

Street Health: Cross-sectional study identifying social medicine issues amongst patients of the Health Center for Homeless in Berlin, Germany

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Abstract

Background: An estimated 265,000 people are homeless in Germany, with 10,000 in Berlin alone. Their physical and psychological health is particularly threatened by their living conditions. Access to health services is often difficult, sometimes impossible, for them. New approaches to care of the homeless offer multidisciplinary support, but systematic analysis of these are lacking. The aim of this study is to analyze socio-demographic and health characteristics of patients at the Berlin Health Center for Homeless (*Gesundheitszentrum für Obdachlose*), founded in 2006.

Methods: Retrospective analysis of primary care patient data from September 2006 to March 2008

regarding reasons for seeking care, existing health problems, and socio-demographic characteristics.

Results: Among a total of 440 homeless patients, 81% were male, with a mean age of 43.5 years (SD=13), 19% were female, with a mean age of 37.2 years (SD=12.8), 62% were single, 26% were foreigners (particularly from Eastern Europe), 71% had obtained a graduation certificate after at least 10 years of schooling, 16% had higher education, and 53% were without health insurance. 58% had a tobacco addiction and 43% an alcohol addiction. The most frequent health complaints were infectious diseases (16%), trauma (15%), respiratory diseases (14%), and skin diseases (9%).

Conclusions: Despite popular perceptions, homelessness in Berlin increasingly affects women, young adults, and better-educated patients. More systematic and longitudinal studies analyzing specific medical care for the homeless are urgently needed.

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Introduction

In Germany approximately 256,000 people (including foreign migrants) were homeless in 2006.¹ In 2008, this figure decreased to 227,000, but most recently it has been increasing again, to 248,000 in 2010.² Social welfare organizations estimate that there are some 10,000 homeless in Berlin alone and that numbers are rising.³ Governmental institutions in Germany do not systematically record figures on homelessness, which leaves estimations to civil society organizations and associated research projects only.

Homeless persons may stay with friends, in hotels, or in lodging provided by the governmental

social service agencies. Close to 18,000 homeless in Germany live without any shelter at all – in building entrances, under bridges, or in parks.⁴

Due to their living conditions, the homeless are particularly vulnerable to poor health, both physically and mentally.⁵⁻¹¹ They are at the mercy of the weather and often have no opportunity for privacy, personal hygiene, or preparation of food. In addition, their health is affected by psychological stress caused by continuous sleep deprivation, social isolation, and violence experienced.¹² Somatic diseases occur up to nine times more frequently as compared to the general population and premature mortality appears at a significantly increased rate.¹² Their access to regular health care provided in Germany is considered to be restricted.

In 2006, the Jenny De la Torre Foundation founded a specialized Health Center for Homeless in Berlin with the aim of improving medical care for the homeless by offering easy accessible care. In addition to primary care, specialist surgical, dermatological, dental, and ophthalmological clinics are offered, as well as comprehensive legal, social, and psychological. The homeless patients can receive warm meals and clean clothing and have the chance to wash themselves at the Center.¹³ Other organizations in Berlin provide similar stationary or different mobile medical care by ambulance.¹⁴

There has been increasing discussion concerning the nature of homelessness, in particular regarding the changes from the older terminology of “transients” (*Nichtsesshafte*), to “homeless” (*Obdachlose*) and now to “housing emergency” (*Wohnungsnotfall*) and related concepts. In addition, new easy-access care models are being developed. Systematic analyses regarding persons who live on the street and their health problems are scarce in Germany. Thus, the aim of this study was to analyze socio-demographic and medical characteristics of the patients at the Health Center for Homeless.

Methods

A cross-sectional study was carried out by the Institute for Social Medicine, Epidemiology and Health Economics of the Charité Universitätsmedizin Berlin, in cooperation with the Health Center for Homeless. Included in the study were pa-

tients treated for the first time from the opening of the Health Center in September 2006 until the end of March 2008.

Data were abstracted from the Center’s intake form. Since the Center’s opening, a standardized questionnaire has been used to collect the patients’ medical history and additional relevant information on their living situation. Dr. Jenny De la Torre, a physician with many years of experience in medical care for homeless, developed the questionnaire based on her extensive personal experience. The questionnaire has been used as the basis for establishing patients’ medical history in a standardized manner and is continually being further developed. Missing or incomprehensible information in the questionnaire was supplemented where possible from the patients’ files, or otherwise recorded as “not specified” in a database.

