alcoholism and psychiatric comorbidity

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background: within the framework of the never-study, a german multicenter project to compare the efficacy of psycho- and pharmaco-therapeutic treatments for alcoholism, it became apparent that treatment-seekers in rostock, mecklenburg-vorpommern (m-v) differed in several respects (age, number of detoxifications and employment rate) from those in the collaborative centres in mainz, rheinland-pfalz and homburg a. d. saar, saarland (other german provincial states). to assess the ecological validity of these differences, psychiatric comorbidity of dsm-IV axes I and II disorder in 104 alcohol-dependent inpatients in the rostock area were examined. method: structured and semistructured clinical interviews (mini-dips, skid II) were applied. information about the course and severity of alcoholism was obtained from paper-and-pencil questionnaires and sociodemographic interview ratings. results: the total psychiatric comorbidity rate was 56.7%. additional unaccompanied axis I disorders were found in 15.4%; unaccompanied axis II disorders in 14.4% and concurrent axis I and II disorders in 26.9%. anxiety (30.8%) and affective disorders (21.2%) were most frequent among axis I comorbidity. 41.3% of the inpatients had at least one personality disorder. conclusion: in agreement with previous studies, high psychiatric comorbidity rates were also found in the rostock detoxification inpatients. with regard to the observed differences in treatment-seeking patients, area-typical socioeconomic features are probably not responsible.

introduction

the study of comorbidity was a pivotal topic in the mental health field during the 1990s (1). high prevalence rates of psychiatric comorbidity in alcoholics were reported in a very large number of publications (2-6) and were described in a considerable number of surveys conducted in general hospitals (7-9). the appearence and severity of psychiatric "double diagnoses" is an important predictor of therapy outcome (10). however, a further predictor is probably the occurrence of personality disorders (pd) especially aspd and borderline pd (11), whereas the influence of comorbid dsm-IV axis I disorders is doubtful (12).

despite this enormous number of comorbidity investigations, there is a lack of information about specific prevalence rates, especially concerning the course and severity of alcoholism as a function of different regional drinking styles (13), investigation settings and socioeconomic influences. within a multicentre project (bmbf grant no. 01b9417) to compare the efficacy of various therapeutic treatments for alcoholism, it became apparent that the rostock sample differed in several respects (never interim report, 1998). the rostock treatment-seekers were younger, had undergone a larger number of detoxifications and were more often unemployed than those in the collaborative centres in homburg/saar and mainz. for this reason it was necessary to examine the ecological validity of these results in a sample of non-treatment seekers, that is to say rostock inpatients treated for ethanol detoxification. preliminary results from another multicentre study (mupka) (14) showed that in comparison to alcoholics from other regions detoxification inpatients in rostock were significantly different with respect to a lower age at first intoxication, earlier onset of regular alcohol consumption and first craving.

the purpose of this study of a sample of detoxification inpatients in rostock with alcohol dependence is to examine the regional extent and distribution of dsm-IV axis I and II disorders, and the relation of comorbidity clusters (without psychiatric comorbidity, axis I comorbidity only, axis II comorbidity only, and concurrent axis I and II comorbidity) with respect to several sociodemographic and alcohol-related features (15).

method

rostock is the largest city (200,000 inhabitants) on the german baltic coast of m-v. m-v and especially the rostock area are known to be the regions of germany which present not only high unemployment rates (1997: 20.4%) but also high levels of alcohol consumption (m-v: 23 g ethanol per head per day; germany: 20 g ethanol per head per day) and accordingly the highest alcohol-related mortality (16).

the hospital for psychiatry and psychotherapy of the university of rostock provides most of the psychiatric care for the city of rostock and the surrounding areas. approximately 1000 patients with alcohol-related disorders were treated in 1999 in 42 of the 140 beds in the hospital.

subjects

all patients included in this investigation fulfilled the dsm-IV criteria of alcohol dependence (17). patients with additional psychosis or organic psycho-syndrome were excluded. the subjects were recruited from one acute admission ward, three non-acute wards and one purely detoxification ward. 104 alcohol-dependent men were studied from january to may 1999. after a minimum of 10 days of soberness and the absence of acute withdrawal symptoms the patients were interviewed by trained investigators.

