Gender, hospitalization and mental disorders among homeless people compared with the general population in Stockholm

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Background: The aim was to study the prevalence of mental disorders among homeless men and women admitted for inpatient treatment in hospitals. Methods: Hospital care utilization of homeless people, 1364 men and 340 women, was compared with a control group consisting of 3750 men and 1250 women from the general population, 1996–2002. Results: Homeless women ran a higher risk for mental disorders than women in the population [risk ratio (RR) 20.88]; their risk was also higher than the risk for homeless men (RR 1.20). Younger homeless women had the highest risk (RR 2.17). Alcohol use disorders were equally common among homeless men and women, but women had more drug use disorders (RR 1.32). Women had higher risk of schizophrenia (RR 2.79), and personality disorders (RR 2.73). When adjustment was made for substance use disorders, no increased risk for mental disorder was found in the homeless group. Conclusion: The elevated risk for mental disorders among the homeless was mainly related to substance use problems. Younger homeless women had the highest risk of mental disorder.

Keywords: alcohol and drug use, gender, homelessness, hospitalization, mental disorders.

Introduction

Despite studies reporting that homeless people have high levels of mental health problems, including substance use related disorders,¹⁻¹¹ little is known about the rates of hospital admissions among the homeless compared with the general population. Studies about health among the homeless often report findings for men and women combined, obscuring important findings about women.⁸ One register-based study, reporting psychiatric admissions among the homeless, shows that fewer homeless women compared with homeless men received hospital care for alcohol or illicit drug use, schizophrenia and other psychotic disorders, but more women received care for multiple drug use and affective disorders.⁶

This study is based on a cohort of homeless people from Stockholm. Between 1993 and 2001, there were ~3000 homeless people in Stockholm, 22–25% of whom were women.¹²,¹³ In this study, ‘homeless people’ are defined as people without a residence, owned or rented, thus having no fixed address, and, consequently, having to rely on temporary housing options, or living rough. People living in institutions or shelters and who have nowhere to live when they are discharged are also included in the definition of homeless people.¹²,¹³

Through the social welfare services in Sweden, homeless people receive support for basic living costs, e.g. housing, as well as support for treatment of addiction related problems.

In this article we present results from a study of inpatient treatment in general hospitals, including psychiatric clinics and treatment for substance use disorders during 1996–2002, among adult men and women who were homeless in 1996. The admissions were mainly on a voluntary basis, but also include involuntary treatment. We compared their hospitalization with a control group of men and women from the general population. By studying hospital admissions data for a large group of homeless men and women, and of men and women in the general population over time, we obtain a general and relatively reliable assessment of psychiatric disorders, including alcohol and drug use disorders, in this group.

During the period 1996–2002, the follow-up period of this present study, the Stockholm County Council started a mobile psychiatric outreach team for homeless people in 1998 and an outpatient clinic for the homeless people in 2001. Treatment of mental health problems and substance use problems are administrated separately in Stockholm. Both offer inpatient and outpatient services.

The aim is to study and describe psychiatric morbidity among homeless men and women by comparing their utilization of hospital care for mental disorders with a control group of men and women from the general population. The aim is also to assess the impact of substance use disorders on psychiatric morbidity among homeless people.

Methods

This study monitors a cohort of 1704 people, 1364 males (80%) and 340 females, who were documented as homeless and brought to the attention of the City of Stockholm Social Welfare Services at some point during 1996. The majority of the group (all males and 187 females) were compiled from one Social Welfare Office for the Homeless. In order to increase the proportion of women in the cohort, the study also included women who on at least one occasion in 1996 had visited the City of Stockholm Women’s Hostel (192 women, 39 of whom...
were also brought to the attention of the Social Welfare Office for the Homeless, and 153 of whom were known within Stockholm city district social services departments). The mean ± standard deviation (SD) age for the homeless women was 38 ± 12 years [95% confidence interval (CI): 36.9–39.4], and for the homeless men 45 ± 13 years (95% CI: 43.9–45.3, from 20 to 92 years). Of the women, 7% were born in 1939 or earlier, 43% were born between 1940 and 1959 and 50% in 1960 or later. Of the men, 17% were born in 1939 or earlier, 53% were born between 1940 and 1959 and 30% in 1960 or later. The mean ± SD age of the homeless group as a whole was 43 ± 13 (95% CI: 42.7–43.9, range 20–92 years), which was the same mean age for all homeless persons in Stockholm in 1996.14 All homeless people who in 1996 had contact with the Social Welfare Office for the Homeless in Stockholm were identified by social services records, and all women who in 1996 had stayed at least one night at a social services hostel for women were identified by the hostel records. The major difference in this group, compared with the whole homeless population in Stockholm 1996, ~3000 people, was that these women were slightly younger.14 The cohort consists of people (men and women) who, at the time of entry into the study, resided in various places, such as homeless hostels, institutions, or pre-discharge flats or were sleeping rough. More information about the group is described in a previously published article.15

