Homelessness among people with severe mental illness in Switzerland

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Summary

Questions under study: This study addresses socio-demographic and clinical characteristics among homeless people in Switzerland admitted to inpatient care, the use of and pathways to inpatient care by this group and, the extent to which psychiatric disorders contribute to the risk of homelessness.

Methods: Based on data of a psychiatric case register we analysed 16 247 people consecutively referred to psychiatric hospitals of a catchment area in Switzerland between 1998 and 2001.

Results: 1.6% of all admitted patients (N = 257) were homeless (mean age: 34.4 years; women: 30.0%). The homeless as compared to other psychiatric inpatients had higher rates of substance use disorders, equal rates of psychotic and personality disorders, but lower rates of organic and affective disorders. Homeless people were more often compulsorily or as an emergency admitted. General practitioners (GPs) were less involved in the admission. The homeless had a shorter inpa-

tient stay and their health status did not equally improve like in other patients. Risk factors of being homeless at psychiatric admission were: young age, male gender, single, low education level, urban residence, abuse of illicit drugs, especially multiple substance use, and having a dual diagnosis.

Conclusions: Social factors and psychopathology are independently contributing to the risk of homelessness. Health care inequalities were found with regard to pathways to inpatient care (high rate of compulsory and emergency admissions, low involvement of GPs) and hospital stay (shorter stay, less improvement). Compared to other countries, disproportionate use of inpatient resources by homeless people could not be confirmed.

Key words: homelessness; mental disorder; substance use; dual diagnosis; pathway to care; general practitioner; compulsory admission; emergency; service utilisation

Introduction

Switzerland is one of the richest countries in the world. With 3012 US$ per capita in 2001, its total health expenditure was the second-highest worldwide [1]. Likewise, allocation of resources for inpatient care – the most expensive type of care – is large: in general medicine, the average length of stay in acute care is with 9.3 days the third-highest in the world. In psychiatry, almost 80% of the total mental health service costs are allocated to inpatient care whereas in other European countries, this totals to 20% [2, p. 16f.].

Studies from industrialised countries reveal that socially marginalized people are at least partially excluded from continuous health care provision [3–5]. While for instance migrants or people with substance use are on the public or political agenda [6], homelessness does not likewise attract the public's attention. Findings from North America and Australia have profiled a growing number of homeless people. They indicate that homelessness has become a serious public health problem

in the last years, especially due to the higher prevalence of psychiatric and somatic morbidity and the subsequently increased mortality. Mental disorders, traumatic injuries and infectious diseases are reported to be over-represented [7–10]. However, the risk of homelessness in a representative sample of mentally ill persons is still unknown, as is whether homelessness varies among diagnostic groups [11].

The lack of public attention has crucial effects: health care provision for homeless people has been repeatedly regarded as insufficient [10, 12]. When homeless people use the health care system, they are mostly seen in emergency rooms of general hospitals or in psychiatric hospitals [13]. Thus, it is recommended to study health care utilisation for homeless people in either of these settings. Previous studies on homeless people originate mainly from Anglo-American countries whose results may not be entirely relevant for other countries due to different contextual backgrounds, e.g. incompa-

rable (mental) health care systems. In Europe, data are only available from the UK [14], Spain [8], France [15] and Germany [7, 9]. Most of these analyses do not describe an entire catchment area, but one particular in- or outpatient service mostly in an urban area [7–9, 15–17]. Some studies give exclusive attention to men [9]. Only few studies investigated psychiatric inpatient utilisation [11, 14, 18, 19] and none the pathways to care. Finally, most analyses focused on only a limited time period, eg one single day [14, 19].

Homelessness in Switzerland is far from being understood. One might argue that homeless people hardly exist in Switzerland due to the high economic level in this country and the well-equipped social security system without obvious health inequalities (defined as the "availability of good medical care inverse with the need for it in the population served" [5]). A good socio-economic level is viewed as protective for a high rate of homelessness [16]. Conversely, the number of beds available for homeless people per night in the Canton Zurich increased between 2000 and 2003 by more than 17% (unpublished data, on request from the authors). It is, however, still unknown which pathways the homeless people use to psychiatric care, what they suffer from and whether the risk of homelessness is specific to a given psychiatric illness.

