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Patterns of inpatient care for immigrants in Switzerland

A case control study

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Abstract *Background* Migration has become a major political and social concern in West European societies. *Methods* A case-control method was used to analyse the utilisation of inpatient mental health services by immigrants from a catchment area in Switzerland over a 7-year period. *Results* Compared to natives, immigrants had fewer psychiatric hospitalisations, but more emergency and compulsory admissions. During inpatient treatment, they received less psycho-, ergo- and physiotherapy. Other therapies as well as compulsory measures were at comparable rates, as was the frequency of irregular discharge. They spent shorter periods as inpatients and the rate of psychiatric readmissions was significantly lower. Comparison of different countries of origin revealed that only patients from West and North Europe were comparable to natives regarding type of referral, inpatient treatment, and longitudinal measures of service utilisation. Even after accounting for effects of social class, immigrants from South Europe, former Yugoslavia, Turkey, East Europe and more distant countries spent significantly shorter time in inpatient treatment, compared to Swiss control patients. *Conclusions* Results of this study clearly point to an underutilisation of inpatient facilities among immigrants with mental disorders, and to disadvantages in psychiatric inpatient care. This, however, does not pertain to all foreign patients to the same extent: inequalities of mental health service use

are particularly pronounced in immigrants from more distant countries.

Keywords migration – mental disorders – psychiatric hospitalisation – service utilisation

Introduction

Migration has become a major political and social concern in West European societies [1, 2]. Apart from two other countries, Switzerland has with 21.2% the highest rates of migrants among the general population in West Europe (Luxembourg 36.6%; Liechtenstein 34.3%), followed by Germany with 8.9% and Austria with 8.7%, respectively [3]. The origin of the migrants, however, is specific for every host country: Unlike in Britain and in the Netherlands, where for example most migrants come from their former colonies, migrants in other countries mainly originate from Europe or Africa.

Since Ødegård's landmark study in the 1930s, migration is recognised as a risk factor for mental disorders [2, 4]. Only in the last decade has psychiatry expanded its attention to migration as there are reports of increased rates of mental illness, e.g., schizophrenia and other psychotic disorders, among migrants and more recently among refugees and asylum seekers [2, 5, 6]. In this context, several studies on utilisation of mental health services were conducted [7, 8]. They reported that migrants are more likely to view services as inappropriate to their needs and are, therefore, likely to have longer duration of untreated illness and more adverse patterns of introduction to these services [2, 9].

Research on immigrants, however, has several limitations so far: first, interpretation of differences in

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the use of health systems with respect to the native population is often difficult, in particular if relevant confounders, such as the prevalence of psychiatric disorders, are not adequately considered. Social class affiliation might account for differential service utilisation in immigrants and natives, too, since socioeconomic status is a factor well known to affect access to mental health care [10–13]. Second, immigrants are either regarded as one homogenous group or research focused on one specific, mainly the most important immigrant group, thus neglecting other migrant populations in a given country. Third, little is known about what inpatient treatment for migrants consists of, how discharge for these people is planned and what the longer-term outcomes after discharge from inpatient treatment are. Finally, studies are usually based on the evaluation of one particular in- or outpatient institution mainly in urban areas [14–18].

To overcome some of these limitations we conducted a case-control study based on a sample representative for a catchment area of 1.2 m population. In a previous investigation we examined the care inception rates of immigrants and compared psychiatric diagnoses and socio-demographic characteristics with the respective data of the native population [19]. The present study aims at comparing service utilisation variables of immigrants and natives with comparable psychiatric diagnoses. In particular, we wanted to address similarities or differences in

- referral to psychiatric inpatient treatment;
- the therapies and treatment measures during hospitalisation as well as discharge; and
- utilisation of inpatient mental health services by immigrants over an extended period.

We hypothesised different utilisation patterns of mental health services in immigrants. In case of significant between group differences, we wanted to explore whether differences are specific to particular immigrant groups.

Subjects and methods

■ The register

Patients were traced using the central psychiatric register, which covers all mental health services in the Canton of Zurich/Switzerland, a catchment area of about 1.2 m people. Since all hospitals are legally mandated to report psychiatric admissions and discharges to the register, all inpatient episodes within this catchment area are recorded.

The database contains detailed information about diagnostic, treatment-related and socio-demographic characteristics including the patients' country of origin and type of residence permit. Hospital physicians in charge of the respective patient are responsible for the documentation. Data are collected in a standardised form. Completion of forms and consistency of information is regularly monitored. Data, therefore, are almost complete and can be regarded as reliable. First admissions were distinguished from readmissions by means of computerised re-

cord linkage on the basis of 18 defined match criteria. The method of this record linkage is described in detail elsewhere [20].

■ Sample

For the present analysis we considered all patients aged 18 years and over, residing in the Swiss Canton of Zurich, who had been admitted to one of the psychiatric hospitals between January 1, 1995 and December 31, 2001, a total of 28,204 subjects.

The study group comprises all immigrants within this sampling frame ($n = 4826$ patients; 17.1%). The control group consists of an equal number of Swiss patients. Control subjects were individually matched for age (in 5-year intervals), gender and ICD-10 diagnosis [21]. Clinical diagnoses at the time of discharge were used. The next Swiss patient fulfilling the match criteria following each foreign case was selected as a control.

Of the 4826 consecutively referred immigrants, 1454 (30.1%) were admitted more than once (control group: 45.5%). For the present analysis of treatment data, all first inpatient episodes within the time interval studied were used. 4019 (84.0%) of the immigrant group had not been admitted previously (control group: 77.5%).