In order to characterize individual patients socio-demographically, the following data were recorded in a database for this study: age, sex, country of birth, country of citizenship (nationality), marital status, number of children, contact to family, highest educational qualification, health insurance, start of unemployment and homelessness, and types of accommodation. Medical information recorded included the date of the last visit to a doctor, pre-existing somatic and psychological illnesses, addictions, current medications, and current complaints. Illnesses from patients history and diagnosed at initial visit were coded using the International Classification of Diseases, 10th revision, German Modification (ICD-10GM); treatment with medication was recorded in line with tables from the Yellow List Pharmaindex (*Gelbe Liste Pharmaindex*).¹⁵ Each individual diagnosis was recorded according to the ICD-10GM as a 3-digit, alphanumeric code and summarized in nosological groups.

All patient data collected were de-identified. Database records’ quality was checked by using a randomly chosen sample comprising 40 patients.

For categorical information, absolute and relative frequencies are presented. Metric values were tested for normal distribution. Group differences for constant variables were tested for statistical significance ($p < 0.05$) with t-test for normal distributions or Mann-Whitney test for non-normal data.

Table 1. Distribution of socio-demographic characteristics

	Total n (%)	Men n (%)	Women n (%)
	440	355 (80.7)	85 (19.3)
Marital status			
Single	272 (61.8)	223 (62.8)	49 (57.6)
Married	20 (4.5)	13 (3.7)	7 (8.2)
Divorced	92 (20.9)	74 (20.8)	18 (21.2)
Widowed	7 (1.6)	4 (1.1)	3 (3.5)
Not specified/unknown	49 (11.1)	41 (11.5)	8 (9.4)
Country of citizenship			
Germany	323 (73.4)	257 (72.4)	66 (77.6)
EU*	90 (20.5)	79 (22.3)	11 (12.9)
Non-EU*	24 (5.5)	16 (4.5)	8 (9.4)
Not specified/unknown	3 (0.6)	3 (0.8)	-
Education			
Grammar school A-level	68 (15.5)	51 (14.4)	17 (20.0)
Intermediate secondary school	100 (22.7)	84 (23.7)	16 (18.8)
Secondary school	146 (33.2)	116 (32.7)	30 (35.3)
No qualification	43 (9.8)	35 (9.9)	8 (9.4)
Not specified/unknown	83 (18.9)	69 (19.4)	14 (16.5)
Health insurance status			
Private health insurance	60 (13.6)	31 (8.7)	29 (34.1)
Statutory health insurance	100 (22.7)	80 (22.5)	20 (23.5)
No insurance	233 (53.0)	204 (57.5)	29 (34.1)
Not specified/unknown	47 (10.7)	40 (11.3)	7 (8.2)

* European Union (not including Germany)

Data analysis was performed using the statistic software SPSS version 15.0 (Chicago, IL, USA).

Results

Socio-demographic results

The study was conducted among all patients seen by a physician at the Health Center for Homeless in Berlin. A total of 560 patient files were analyzed. Based on self-report, 440 patients were considered homeless at the time of first contact and included in further analysis.

Of the 440 homeless patients, 81% were male. The mean age of the male patients at the time of first contact was at 44 (± 13) years, which was statistically significantly higher than that of the women at 37 (± 13) years ($p < 0.001$).

In both sexes, a large proportion (almost two thirds of each sex) of persons were single. Approximately one fifth of all patients were divorced. Women were twice as likely to be married compared to men (Table 1).

Of all homeless patients, 73% were German, while only one in twenty came from a non-EU country. Foreign patients from member states of the European Union came almost exclusively from Central European and Eastern European countries, especially from neighboring Poland.

Of all 440 patients, 314 (71.4%) had finished school with a school leaving certificate after at least 10 years of schooling, while 43 (9.8%) had not graduated from school. 68 had completed a 13-year secondary school (*Abitur*); 146 had completed a 9 or 10-year secondary vocational school (*Hauptschulabschluss*); 100 completed 10 years of secondary education at either a *Realschul* or *polytechnisch Oberschule*, and 83 did not provide information.

Of all patients, approximately half (53%) were not insured by statutory health insurance. Almost all (>95%) of the patients from foreign countries had no health insurance (Table 2).

