated with 26% and increases with geographical agglomeration up to 35% in metropolitan areas6).

Standardised diagnostic procedures distinguished themselves because of their high reliability in epidemiological studies as well as in clinical settings. On the other hand, clinical diagnoses without structuring are less reliable and valid7). As basis for estimates on morbidity and ensuing planning of demand, clinical diagnoses have to be regarded with greater care.

Persons with mental disorders call on medical treatments more often and are more frequently on sick leave8).
However only one third of all persons concerned, has sought out psychotherapeutic treatments, or have received psychotherapy\(^9\). Another study estimates this rate for the years 2006 and 2007 with ten percent\(^9\).

These high demands on health care provision are met with a differentiated system of services. In international comparison, the wide range of differentiated services of inpatient psychotherapeutic care in Germany takes a leading position. Likewise the psychotherapeutic outpatient care is widely arrayed. It encompasses a) specialists in neurology / psychiatry who are contracted through a statutory health insurance (SHI), b) SHI psychotherapists, c) SHI psychotherapists for children and adolescents, d) psychosomatic primary care through SHI general practitioners, e) outpatient care clinics, f) psycho-social counselling centres, and g) day care centres. A comprehensive overview is given by Schulz and colleagues\(^9\). Waiting time for an intake interview lasts about two months, waiting time for psychotherapy to begin lasts about four and a half months\(^9\). In the geographical region of the former GDR (East-Germany) waiting times last about ten weeks and over three months respectively\(^12\).

Comparing the mental health care provision by regional aspects, Schulz and colleagues summarise: “A comparison of density of supply in different regions within Germany shows, with the exception of inpatient care for children and adolescents, a striking east-west-difference to the disadvantage of East-Germany. Furthermore the expected urban-rural downward slope is observable\(^9\)\(^9\). The under-supply seems to be especially striking in the outpatient provision for children and adolescents. Even in the otherwise well provisioned federal state of Baden-Württemberg, only between 4% and 35% of all children and adolescents concerned found a treatment place\(^9\)\(^9\).

The aim of this study is, with regard to a posited bottleneck in supply, to paint a more precise picture of the provision of care for persons with mental disorders within a rural area in East-Germany. We do not only take data from the psychotherapeutic provision of care into account, but data from the whole statutory health insurance. We assume that by analysing reimbursement claims from SHI physicians, we gain insights into areas where persons with mental disorders are cared for outside psychotherapeutic provision of care. This view creates an image of the real-life provision of care in an economically underdeveloped region.

**Material and Methods**

Mecklenburg-West Pomerania is the most rural federal state in Germany. Altogether 1.7 million inhabitants live in an area of little over 21,000 square kilometres. This parallels a population density of 72 inhabitants per square kilometre (in Germany the population density is 231 inhabitants per square kilometre). About one third lives in cities with between 45,000 and 198,000 inhabitants, another third in communities with less than 2,000 inhabitants. Only one city (Rostock, 189,000 inhabitants) houses over 100,000 inhabitants.

Mental disorders take middle and forward ranks in the burden of disease. With respect to their relative frequencies the following rank order results in Mecklenburg-West Pomerania\(^14\)\(^15\): a) 29.2% of all new entries into the statutory pension funds (rank 1), b) 18.1% of all rehabilitative treatments (rank 3), c) 8.1% of all sick certificates (rank 4), d) 1.7% of mortality (rank 7), and e) 6.1% of all hospitalisations (rank 8). The density of supply with psychotherapists varies between 5,000 and 120,000 inhabitants per psychotherapist; in the very sparsely inhabited areas the supply density ranges between 15,000 and 150,000.

To address our research questions, we analysed the billing data of Mecklenburg-West Pomerania’s association of SHI Physicians from the years 2006 / 2007. We inspected all reimbursement claims for ICD-10 chapter V disorders. These are reported with respect to the medical specialty of the billing practice.