■ Country of origin

In the present study the term 'immigrant' is defined as any foreign person according to the Swiss law on citizenship. People who are not born or naturalised in Switzerland were classified according to their country of origin. As most countries are represented only by few patients, all immigrants (with noted nationality) were grouped into six categories which were considered to reflect a rough geographical breakdown: Foreign nationals coming from South Europe (including Spain, Greece, Italy, Portugal), West and North Europe (Austria, Belgium, Germany, Denmark, France, Great Britain, Ireland, Liechtenstein, Luxemburg, The Netherlands, Finland, Greenland, Iceland, Norway, Sweden), former Yugoslavia (Albania, Bosnia-Herzegovina, Croatia, Macedonia, Slovenia, Yugoslavia), Turkey, East Europe (Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia, Estonia, Latvia, Lithuania, Moldova, Russia, Belarus, Ukraine), and 'Other countries' (all countries not represented by the five prior groups). In 93 patients (1.9%) the country of origin was unknown.

■ Social class

In order to account for effects due to socioeconomic status, a composite index was built based on four sociodemographic variables: 'Educational level' (ranging from 0, no diploma to 3, secondary/higher education), 'employment situation' (0, no employment to 2, fulltime job), 'job position' (1, unskilled workers to 3, executives) and 'source of income' (0, social welfare benefits or 1, occupation). In order to obtain a proxy of social class affiliation for all patients, missing values in each of these variables were substituted by gender- and country-specific mean values. The resulting social class index ranged between 0 and 9 with higher values indicating higher socioeconomic status.

■ Service utilisation variables

Measures analysed in this study include the number of previous admissions (first vs. readmission, life-time), the type of referral (emergency vs. regular) and the legal basis of admission (voluntary vs. compulsory). Furthermore, all records were analysed with respect to a variety of therapeutic measures the patients had received during their inpatient stay including compulsory measures (compulsory medication; seclusion).

Variables assessed at discharge comprise the discharge situation (i.e., regular discharge, discharge against medical advice, absconding from the ward etc.) and planned aftercare. For all patients, length of hospital stay (index episode) was computed.

We also examined several longitudinal characteristics of the further course of psychiatric treatment: For those patients with further admissions, the interval between discharge and readmission was computed, and the number of admissions within the study period and the total time as inpatient (in days) were calculated. Finally, the percentage of time spent in psychiatric hospitals was determined by dividing the number of days spent in psychiatric hospitals by the number of person-days from the time of admission to December 31, 2001. Because the distribution of the longitudinal characteristics was extremely skewed, these measures were \log_{10} -transformed to normalise the distribution. The \log_{10} -transformed measures were used for further statistical analyses; only for descriptive information, we additionally refer to the non-transformed median values.

■ Statistics

Service utilisation variables of immigrants and natives were compared by Wilcoxon rank-sum tests (ordinal scaled variables) and McNemar tests (categorical variables). In case of significant between-group differences, we examined post hoc subgroups of immigrants (by country of origin), comparing them to the respective matched controls.

In order to examine the longitudinal outcome measures (length of hospital stay; interval to readmission; total time as inpatient; percentage of total time as inpatient) more thoroughly, mixed linear model analysis was applied in order to take account of correlations between measurements (case-control matching; observations thus are not independent [22]). We therefore fitted the matched sets at random, thus controlling for effects of gender, age and diagnosis. 'Country of origin' was fitted as fixed effect. The residual maximum likelihood (REML) estimation method was applied. For each of the longitudinal outcome measures, three models were calculated: In the first model, beyond the random effect, only effects of 'country of origin' were included. In the second model, effects of 'country of origin' were estimated while adjusting for effects of 'social class' (Table 3; Fig. 3). In a third model, interaction effects were fitted additionally (data on request from the first author). There was no significant interaction effect of 'country of origin' and 'social class' suggesting that the influence of social class is not significantly different for the levels of 'country of origin'. Model statistics thus are reported only on Model 1 and 2.

Since we were interested in more robust effects only, α -level was fixed at 0.01 (two-tailed). Statistical analyses were carried out using the SPSS 11.5 software package and the SAS V8 procedure PROC MIXED.

Results

■ The sample of foreign inpatients

Most of the foreigners included in the study came from South Europe (27.3%) and former Yugoslavia (20.9%). The category 'other countries' (20.3%) comprises people mainly originating from Africa, and Middle and Far East countries. 16.2% were from West or North Europe. Of the 4826 foreign patients, 60.0% were settled residents. Asylum seekers made up only 11.9%, short-term residents 11.6% of the sample (unknown 16.4%). Table 1 lists the characteristics of the sample (i.e., variables used for matching; study

and control group thus have a comparable distribution in terms of age, gender, diagnosis).

A significantly higher proportion of the immigrants were married or cohabiting (as opposed to single and separated, widowed; $P < 0.001$; marginal homogeneity test). Only 33.2% among the immigrant group was employed, but 41.7% of the control group ($P < 0.001$; McNemar test). There was no significant difference between the two groups regarding the patients' place of residence (urban as opposed to rural) at admission. Sociodemographic characteristics of natives and immigrants by country of origin are detailed elsewhere [19]. With a mean value of 4.36 (SD 1.72) the socioeconomic status of immigrants was significantly lower than that of the Swiss control group (4.98, SD 1.73; $t = -18.29$, $P < 0.001$).