For 358 patients, it was possible to calculate the reported duration of homelessness (mean=3 years

Table 2. Distribution of school education and health insurance according to country of citizenship

	Total n (%)	Germans n (%)	EU* citizens n (%)	Non-EU* citizens n (%)
	437 [†]	323	90	24
School education				
Grammar school A-level	68 (15.6)	44 (13.6)	20 (22.2)	4 (16.7)
Intermediate secondary school	100 (22.9)	92 (28.5)	5 (5.5)	3 (12.5)
Secondary school	146 (33.4)	128 (39.6)	14 (15.6)	4 (16.7)
No qualification	42 (9.6)	34 (10.5)	6 (6.7)	2 (8.3)
Not specified/unknown	81 (18.5)	25 (7.7)	45 (50)	11 (45.8)
Health insurance				
Private health insurance	100 (22.8)	98 (30.3)	2 (2.2)	-
Statutory health insurance	60 (13.8)	58 (18.0)	1 (1.1)	1 (4.2)
No insurance	232 (54.1)	142 (44.0)	72 (80.0)	18 (75.0)
Not specified/unknown	44 (10.3)	25 (7.7)	15 (16.7)	5 (20.8)

* European Union (not including Germany)

[†] background of three male patients was unknown

and 3 months, median=0.6 years, SD=5.5, range=2 days - 36 years). 19.8% of the patients were homeless for one month or less, while 49.5% of all patients were homeless for six months or less.

Medical results

Of all 440 patients, 169 (38.4%) patients reported having a total of 176 pre-existing illnesses. 28.4% (50/176) reported mental illness among all reported pre-existing illnesses; 21.0% (37/176) had respiratory diseases, especially asthma and chronic obstructive bronchitis; 19.9% (35/176) had infectious diseases, particularly hepatitis C, tuberculosis, and HIV; 15.9% (28/176) had cardiovascular diseases, predominantly myocardial infarction and arrhythmic conditions; and 14.8% (26/176) neurological diseases, often epilepsy, and frequently in the context of alcohol addiction.

The most common reasons for visiting the Health Center as reported by patients were: skin complaints (21%) such as itching or lesions; respiratory symptoms (19%), especially cough, runny nose, and sore throat; and injuries (14%).

Medical history and physical examinations revealed that 68% (299/440) of patients had only one diagnosis, 17.3% (76/440) of patients had two diagnoses, and 6.6% (29/440) of patients had three or more diagnoses. A total of 543 diagnoses were made (Table 3).

Of the 84 patients with infectious diseases: 31 patients had viral respiratory infections; 18 had mycoses; 18 had pediculoses; 13 had scabies; and four had bacterial infections. Of 81 patients with injuries: 32 suffered from open wounds; 21 had post-traumatic wound infections; and 18 patients had bruising or strains; six patients had fractures or dislocations; and four were treated for burns. Of 74 patients with skin disease: 27 had an infectious pathogenesis, such as impetigo, abscesses (especially abscesses due to intravenous drug use), or phlegmons; 14 had dermatitis; five patients had papulosquamous skin disease; and one patient had a corn. Of 43 patients with psychological or behavioral disorders: 17 had disorders related to use of psychotropic substances including use of multiple substances, with alcohol reported as the main drug; ten patients had affective disorders, including eight with depression; eight had schizophrenia or delusional disorders; four had stress disorder; two had unspecified behavioral disorder; one had attention deficit disorder; and one had dementia.

When asked about their dependency on specific substances, 71.6% (315/440) described at least one addiction. 58% (255/440) of all patients were addicted to tobacco; 42.5% (187/440) to alcohol; and 16.8% (74/440) took illegal substances on a regular basis.

Table 3. Treatment diagnoses according to ICD-10 diagnosis groups*

Diagnosis group	Diagnosis n (%)
Certain infectious and parasitic diseases (A00-B99)	84 (15.5)
Injuries, poisonings and certain other consequences of external causes (S00-T98)	81 (14.9)
Diseases of the respiratory system (J00-J99)	74 (13.6)
Diseases of the skin and subcutaneous tissue (L00-L99)	47 (8.7)
Psychological and behavioral disorders (F00-F99)	43 (7.9)
Diseases of the digestive system (K00-K93)	38 (7)
Homelessness (Z59.0) [†]	38 (7)
Diseases of the cardiovascular system (I00-I99)	37 (6.8)
Diseases of the musculoskeletal system and connective tissue (M00-M99)	28 (5.2)
Endocrine, nutritional and metabolic diseases (E00-E99)	19 (3.5)
Symptoms and abnormal clinical and laboratory findings (R00-R99)	19 (3.5)
Diseases of the nervous systems (G00-G99)	12 (2.2)
Diseases of the ear and mastoid (H60-H95)	11 (2)
Diseases of the eye and adnexa (H00-H59)	6 (1.1)
Diseases of the urogenital system (N00-N99)	3 (0.5)
Neoplasms (C00-D48)	3 (0.5)

* Multiple diagnoses were possible.