Linkage was performed with databases maintained by Statistics Sweden, where data concerning citizenship, income for the year 1996 and marital status could be collected for the homeless group. Of the homeless men, 89% were single (87% of the women), 72% had Swedish citizenship (83% of the women) and 25% had no income (33% of the women). In the general population, 60% of the men were single (54% of the women), 94% of the men and women had Swedish citizenship and 3% of the men and women had no income.

The control group consists of a random sample of 5000 people from the general population, 3750 males and 1250 females. Everyone in the control group was alive at the beginning of 1996. The sample, matched for age with the homeless group, has been collected from Statistics Sweden. The office of Statistics Sweden is a government agency that produces official statistics used to guide policy and also for research. The morbidity and mortality in the control group are obtained from the Centre for Epidemiology at the National Board of Health and Welfare.

Data on healthcare consumption (in-patient data 1996–2002) were collected from the Hospital Discharge Register in Sweden maintained by the Centre for Epidemiology at the National Board of Health and Welfare. These data contain information on all individual discharges, including dates of admission and discharge and the principal and secondary discharge diagnoses, coded in accordance with the International Classification of Diseases (ICD). The study contains ICD 9 (1987–1996) and ICD 10 (from 1997), but follows the chapter division of ICD 10. The study includes people who were admitted for hospital care for mental disorders, including alcohol and drug use disorders, according to principal and secondary diagnoses (ICD 9:290–319, ICD 10:F00–F99).

The high quality of the Swedish patient register, in which all hospital admissions are registered and linked to an individual social security number, with very high coverage rates, provides us with an excellent basis for this type of study.16

Data on deaths were collected from the Cause of Death Register, maintained by the Centre for Epidemiology at the National Board of Health and Welfare. To estimate relative risk (RR) and the number of days and admissions for hospital care, the data are based on person-years (PY) taking into account the number of deaths throughout the period 1996–2002. The computer package SPSS 16.0 was used for statistical analysis.

Since we only have data about income, citizenship and marital status for the homeless group, but lack this information for the control group, we cannot assess the degree to which the differences between the groups can be explained by these variables. Utilizing a Poisson regression model, an estimate of the extent of inpatient care attributable to these variables was made for the homeless group.

Risk groups

In order to assess the impact of substance use disorders on the level of hospital treatment for mental disorders, the homeless women and men were subdivided into two risk groups, drugs and alcohol, according to principal and secondary diagnoses (ICD 9: 291–292, 303, 304–305X, ICD 10: F10-19). Homeless persons who had a drug use disorders during the follow-up period, 1996–2002, were included in the ‘Drug’ group (49% of that group had also been hospitalized for alcohol use disorders). Those who had alcohol use disorders, but had ‘not’ been hospitalized for drugs, were included in the ‘Alcohol’ group. For the estimates of number of days and admissions for hospital care, data are based on PY taking into account the number of deaths in the risk groups throughout the period 1996–2002.

Results

Nearly half of the homeless group, but only a small percentage of the control group had mental disorders, including alcohol or drug use disorders (table 1). Homeless women ran very high risks (RR 20.88; CI: 14.4–30.3), compared with women in the population, and homeless women born between 1950 and 1959 (at the baseline: 37–46 years old) had particularly high risk levels (RR: 38.19; 16.3–88.4). Homeless men were at high risk in relation to men in the control group; the highest risk (RR: 17.77; 12.2–26.0) was found in men born between 1940 and 1949 (47–56-years-old). In the homeless group, women ran a significantly higher risk compared with men (RR 1.20; 1.0–1.4), especially women born after 1970 (at the baseline 18–26-years-old, RR: 2.17; 1.1–4.2).