■ Measures at admission

Figure 1 shows types of referral to inpatient treatment. Similarly to the control group, most of the immigrants were referred by psychiatrists in office practice or community mental health care (31.8%; controls: 30.7%). In particular immigrants from Turkey (36.9%), Yugoslavia (34.7%) and 'other countries' (36.1%) used this way of referral to inpatient treatment at relatively high rates.

Every fifth patient was referred by a general practitioner (22.8%; controls: 21.6%). It is noteworthy that the proportion of inpatient admissions initiated by the patients themselves was by far lower in foreign nationals (15.4%), compared to Swiss controls (23.7%). Among immigrants from Yugoslavia, East Europe and 'other countries' the respective rates are 10% and lower. On the other hand, in immigrants inpatient treatment was more often initiated by general hospitals (15.3%) and legal authorities (4.9%) than in natives (11.5%; 1.8%). It should be mentioned though, that there is also a high number of patients in both groups for whom pathways to inpatient care cannot be retraced.

Emergency referral was more frequent among immigrants, compared to controls, as was the case for compulsory admission (Table 2). High rates of compulsorily admitted patients were found in particular among immigrants from former Yugoslavia (43.4%), East Europe (51.6%) and more distant 'other countries' (54.9%).

■ Inpatient treatment

Regarding treatment during the inpatient stay, available therapies like psychotherapy, ergo-, physiotherapy as well as support by social workers were less often provided to immigrants, compared to the control group. Subgroup comparisons show that this applies in particular to patients from former Yugoslavia (39.8%) and 'other countries' (32.7%) who re-

Table 1 Characteristics of the immigrant sample by gender

| | Women | | Men | | Total | |
|--|----------|-------|----------|-------|----------|-------|
| | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % |
| <i>Country of origin</i> | | | | | | |
| South Europe | 480 | 25.7 | 839 | 28.3 | 1319 | 27.3 |
| West-, North Europe | 350 | 18.8 | 430 | 14.5 | 780 | 16.2 |
| Former Yugoslavia | 453 | 24.3 | 557 | 18.8 | 1010 | 20.9 |
| Turkey | 166 | 8.9 | 288 | 9.7 | 454 | 9.4 |
| East Europe | 78 | 4.2 | 114 | 3.9 | 192 | 4.0 |
| Other countries | 297 | 15.9 | 681 | 23.0 | 978 | 20.3 |
| Unknown | 42 | 2.3 | 51 | 1.7 | 93 | 1.9 |
| Total | 1866 | 100.0 | 2960 | 100.0 | 4826 | 100.0 |
| <i>Age (year)</i> | | | | | | |
| 18–25 | 318 | 17.0 | 619 | 20.9 | 937 | 19.4 |
| 26–35 | 556 | 29.8 | 1034 | 34.9 | 1590 | 32.9 |
| 36–45 | 455 | 24.4 | 672 | 22.7 | 1127 | 23.4 |
| 46–55 | 264 | 14.1 | 353 | 11.9 | 617 | 12.8 |
| 56–65 | 151 | 8.1 | 190 | 6.4 | 341 | 7.1 |
| 65– | 122 | 5.8 | 92 | 3.0 | 214 | 4.4 |
| Total | 1866 | 100.0 | 2960 | 100.0 | 4826 | 100.0 |
| <i>Diagnosis (ICD-10)</i> | | | | | | |
| F0 Organic mental disorders | 75 | 4.0 | 110 | 3.7 | 185 | 3.8 |
| F1 Substance use disorder | 266 | 14.3 | 1007 | 34.0 | 1273 | 26.4 |
| F2 Psychotic disorder | 480 | 25.7 | 643 | 21.7 | 1123 | 23.3 |
| F3 Mood disorder | 474 | 25.4 | 488 | 16.5 | 962 | 19.9 |
| F4 Neurotic, stress-related, somatoform disorder | 483 | 25.9 | 564 | 19.1 | 1047 | 21.7 |
| F6 Disorder of personality and behaviour | 63 | 3.4 | 122 | 4.1 | 185 | 3.8 |
| Other | 25 | 1.3 | 26 | 0.9 | 51 | 1.1 |
| Total | 1866 | 100.0 | 2960 | 100.0 | 4826 | 100.0 |

ceived significantly less psychotherapy, and those from East Europe (39.6%) and ‘other countries’ (36.4%) who used less ergo-, or physiotherapy, compared to their matched controls.

No significant differences were seen regarding provision of pharmacotherapy, vocational training and occupational therapy. Compulsory measures during inpatient treatment, too, were applied at comparable rates.

■ Discharge from hospital

Immigrants spent significantly shorter time in the hospital (on average 19 days; controls: 23 days). Rates of patients discharged against medical advice were comparable in both groups. For nearly all patients a referral after inpatient care was planned. Figure 2 shows that the highest number of immigrants were referred to a general practitioner (GP 25.1%; controls 20.2%), whereas in the Swiss control group referral to a psychiatrist in office practice ranked first (28.7%; immigrants: 23.7%). A comparison of immigrants from different countries, however, reveals quite specific patterns of referral: e.g., one out of three Turkish patients (33.9%) was referred to a psychiatrist in office practice at discharge, what is an even higher rate than in Swiss patients, whereas for only one of five patients from East Europe (20.1%) this type of referral after inpatient care was found. Patients from East Europe were primarily referred to the GP (27.8%),

those from more distant ‘other countries’ to community mental health teams (CMH 29.5%).

