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Alcoholism in homeless men in the mid-nineties: results from the Bavarian Public Health Study on homelessness

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Summary Parallel to structural economic changes homelessness has become publicly more visible and has received increased media attention in Western industrialized countries. Most studies on mental illness and homelessness in recent years were carried out in North America but only few studies in Europe have dealt with these issues. The goals of the present study were (1) to assess alcohol abuse and dependence as well as other mental disorders in a representative sample of homeless men in Munich using reliable methods of case identification (Structured Clinical Interview for DSM-IV (SCID)), (2) to compare homeless alcoholics with homeless non-alcoholics in our sample on relevant variables, and (3) to compare our data from the Munich sample with data obtained by others. According to our results, the life-time prevalence of any SCID-DSM-IV Axis I diagnoses was 93.2% and the life-time prevalence of substance use disorder was 79.6%. The single most prevalent diagnosis among homeless males in Munich was alcohol dependence (life-time 72.7%); alcohol abuse (life-time 5.5%) and drug abuse/dependence were considerably lower in prevalence (life-time 19.1%) (weighted data). A higher rate of psychotic disorders was found for non-alcoholic homeless men. Data show that alcoholism and its consequences were more severe in the Munich as compared to North American samples. Homeless alcohol dependent men showed a high comorbidity with other mental disorders (life-time) such as mood disorders (36.4%), anxiety disorders (16.4%), drug abuse/dependence (18.9%) and psychotic disorders (4.5%). Of those with alcohol dependence at some time during their life 59.1% had experienced at least one other life-time mental disorder. Alcohol-related behavioral patterns and

symptoms as well as general social functioning are described. Considering the very high prevalence of alcohol dependence (frequently in combination with other mental disorders), the participation in alcohol rehabilitation and other services as well as self-help groups was rather low among Munich homeless alcoholics. Currently homeless men in Germany are adequately supplied with food, clothes, and shelter but psychiatrically (and medically) neglected. Existing concepts and programs for dealing with these problems need to be implemented.

Key words Alcoholism · Homelessness · Epidemiology · Mental Disorders

Introduction

Homeless individuals have been the focus of much public attention in recent years especially in industrialized English-speaking countries like the United States, Great Britain, and Australia. However, the issue of mental illness in the homeless was largely neglected on the European continent. Studies in North America indicate changes in the composition of the homeless population. As Koegel et al. (1988) pointed out, the homeless population in American cities no longer fits the stereotype of the older white male skid row alcoholic, but has become more heterogeneous. Resulting from economic changes and higher skill requirements for jobs there has apparently been quite an increase in the number of homeless people who (in North America) today tend to be younger and also include women, adolescents, and whole families.

According to the results of recent studies with adequate methodology (Koegel et al., 1988; Burnam and Koegel 1988) the prevalence rates for mental illness among the homeless are considerably higher than in representative community samples. Welte and Barnes (1992) assessed drinking patterns of 412 homeless and marginally housed adults in New York state and concluded that “many of the homeless and marginally housed are abstainers (40%, as opposed to 26% in the state as a whole), but a startling

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13% drink more than twenty drinks a day, as opposed to less than 1% in the state as a whole" (p. 303). Other studies have reported higher rates of alcohol problems: Basuk et al. (1984) surveyed guests at a Boston shelter and found that 29% were alcoholics. Mulkern et al. (1985) employed a broader sampling procedure and arrived at a comparable estimate for alcoholism in the homeless (32%) in Boston. Ladner et al. (1986) based their study on intake records of the shelter system in New York City and reported that 23% of residents had drinking problems; three studies from other US cities arrive at similar estimates (Rosnow et al. 1985; Arce et al. 1983; Brown et al. 1983). Several other studies report somewhat higher rates for alcoholism in the homeless (Fisher et al. 1986; Solarz and Mowbray 1985; Morse et al. 1985; Roth et al. 1985; Robertson et al. 1985).

Some of the cited studies from the US suggest that the contemporary *alcoholic homeless* (as opposed to non-alcoholic homeless individuals) is older, Caucasian, male, an armed forces veteran, more likely to have been married (and divorced), and more likely to experience problems in physical and/or mental health. There is some evidence that this demographic profile mostly applies to the alcoholic homeless person without mental illness, whereas the dually diagnosed homeless individuals (alcoholism plus another mental illness) more resembles the non-alcoholic homeless. Possibly the "traditional skid row alcoholic has been joined by alcoholics who, like the new homeless in general, are younger, non-white and more likely to suffer from a mental disorder (in the United States)" (Koegel and Burnam 1988, p. 1011).

There are several methodological problems for studies about the prevalence and course of mental illness among the homeless, because only parts of the homeless population are known; there are no registers from which random samples could easily be drawn. Therefore, the majority of the studies reported in the literature are based on selected groups ("samples of convenience") such as users of public shelters. Another methodological limitation of many studies is their reliance on self-report questionnaire data rather than structured or standardized interviews.

In a pilot study for this study using the Diagnostic Interview Schedule (DIS) for DSM-III diagnoses, we successfully tested the feasibility of such an epidemiologic project in the city of Munich (Fichter et al. 1996, 1997; Greifenhagen and Fichter 1997). In the present Bavarian Public Health Study on Homelessness we built on this experience and assessed mental disorders according to DSM-IV criteria in a larger representative sample of homeless individuals, with a refined sampling strategy and updated diagnostic instruments. Thus, this study aims at assessing the prevalence of alcohol abuse and -dependency and its comorbidity with other mental disorders in a random sample of single homeless men representative for the homeless population of the city of Munich, Germany.