current 6-month axis I comorbidity was assessed by the mini-dips (dsm-IV, axis I), a semistructured clinical interview (18). a comorbid axis I diagnosis was given if the severity index of the mini-dips was at minimum 4 on a 8 point scale. lifetime axis II comorbidity was assessed with the german version of the structured clinical interview for dsm IV axis II (skid II) (19). in addition, structured self-report interviews for sociodemographic characteristics and alcohol-related problems were applied. the sample characteristics are shown in table 1.

statistical analysis

all data were transferred to the spss programme, windows version 8.0.1 and analyzed. after clustering patients into four main diagnostic subgroups of psychiatric comorbidity (no additional, axis I only, axis II only, axis I + axis II combined) we computed for all interval scaled variables one-way anovas with four-stage factor comorbidity. homogeneity of variances was tested with levene`s procedure. significant main effects were established with multivariate t-tests. the significance of comorbidity group differences was corrected by bonferroni adjustment at significance level $\alpha$=.05 or, in the case of inhomogeneity of variances (levene`s procedure: p≤.2), by tamhane-t2 at significance level α=.05.

results

56.7% of the investigated patients displayed at least one 6-month occurrence of axis I disorder and/or a lifetime axis II pd. clustering patients with regard to additional 6-month co-occurrence of axis I and lifetime prevalence axis II disorder revealed the following figures (four main diagnostic subgroups): (a) no additional axis I + II comorbidity (43.3%); (b) axis I comorbidity only (15.4%); (c) axis II comorbidity only (14.4%); (d) axis I + II comorbidity (26.9%).

in axis I diagnosis, anxiety disorders predominated with 30.8%. affective disorders including major depression, dysthymia, bipolar affective disorders were found in 21.8%. additional substance abuse occurred in 6.7%. diagnostic criteria for pd, including research criteria for negativistic pd and depressive pd, accounted for 43.3%. excluding research criteria, the proportion fell to 41.3%. cluster a (paranoid, schizoid and schizotypal pd) accounted for 10.1%. cluster b (antisocial, borderline, histrionic and narcissistic pd) were attributed to 17.4%. the criteria of cluster c (avoidant, dependent, obsessive-compulsive pd) were fulfilled by 9.2%. table 2 shows the unweighted 6-month prevalence rates of comorbid axis I disorders, table 3 lifetime prevalence rates for axis II pd in the rostock area sample in comparison to the occurrence in the general population and a clinical reference group (12).

table 1: sample characteristics (n = 104)

	mean	sd	range
general features			
age	40.2	8.9	20-62
male	100%		
marital status: with long-term partnership	29.8%		
occupational status: regular employment	24.0%		
occupational status: unemployment	61.5%		
number of months employment in year before treatment	4.5	4.6	0-12
number of months certificated illness in year before treatment	1.7	2.7	0-12
grams of pure alcohol / day	289	135	79-755
onset of perception of fulfilment dsm IV criteria			
age at onset of tolerance (1)	28.7	9.3	13-61
onset of withdrawal syndrome (2a)	32.7	9.3	15-58
drinking alcohol against withdrawal symptoms (2b)	32.9	9.4	15-58
using more or for longer period than intended (3)	29.3	9.1	13-58
desire, or unsuccessful efforts, to cut down (4)	31.9	9.0	14-58
considerable time spent in obtaining alcohol or using it or recovering from its effects(5)	33.7	9.9	14-61
loss of important social, work, or recreational activities (6)	32.2	9.7	12-59
continued use despite knowledge of problems caused or aggravated by alcohol use (7)	33.3	9.5	12-61
sum of fulfilled DSM-IV criteria	6.9	6.9	5-7
previous treatments			
number of previous detoxications	3.6	4.9	0-25
number of previous long-term therapies	0.44	0.8	0-4

table 2: unweighted prevalence rates
of comorbid axis I psychiatric disorders according to dsm-IV criteria