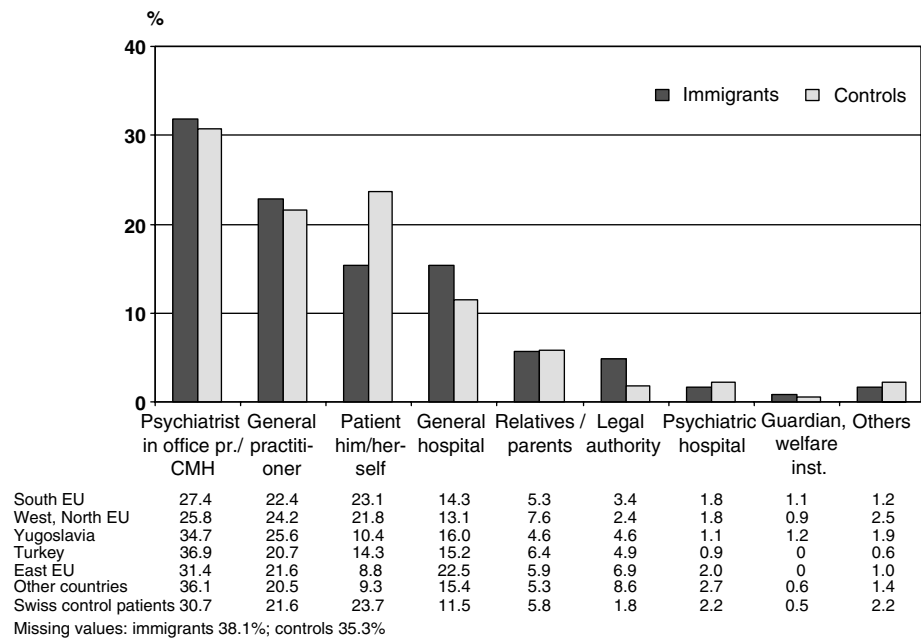
■ Longitudinal measures

In immigrants, a significant smaller number of psychiatric readmissions was found within the 7-year period, compared to control subjects: Less than one third of the immigrant group was readmitted to psychiatric treatment, whereas this applies to virtually every other Swiss patient (Table 2). Subgroup comparisons showed significantly fewer readmissions in all immigrant subgroups.

Analysis of the longitudinal outcome measures further revealed significant effects of ‘country of origin’ on the length of hospital stay (index episode) as well as on the total time in inpatient treatment (in terms of the absolute number of days and the total percentage of time spent as an inpatient at psychiatric hospitals) indicating all in all longer hospital stays in native patients (Table 3). These effects still remain statistically significant after controlling for effects of ‘social class’.

When comparing the diverse countries of origin to Swiss control patients, significant contrasts were found for all immigrant groups regarding the total percentage of time spent as inpatients. Only for ‘West/North Europeans’ total time in inpatient treatment (absolute number of days) was not different to that of Swiss patients. Compared to Swiss patients, length of

Fig. 1 Referral to inpatient treatment



the first inpatient treatment already was significantly shorter in patients from former Yugoslavia, Turkey, East Europe and ‘other countries’. In sum, all but ‘West/North Europeans’ and to some extent ‘South Europeans’ consistently spent less time in hospital. Figure 3 gives the mean differences (Least Squares Means and confidence intervals of LSM) for all immigrant groups from the Swiss control group for these measures. No statistical significant ‘country’ effect was found regarding the ‘interval to readmission’.

Discussion

In the present study inpatient care was analysed in a sample of immigrants consecutively referred to psychiatric hospitals of a catchment area. The findings point to an underutilisation of psychiatric inpatient services among immigrants in terms of fewer psychiatric hospitalisations, shorter inpatient stay and partly lower use of treatment measures during inpatient stay, compared to natives.

■ Limitations and strengths

Before discussing the relevance of these findings, some methodological issues should be considered. The most relevant differences between this study and others are the *design*, the *period of time* and the *catchment area* considered. The applied case-control design balances immigrants and native patients in terms of psychiatric diagnosis, gender and age, whereas other studies compare patients who were hospitalised in the same period of time. Because the sampling frame was the same for immigrants and

indigenous people, we can assume structural equality of the two study groups. Furthermore, the study covers an extensive period of time. This resulted in a substantial sample size, thus, increasing the reliability of these results. Moreover, it allows an analysis of inpatient care from a longitudinal perspective. Finally, data of the present analysis are not restricted to a single service, but based on an entire mixed urban-rural catchment area. Thus, selection bias, for instance due to a heavily burdened service or an urban sample is avoided. A limitation of the study, however, is that with its focus on inpatient treatment it does not give a total care perspective for immigrants, nor does it analyse the quality of inpatient care provided to them.

Moreover, we cannot exclude *referral bias*. Selection may have occurred due to different help-seeking patterns among immigrants, selective admission thresholds or dissimilar disengagement from psychiatric services [15, 23]. We can exclude, however, selective effects of social system factors. Since for every individual residing in Switzerland health insurance is compulsory, data are not biased by a limited access to the mental health service system, nor are there restrictions for foreign nationals due to their legal status.

In contrast to other studies that are confined to one single immigrant group [17, 24, 25], our focus was not on a selected nationality, but included all foreign people in inpatient treatment. In order to group the different nationalities for analysis, we categorised them according to a rough geographical classification. This differentiation refers to the patients ‘nominal’ citizenship, not to ethnic origins, what must be considered when comparing our findings to those of other studies.