Method

Measures and instruments

A German translation of the Structured Clinical Interview for DSM-IV (SCID-I) (cf. First et al. 1996) yielded both current and lifetime diagnoses. In addition to the SCID, reliable data on socio-demographic variables, degree of social support, use of medical and other services, the development of homelessness in each individual and several other areas were obtained. The Mini Mental State Examination (MMSE) (Folstein et al. 1975) assessed general cognitive impairment.

Sample

In order to be classified as homeless, a person had to be homeless ("no home-criterion") for at least 30 days preceding the interview ("time-criterion") and he had to have stayed predominantly in Munich ("location-criterion"). Inclusion criteria and definition of homelessness for this study were as follows: (1) The person was male and his command of the German language was sufficient for conducting the interview, *and* (2a) the person did not have a home of his own and in the last 30 days before the interview he had slept at the homes of friends or relatives; the stay with these friends or relatives had not been continual and the person had changed sleeping place at least three times during the last 30 days, *or* the person had been forced to spend the nights outdoors *or* (2b) during the last 30 days the person had lived in a shelter for homeless men, where he had to apply for a bed every day, *or* (2c) the person had spent the past 30 days at places which were not intended for sleeping, such as parks, streets, railroad cars, buildings under construction or dilapidated houses.

A sampling procedure similar to that described by Koegel et al. (1988) and Fichter et al. (1996) was used. The present study aimed at obtaining a representative sample of homeless males in a large German city (Munich; approx. 2 mio inhabitants). Because the characteristics of the population of homeless people in Munich (size, composition) were largely unknown, a *pre-sampling* procedure had to be implemented. We hypothesised that homeless people fall into one of the following three overlapping groups (sectors): (1) those who make use of shelters (shelter sector); (2) those who make use of free meal services or of free counselling services (indoor/meal sector), and (3) those who congregate on the streets or in other outdoor settings of the city of Munich (outdoor sector). The pre-sampling was done to get the actual number and distribution of homeless individuals across the city of Munich and to obtain the proportion of homeless men in each of the three sectors. Based on the information obtained in the pre-sampling interview each person was assigned to one sector. The pre-sampling was conducted to determine a proportionate allocation for the main interviews in three nested sampling strata. We then randomly sampled homeless males in these three strata until the proportions indicated by the pre-sampling were met (see below). A short pre-sampling interview served to find out whether or not a person met the study's definition of homelessness and to which sector he belonged. The three sectors were defined hierarchically in the order listed above; this means that a person who mentioned that he had stayed in a shelter at least once in the preceding 30 days was counted as belonging to the "shelter sector", even if he also had used free meal services or free counselling or had slept outdoors. Similarly, a person who had mainly lived outdoors but occasionally used free meal services or free counselling was counted as belonging to the "indoor/meal service sector". The "outdoor sector", thus, contains only persons who used neither shelter, mission or voucher hotelroom beds nor free meal services or free counselling during the 30-day time period preceding the pre-sampling. A person classified as belonging to the "shelter sector" had slept in a shelter within the last 30 days. A person classified as belonging to the "indoor/meal service sector" had made use of one or several soup kitchens or similar institutions or visited free counselling ser-

vices within the last 30 days, but had not used a shelter. Vagrants were not excluded from the sample.

Final sampling and selection for main interview

The final sample was drawn from the universe of facilities in the “shelter sector” (1), the “indoor/meal service sector” (2) and the “outdoor sector” (3). The pre-sampling survey had been designed to reveal the number and relative proportions of homeless people in each sector. Interviews were proportionally allocated to persons in the three sectors on the basis of the results of the pre-sampling survey. Selection of individuals to be interviewed at each location was random and consisted of two steps. In each location, the inter-

viewer first counted how many groups of homeless men could be distinguished. After choosing one group at random, one person within this group was chosen by a randomization procedure (cf. Schnell, Hill and Esser 1988). Of the 301 homeless males who were approached for the main interview, 265 (88%) participated. The distribution of these 265 homeless males across the three sectors was as follows: 59.6% were from the “shelter sector”, 35.8% from the “indoor/meal service sector”, and 4.5% from the “outdoor sector”. The distribution of the presampling across sectors, however, was 27.5% shelter sector, 64% indoor/meal service sector, and 8.5% outdoor sector. To account for sampling bias, data were weighted by the sector distribution of the population using the SUDAAN computer program (Shah, Barnwell, and Bieler 1995). The weighting factor for the shelter sector was 1.78 (281/158), for the

Table 1 Demographic and homelessness characteristics in male homeless in Munich with or without alcoholism (based on lifetime prevalence); ($n = 265$ weighted cases)

	A ₁ Alcoholics ($n = 204$)		A ₂ Non- alcoholics ($n = 61$) %	Chi ² -test/ t -test A _{1A} vs. A ₂
	A _{1A} Alcohol depen- dent persons ($n = 187$) %	A _{1B} Alcohol abus- ing persons ($n = 17$) %		
Age (years)				
18–25	1.0	3.2	3.2	Chi ² = 11.8 (df = 4)*
26–45	57.7	56.5	32.2	
46–60	37.4	40.4	54.3	
61–65	1.9	0.0	9.4	
> = 66	2.1	0.0	0.8	
Mean \pm SE (years)	44.1 \pm 0.8	45.0 \pm 2.6	46.8 \pm 1.4	n.s.
Range: ($n = 265/187/17/61$)	22–68	24–59	18–68	
Marital Status				
Married	0.0	0.0	0.0	n.s.
Separated	4.5	0.0	13.3	
Divorced	36.3	50.1	29.2	
Widowed	1.9	3.2	11.6	
Never married	57.3	46.7	45.8	
($n = 178/16/55$)				
Percentage with children				
No child	54.6	28.1	58.9	n.s.
One child	21.1	40.4	8.1	
\geq two children	24.3	31.5	33.0	
($n = 181/17/57$)				
Duration of homelessness				
Mean \pm SE (years)	9.5 \pm 0.9	2.3 \pm 1.0	3.8 \pm 0.8	$t = 4.9^{**}$
Range: ($n = 177/16/54$)	0–48	0–28	0–22	
Age at onset of homelessness				
Mean \pm SE (years)	33.8 \pm 0.9	41.6 \pm 2.9	39.1 \pm 1.4	$t = 3.2^{**}$
Range: ($n = 185/17/57$)	12–60	18–58	18–59	
Age at onset of lifetime alcohol problems				
Mean \pm SE (years)	23.6 \pm 0.9	33.5 \pm 2.5	–	–
Range: ($n = 161/2/0$)	9–56	30–37		
Number of homeless episodes				
1 \times	53.9	68.1	80.0	Chi ² = 9.6 (df = 2)**
2–5 \times	34.3	19.2	16.3	
6 times and more	11.8	12.7	3.7	
Mean \pm SE	2.6 \pm 0.3	2.1 \pm 0.8	1.7 \pm 0.5	n.s.
Range: ($n = 178/16/55$)	1–30	1–8	1–15	