[†] From the ICD-10GM classification Z00-Z99: Factors that affect state of health and lead to utilization of the health care system.

In 7% of patients, the newly introduced ICD-10 diagnosis Z59.0 of ‘Problems related to housing and economic circumstances/Homelessness’ was made.

5% of the patients attended consultations in order to get medication or a certificate of health status, while 4% primarily came because of psychological complaints or simply to shower, respectively.

Comparisons between patients who have been homeless for six months or less and those who have been homeless for more than six months showed that the latter reported more respiratory diseases or injuries and less mental or behavioral disorders. Compared to those who were homeless for less than six months, patients who had been homeless for longer than six months were diagnosed with ICD-10 Z59.0 ‘Homelessness’ twice as often.

Discussion

Socio-demographic parameters

In the first 1.5 years since the inauguration of the Berlin Health Center for Homeless, 560 new patients were treated for the first time. Of these, approximately 80% self-reported to be homeless; this indicates that for about 20% of all patients seen at the center, reasons other than homelessness prevent-

ed their access to the regular German health care system.

Of all patients, about one in five were female. Although public perception is that it is mostly men who live on the street, the high percentage of women among the homeless patients at the Center suggests high numbers of homeless women in Berlin. Homeless women often are precariously housed with friends or acquaintances, in so-called ‘latent homelessness,’ which is found to aggravate ill health.¹⁶⁻²⁰

The relative high number of female patients could reflect a deteriorating socio-economic situation for homeless women in Berlin or that female patients could have a lower threshold for seeking medical treatment, possibly making homeless women more likely to receive medical care and other help.

Homelessness often starts with losing one’s home after separation or divorce.¹⁶ Separation, loss of employment, and health problems are the main triggers for homelessness, mostly in the third and fourth decade of life.⁹ Perhaps people are overwhelmed with life crises, do not have a stable environment and end up being homeless. Our results

confirm earlier studies' findings that the homeless in Germany are more than twice as often single or divorced than persons in the general population.^{1,21}

It is believed that homelessness is often associated with a lower level of school educational, although it is not necessarily caused by this.²² The patients in Berlin were surprisingly well-educated and a large proportion of the foreign patients had a higher school degree. Small business failure has been found to be the main factor for financial downfall, social destitution, and homelessness.²³ Perhaps patients from Eastern European countries trying to find work in Berlin are at a higher risk of becoming homeless when their attempts fail. This argument could be supported by the larger proportion of homeless people with migrant backgrounds (26%) compared to migrants amongst the general population in Berlin (14%).²⁴ Social upheaval is also seen as a cause of homelessness.²⁵

It is striking that a large proportion (80%) of non-German homeless patients did not have health insurance. The number of homeless Germans without health insurance was also high (54.1%). This contradicts official figures which claim that since the introduction of compulsory basic health insurance act, all homeless capable of working or pensioned are covered by health insurance.⁴ Administrative hurdles when applying for health insurance, mental disorders, and simply practical reasons, such as lack of storage facilities for insurance-related documents, exclude the homeless from the health system. In addition, receiving medical care is made difficult by user fees and advanced down payments before receiving treatment.^{26,27}

However, this begs the question of why the 36% of patients who do have health insurance do not take advantage of the regular health care system. Most likely the majority of these patients are not 'waiting-room compatible,' meaning they are not able to wait, they feel ashamed for their appearance being homeless among regular patients, or they simply are ashamed of going to a medical doctor's practice.⁶ Other reasons for not seeking medical help include intoxication, lack of trust in physicians, illegal residency status, or a shifted perception of illness.^{12,28}

Surprisingly, half of the patients reported to be homeless for less than six months, and one in five

patients reported homelessness for less than one month. While homelessness often is perceived as chronic state, the Berlin Health Center for Homeless appears to offer easily accessible approach to the 'acutely' homeless. This approach may be a chance to establish connections between the homeless and social services in order to prevent chronic homelessness and its associated diseases.