Table 2 Measures of inpatient service provision in immigrants and Swiss control patients

| | Immigrants (<i>n</i> = 4826) % | Controls (<i>n</i> = 4826) % | Group ^a <i>P</i> -value | Immigrant subgroups ^b <i>Significant contrasts</i> |
|--|---------------------------------------|-------------------------------------|---------------------------------------|--|
| <i>Admission</i> | | | | |
| Previous inpatient admissions | 16.0 | 22.5 | <0.001 | C, D, F |
| Emergency referral ^c | 61.7 | 57.1 | <0.001 | E, F |
| Compulsory admission | 42.3 | 34.3 | <0.001 | C, E, F |
| <i>Inpatient treatment</i> | | | | |
| Therapeutic measures | | | | |
| Psychotherapy | 39.1 | 45.4 | <0.001 | C, F, G |
| Pharmacotherapy | 72.8 | 74.1 | 0.11 | ————— |
| Vocational, occupational th. | 20.7 | 20.7 | 0.98 | ————— |
| Ergotherapy, physiotherapy | 48.9 | 54.6 | <0.001 | E, F, G |
| Support by social worker | 11.9 | 14.5 | <0.001 | — |
| Compulsory medication | 4.6 | 4.6 | 0.84 | ————— |
| Seclusion | 7.9 | 6.8 | 0.03 | ————— |
| <i>Discharge</i> | | | | |
| Length of hospital stay (days; <i>Median</i>) | 19.0 | 23.0 | <0.001 | ^f |
| Discharge: regular | 77.4 | 76.7 | 0.43 | ————— |
| Aftercare planned ^d | 94.0 | 96.0 | <0.001 | F |
| <i>Longitudinal measures</i> | | | | |
| Further inpatient admissions | 30.1 | 45.5 | <0.001 | A, B, C, D, E, F |
| Interval discharge-readmission ^e (days; <i>Median</i>) | 147.5 | 128.0 | 0.97 | ^f |
| Total time as inpatient 1995–2001 (days; <i>Median</i>) | 29.0 | 43.0 | <0.001 | ^f |
| Percentage of time as inpatient (admission–2001; <i>Median</i>) | 3.23 | 4.79 | <0.001 | ^f |

^aComparison: Immigrant vs. Swiss control group (Wilcoxon test; McNemar test). If not otherwise specified, missing values in less than 5%

^bComparison: Immigrant subgroups compared to controls (matched pairs); *P*-values < 0.01. A: South Europe; B: West, North Europe; C: Former Yugoslavia; D: Turkey; E: East Europe; F: Other countries; G: Unknown country. All significant differences are in the direction of those found in the Immigrant vs Control comparisons

—————No subgroup comparison was made on measures with non-significant group effects

^cMeasure available only in patients admitted after 1998, i.e., *n* = 2948 immigrants, *n* = 3024 controls

^dMissing values in 8.5% of the immigrant and 7.1% of the control group ^e*n* = 1454 immigrants and *n* = 2194 controls with further admissions

^fMeasures were analysed by random effects models; see Table 3

■ Underutilisation of inpatient services among immigrants

Results of this study provide several indications of *inequalities of inpatient service use* across immigrants

and the indigenous population: Compared to Swiss patients, immigrants had fewer psychiatric admissions (before and after index hospitalisation), but more emergency and compulsory referrals. They also had a shorter inpatient stay. Regarding measures of