SE = Standard error of the weighted mean estimate

* $P < 0.05$; ** $P < 0.01$; n.s. = not significant

Table 2 Lifetime prevalence of SCID-DSM-IV disorders (excluding alcohol use disorder, per 100 persons) in homeless men with or without a lifetime diagnosis of alcoholism ($n = 265$ weighted cases)

Lifetime prevalence	Munich (Germany) Homeless Study (weighted cases)				
	A ₁ Alcoholics (<i>n</i> = 204)		A ₂ Non-alcoholics (<i>n</i> = 61) %	Chi ² -test A _{1A} vs. A ₂ (df = 1)	Risk ratio A _{1A} /A ₂
	A _{1A} Alcohol dependent men (<i>n</i> = 187) %	A _{1B} Alcohol abusing men (<i>n</i> = 17) %			
Any psychotic disorder ^a	4.5	12.3	27.1	8.8**	0.2
Schizophrenia	0.5	0.0	18.4	7.4**	0.03
Schizophreniform	0.0	0.0	0.0	—	—
Any Mood disorder ^b	36.4	12.7	25.8	n.s.	1.4
Major Depression	23.3	9.5	21.2	n.s.	1.1
Bipolar I disorder	5.1	3.2	3.9	n.s.	1.3
Bipolar II disorder	0.2	0.0	0.0	n.s.	—
Dysthymic disorder	0.9	0.0	0.8	n.s.	1.1
Cognitive impairment	12.6	0.0	3.2	7.0**	3.9
Any anxiety disorder ^c	16.4	9.5	15.8	n.s.	1.0
Panic disorder	2.6	0.0	8.6	n.s.	0.3
Generalized anxiety disorder	0.5	0.0	1.6	n.s.	0.3
Antisocial personality disorder	31.9	18.6	4.1	22.0**	7.8
Drug use disorder	18.9	6.3	6.3	6.3*	3.0
Any axis I disorder other than alcoholism	56.0	31.3	68.7	n.s.	0.8

* $P < 0.05$; ** $P < 0.01$; *n.s.* = not significant

^a Including schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, brief psychotic disorder, psychotic disorders NOS, GMC, and substance induced psychotic disorders

^b Including major depression, bipolar disorders, dysthymia, mood disorders NOS, GMC and substance induced mood disorders

^c Including panic disorder, agoraphobia, social phobia, specific phobia, obsessive compulsive disorder, posttraumatic stress disorder, general anxiety disorder, anxiety disorders NOS, GMC, and substance induced anxiety disorders

indoor/meal service sector 6.88 (654/95), and for the outdoor sector 7.25 (87/12). All data reported here from the main study are weighted data. The weighting procedure creates an artificial increase in sample size ($n = 1022$) and in rating these data the reader needs to keep in mind that the actual sample size consisted of 265 homeless males.

Results

The current (one-month) prevalence of alcohol dependence in our sample of homeless men in Munich (weighted cases) was 58.4%, and for alcohol abuse it was 2.6%. 4.4% of the sample carried a current diagnosis of drug dependence and 0.9% of drug abuse. For the 265 homeless males (weighted cases) the lifetime prevalence rates for alcohol dependence was 72.7%, alcohol abuse 5.5%, drug dependence 14.0%, and drug abuse 5.1%. Alcohol dependence constituted the most frequent diagnosis of all DSM-IV diagnoses in our sample of homeless men. The lifetime prevalence of mood disorders was 32.8%, anxiety disorders 15.9%, and psychotic disorders 9.8%.

Table 1 shows the demographic and homelessness characteristics for the Munich homeless men. In comparison to non-alcoholic homeless men those with alcohol dependence showed more chronicity as evidenced by a significantly longer duration of homelessness, a lower age at onset of homelessness, and a higher number of homeless-

ness episodes. The two groups did not differ with respect to average age, marital status, and percentage of individuals with children.

Table 2 shows the lifetime prevalence of mental disorders for three subgroups of our sample (alcohol dependency/alcohol abuse/non-alcoholic lifetime). In our sample the diagnostic category "any psychotic disorder" was significantly more prevalent among non-alcoholic as compared to alcoholic homeless men. The high prevalence of schizophrenia among non-alcoholics is the main reason for this finding, which remains largely unchanged when the substance induced psychotic disorders are excluded. Koegel and Burnam (1988) reported that alcoholic and non-alcoholic homeless individuals showed the same rate of psychotic disorders. Otherwise, the data from this study on homeless individuals in Los Angeles are in agreement with our data by showing a trend for higher prevalence rates of mood disorders, anxiety disorders, antisocial personality, and drug use disorders for homeless men diagnosed with alcohol dependence. In comparing the data from Munich and Los Angeles, it must be kept in mind that different instruments were used in both samples (SCID-I DSM-IV in Munich and DIS-DSM-III in Los Angeles).