Medical parameters

Persons living on the street outward appearance are often marked by consumption of drugs or alcohol. Among the homeless, the percentage of alcoholics is 43-80% (43% in our study), which is five to nine times higher than that of the general population.^{7,8,29} The percentage of illicit drug addicts in our study (17%) was however lower than that of earlier studies from Germany (4-13%).^{6,8} The relatively low proportion of alcoholics and higher proportion of illicit substances users could be an indication of increasingly younger homeless persons in Berlin. Dependency on illicit substances among the homeless has hardly been analyzed until now and most studies did not distinguish between intravenous drugs, marijuana, synthetic drugs, or other substances.

The acute somatic and psychological symptoms among homeless patients are similarly heterogeneous to those of patients in a general practitioner's office; in addition, however, homeless patients suffer from illnesses associated with their particular lifestyle. Homeless persons' immune systems are compromised by their living conditions, which makes them more susceptible to infectious diseases.³⁰ In addition, an insufficient or unbalanced diet and lack of personal hygiene increases the susceptibility to infectious diseases.³¹ Overnight stays in centers for the homeless increase the risk for transmission of ectoparasites and under poor hygienic conditions the smallest skin lesions can lead to abscesses and phlegmons. It is therefore not surprising that the most common diagnoses in the Health Center were infectious and parasitic illnesses (16%).

Other relatively frequent diagnoses were injuries, especially wounds, bruises, and post-traumatic wound infections. Life on the street increases the risk for falls and acts of violence.³² Reduced im-

mune response and decreased personal hygiene can be responsible for wounds not healing properly or becoming infected.

Homeless persons often suffer from psychiatric disorders.^{8,17,33} Persons who have been homeless for a longer period of time probably have an increased risk for psychiatric disorders, especially when also suffering from an addiction. As a whole, research on mental illnesses amongst homeless appears often dominated by ideological prejudices so that an interpretation of these results should be done with caution.⁶

Nowadays, homelessness is seen as a social illness. The diagnosis Z59.0 'Homelessness' was recorded in the 10th revision of the ICD for the first time and implies that this lifestyle is now considered to be a pathogenic factor.³⁴

Limitations

Although the Health Center staff strives to create a trusting environment, homeless persons are generally more skeptical and cautious due to their living conditions. They tend to develop a relationship with the doctor more slowly and usually want focus on current disease symptoms only. On initial contact, this can make it especially difficult to take a full medical history. Therefore we suspect that the rate of co-morbidities is probably underreported in our study and the true prevalence of past or existing medical conditions might be higher. Nevertheless, the results of our study provide clear indices to the disease spectrum of homeless patients. Another impairment of the accuracy of the medical histories may have been posed by language barriers for foreign patients. Additionally, the details of foreign patients' highest level of education reported are not always comparable to the German school system.

Conclusion

The Berlin Health Center for Homeless is one of the largest ambulatory medical care facilities for the homeless in Germany. Although our results cannot be viewed as being representative nation-wide, they allow us to draw conclusions about the situation regarding medical care for homeless in Berlin and probably other larger cities.

While homeless persons are often perceived as older, male, and uneducated, we found that the patients of the Berlin Health Center were surprisingly often female, younger, and a large number reported advanced educational degrees. The patients in Berlin reported surprisingly short duration of homelessness.

In particular, infectious diseases, superinfected wounds, chronic alcohol and illegal substance abuse, psychological disorders, or homelessness as a social illness were common. While in many cases the patients could have access to the regular health medical system, access to such services is not possible due to a variety of reasons associated with homelessness. The approach of the Berlin Health Center for homeless, includes care by physicians, social workers, and others, and offers early access to their patients.

While data on prevalence and effects of homelessness in Germany is still scarce, increasing research efforts are urgently needed in this area. The results of our cross-sectional study can be used as a basis for long-term observational studies, as well as for intervention studies to compare different approaches to medical care with special attention to female, foreign, and mentally ill patients.

Conclusions for implementing into practice:

- A fifth of all patients in the Berlin Health Center are female.
- Many homeless patients are young or middle-aged, with almost half reported having received a middle school certificate or higher/moderate or high school education.
- The acute somatic and psychological symptoms among homeless patients are similarly heterogeneous to the illnesses of general practice; in addition they suffer from illnesses associated with homelessness.
- In many cases, patients could have taken advantage of regular medical care; however the access to such services is not possible due to a variety of reasons.
- The data on prevalence effects of homelessness in Germany is scarce and increased research efforts are urgently needed in this area.

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