Fig. 2 Planned aftercare after inpatient treatment

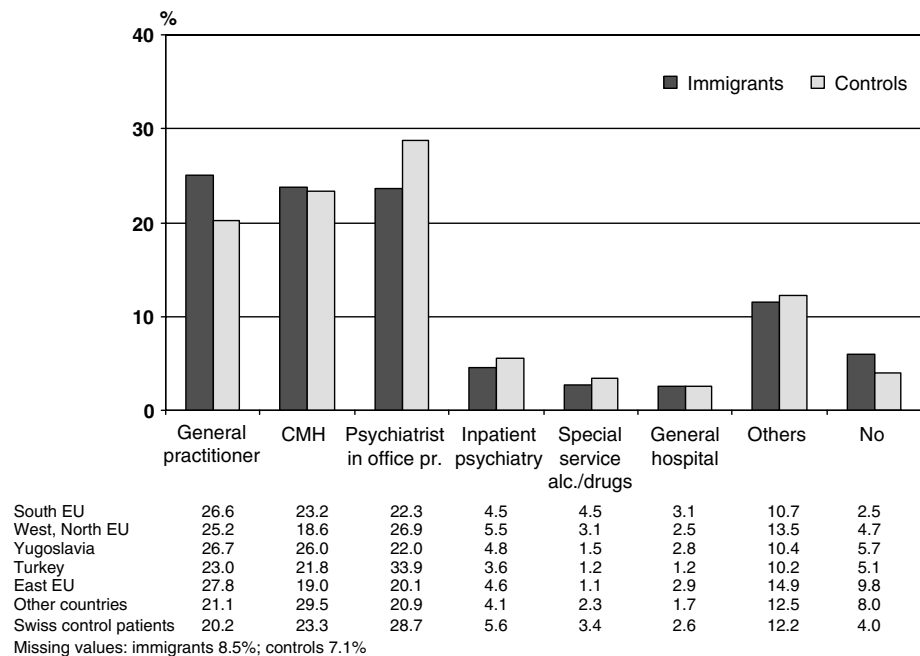


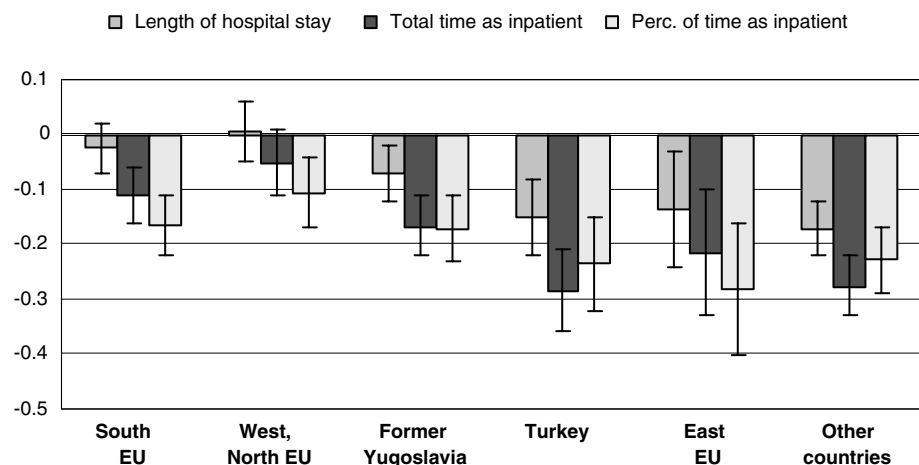
Table 3 Comparison of longitudinal measures of service provision in immigrants and Swiss control patients (statistical results of random effects models^a)

| | Country of origin | | | Country of origin adjusted for 'Social class' | | | Significant contrasts Effects adjusted for 'Social class' ^b |
|-----------------------------------|-------------------|---------|---------|---|---------|---------|--|
| | F | df | P-value | F | df | P-value | |
| Length of hospital stay | 34.75 | 1; 9492 | <0.0001 | 20.05 | 7; 9580 | <0.0001 | C, D, E, F, G<SCP |
| Interval discharge–readmission | 1.91 | 1; 3635 | 0.17 | 1.42 | 7; 3628 | 0.19 | |
| Total time as inpatient 1995–2001 | 151.01 | 1; 9091 | <0.0001 | 43.09 | 7; 9172 | <0.0001 | A, C, D, E, F, G<SCP |
| Percentage of time as inpatient | 181.17 | 1; 9094 | <0.0001 | 37.74 | 7; 9182 | <0.0001 | A, B, C, D, E, F, G<SCP |

^aResults of mixed model analyses with matched sets fitted at random. Model statistics refer to type-III tests of fixed effects (country of origin; social class). There was no statistically significant interaction effect of 'Country of origin' and 'Social class' for any of the dependent variables

^bEffect estimates of immigrant groups compared to Swiss control patients by Dunnett's *t*-test; significant contrasts refer to *adjusted P-values* < 0.01. SCP: Swiss control patients; A: South Europe; B: West, North Europe; C: Former Yugoslavia; D: Turkey; E: East Europe; F: Other countries; G: Unknown country

Fig. 3 Differences of Least Squares Means (estimates and confidence intervals) on longitudinal measures. Immigrants by country of origin, compared to Swiss control patients



Note:

Longitudinal measures log-transformed. Negative values indicate shorter times/ lower percentage in immigrants.

Least Squares Means (CI) of Swiss control patients: Length of hospital stay: 1.42 (1.39; 1.45),

Total time as inpatient: 1.63 (1.59; 1.66), Perc. of time as inpatient: 0.69 (0.65; 0.72)

the longitudinal course, immigrants spent less time in psychiatric hospitals during the 7-year observation period (in terms of number of days as well as percentage of total inpatient time). These inequalities of inpatient service use cannot be attributed merely to social class differences, even if social class on its own had a significant effect on service use. But even after accounting for social class differences, significant effects still remain indicating that foreign nationals spend shorter time as inpatients than Swiss patients of same age, gender and with comparable psychiatric disorders.

It could be conjectured that a lower rate of re-hospitalisation among immigrants could be explained by the fact that immigrants would send an ill member of the family back to the home country for treatment. This, however, is not likely, at least amongst settled residents who have lived in the country already for a long time (administrative minimum: 5 years) as well as in asylum seekers who have not the possibility to return. For both groups which make up the majority

of our immigrant sample (72%) it is also not to be assumed that they spend a good part of the year in their home countries. The fact that mainly immigrant groups originating from more distant countries are affected challenges this view, too.

Our analysis furthermore reveals that immigrants only partly receive same *therapeutic measures* during inpatient treatment, compared to other patients. This suggests that not only in outpatient settings [26, 27], but also in inpatient treatment is the use of more specialised services such as psycho-, ergo- and physiotherapy lower in immigrants, as compared to natives. Therapies such as pharmacotherapy, vocational training or occupational therapy were as often provided to them as to other patients. The same applies to compulsory medication or seclusion. Strikingly, the latter are measures for which verbal skills are necessary to a far lower degree. It is well-known that effective psychotherapeutic intervention for ethnic minorities in a cross-cultural setting is a great challenge for mental health services [28]. Considering

that verbal skills are a crucial determinant in psychiatric treatment, these data might mirror these difficulties.

Regarding the *number of inpatient admissions* among immigrants, results of previous studies are conflicting indicating the same relative admission risk for the indigenous and immigrant population [29, 30], lower [24, 31], as well as higher admission rates [32]. Regarding the *length of hospitalisation* most studies did not find a difference between immigrants and the national majority [29, 30, 33, 34], but also longer length of stay has been reported for immigrants [35].