dsm-IV axis I	6-month prevalence (%) rostock alcohol detoxification inpatients	6-month prevalence (%) general population	6-month prevalence (%) clinical reference sample
≥ 1 diagnosis	42.3	ca. 15	33.6
≥ 2 diagnoses	24.0	?	18.0
3 – 5 Diagnoses	13.5	?	8.8
296 affective disorder	21.2	ca. 7	14.4
296.2-.3 major depression	17.3	ca. 3	9.6
300.4 dysthymia	3.8	ca. 4	8.4
296.0-.7 bipolar affective disorder	2.0	ca. 0.3	0.4
300 anxiety disorder	30.8	ca. 8	30.0
300.01 panic disorder	5.8	1.1	1.2
300.02 general anxiety disorder	9.6	3	2.0
300.2 phobia	27.9	ca. 7	24.0
300.21-.22 agoraphobia	14.4	3.6	8.4
300.23 social phobia	6.7	ca. 2.5	10.8
300.29 simple phobia	13.5	ca. 9	7.6
309.81 ptsd	4.8	1-14	?
300.3 ocd	1.0	0.5-1.0	2.0
300.8 somatization disorder	0.0	0.8	0.8
307 eating disorders	0.0	0.3	0.4
other substance-dependence	6.7	0.6	excluded

table 3: unweighted prevalence rates
of comorbid axis II personality disorders according to dsm-IV criteria

definitive and probable	lifetime prevalence (%) rostock alcoholics (n=104)	lifetime prevalence (%) general population	lifetime prevalence (%) clinical reference sample (driessen et al., 1998)
≥ 1 diagnosis	41.3	ca. 10.0	33.6
≥ 2 diagnoses	9.6	?	12.4
pd-nos	15.4	?	16.8
cluster a	9.6	ca. 1.5	5.2
301.00 paranoid	7.7	0,5-2,5	1.2
301.20 schizoid	1.9	< 0.5	4.3
301.22 schizotypal	1.0	1.0	0.8
cluster b	16.3	ca. 8	7.6
301.7 antisocial	7.7	3	4.4
301.83 borderline	4.8	2	3.2
301.50 histrionic	1.9	2-3	0.8
301.81 narcissistic	2.9	< 1	0.4
cluster c	8.7	ca. 4	7.6
301.82 avoidant	6.7	0.5-1.0	5.2
301.60 dependent	2.9	?	2.4
301.40 obsessive-compulsive	0.0	ca. 1.0	0.8
depressive pd	6.7	?	?
negativistic pd	6.7	?	?

table 4: differential effects of axis I and axis II comorbidity with reference to
alcohol-related statements

	(a) no psychiatric comorbidity (n = 45)		(b) axis I comorbidity only (n = 16)		(c) axis II comorbidity only (n = 15)		(d) axis I and Axis II comorbidity (n = 28)		
variable	mean	sd	mean	sd	mean	sd	mean	sd	statistical analysis
duration of employment in year before treatment (months)	5.6	4.8	5.4	5.0	3.1	3.6	2.9	4.1	F=2.7, df=3, 100, p<.05 Gr. 1 > Gr. 4[4]
duration of certificated illness in year before treatment (months)	1.0	2.1	1.4	2.9	2.9	3.6	2.5	2.6	F=3.0, df=3, 100, p<.05 Gr. 1 < Gr. 3[3]
number of previous detoxifications	2.2	3.6	3.5	6.8	3.3	2.6	6.0	5.8	F=3.6, df=3, 100, p<.05 Gr. 1 < Gr. 4[4]
age at onset of first alcohol craving	28.8	8.8	27.1	8.7	25.7	6.6	23.8	7.3	F=2.2, df=3, 99, p<.1 Gr. 1 > Gr. 4[4]
age at onset of awareness of alcohol-related problems	35.7	8.7	31.9	8.1	31.1	9.4	29.3	11.8	F=2.7, df=3, 99, p<.05 Gr. 1 > Gr. 4[4]
age of first medical treatment for alcohol-related problems	39.4	8.5	33.6	7.0	34.5	10.2	32.5	10.5	F=4.0, df=3, 100, p<.01 Gr. 1 > Gr. 4[4]
grams of pure alcohol/day	253	120	275	156	297	127	352	134	F=3.3, df=3, 100, p<.05 Gr. 1 < Gr. 4[4]
age at onset of drinking to avoid withdrawal symptoms	34.8	8.6	30.1	7.1	33.6	11.0	30.4	10.0	F=2.2, df=3, 93, p<.1 Gr. 1 > Gr. 4[4]
age at onset of first alcohol use to achieve effects	30.0	8.6	29.0	8.9	29.8	12.4	24.4	7.7	F=2.4, df=3, 99, p<.1 Gr. 1 > Gr. 4[4]