Generally, comorbidity between alcoholism and other mental disorders was high. 56.0% of the alcohol dependent homeless males and 31.3% of the alcohol abusing homeless males in Munich showed one or more other

Table 3 Current (one month) prevalence of DSM-IV disorders (excluding alcohol use disorder) per 100 persons among those with and without a lifetime diagnosis of alcoholism in Munich homeless study ($n = 265$ weighted cases)

Current prevalence (one month)	Munich (Germany) Homeless Study				
	A ₁ Alcoholics ($n = 204$)		A ₂ Non-alcoholics ($n = 61$) %	Chi ² -test A _{1A} vs. A ₂ (df = 1)	Risk ratio A _{1A} /A ₂
	A _{1A} Alcohol dependent men ($n = 187$) %	A _{1B} Alcohol abusing men ($n = 17$) %			
Any psychotic disorder ^a	1.5	12.3	22.2	8.1**	0.1
Schizophrenia	0.5	0.0	15.1	5.7*	0.03
Schizophreniform	0.0	0.0	0.0	—	—
Any Mood disorder ^b	18.8	6.3	10.2	n.s.	1.8
Major Depression	5.5	6.3	8.6	n.s.	0.6
Bipolar I disorder	1.9	0.0	0.8	n.s.	2.4
Dysthymic disorder	0.9	0.0	0.8	n.s.	1.1
Cognitive impairment	12.6	0.0	3.2	7.0 **	3.9
Any anxiety disorder ^c	12.1	6.3	11.1	n.s.	1.1
Panic disorder	1.2	0.0	4.7	n.s.	0.3
Generalized anxiety disorder	0.5	0.0	1.6	n.s.	0.3
Antisocial personality disorder	31.9	18.6	4.1	22.0 **	7.8
Drug use disorder	4.7	6.3	3.9	n.s.	1.2
Any axis I disorder other than alcoholism	30.7	24.9	45.1	n.s.	0.7

* $P < 0.05$; ** $P < 0.01$; n.s. = not significant

^a Including schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, brief psychotic disorder, psychotic disorders NOS, GMC, and substance induced psychotic disorders

^b Including major depression, bipolar disorders, dysthymia, mood disorders NOS, GMC, and substance induced mood disorders

^c Including panic disorder, agoraphobia, social phobia, specific phobia, obsessive compulsive disorder, posttraumatic stress disorder, general anxiety disorder, anxiety disorders NOS, GMC, and substance induced anxiety disorders

mental disorders besides alcohol problems. The relatively high rate of psychotic disorders in non-alcoholic homeless men in Munich constitutes a major difference between the German and the US samples.

Table 3 shows the one-month prevalence of mental disorders other than alcohol abuse/dependency. Similar to the lifetime data presented above the current prevalence in non-alcoholic homeless men was higher for schizophrenia (and therefore any psychotic disorder) and lower for cognitive impairment and antisocial personality disorder. Excluding substance induced psychotic disorders or excluding substance induced mood disorders did not change the statistical significances of the data shown in Table 3.

Psychiatric comorbidity rates were high. Over a lifetime, only 6.7% and currently (one month) only 25.8% carried no psychiatric SCID-DSM-IV diagnosis. A substantial proportion received only one diagnosis (lifetime 53.5%; one month 49.7%). A considerable proportion received two diagnoses (lifetime 27.2%; one month 17.5%) or three or more diagnoses (lifetime 12.6%; one month 7.2%). The most frequent association existed between substance use/dependency and mood disorders. In Table 4 the term "drug use disorder" includes all substance use disorders except alcohol abuse or dependency. The non-alcoholic group was by no means mentally healthy. Only 30.5% (lifetime) and 53.4% (currently) never had suffered from any SCID-DSM-IV mental disorder. The remaining 69.5% (lifetime) or 46.6% (current prevalence) had one or

more mental disorders; details are given in Table 4. 62.3% carried one, 5.6% two, and 1.6% three lifetime DSM-IV diagnoses. Multiple diagnoses (two or more) were more frequent in alcohol dependent homeless men (as compared to non-alcoholic homeless men).

The homeless men in our sample were asked whether a specific mental disorder began before their first episode of homelessness, concurrently with it or afterwards (see Table 5). 76.2% of the alcohol dependent men reported that they had experienced alcohol problems before their first episode of homelessness; for 14.5% it occurred concurrently, and 9.3% reported that they developed alcohol problems after becoming homeless. A similar pattern was reported for major depressive episodes (67.6% of the alcohol dependent men developed before; 14.5% concurrently; 17.9% afterwards). About two thirds (64.9%) of the homeless men with a lifetime diagnosis of affective disorder reported that the onset of affective disorder occurred before they had become homeless. Of those with a lifetime diagnosis of anxiety disorder, 62.6% reported onset of anxiety disorder before homelessness. Of all homeless men with an axis I diagnosis, 65.3% reported an onset of that disorder before homelessness, 14.5% reported that the onset of the disorder and homelessness occurred about the same time, while 20.2% said that the onset of mental illness was after they had become homeless. Alcohol dependent men (in comparison to non-alcoholics) more frequently reported that the onset of illness was be-

Table 4 Psychiatric comorbidity (lifetime, one month) in homeless males with or without alcoholism (lifetime) in Munich ($n = 265$ weighted cases)