As an explanation for these variations in findings, several factors should be kept in mind: among others, local social system factors, the immigrants' cultural distance to the recipient societies as well as their understanding of the health system of the host society. These are likely to be associated with their access to and use of psychiatric services [12, 36]. Moreover, the composition of any one ethnic group varies across diverse studies. Therefore, it has been questioned as to what extent useful cross-national generalisations can be drawn in relation to mental health service utilisation [30]. It is worth noting, however, that in Switzerland, mental health care does not suffer from insufficient resources [37]. E.g. in the Canton of Zurich, the rate of psychiatric inpatient beds is about 1.4/1000 population. Compared to the situation in other countries, the mental health care system must be regarded as well equipped. This raises the issue whether psychiatric services are optimally structured to meet the needs of immigrants with severe mental illness.

■ Differences between various immigrant groups

The composition of immigrants in this study mirrors very well that of foreign nationals in this country. When comparing immigrant groups from different countries of origin, we become aware of some noteworthy distinctive features regarding psychiatric service use: Immigrants from West and North European countries are in many respects comparable to Swiss inpatients (but different to other nationals), for example, as regards admission rates, emergency and compulsory admission, but also the use of inpatient treatment measures. Likewise, immigrants from West, North and South European countries have similar referral pathways. Other immigrants are admitted less frequently as self-referrals, but are more often referred by psychiatrists in office practice or in a community mental health service. Finally, differences are discovered in long-term measures where a similar pattern of service use can be found among immigrants from Turkey, East Europe and more distant 'other countries', whereas West and North Europeans, again, do not differ from native patients.

We can only speculate about the reasons for these differences across foreign nationals which obviously cannot be reduced to socioeconomic affiliation. They may reflect the various levels of acculturation in the host country. Immigrants who are poorly integrated have different patterns of behaviour in case of mental distress. Apart from their better embedding in traditional social support networks, which helps them deal with psychological problems without the need to take professional advice, they may be relatively unfamiliar with or adopt a more reserved attitude towards local mental health care facilities [32].

Differences in the utilisation of psychiatric services also might be associated with specific attitudes of the host society towards various ethnic groups. The lack of cultural sensitivity in service providers might negatively influence the contact to mental health services [25]. This in turn leads to a progressive alienation from psychiatric services that results to more compulsory and emergency admissions over time [14, 38–41]. It is likely that immigrants from North and West European countries as 'cultural neighbours' meet to a far lower extent with communication difficulties and lack of understanding. These may play a more important role in immigrants from Turkey, East Europe and more distant countries (Africa, Middle and Far East countries) due to their cultural and ethnic differences to our society. Further research is certainly needed to clarify the causes of differences in service utilisation between immigrants of different countries of origin and to understand more thoroughly the impact of culture-specific factors on access, utilisation and outcome of psychiatric treatment.

Conclusions

So far, the results of this study clearly point to an underutilisation of inpatient facilities among immigrants with mental disorders compared to the Swiss control group, and to disadvantages in psychiatric inpatient care. Immigrants, however, are not a homogenous group. Our data suggest that inequalities of mental health service use are especially pronounced in those immigrants originating from societies more distant to our country.

References

1. Freeman GP (1997) Immigration as a source of political discontent and frustration in Western democracies. *Stud Comp Int Dev* 32:42–64
2. Hutchinson G, Haasen C (2004) Migration and schizophrenia: the challenges for European psychiatry and implications for the future. *Soc Psychiatry Psychiatr Epidemiol* 39:350–357
3. Swiss Federal Statistical Office (2005) http://www.bfs.admin.ch/bfs/portal/de/index/themen/bevoelkerung/uebersicht/blank/wichtigste_kennzahlen.html. 19–09–2005