This study aims to depict homelessness under one of the best social and health care conditions. We analysed inpatient data as hospitalisation is generally seen as an indicator of a serious illness and viewed as the most restrictive measure in health care when further treatment in the community is no longer considered as appropriate. Homelessness was defined in this study as "being without own accommodation in the last half a year prior to psychiatric inpatient admission". This definition is used by other researchers in this field [20]. In contrast to other studies that defined homelessness as being without accommodation "at any time" or "one month before the baseline interview" [11, 14, 21], our definition focuses on a considerable time of homelessness excluding short-term homelessness or temporary undefined living conditions. Based on all psychiatric inpatients of a catchment area assessed over an extended period of time, this study wants to:

– analyse the use of and pathways to psychiatric inpatient care in homeless people;
– depict socio-demographic and clinical characteristics of homeless people; and
– examine to what extent psychiatric disorders contribute to the risk factors of homelessness.

Methods

Catchment area and central psychiatric register

The Canton Zurich covers a mixed urban-rural area with a population of 1.2 million, which is about one sixth of the Swiss general population. All mental health services in the Canton report detailed information about diagnostic, treatment-related and socio-demographic characteristics of all their patients to the central psychiatric register [22]. The hospital physicians in charge are responsible for the documentation on their respective patients. Data are collected by means of a basic documentation system. This assesses information based on standard forms to be completed at admission and discharge. All measures are defined in a comprehensive manual that is provided to the hospital physicians responsible for the documentation (for further details including instructions to clinicians see ref. [23]). All data of this analysis derive from this central psychiatric register [22]. The measures below are part of this documentation system. However, there are no reliability and validity data on these clinical ratings what must be considered as a shortcoming of this documentation system.

Sample

The sample includes all 16 247 patients aged 18 years and over who were admitted to a psychiatric hospital between 1998 and 2001 in the Canton Zurich/Switzerland. Of these consecutive referrals, all first inpatient admissions were used for this analysis. 13 054 (81.2%) of the patients had not been admitted previously. First admissions were separated from readmissions by means of computerised record linkage on the basis of 18 defined match criteria (for more details see [24]).

Measures

Socio-demographic characteristics (gender, age, marital status, education, main source of income, nationality) were analysed. To refer to the patients' current *place of residence*, postal codes were aggregated into three broad categories: urban (large cities with >100 000 inhabitants), suburban (>10 000 inhabitants) and rural (<10 000 inhabitants) communities [25].

Clinical variables include psychiatric diagnoses at discharge based on ICD-10 diagnostic criteria [26]. For the regression analysis, we considered whether a given patient had had one or more diagnoses. To be classified in the dual diagnosis group, a patient had to be diagnosed as suffering from both a substance use disorder (ICD-10, F1) and any other psychiatric disorder. Furthermore, the severity of the disorder at admission and at discharge (ratings included in the documentation system, ranging from 0, no disorder to 6, very serious disorder) was analysed. The person or institution responsible for the admission (e.g. general hospital, patient by his/her own etc.), the type of admission (regular *vs* emergency referral) and the legal basis of admission (voluntary *vs* compulsory) were examined. Length of hospital stay (index episode) was assessed and clinical change during inpatient treatment was determined (+3, remarkably improved to –3, remarkably deteriorated).

Statistical analyses

To analyse risk factors for being homeless, logistic regression analysis was applied with living situation before admission (homeless *vs* other situation) as dependent variable. To evaluate what extent psychiatric disorders contribute to the risk of homelessness we used a hierarchical procedure in which blocks of explanatory variables

were entered into the model. In the first model socio-demographic factors were included (block 1). In a second model, effects of the psychiatric disorder were estimated (block 2) while adjusting for effects of the socio-demographic variables. Variables of each block were fit together in the model. Improvement in model fit was assessed by testing the difference in logarithmical likelihood ratio statistic between two models.