In the homeless group, the variables income, citizenship and marital status (controlling for age) only explain 3% of the variance in inpatient admissions in the Poison regression performed. The RRs for admission to inpatient care for the homeless groups compared with the control groups reported here can therefore to a very low degree be attributed to these factors.

The dominant diagnostic group for homeless men and women, as well as for men in the controls, was alcohol and drug use disorders (table 2). The prevalence of alcohol and drug diagnoses among the homeless was 42% among the men and 41% among the women, in the controls, 2% among the men and <0.5% among the women.

Homeless men ran 22 times the risk of having an alcohol and drug diagnosis compared with men in the controls. Homeless women, on the other hand, ran nearly 89 times the risk compared with women in the controls. In terms of risk, there was a slightly increased risk, not statistically significantly assured, for homeless men compared with women having an alcohol diagnosis (RR 1.1; 95% CI: 0.9–1.4, not shown in table 2). Homeless women had a higher risk of drug use disorders (RR 1.32; 1.1–1.7), compared with homeless men, and the risk was highest in the group born after 1960 (RR 1.40; 1.0–2.0).

Homeless women had increased risks for most substances, with the exception of cannabis (table 2).
Among the homeless, 11% of the men and 22% of the women had a 'psychosis diagnosis', compared with 1% of the men and women in the control groups (table 2). In the homeless group, 5% of the men and 15% of the women had schizophrenia, compared with only 1% of men and <0.5% of women in the controls. Among the homeless, 8% of the women had both schizophrenia and alcohol or drug use disorders, and 3% of the men (not shown in table 2). In terms of risk, homeless women ran an almost 3 times higher risk than homeless men of having schizophrenia, and a 38 times higher risk compared with women in the control group (table 2).

Homeless men had a higher risk, but not a statistically significant one, for alcohol psychosis compared with homeless women (RR 1.36; 95% CI: 0.7–2.7, not shown in table 2). Homeless women had a higher risk for drug psychosis, but not a statistically significant one, compared with homeless men (table 2).

In the homeless group, 3% of the men and 9% of the women had a ‘personality/behaviour disorder’, while in the controls <0.5% of the men and women had a similar diagnosis. Homeless women, compared with homeless men, had a nearly three times higher risk of having a personality/behaviour disorder (table 2).

### Risk groups—drugs and alcohol

When homeless men and women with diagnoses of substance use disorders are compared with men and women in the control groups with these diagnoses, no difference in risk for mental disorders is found (table 3).
Concerning ‘hospital days’ for mental disorders, homeless women in the risk groups (Alcohol and Drugs) had in total 71% of all hospital days of homeless women in the study (not shown in the table 3). Homeless men in the risk groups had 94% of all hospital days of homeless men in the study. Women in the control group and included in the risk groups had 7% of all hospital days for women in the controls. The men in the control group and included in the risk groups had 46% of all hospital days for men in the control group.

People in the Drugs risk group had more days in hospital care for mental disorders compared with persons in the Alcohol risk group (table 4).

Homeless women with a drug diagnosis had the highest number of hospital days for psychotic symptoms, neurotic/stress-related disorders, personality disorder and drug use disorders. Homeless men in the Drug risk group had the highest number of days in hospital for schizophrenia (table 4), whereas homeless women in the Drug risk group had the highest prevalence of schizophrenia (18% among women, compared with 13% among men, not shown in table).

Discussion

This register-based study of psychiatric morbidity is the first of its kind which is based on a larger cohort of homeless men and women, where hospitalization for psychiatric disorders is compared with a gender- and age-matched control group from the general population. While it is clear that the cohort was homeless 1996 we have no data on their housing during the follow-up period. It is likely that some members of the cohort succeeded in acquiring housing, with other associated improvements in their living conditions during this period. This would lead to an underestimation of morbidity related to homelessness.