[1] Tamhane-T2 significant at .05 level
[2] n. s. after Tamhane-T2 but p<.1
[3] Bonferroni adjustment significant at .05 level
[4] n. s. after Bonferroni adjustment but p<.1

four-stages anovas shows significant differences in alcohol-related statements with reference to the occurrence of psychiatric comorbidity. comorbidity subtypes differed in number of months employment (p<.05) and duration of certificated illness (p<.05) in the year before treatment, number of previous detoxifications (p<.05), age at onset of awareness of alcohol-related problems (p<.05), age at first medical treatment for alcohol-related problems (p<.01) and daily consumption rates of grams of pure ethanol (p<.05) (table 4). non-significant but tendentially important differences between the subgroups were found in age at onset of first alcohol craving (p<.1), drinking to avoid withdrawal symptoms (p<.1) and first alcohol use to achieve effects (p<.1) (table 4).

significant main effects of comorbidity were established with multivariate t-tests. after bonferroni adjustment (resp. tamhane-t2 in the case of inhomogeneity of variances) the following differences between the diagnostic subgroups (a) - no psychiatric comorbidity - and (d) - axis I + II double comorbidity - remained statistically significant. patients with axis I + II double diagnoses (d) showed a higher number of previous detoxifications, became aware earlier of alcohol-related problems, and therefore sought earlier medical treatment and were characterized by higher ethanol consumption rates than patients without any comorbidity diagnoses (table 4). double axis I + II diagnosed patients showed tendentially but non-significant differences relating to a lower period of employment in the year before treatment, an earlier onset of alcohol craving and intentional drinking to avoid withdrawal symptoms as well as to achieve effects than patients without comorbidity (table 4).

discussion

surveys on the prevalence of psychiatric diagnoses in treated alcoholics yielded high prevalence rates of comorbidity in axis I and II psychiatric disorders (20-23). however, the 6-month prevalence of axis I disorders in our sample was lower (42.3%) than in previous studies of treated alcoholics. nevertheless, this result is nearly identical to a comparable german study (12), despite our sample size being considerably smaller.

driessen et al.´s study is in two ways comparable to our investigation. first, luebeck and rostock have nearly an identical number of inhabitants, both lie on the german baltic coast only 100 km apart; and second, there are comparable population drinking patterns, the so-called scandinavian drinking culture. the main distinction between the samples are differing socioeconomic area-typical circumstances: in 1997 the general unemployment rate in rostock was 20.4%, in luebeck 14.0% (24). thus, driessen et al. (1998) in their sample found only an unemployment rate of 40.8%, whereas we found a rate of 61.5%. surprisingly, there are no distinctions between our and driessen et al.´s results in anxiety and mood disorder prevalence, despite bad social conditions should have an influence to helplessness experience and quality of life. similar to the outcome of meyer et al. (1998), who found no influence of these factors on the frequency of hazardous drinking, we found no effects of these socioeconomic features on the observed psychiatric axis I comorbidity rate.

the prevalence of overall axis II pd lifetime diagnoses in our sample was 41.3 %. other studies reported pd rates from 18% to 78 % (25), driessen et al. (1998) found 33.6% in luebeck. these differences are in part of methodological origin: self-report questionnaires producing the highest prevalence rates, semistructured interviews like the skid II leading to intermediate prevalence rates, and clinical assessments producing the lowest rates. unlike driessen et al. (1998), we found higher rates of cluster a (9.6 vs. 5.2%) and cluster b (16.3 vs. 7.6%) pd, whereas cluster c pd lifetime prevalences are similar (8.7 vs. 7.6%). these differences are not statistically proved, because our sample size was to small too assess the real prevalence rate of pd.

one aim of future addiction research should be to explore the effects of various general and specific factors on the prevalence rates.

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