As explanatory variables we considered the "type of psychiatric disorder", which was specified as a categorical variable. Psychiatric diagnoses were grouped into 8 categories (7 categories of Fx-diagnoses without an additional F1-diagnosis, and a further category indicating a dual diagnosis). Diagnostic categories are mutually exclusive. Psychotic disorder (F2) was used as the reference category. Odds ratios and their 95% confidence intervals are presented; the confidence intervals are calculated from Wald-Statistics. All statistical analyses were carried out using the SPSS 11.5 software package.

Results

Demographic characteristics of homeless psychiatric patients

Among the 16247 persons admitted to a psychiatric hospital between 1998–2001, 1.6% of all admissions (N = 257) were homeless, whereof 77 were women (30.0%) and 180 men (70.0%). The mean age at admission was 34.4 years (SD 12.9) with a range of 18 to 80 years. 44.8% of the homeless group had no diploma or had only a low education level.

Comparison to other psychiatric patients

We compared the homeless patients with psychiatric patients living in other housing conditions before admission (table 1). In the homeless as compared to the other patient groups, we found more males, younger people and more people with low education. Few of them were living in an intimate relationship. More people lived in an urban place of residence. As compared to the group living at home, few homeless people had an income of their own and most of them received disability pension or social welfare benefits.

Clinical characteristics

Ways of referral: Figure 1 shows that most of the homeless people were admitted on their own initiative (29.2%) or the initiative of psychiatrists (24.5%). As compared to the other patient groups, self-referral, referral via the legal system and compulsory admission (table 1) were high among homeless people. Homeless people used other means of referral to psychiatric hospitals, and especially GPs were comparatively less used.

Diagnoses: Homeless as compared to other patients (figure 2) are more affected by substance use disorders, especially multiple substance use (ICD-10, F19) and any form of illicit substance use (ICD-10, F11–18). Equal rates were found with respect to psychotic (ICD-10, F2), neurotic (ICD-10, F4) and personality (ICD-10, F6) disorders while lower rates regarding organic (ICD-10, F0) and affective disorders (ICD-10, F3). The number of patients with dual diagnosis, i.e. patients suffering from both a substance use disorder (ICD-10, F1) and any other psychiatric diagnosis, were by far higher in the homeless as compared to the other patient groups.

As for all three groups, the degree of severity was on average 4 (scale ranging from 0 to 6) indicating "considerably ill" (table 1). Homeless people, however, had a significantly shorter inpatient stay (20 days; overall: 26 days) and were found to have only slightly improved at discharge whereas in all other patient groups the clinical situation had remarkably improved.

Figure 1

Referral pattern for inpatient treatment in homeless people.

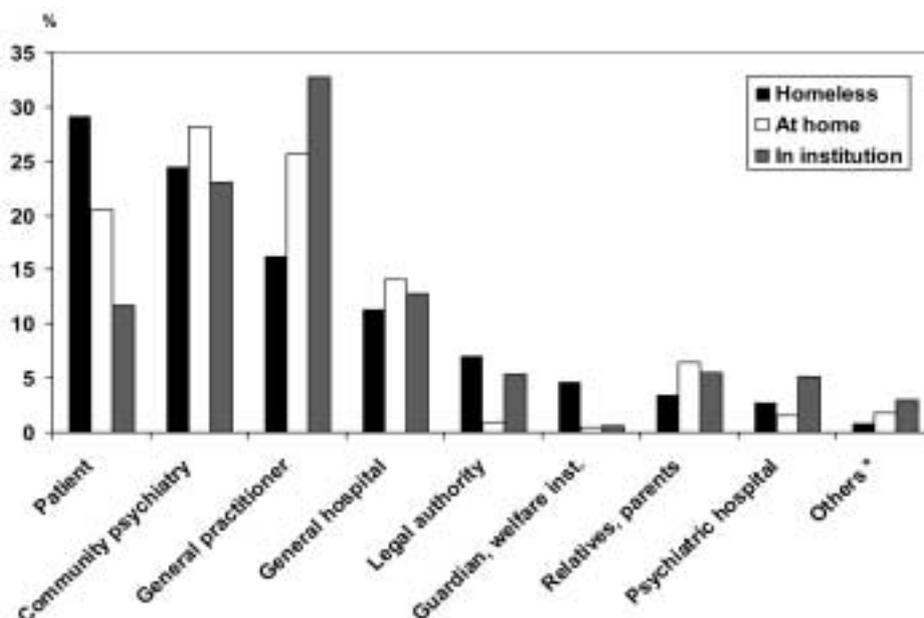* Non-medical therapists, social services, insurances, armed forces

Table 1.