	Lifetime			1 month		
	Alcohol dependent men ($n = 187$) %	Alcohol abusing men ($n = 17$) %	Non-Alcoholics ($n = 61$) %	Alcohol dependent men ($n = 187$) %	Alcohol abusing men ($n = 17$) %	Non-Alcoholics ($n = 61$) %
No diagnosis (except alcohol dependence/abuse where appropriate)	40.9	68.7	30.5	63.6	75.1	53.4
One DSM-IV diagnosis (excluding alcohol dependence/abuse)	37.3	24.9	62.3	25.2	18.6	42.7
Drug use disorder (drugs/medication)	8.9	0.0	3.9	2.3	0.0	3.9
Anxiety disorder	5.0	3.2	11.8	4.4	0.0	8.0
Mood disorder	18.6	9.5	21.9	11.6	6.3	7.8
Psychotic disorder	1.9	12.3	23.9	1.2	12.3	21.4
Cognitive impairment (MMSE)	3.1	0.0	0.8	5.6	0.0	1.6
Two DSM-IV diagnoses (excluding alcohol dependence/abuse)	15.9	3.2	5.6	9.1	6.3	4.0
Drug use/Mood disorder	4.0	0.0	0.0	1.2	0.0	0.0
Drug use/Anxiety disorder	0.9	3.2	0.0	0.0	6.3	0.0
Drug use/Psychotic disorder	0.0	0.0	0.8	0.2	0.0	0.0
Drug use/Cognitive impairment	0.2	0.0	0.0	0.0	0.0	0.0
Other combinations	10.7	0.0	4.8	7.7	0.0	4.0
Three DSM-IV diagnoses (excluding alcohol dependence/abuse)	3.8	3.2	1.6	2.1	0.0	0.0
Drug use/Mood disorder/ Anxiety disorder	1.5	3.2	0.8	0.9	0.0	0.0
Drug use/Mood disorder/Psychotic disorder	0.5	0.0	0.0	0.0	0.0	0.0
Drug use/ Mood disorder/Cognitive impairment	0.0	0.0	0.0	0.0	0.0	0.0
Other combinations	1.9	0.0	0.8	1.2	0.0	0.0
Four or more DSM-IV diagnoses (excluding alcohol dependence/abuse)	2.1	0.0	0.0	0.0	0.0	0.0
Drug use/Mood disorder/Anxiety disorder/ Cognitive impairment	1.2	0.0	0.0	0.0	0.0	0.0
Other combinations	0.9	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

fore becoming homeless (two thirds vs. half of the men). This difference was, however, not significant (χ^2 -test, ns).

Cognitive impairment (Mini-Mental State Examination ≤ 23) among homeless males in Munich was most frequently found among those with alcohol dependency. It appears plausible that consumption of high quantities of alcohol over many years may have precipitated cognitive impairment. This finding differs from those of the L.A. homeless sample and the L.A. household sample.

Patterns of drinking, indicators of pathologic use of alcohol, indicators of impairment in social or vocational functioning and withdrawal symptoms, and indicators of tolerance were assessed in the Munich homeless study (Table 6). Homeless alcoholics in Munich generally showed a pattern of consistently heavy alcohol abuse. More than one third of the alcohol dependent individuals had drunk 240 g of alcohol per day or more on each day of the week while none of the alcohol abusing persons had drunk that much. The comparison group A2 non-alcoholic homeless men met neither criteria for alcohol dependency nor alco-

hol abuse lifetime DSM-IV, which does not mean that they did not drink. In comparison to the alcohol abusing homeless men, most of the homeless alcohol dependent men in Munich wanted to stop drinking, but could not (71.7% vs. 15.4%), continued to drink in spite of a related physical ailment (92.3% vs. 21.8%), and experienced serious somatic complications due to drinking (78.3% vs. 6.3%). Compared with the Munich homeless alcohol abusing group, the alcohol dependent persons tended to show more alcohol-related problems (amount of drinking, excessive drinking, inability to stop drinking, drinking in spite of physical ailment, disturbance of consciousness under the influence of alcohol, neglecting responsibilities, tolerance, and withdrawal symptoms). These findings underscore the severity of alcoholism in many homeless males in Munich.

Homeless alcoholics in Munich and L.A. fulfilled expected familial roles to a lesser extent when compared to alcoholics living in a household. Homeless alcoholics in Munich, very similar to their counterparts in Los Angeles, were married less frequently and if they were, they all

Table 5 Onset of lifetime mental disorders in relation to first onset of homelessness in homeless males in Munich with lifetime DSM-IV alcohol dependency/abuse and in non-alcoholics ($n = 265$ weighted cases)^a

	First onset	Alcohol dependent persons weighted %	Alcohol abusing persons weighted %	Non-Alcoholics weighted %
Substance dependency/abuse ($n = 161/2/1$)	Before first homelessness	72.5	50.0	100.0
	At same time	14.4	0.0	0.0
	After first homelessness	13.0	50.0	0.0
Alcohol dependency/abuse ($n = 160/2/0$)	Before first homelessness	76.2	50.0	–
	At same time	14.5	0.0	–
	After first homelessness	9.3	50.0	–
Drug use disorder ($n = 12/0/1$)	Before first homelessness	21.3	–	100.0
	At same time	0.0	–	0.0
	After first homelessness	78.7	–	0.0
Psychotic disorder ($n = 3/0/5$)	Before first homelessness	44.3	–	62.8
	At same time	0.0	–	37.2
	After first homelessness	55.7	–	0.0
Affective disorder ($n = 47/3/15$)	Before first homelessness	68.1	66.7	50.3
	At same time	16.3	0.0	16.4
	After first homelessness	15.6	33.3	33.3
Major depressive episode ($n = 42/2/14$)	Before first homelessness	67.6	50.0	65.2
	At same time	14.5	0.0	17.1
	After first homelessness	17.9	50.0	17.7
Anxiety disorder ($n = 10/1/6$)	Before first homelessness	68.0	100.0	45.1
	At same time	9.3	0.0	0.0
	After first homelessness	22.7	0.0	54.9
Any DSM-IV Axis I disorder ($n = 167/5/25$)	Before first homelessness	66.7	80.0	51.2
	At same time	14.2	0.0	18.7
	After first homelessness	19.1	20.0	30.0