The study confirms earlier reports that homeless people have poorer mental health than the general population. Over half of the homeless women and nearly half of the homeless men had a psychiatric diagnosis, whereas this was the case for only 3–4% of the control groups. In addition, the study shows that homeless women had higher risks for psychiatric disorders than homeless men, especially younger homeless women. Furthermore, the difference between homeless women and women in the population was larger than the difference between homeless men and men in the population.

The higher mean age for men compared with women in this study is consistent with the survey of 3000 homeless people in Stockholm 1996 (baseline year for this study), which strengthens generalizability in relation to the homeless population.

The dominant diagnostic group among the homeless was alcohol and drug use disorders, which is consistent with other studies. Surprisingly, younger homeless women (18–36-years-old at the baseline) had a higher risk for alcohol disorders than homeless men. In contrast to earlier study, this study also found that homeless women had higher risks for all drug use disorders, with the exception of cannabis.

A large difference between the homeless group and the control group was found for psychotic symptoms, with the biggest difference being between homeless women and women in the control group. A new finding in this study was that homeless women had higher rates of psychotic symptoms than homeless men, and that nearly three times as many homeless women had been diagnosed with schizophrenia compared with men. The prevalence of schizophrenia in combination with alcohol and drug use disorders was nearly...
three times higher among the homeless women than among homeless men.

Concerning affective/mood disorders, more homeless women than men had this diagnosis, which is similar to a previous study. New findings in this study are that more homeless women than men, and nearly three times more, had been diagnosed with personality/behaviour disorder. The fact that personality/behaviour disorder is more common among women than among men is an important factor for the social services and healthcare services to bear in mind, so that they can offer as much help as possible to homeless women to get out of homelessness.

Most days of the hospital care for psychiatric disorders, among homeless men and women, were related to alcohol or drugs. The analysis of ‘risk groups’, e.g. people with substance use disorders, shows that once substance use disorders were controlled for, there was no significantly increased risk for psychiatric morbidity in the homeless group. Substance use disorders had a powerful impact on hospital utilization in all the groups in this study. Men in the control group, who belonged to the Drug risk group, had for example most hospital days for mental disorders. New findings are also that homeless women with a drug diagnosis had the highest number of hospital days for psychotic symptoms, neurotic/stress-related disorders, personality disorder and drug use disorders. The division of the homeless group and the control group into risk groups also shows that the prevalence of schizophrenia was higher among homeless women with drug use disorders than among homeless men with such disorders. However, the number of days in hospital care for schizophrenia was higher among homeless men having a drug use disorder.

Homeless people have higher rates of excessive use of alcohol and drugs; they avoid outpatient contacts and have difficulties in managing prescribed medications. All this contributes to the deterioration of health, and, consequently, an increase in hospital treatment. In recent decades, the number of hospital beds in the psychiatric care has decreased in Sweden, while outpatient treatment has increased. A result of this change is that only the sickest and neediest cases are admitted to hospitals. Therefore, when homeless people visit the health service, they are sicker than the rest of the population. Analysing homeless people from a hospital perspective gives us a picture of how much ill-health there is among homeless men and women. From a gender perspective, homeless women had the worst mental ill-health situation.

The study shows that alcohol and drugs play a crucial role in the high levels of psychiatric hospital care for both homeless people and the general population. These findings place new demands on societal support systems, especially healthcare and social services, when helping homeless people.

Treating severe substance dependence is difficult at best. Treating homeless people represents an even greater challenge, calling for highly specialized services. A literature
review of treatment for homeless people identified several promising approaches to treatment for this group. It remains a challenge to implement these research-based treatment protocols in practice however.

An earlier study demonstrated that a reduction of homelessness led to immediate results in terms of reduced healthcare utilization in this group. It is particularly important that these efforts reach homeless women, especially younger homeless women. Societal efforts have traditionally been focused on homeless men. The result of this study indicates that support efforts should be focused on the reduction of alcohol and drug use among homeless men and women.

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Key points

- Homeless women had higher risks for psychiatric disorders than homeless men, especially younger homeless women.
- Nearly three times more homeless women than men had been diagnosed with schizophrenia and personality/behaviour disorders.
- Younger homeless women had a higher risk for alcohol disorders than younger homeless men.
- Homeless women had higher risks for all drug use disorders, with the exception of cannabis.
- The present study highlights the importance that efforts reach homeless women, especially younger homeless women.

References