Homeless people admitted to psychiatric hospitals in the Canton Zurich compared to other inpatients: Sample characteristics

	n	Living situation before admission			
		Homeless n = 257 %	At home n = 13 531 %	Institution n = 1965 %	Total * n = 16 247 %
Gender, male	180	70.0	47.6	51.9	48.9
Age					
18–25 y	64	24.9	12.7	15.2	13.6
26–35 y	105	40.9	23.5	21.4	23.8
36–45 y	47	18.3	21.9	13.7	20.9
46–55 y	19	7.4	16.4	7.9	15.0
56–65 y	10	3.9	9.6	6.0	8.8
66– y	12	4.7	15.9	35.8	17.9
Educational level					
No diploma	22	8.6	3.0	7.8	3.7
Basic education (grade 9)	93	36.2	22.7	31.0	23.9
Apprenticeship	75	29.2	43.2	29.2	40.6
Secondary/ higher education	20	7.7	16.2	8.6	15.0
Not known	47	18.3	14.9	23.4	16.7
Source of income					
Occupation	30	11.7	35.3	7.0	31.1
Parents, spouse, relatives	16	6.2	14.4	3.2	12.7
Disability pension	36	14.0	12.5	23.6	13.7
Social welfare benefits	96	37.4	13.6	18.7	14.8
Old age pension; others	79	30.7	24.2	47.4	27.6
Marital status					
Single	168	67.7	40.9	53.5	43.4
Married; cohabitant	14	5.6	30.5	11.2	27.3
Separated, divorced, widowed	66	26.6	28.5	35.3	29.3
Place of residence					
Urban	152	59.1	49.0	50.3	49.5
Suburban	68	26.5	31.7	30.1	31.3
Rural	37	14.4	19.3	19.6	19.2
Citizenship, foreign country	69	26.8	17.0	18.1	17.9
Type of admission, emergency referral	152	60.1	55.5	50.3	55.2
Legal basis of admission, compulsory	107	41.6	36.3	37.9	36.9
N of admissions (life-time)					
1	204	80.0	82.2	74.5	81.2
2–3	39	15.3	12.9	17.0	13.5
4–	12	4.7	4.9	8.5	5.3
Dual diagnosis **	70	27.2	16.5	13.8	16.3
Severity of disorder (0–6; Median)		4.0	4.0	4.0	4.0
Length of hospital stay (days; Median)		20.0	26.0	30.0	26.0
Clinical change during inpatient treatment (–3 – +3; Median)		1.0	2.0	2.0	2.0

*   Total comprising in addition 'Other situation' (n = 300), 'Situation not known' (n = 194).
      Due to missing values some of the variables do not sum up to n = 16 247 (missing values <1.1%)
**   Substance use disorder (ICD-10, F1) plus any other F-diagnosis

Regression analyses

To examine the extent to which socio-demographic and clinical variables are associated with homelessness (dependent variable) we fitted two regression models. The first included socio-demographic background factors only (model 1), the second modelled the effect of psychiatric disorders while adjusting for significant effects of socio-demographic variables (model 2). Table 2 gives the adjusted odds ratios (OR) and the 95% confidence intervals (95% CI) of the factors included.

Results of model 1 show that all the socio-demographic factors included were significantly associated with homelessness at admission: odds were increased in single persons, men, those with low education level, living in an urban area and younger people. When psychiatric disorders were included in model 2 to examine their additional

Table 2

Risk factors of homelessness in psychiatric inpatients.