^a n = number of persons with a particular illness, for whom data about onset is available

were separated from their wives. Homeless males tended to have fewer children than alcoholics living in a household. In addition, homeless alcoholics were far less likely to fulfill expected vocational roles. The unemployment rate was much higher in homeless alcoholics than in those living in a household. Although 10.7% of the homeless alcoholics in Munich reported that they currently held some kind of employment, most of these individuals had only part-time, low-income jobs without benefits which paid too little to allow for a life in the community. Concerning educational background, the Los Angeles data indicate no difference between homeless and non-homeless alcoholics. Because of differences in the educational system, the educational background of homeless males in Munich can hardly be compared with the US data. Table 7 also shows data about conflicts with the law before age 21, type of previous conviction and imprisonment after age 21. Using public transport without paying occurred equally frequently among homeless alcohol dependent and non-alcohol abusing men (1.2% vs. 0.8%). Trespassing, theft, use of violence, and other offences tended to be more frequent among homeless alcohol dependent man as compared to homeless non-alcoholics in Munich. Alcohol dependent homeless men tended to have experienced conflicts with the law before age 21 (not leading to imprisonment) more frequently than homeless non-alcoholics. Previous convictions for using public transport without paying, trespassing, theft, and use of violence were significantly

more frequent among alcohol dependent homeless males as compared to non-alcoholic homeless males in Munich.

Of the alcohol dependent homeless men in Munich, 2.1% reported that they had attended a self-help group, 5.9% that they had used outpatient alcohol rehabilitation services, and 20.3% that they had received inpatient treatment for alcohol problems (lifetime). None of the alcohol abusing men ($n = 17$) and the non-alcoholics ($n = 61$) had used any such services. In comparison homeless alcoholics in Los Angeles had used services for the treatment of alcoholism considerably more often (53% self-help groups, 24% outpatient alcohol rehabilitation service, and 63% inpatient treatment for alcoholism). Thus, in our German sample, there was a high discrepancy between prevalence of alcoholism in homeless males and use of treatment facilities.

Nicotine consumption was high in all groups: 94.7% of the alcohol dependent men, 92.8% of the alcohol abusers, and 87.0% of the non-alcoholics reported smoking (chi²-test, not significant). Smokers gave a mean daily consumption of 27.0 (± 1.2), 31.1 (± 3.8), and 26.2 (± 3.3) (mean \pm SE; alcohol dependent; alcohol abusers, and non-alcoholics, respectively) cigarettes. Smoking cigars or pipe was neglectable. About one third (33.9%) of the homeless men were born in Munich (35.1% of the alcohol dependent men, 24.9% of the alcohol abusers, and 32.1% of the non-alcoholics (chi²-test, not significant)). 72% of all homeless men had lived in Munich for the entire pe-

Table 6 Lifetime prevalence (per 100 persons) of alcohol-related patterns and symptoms among homeless males in Munich ($n = 265$ weighted cases)

	Munich Homeless Study			Chi ² -test A _{1A} vs. A _{1B}
	A _{1A} Homeless alcohol dependent men ($n = 187$) %	A _{1B} Homeless alcohol abusing men ($n = 17$) %	A ₂ Non- alcoholic homeless men ($n = 61$) %	
Daily alcohol (pure) consumption				
none	19.3	34.5	89.7	72.0** df = 5
less than 60 g	2.8	3.2	0.8	
60–119 g	20.8	40.0	6.3	
120–179 g	11.7	19.3	3.3	
180–239 g	8.7	3.2	0.0	
240 or more	36.8	0.0	0.0	
Other indicators of pathologic drinking				
desire/unsuccessful effort to stop drinking	71.7	15.4	1.6	8.8 **
person becomes unusually aggressive and violent under the influence of alcohol	31.1	3.8	3.9	6.9 **
person continues to drink in spite of physical ailment	92.3	21.8	0.0	9.3 **
somatic complications due to drinking	78.3	6.3	0.0	11.3 **
disturbance of consciousness under the influence of alcohol	72.8	28.1	3.1	5.5 *
person consumes more alcohol than he resolved to do	89.3	41.4	0.0	4.9 *
Indicators of social or vocational impairment				
activities related to alcohol are of great importance to the person	39.2	15.4	0.0	n.s. df = 1
giving up/reducing important social and other activities	70.8	0.0	0.0	13.0 **
consuming alcohol takes up a great part of a person's time	83.0	24.9	0.0	7.6 **
Indicators of tolerance or withdrawal				
apparent tolerance of alcohol	81.6	25.2	3.3	8.9 **
typical withdrawal symptoms	71.5	0.0	0.0	13.1 **

* $P < 0.05$; ** $P < 0.01$ **Table 7** General social functioning among alcoholic and non-alcoholic homeless men (lifetime) in Munich ($n = 265$ weighted cases)