4. Ødegård O (1932) Emigration and insanity: a study of mental disease among Norwegian born population in Minnesota. *Acta Psychiatr Neurol* 7:1-206
5. Cantor-Graae E, Pedersen CB, McNeil TF, Mortensen PB (2003) Migration as a risk factor for schizophrenia: a Danish population-based cohort study. *Br J Psychiatry* 182:117-122
6. Vollebergh WA, ten Have M, Dekovic M, Oosterwegel A, Pels T, Veenstra R, et al. (2005) Mental health in immigrant children in the Netherlands. *Soc Psychiatry Psychiatr Epidemiol* 40:489-496
7. Bhugra D (2002) Ethnic factors and service utilization. *Curr Opin Psychiatry* 15:201-204
8. Steel Z, Silove D, Chey T, Bauman A, Phan T, Phan T (2005) Mental disorders, disability and health service use amongst Vietnamese refugees and the host Australian population. *Acta Psychiatr Scand* 111:300-309
9. McCrone P, Bhui K, Craig T, Mohamud S, Warfa N, Stansfeld SA, et al. (2005) Mental health needs, service use and costs among Somali refugees in the UK. *Acta Psychiatr Scand* 111:351-357
10. Lorant V, Kampfl D, Seghers A, Deliege D, Closon MC, Ansseau M (2003) Socio-economic differences in psychiatric in-patient care. *Acta Psychiatr Scand* 107:170-177
11. Drukker M, Driessen G, Krabbendam L, van Os J (2004) The wider social environment and mental health service use. *Acta Psychiatr Scand* 110:119-129
12. Gotor L, Gonzalez-Juarez C (2004) Psychiatric hospitalization and continuity of care in immigrants treated in Madrid (Spain). *Soc Psychiatry Psychiatr Epidemiol* 39(7):560-568
13. Have M, Oldehinkel A, Vollebergh W, Ormel J (2003) Does educational background explain inequalities in care service use for mental health problems in the Dutch general population? *Acta Psychiatr Scand* 107:178-187
14. Commander MJ, Odell S, Sashidharan SP, Surtees PG (1999) Psychiatric morbidity in people born in Ireland. *Soc Psychiatry Psychiatr Epidemiol* 34:565-569
15. Fossion P, Ledoux Y, Valente F, Servais L, Staner L, Pelc I, et al. (2002) Psychiatric disorders and social characteristics among second-generation Moroccan migrants in Belgium: an age-and gender-controlled study conducted in a psychiatric emergency department. *Eur Psychiatry* 17:443-450
16. Fossion P, Servais L, Rejas MC, Ledoux Y, Pelc I, Minner P (2004) Psychosis, migration and social environment: an age-and gender-controlled study. *Eur Psychiatry* 19:338-343
17. Haasen C, Yagdiran O, Mass R, Krausz M (2001) Schizophrenic disorders among Turkish migrants in Germany. A controlled clinical study. *Psychopathology* 34:203-208
18. Schrier AC, van de Wetering BJ, Mulder PG, Selten JP (2001) Point prevalence of schizophrenia in immigrant groups in Rotterdam: data from outpatient facilities. *Eur Psychiatry* 16:162-166
19. Lay B, Lauber C, Rossler W (2005) Are immigrants at a disadvantage in psychiatric in-patient care? *Acta Psychiatr Scand* 111:358-366
20. Christen S, Christen L, Meyer PC, Eichenberger A (2003) Length of inpatient stay in psychiatric hospitals - record linkage. Research Report of the Psychiatric University Hospital Zurich 8[1] ISBN-Nr. 3-907620-32-1
21. World Health Organisation (1993) The International Statistical Classification of Diseases and Related Health Problems, 10th revision. Chapter V (F). German Version. Huber, Bern Göttingen, Toronto, Seattle
22. Brown H, Prescott R (2000) Applied mixed models in medicine. Wiley, Chichester
23. Zolkowska K, Cantor-Graae E, McNeil TF (2001) Increased rates of psychosis among immigrants to Sweden: is migration a risk factor for psychosis? *Psychol Med* 31:669-678
24. Gupta S (1991) Psychosis in migrants from the Indian subcontinent and English-born controls. A preliminary study on the use of psychiatric services. *Br J Psychiatry* 159:222-225
25. Phan T (2000) Investigating the use of services for Vietnamese with mental illness. *J Community Health* 25:411-425
26. Smaje C, Grand JL (1997) Ethnicity, equity and the use of health services in the British NHS. *Soc Sci Med* 45:485-496
27. Stronks K, Ravelli AC, Reijneveld SA (2001) Immigrants in the Netherlands: equal access for equal needs? *J Epidemiol Community Health* 55:701-707
28. Weiss MG, Yilmaz AT (2001) Euro-international perspectives. In: Yilmaz AT, Weiss MG, Riecher-Rössler A (eds) Cultural psychiatry: Euro-international perspectives. Basel, Karger, pp1-10
29. Iversen VC, Morken G (2003) Acute admissions among immigrants and asylum seekers to a psychiatric hospital in Norway. *Soc Psychiatry Psychiatr Epidemiol* 38:515-519
30. Klimidis S, McKenzie DP, Lewis J, Minas IH (2000) Continuity of contact with psychiatric services: immigrant and Australian-born patients. *Soc Psychiatry Psychiatr Epidemiol* 35:554-563
31. Bruxner G, Burvill P, Fazio S, Febbo S (1997) Aspects of psychiatric admissions of migrants to hospitals in Perth, Western Australia. *Aust NZ J Psychiatry* 31:532-542
32. Cochrane R, Bal SS (1989) Mental hospital admission rates of immigrants to England: a comparison of 1971 and 1981. *Soc Psychiatry Psychiatr Epidemiol* 24:2-11
33. Shaikh A (1985) Cross-cultural comparison: psychiatric admission of Asian and indigenous patients in Leicestershire. *Int J Soc Psychiatry* 31:3-11
34. Wijesinghe CP, Clancy DJ (1991) Schizophrenia in migrants living in the western region of Melbourne. *Aust NZ J Psychiatry* 25:350-357
35. Trauer T (1995) Ethnic differences in the utilisation of public psychiatric services in an area of suburban Melbourne. *Aust NZ J Psychiatry* 29:615-623
36. Bhugra D (2004) Migration and mental health. *Acta Psychiatr Scand* 109:243-258
37. OECD Health Data (2005) <http://www.oecd.org/dataoecd/3/62/31938359.pdf> <http://www.oecd.org/dataoecd/10/20/2789777.pdf>
38. Burnett R, Mallett R, Bhugra D, Hutchinson G, Der G, Leff J (1999) The first contact of patients with schizophrenia with psychiatric services: social factors and pathways to care in a multi-ethnic population. *Psychol Med* 29:475-483
39. Cole E, Leavey G, King M, Johnson-Sabine E, Hoar A (1995) Pathways to care for patients with a first episode of psychosis. A comparison of ethnic groups. *Br J Psychiatry* 167:770-776
40. Davies S, Thornicroft G, Leese M, Higgingsbotham A, Phelan M (1996) Ethnic differences in risk of compulsory psychiatric admission among representative cases of psychosis in London. *BMJ* 312:533-537
41. Parkman S, Davies S, Leese M, Phelan M, Thornicroft G (1997) Ethnic differences in satisfaction with mental health services among representative people with psychosis in south London: PRISM study 4. *Br J Psychiatry* 171:260-264