Risk factors		Model 1		Model 2	
		OR	95% CI	OR	95% CI
Block 1	Age (years)	0.97	0.96–0.98	0.98	0.97–0.99
	Male gender	2.16	1.63–2.85	1.93	1.45–2.56
	Lower education	1.94	1.49–2.52	1.92	1.47–2.50
	Place of residence: urban	1.44	1.11–1.86	1.38	1.06–1.79
	Marital status: single, separated, divorced, widowed	4.29	2.48–7.44	3.85	2.22–6.69
Block 2	Psychiatric diagnosis (ICD–10)				
	(ref: psychotic disorders only [F2])			(1.00)	
	Organic mental disorders only (F0)			0.60	0.22–1.65
	Mental disorders due to use of alcohol only (F10)			0.77	0.39–1.54
	Mental disorders due to drug use only (F11–F18)			1.84	1.09–3.10
	Mental disorders due to multiple drug use only (F19)			3.57	2.22–5.73
	Mood disorders only (F3)			0.51	0.26–0.97
	Other disorders only (F4 –F9)			1.44	0.91–2.26
	Dual *			2.13	1.40–3.24

Reference categories: Dependent variable 1 = Homeless at admission (n = 248); 0 = Not homeless (n = 15 818)
Covariates: Gender 1 = male vs 0 = female; Educational level 1 = no diploma, lower education, unknown vs
0 = apprenticeship, secondary, higher education; Patient's place of residence 1 = urban vs 0 = suburban, rural;
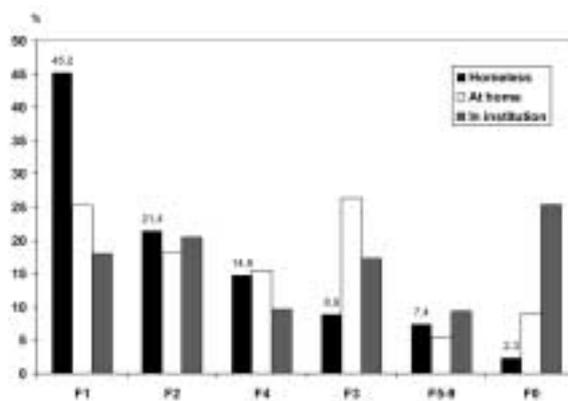Marital status 1 = single, separated, divorced, widowed vs 0 = married, cohabitant
Significance of model improvement: model 2 – model 1: χ^2 = 62.58, df = 7, P <0.001 OR: Odds ratio;
CI: 95% confidence interval
* Dual: Substance use disorder (ICD-10, F1) plus any other F-diagnosis

Figure 2

ICD-10 diagnoses among homeless inpatients.

contribution, these factors further improve the prediction: risk of homelessness was associated with the diagnosis of a mental disorder due to multiple drug use or dual diagnosis. Mental disorders due to drug use without further psychiatric disorders were significantly related to homelessness, whereas mental disorders due to alcohol use was not. Patients with a mood disorder were significantly less likely to experience homelessness compared to those with a psychotic disorder. Regarding the socio-demographic factors, the results of the regression remained unchanged as compared to model 1.

Discussion

This is the first study to assess the risk of homelessness in a psychiatric inpatient sample by comparing different diagnostic groups and to describe pathways to inpatient care used by homeless people. Since the results are based on the largest survey and a long time period, the results are highly reliable for this group. Moreover, we avoided selection bias typical of urban samples by including people from a mixed urban-rural catchment area.

Limitations of this study

Before discussing the results, some limitations of this study must be addressed. Firstly, there are no data available neither on the prevalence of homeless people in Switzerland nor on the preva-

lence of mental disorders in homeless people in this country. Thus, we do not know to what extent the sample studied is representative for homeless people with mental disorders or even for homeless people in general. Thus, the risk factors reported here do only apply to this inpatient sample and cannot be generalised to any other sample of homeless people. Secondly, the definition of homelessness ("being without own accommodation in the last half a year prior to psychiatric inpatient admission") introduces a study limitation. This includes a range of very different housing situations, eg with relatives or friends (which can be considered as rather comfortably), in sheltered accommodations (which may be of different quality), or on the streets. The third limitation derives from

the way patients may interpret their housing conditions. As homelessness is socially unacceptable, patients may be evasive when talking about their housing conditions. Thus, we assume that the estimated rates might be negatively biased [11]. There are further limitations due to the instruments used, which are already discussed in the method section.

