The Nordic Comparative Study on Sectorized Psychiatry
III. Accessibility of psychiatric services, degree of urbanization and treated incidence

Abstract As part of a Nordic Comparative Study on Sectorized Psychiatry, accessibility of psychiatric services and degree of urbanization in seven catchment areas were related to treated incidence. One-year treated incidence cohorts were used. Accessibility was assessed according to referral practice, existence of a round the clock emergency service and geographical location of the services. Accessibility was, surprisingly, weakly associated with treated incidence. Easy access to the psychiatric services was not related to a high treated incidence of less severe psychiatric problems at the expense of patients suffering from severe illness. Geographical distance to the services did not predict the demand for services. A positive correlation was found between the degree of urbanization and treated incidence of psychoses but not of other diagnostic groups.

Only a part of the population’s need for psychiatric care results in a demand for care [1]; the accessibility, availability and acceptability of the services at least partly determine this demand. Whereas availability denotes the existence of psychiatric services, accessibility refers to whether an individual in need of care is able to get to and purchase the services [2]. Accessibility can be limited by lack of an open referral system or a 24-h emergency service, by large distances and by lack of public transportation. Reimbursement policies and waiting lists may also limit accessibility.

Sectorization and deinstitutionalization have been essential components in the planning of psychiatric services in most Western countries over the last decades. One of the aims has been to develop services that are easily accessible to the population living in a catchment area [3]. However, some doubts have been raised about the benefits of easy access to the specialist level of psychiatric service. Some concern has been expressed that it results in an inflow of patients with less severe mental health problems, while patients suffering from long-term severe illness are left without sufficient support [4, 5].

Studies in both urban and rural localities have shown that the degree of urbanization and the geographical distance to the services are important variables in predicting the demand for services. Several studies have shown an inverse relationship between the geographical distance and the demand for psychiatric inpatient care [6, 7]. Furthermore, it has been argued that the utilization of psychiatric services will remain low as long as they are distant even though they are otherwise available [8]. According to Sytema’s study on the Groningen psychiatric case register, more urban people were admitted than rural people, regardless of the geographical distance from the hospital [9]. Since it has been found that treated incidence is higher in urban than in rural areas budgets in the Netherlands for the Regional Institutes for Outpatient Care are based on
the degree of urbanization of catchment areas [10]. Keatinge has reported more negative attitudes to psychiatric facilities among rural than urban individuals, which may function as a barrier against seeking psychiatric help in rural areas [11]. However, Sommers’ findings do not support the assumption that rural living has a diminishing effect on the use of psychiatric services [12]. The confounding factor is that the degree of urbanization and the distance from the facilities are often negatively correlated.

So far, to our knowledge, no comparative multicentre study has been conducted where the relationship between treated incidence and geographical and procedural accessibility of psychiatric services has been thoroughly analysed and discussed. Earlier studies of treated incidence have yielded data on the incidence rates in single catchment areas, divided into age, sex and diagnostic subgroups [13–15]. Three comparative two-catchment area studies of patterns of care have presented some preliminary discussion of differences in care resources and their impact on care utilization [16–18]. The only multicentre study is the WHO study comprising 21 pilot study catchment areas in 16 European countries. The merits of this study are mainly in the efforts to develop patterns of care classification models and the empirical description of incidence cohorts [19].

The similarity of the Nordic countries with regard to demography, socioeconomic stratification and the structure of society, as well as the similarity of the health care organizations (all have a socialized health care system) combined with some differences in the legislation and the availability and allocation of resources together provide an interesting possibility to carry out “quasi-experimental” Nordic surveys of public health care [20].

This paper is part of a Nordic comparative study on sectorized psychiatry. The main aim of the study is to perform a prospective investigation of treated incidence and utilization of psychiatric care in 1-year cohorts of new patients in the participating centres. The purpose of the present part of the study was to analyse how the accessibility of psychiatric care and the degree of urbanization are associated with treated incidence. Our hypotheses were the following: (1) limited access to care is associated with low treated incidence, (2) easy access is related to high treated incidence of less severe psychiatric problems, (3) there is an inverse relationship between the geographical distance to services and treated incidence and (4) treated incidence is higher in urban than in rural areas.

**Materials and methods**

**Participating psychiatric services**

The participating psychiatric services were the following:

1. Salten Psychiatric Centre, Nordland Psychiatric Hospital, Bodø. The catchment area is mostly a rural area in northern Norway.
2. Department of Psychiatry, Frederiksberg. The catchment area is part of the central city of Copenhagen, Denmark.
3. Greve Psychiatric Centre, Roskilde. The catchment area is a suburban area in the vicinity of Copenhagen, Denmark.
4. Department of Psychiatry, Mora. The catchment area consists of the village of Mora and its rural surroundings in central Sweden.
5. Department of Psychiatry, sector A, Oulu. The catchment area covers the university and industrial town of Oulu in northern Finland.
6. Department of Psychiatry, Skellefteå. The catchment area consists of the town of Skellefteå and its extensive and sparsely populated surroundings in northern Sweden.

The amount and density of the population and the size of the catchment areas are presented in Table 1.

### The incidence cohorts

Each cohort consisted of all new patients who contacted the sectorized psychiatric services during a 1-year period, from April 1990 to April 1991, except in Greve where contacts from October 1990 to October 1991 were included. Double countings were avoided by an identification code, which was unique for each patient. The patient was defined as being new if he/she had no contact with the psychiatric services in the 18 months prior to the recorded index contact. Patients included in the incidence cohorts were aged 18 years and above, except for Frederiksberg, Greve and Oulu where patients aged 15 years and above were included (official age limits for the services were used). Diagnoses according to ICD-9 [21] were registered. Diagnoses were made by the psychiatrist in charge of the patient, and the last diagnosis made during the 1-year follow-up was used. In the analyses, patients were classified according to eight diagnostic groups to improve the reliability of the diagnostic coding [22, 23]: (1) organic psychoses (290–294), (2) affective psychoses (296), (3) functional psychoses (295, 297, 298), (4) neuroses (300), (5) personality disorders (301), (6) dependencies (303–305), (7) adjustment disorders (308–309) and (8) others (302, 306, >309 and unclear diagnoses).

### Accessibility

The accessibility of the psychiatric services was assessed according to the referral practice, the existence of a 24-h emergency service for outpatient and inpatient care and geographical location of the services. Reimbursement policies and waiting lists were not included in the analyses of accessibility but there are no big differences in the reimbursement regulations between the Nordic countries and it was not possible to get reliable information concerning the waiting lists.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Size (km²)</th>
<th>Amount of population</th>
<th>Density of population per km²</th>
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<tr>
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<tr>
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<td>9885</td>
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<td>67000</td>
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