All billing groups of treatments providers were broken down into their treatment specialties. The exception here is ambulatory health care centres (MVZ), where more than one specialised practice work as one treatment unit. They bill under one single billing account, so that the specialty of every single provider cannot be identified. Also the group of neurologists and psychiatrists bill their reimbursement claims under one single account so it’s not possible to differentiate between neurological and psychiatric practices and within the group of psychotherapists it’s not possible to differentiate between medical and psychological psychotherapists.

In analysing the data, treatments and cases need to be differentiated. A treatment corresponds to a medical treatment or service that has been billed within one billing quarter (three months). A case corresponds to a person (patient), for whom one or more treatments may be billed within one quarter. Following this logic, there may be claims for various treatments for one single case. These may be billed by different providers for different diagnoses. Theoretically all permutations of treatment and provider are possible for each case.

This entails that with respect to cases the relative frequencies of diagnoses may vary. For example a patient with a depression, a phobic disorder and nicotine dependence would be counted with three diagnoses, when the distribution of diagnoses on the level of cases is considered. Since no ordering according to importance of disorder (primary
diagnosis, secondary diagnosis etc.) has been recorded within the data, we were unable to rank-order diagnoses accordingly for each case.

Treatment providers may be assigned to cases only per quarter. Therefore we investigated from the data from the last quarter of 2007 – as a proxy for the whole period – how many diagnoses and how many cases have been billed by how many treatment providers. For the last quarter in 2007 that corresponds to 564,279 treatments for 303,839 cases.

The data have been provided by the association of SHI physicians Mecklenburg-West Pomerania. Ethical, legal or data-safety regards are warranted: anonymous data were provided, data cannot be traced back to individuals and additional diagnostic or therapeutic means have not been taken. The analyses are simply descriptive using the data-base program Access©.

Results

Altogether data stem from 4,246,734 treatments from the years 2006 and 2007, that have been billed to the association of SHI physicians Mecklenburg-West Pomerania for an ICD-10 chapter V diagnosis. Of these treatments, the ICD-10 codes were inaccurate or incomplete for 3,417,472 (8%) treatments. Inaccurate means a diagnostic code has been billed that does not exist in ICD-10 chapter V (e.g. F45.51, or F10.17); incomplete means the billed diagnostic code doesn’t allow for unambiguous allocation to one category (e.g. F45, or F10). For our further analysis, we limit ourselves to the remaining 3,905,262 treatments.

The distributions of the relative frequencies of diagnoses according to ICD-10 subchapters on the basis of treatments as well as on the basis of cases are given in Table 1. Remarkable is that more than one third of all treatments billed for reimbursement are allocated to neurotic, stress-related and somatoform disorders (F4x.xx), a little bit less than one quarter of all claims are allocated to mood (affective) disorders (F3x.xx) and a little more than one tenth of all claims are allocated to substance use disorders (F1x.xx).

The different disorders were billed by 24 different groups of treatment providers. The relative frequencies based on cases are given in Table 2. Here it is worth remarking that almost half of all claims were filed by general practitioners. Almost one sixth of all claims were filed by neurologists / psychiatrists. Psychotherapists (medical and psychological psychotherapists combined) claimed with only 3.1% a minor proportion of claims.

For the 303,839 cases from the last quarter of 2007, claims were billed in 193,717 cases (63.8%) for a single diagnosis, in 63,941 cases (21.0%) for two diagnosis, in 26,006 cases for (8.6%) three diagnoses, and in 20,175 cases (6.6%) for more than three different ICD-10 chapter V diagnoses. These were billed in 244,070 cases (80.3%) from one group of specialists, in 49,528 cases (16.3%) from two different groups, in 8,757 cases (2.9%) from three different groups, and in 1,484 cases (0.5%) from more than three different groups of specialists.