Comparison to the literature

In the last decade, only four studies have investigated homeless people in psychiatric inpatient care [11, 14, 18, 19], one among them from Europe [14]. Findings of the present study are in line with these data and give further support that homeless people as compared to other groups of psychiatric patients are characterised by variables associated with severe mental disorders and poor integration, eg in terms of social relation [11, 14, 18, 19, 27]. Moreover, the distribution of psychiatric diagnoses found in our sample (see figure 2) is comparable to that reported in other studies [19]. However, three points need further attention:

Psychiatric diagnoses and their contribution to the risk of being homeless

In this study, the distribution of psychotic disorders is comparable in all patient groups. Thus, we chose this sub-sample as a reference. Even if socio-demographic conditions are accounted for, e.g. not living in a partnership, male gender or low education level, substance use is additionally increasing the risk of becoming homeless: multiple drug use is the most powerful predictor (OR = 3.57). Likewise dual diagnoses, i.e. substance use disorder in combination with any other psychiatric diagnosis (OR = 2.13), or drug use (OR = 1.84) are associated with a roughly twofold risk. There is evidence that social factors and psychopathology are independently contributing to the risk for homelessness. Although we cannot draw causal conclusions from this retrospective analysis our data strongly suggest that mental disorders per se are associated with homelessness beyond the social variables (such as male gender and low education level) that are well known to contribute to the risk of homelessness.

Pathways to psychiatric inpatient care by homeless people differ from other patients

With regard to the pathway of homeless people to psychiatric inpatient care it is striking that one out of three homeless was admitted on his/her own initiative. This is higher as compared to those with permanent accommodations. Results further showed that general practitioners (GPs) are less involved in the referral system of homeless people.

Our data provide no explanation for these findings. However, we can assume that in a mental health care system with almost no barriers to care a high self-referral rate is likely an expression of the homeless seeking for shelter. Moreover, it might be a manifestation of autonomy and self-determination which characterises this population [28]. Most homeless people have no insurance and are not registered with a GP which could have led to a low involvement of GPs in their admission [14].

Another remarkable finding is the high rate of both emergency and compulsory admissions as compared to people with permanent housing. These two variables are commonly viewed as indicators of severe mental illness [29]. However, homeless people were not rated higher than other psychiatric inpatients in regard to the severity of their disorders. Their shorter inpatient stay and their less clinical improvement at discharge are more likely to be an expression of health care inequalities than of severity of illness. Health care inequalities affect inpatient treatment rather than access to care as the number of admissions is similar in all groups. To confirm this assumption, further studies examining, eg the quality of inpatient care for homeless, preparation for discharge and aftercare are needed.

Utilisation of psychiatric inpatient care by homeless people is lower in Switzerland than abroad

Utilisation of psychiatric inpatient care is of major public health interest, especially in countries with limited health care resources [14, 19]. The homeless among psychiatric inpatients in our study accounted for 1.6%, in the UK 20.5% [14] and in an American study 35% [19]. There are only few studies that have investigated these cross-cultural differences in homelessness [8, 30]. Apart from cultural characteristics such as the role of the family as a protective factor [30], these differences are the result of various social security and (mental) health care systems, but also of different methodologies: the American investigation was conducted in Veteran Affaires hospitals, a health care organisation devoted to serve the poor and disabled [19]. The rate of homeless people is, thus, not representative of a general psychiatric patients sample. In the UK [14] and in Australia [18] urban samples were studied. As a result, homeless people might have been over-represented as urbanity is a risk factor of homelessness. In our mixed urban-rural catchment area the psychiatric inpatient service use by homeless as compared to other patients was low. Thus, disproportionate use of inpatient resources by homeless people as displayed by other studies could not be confirmed in this analysis.

Conclusions

The present results shed light on access and use of psychiatric inpatient care by homeless people pointing to health care inequalities. However, the data provided are not sufficient to analyse in-depth the problem of homelessness. Further research is therefore needed to study e.g. a representative sample of homeless people, to better understand their pathways to homelessness and to further analyse high-risk groups. This includes an analysis of the somatic and psychiatric morbidity and their needs (e.g. for (mental) health service provision or housing), but also their resources, their social support and their quality of life.

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