	A ₁ Homeless alcoholics (lifetime) in Munich (<i>n</i> = 204)		A ₂ Homeless non-alcoholics in Munich (<i>n</i> = 61)		Chi ² -test/ <i>t</i> -test A ₁ vs. A ₂
	A _{1A} Alcohol depen- dent men (<i>n</i> = 187)	A _{1B} Alcohol abusing men (<i>n</i> = 17)			
	Mean ± SD	%	Mean ± SD	%	Mean ± SD
Employed (<i>n</i> = 263/186/17/60)		10.7	9.5		4.8
Education in years	9.2 ± 0.1		9.2 ± 0.4		9.3 ± 0.3
Conflict with the law before age 21 due to:					
Riding public transportation without paying		1.2	0.0		0.8
Trespassing		2.1	0.0		0.0
Theft		8.2	3.2		4.7
Violent offences		3.8	0.0		4.7
Other offences		13.4	3.2		2.4
Imprisonment before age 21		19.6	7.2		8.9
Previous convictions:					
Riding public transportation without paying		6.3	3.2		0.8
Trespassing		10.7	0.0		0.0
Theft		19.7	6.3		3.1
Violent offences		15.2	0.0		0.0
Failure to pay alimony		4.5	0.0		4.7
Other offences		15.7	3.2		10.2
Imprisonment since age 21		70.5	36.4		53.1

* $P < 0.05$; ** $P < 0.01$; SE = Standard error of the weighted mean estimate; n.s. = not significant

riod of the current episode of homelessness. There was no statistically significant (χ^2 -test) difference between diagnostic groups (76% of the alcohol dependent men, 63% of the alcohol abusers, and 57% of the non-alcoholics). Only 19.3% of all homeless men signaled their intention to leave the city of Munich (18% of alcohol dependents, 22% of alcohol abusers, and 23% of non-alcoholics) again with no statistically significant differences between groups.

Discussion

A larger number of mainly Anglo-American studies have provided data on the prevalence of mental illness in homeless men (for review see Fisher and Breakey 1991; Fichter et al. 1996, 1997, in preparation) and women (Greifenhagen and Fichter 1997). Many of the published studies have methodological shortcomings with respect to sampling or assessment and case identification procedures. Alcohol abuse or dependency has been described as one of the most frequent mental disorders among various homeless samples. There are only limited data on alcoholism and other mental disorders in homeless individuals in Europe. Podschus and Dufeu (1995) reported that "68.1% of the homeless population fulfilled the ICD-10 criteria of alcohol dependence" in Berlin (p.348) as assessed using a different interview (Composite International Diagnostic Interview – CIDI). However, the sample size is very limited ($n = 72$) and highly selected – as is the case with the majority of studies in this area. Recently Vázquez et al. (1997) assessed 261 homeless individuals from different sites in the city of Madrid using the CIDI for DSM-III-R and reported a 12-month prevalence of 32% and a lifetime prevalence of 48% for alcohol abuse or dependence for homeless males; in homeless women it was significantly lower (12 months: 12%, lifetime: 18%). Generally, DIS and especially CIDI interviews tend to yield higher rates for mental disorders than interviews based on the SCID. Taking this into account the rates reported from Madrid for alcohol abuse or dependence are considerably lower than those in Munich. In the US, several studies on homeless samples assessed the prevalence of alcohol dependence or abuse and other mental disorders. Koegel et al. reported a prevalence of 62.9% for their homeless individuals in shelters, meal programs or indoor gathering places in Los Angeles. Vernez et al. (1988) reported alcohol abuse or dependence of 57% in Californian shelters and streets; North and Smith (1993) found alcohol abuse or dependence of 37.2% in their St. Louis sample of homeless individuals in shelters, hotels, and indoor gathering areas. Welte and Barnes (1992) studied homeless and marginally housed adults in New York State and reported that 40% of these (as opposed to 36% in NY State as a whole) abstained from alcohol; on the other hand, 13% were heavy drinkers (more than 20 drinks a day). In the city of Melbourne, alcohol abuse or dependence was found in 44% of homeless individuals in shelters, hotels or accommodation houses (Herrman et al. 1989). In this Australian study similar to our current study, the SCID was used for case identification, which makes

this finding particularly remarkable. Having a first-degree relative with alcohol dependence (Podschus and Dufeu) or having a heavily drinking father (Welte and Barnes) have been described as risk factors for becoming a heavily drinking homeless person. In the Bavarian Public Health Study on Homelessness substance use disorder (mainly alcohol abuse/dependency) was the single most frequent main diagnostic category with a life-time prevalence of 79.6% and a one-month prevalence of 63.0% for men. The life-time prevalence for alcohol abuse or dependency was 78.2% (abuse in 5.5% and dependency in 72.7%), while the one-month prevalence of alcohol abuse or dependency was 61.0% (abuse in 2.6% and dependency in 58.4%). Drug abuse/dependency was considerably less frequent (life-time 19.1%; one-month prevalence 5.3%) – and consisted almost exclusively of drug dependence rather than abuse. The presentation of our data focussed on a detailed description of homeless alcoholics and compared other characteristics of homeless alcoholics with those of homeless non-alcoholics. The group of alcohol abusers has only a limited number of persons, so that prevalence rates must be interpreted with caution. For reasons of validity, tests of significance were made for most variables comparing the two larger groups only.

Koegel et al. put their data into perspective by comparing results of homeless individuals with those of a representative household sample in Los Angeles assessed with the same interview (DIS). Alcohol abuse/dependence (lifetime) was 2.6 times more frequent in the sample of homeless individuals. Data from the study cited and both studies of our own group indicate that alcohol abuse/dependence is the most frequent mental disorder among homeless males in larger cities. Little is, however, achieved by stigmatizing homeless individuals as alcoholics. A second finding is that other mental disorders such as mood disorders, anxiety disorders, psychotic disorders, and general cognitive impairment also constitute a considerable problem in homeless populations and quite a few have more than one additional mental disorder. Data on alcoholism in homeless individuals and the context in which it occurs will increase our understanding of the problem and help to develop more effective and sophisticated rehabilitation programs for homeless individuals.