Discussion

The significance of alcohol and tobacco related disorders, depression, anxiety and somatoform disorders, that
has been reported in large epidemiological studies, also pictures in everyday health care provision. A broad spectrum of practitioners provides health care for the patients, with the stress on general practices and family doctors who bill about half of the claims. The group of neurologists / psychiatrists cares for about one seventh of all cases. Opposed to that, psychotherapeutic practices (medical as well as psychological) bill claims for only about three percent of all cases. Collaborative treatment of patients with mental disorders seems to be the exception rather than the rule; treatments for four fifth of cases are claimed by one single practitioner.

These results complement the image from other German studies on health care provision of patients with mental disorders. Striking is the large proportion of treatments that are claimed by general practitioners. Since 80% of all treatment claims are billed by one single practitioner, we may well assume that to a large degree, patients with mental disorders are cared for by general practitioners alone. Taking into account the urban-rural-divide that Schulz and colleagues observed in 2008 with regard to psychotherapeutic provision of care, and against the background of long waiting times as reported by Zepf and colleagues and Peikert and colleagues, it may be assumed that the treatments of mental disordered patients provided by general practitioners owe to at least to a certain degree a bottleneck in the provision of care by neurologists/psychiatrists and psychotherapists; and that this shows more pronounced in a rural and remote area as Mecklenburg-West Pomerania. That the outpatient provision of care in rural and remote areas lacks behind that in metropolitan areas is also shown in the study by Peikert and colleagues; about one fifth of the inhabitants in East-Germany live in urban areas. This is countered by two fifths of all psychotherapists practicing in metropolitan areas. Accordingly the provision of care in urban areas is evaluated more favourably by psychotherapists and waiting times are much shorter in bigger cities than in the other regions.

In sum, this study provides insight into the epidemiology of mental disorders in Germany under the actual status quo with the regard to health care provision. And these reflect on the one hand the large proportion of substance use disorders, depression, anxiety, and somatoform disorders on the burden of disease due to mental disorders. On the other hand, the study supports the picture of a suboptimal provision of mental health care outside the metropolitan areas. In order to improve the provision of care especially in rural and remote areas, it could be considered to take aspects of population density into account, when practice settlements for psychotherapists and neurologists/psychiatrists are planned. But also alternative concepts to secure service provision, such as the implementation of mobile treatment facilities or actively calling on patients in their homes, may cause some relief. Additionally to these ramifications, in the face of the high prevalence of mental disorders, interventions to prevent mental disorders should also be kept in mind.

The results of this investigation have to be put into perspective by a number of limitations. For instance it cannot be safely assumed that all diagnoses have been secured by standardised and structured diagnostic interviews. It may well be that the frequency of certain diagnoses have been under- or overestimated. It has to be seen critically that al-

| SHI group of provider                           | Cases |
|------------------------------------------------|-------|
| General practitioners                           | 44.7% |
| Neurologists / psychiatrists                    | 15.1% |
| Internists                                      | 8.1%  |
| Gynaecologists                                  | 12.6% |
| Paediatricians                                  | 5.7%  |
| Urologists                                      | 2.2%  |
| Psychotherapists (medical and psychological)    | 3.1%  |
| Ear-Nose-and-Throat                             | 2.5%  |
| Dermatologist                                   | 1.5%  |
| Orthopaedists                                   | 1.4%  |
| Others                                          | 3.1%  |

The “Others” category encompasses medical treatment centres (MVZ), ophthalmologists, surgeons, anaesthesiologists, pulmologists, emergency clinics, laboratory pracies, radiologists, neurosurgeons, central emergency services, oral and facial surgery, nuclear physicians and other central services.
most ten percent of all billed claims base on incorrect or incomplete diagnostic codes and had to be discarded from our analyses. Furthermore our study does not provide differential insight as to what kind of treatment has been provided for which kind of disorder.

For future evaluations it may be advisable to be able to differentiate the treatments provided according to the kind of disorder. Taking a future perspective, utilising modern methods of spatial statistics in combination with geographical information systems may serve as a basis for empirically and geographically based service provision planning\(^{17}\). This may lead to demand-oriented plans for service provision that is more strongly oriented towards the demands of the population served.

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