Important characteristics of inner city homeless males in Germany as well as the USA are (1) the high prevalence of alcoholism and (2) the high psychiatric comorbidity with other mental disorders. 39.8% (weighted data) of the homeless males in Munich had at least two psychiatric diagnoses, 36.4% of the alcohol dependent homeless males in Munich had a lifetime diagnosis of mood disorder, 16.4% anxiety disorder, 18.9% drug abuse/dependence, 4.5% psychotic disorder (mainly schizophrenia), and 12.6% cognitive impairment (MMSE score ≤ 23). Psychotic disorders were more frequent in non-alcoholic homeless men compared to alcohol dependent homeless men (27.1% vs. 4.5%). This holds true also when substance-induced psychotic disorders are excluded from analyses (26.3% vs. 3.6%). The high rate of psychosis in alcohol abusers must be interpreted with caution, as the whole group of alcohol abusers is very small. Being

homeless, experiencing an alcohol problem, and being impaired because of psychosis, depression or anxiety results in multiple risks which are difficult to control for professionals or for the homeless themselves. Not only is alcoholism more severe among homeless alcoholics than among their counterparts living in a household but they also carry other mental health and physical health risks. This leads to the question if or to what extent alcohol rehabilitation concepts used mainly for community alcoholics may actually transfer directly to the homeless alcoholic. Similarly, straightforward treatment concepts successfully used in schizophrenic, depressed or anxious patients in the community do not seem to be useful for the homeless mentally ill – especially when there are multiple impairments. The health care systems in the United States and in Germany differ considerably. In Germany as well as in the United States, there is evidence that homeless males use services available less frequent than would be expected by their morbidity.

Alcoholism can be seen as one of several factors leading to homelessness. However, it can also be seen as a possible consequence of homelessness – the individual attempts to cope with desolate living conditions and damaged self-esteem. In order to answer the question whether alcoholism or homelessness was first, longitudinal data would be required. In the absence of this, homeless men in Munich and in Los Angeles were asked how they themselves recall the sequence of events. The data of both studies showed that the majority of the homeless alcoholics experienced their first symptoms of alcoholism before their first episode of homelessness (76.2% in the homeless alcohol dependent men in Munich). A similar pattern was seen by homeless depressed males; 67.6% of them reported that depression preceded homelessness.

In comparison to the results of our pilot study (Fichter et al. 1997), our main study presented here did not confirm the expectation of high prevalence rates for hypomanic episodes, which the DIS-DSM-III data from our pilot study had shown. There, we discussed the possibility that alcohol induced euphoria might have been mistaken as hypomania. Based on SCID-DSM-IV data of our present study mania or hypomania was not a frequent problem among homeless men. With respect to prevalence for specific mental disorders, psychiatric comorbidity, onset of mental illness and homelessness, patterns of drinking and use of medical services our present data confirm and supplement our previous findings on a smaller, possibly less representative sample.

The composition of homeless populations changes over time. The post world-war II refugees in Germany from the East were “ordinary people from the community” who had lost their home but who were not mentally ill or impaired; they had concepts about what to do in the future. In Northern Europe, labor was in so much demand from 1950 to 1970 that even physically or mentally impaired or handicapped persons had a fair chance to get a job. Changing economic structures and cutting costs for labor in a time of increasing automatization reduces the chances for a job first for those with any kind of a handi-

cap. The schizophrenic guard at the parking lot, the doorman at the entrance of a building no longer were needed. The healthy ones were able to adapt more flexibly to the new situation and still found or kept a job. In the current job market, those impaired due to one or several mental disorders including alcoholism have very few chances in the current job market. Parallel to economic restructuring, a development of de-institutionalization of long-time hospitalized mentally ill individuals took place in Northern America and Western Europe. Well-intended, this development nevertheless increased the number of mentally ill patients on the streets. According to Koegel and Burnam (1988, p. 1011) “individuals with diagnoses of alcoholism and other mental disorders more closely resembled the demographic profile of non-alcoholics, indicating that the traditional skid row alcoholic has been joined by alcoholics who, like the “new” homeless in general are younger ... and more likely to suffer from a mental disorder”. Our data substantiate the findings of Koegel and Burnam and show that the homeless are not simply happy vagrants who chose this particular lifestyle but rather mostly mentally ill individuals with serious problems.

Today's homeless are a heterogeneous group. Homelessness is the final common pathway resulting from a variety of different causes. Among the homeless we can distinguish (1) “ordinary poor individuals”, who because of bad luck, lack of low-cost housing, and inadequate social support lost their foothold in society, (2) the institutionalized mentally ill with or without alcohol, problems, and (3) today's equivalent of the “hobo” – alienated loners with difficulties getting along with others. Alcohol problems appear to be more deeply rooted in the homeless as compared to the rest of the population.

There is a necessity to design alcohol rehabilitation programs specifically for the needs of homeless alcoholics. Current policies in Germany are quite effective in getting homeless individuals off the street and into more permanent housing. While sufficient shelter, food, and clothes are apparently supplied in large German cities like Munich, there is a massive discrepancy between medical/psychiatric treatment needs and treatment actually received by (alcoholic) homeless men in Germany. In order to improve treatment conditions, data are needed to understand the condition of homeless men even better; we should learn from their socialization and current living situation and better understand causalities in order to be able to develop sensible concepts for improvement. It is insufficient to claim that treatment facilities in principle are available and to claim that it is the homeless men's fault, if they do not make use of them. Outreach programs and low threshold services have been developed and put into use in other countries with positive results. For the current situation in Germany, there is a need to implement these concepts (Toro et al. 1997; Susser et al. 1997). We must, however, keep in mind that there are additional factors in Germany contributing to homelessness and mental illness among homeless individuals, such as high unemployment rates and decrease in inpatient psychiatric services over the past decades.

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