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Sex Differences in the Psychopathology of Inpatients

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Summary. In a sample of more than 2000 patients from the Department of Psychiatry of the Free University of Berlin (58.8% men, and 41.2% women), the sex differences in the diagnostic distribution and in the severity of the depressive symptomatology were investigated on the basis of data documented by the AMP system. Due to patient selection by the hospital, men with depressive neuroses were found to be over-represented contrary to expectation; depressive psychoses, however, were prevalent in women as expected. In the total group of patients, depressive symptomatology at the symptom and syndrome levels prevailed in women. Within homogeneous diagnostic groups, depressiveness in minor depressive disorders like depressive neuroses was more severe in women, but in psychotic depression men were more seriously depressed than women. Attempts are made to interprete these findings on the basis of constitution-biological and role-theoretical concepts, but especially on the basis of sex-specific help-seeking behaviour.

Key words: Sex differences – Depressive disorders – AMP system

Introduction

The discussion on sex differences in psychic disorders has increased in intensity in the last few years and is a controversial subject in the literature (e.g. Uchtenhagen 1975; Eme 1979; Gove 1979; Weissman and Klerman 1979; von Zerssen and Weyerer 1982; Gebhardt and Klimitz 1983). However the fact that depression, except in a few non-European countries (Weissman and Klerman 1979) and among the Amish in the United States (Egeland and Hostetter 1983), appears more frequently in women than in men is now no longer doubted. The controversies apply to the interpretation of this fact. At present, no generally accepted theory exists which is capable of conclusively explaining the cause of the sex differences found again and again in the rates of the illness. At the centre of the theoretical discussion, there are, besides the more biologically-oriented explanation attempts and selection hypotheses, primarily arguments with a role-theoretical approach which especially stresses the different sex roles which are valid for men and women in western industrial societies (Gove and Tudor 1973; Tudor et al. 1977; Gove 1978; Fox 1980; Davis et al. 1982). Beside this controversy it must be emphasized that sex differences in the psychopathology of psychiatric patients contain very important information that is significant in attempting to explain the origin of depression, in interpreting the factors maintaining the depressive symptomatology and in considering specifical therapeutic approaches and developing preventive measures.

Investigations on this topic refer mainly to the diagnostic comparisons of in and outpatients. In particular the numerous field studies are partially based on very diverse case definitions and measuring instruments. In the present study, the problem of the sex differences of psychiatric patients is viewed under the special aspect of nosological distinction. The study is based on standardized psychopathological findings ascertained at admission. If women, in general, are more depressed than men, and if this is seen in connection with the role of women in our society, then the greater depressiveness of women within a described nosological group of psychiatric disorders must be provable. Also in homogeneous groups with psychiatric disorders, according to a 4-digit ICD diagnosis, the increased depressive disturbances among women should appear; with schizo-affective psychosis, for example, the psychopathological symptomatology in women should be more depressively shaded than in men.

Methodology

For this investigation psychopathological findings at admission of more than 2000 patients of the Department of Psychiatry of the Free University of Berlin were available which were documented in the AMP system (details of the AMP system are contained in the test manual of the AMDP system, 1983). The patient population consisted of 1334 men (58.8%) and 935 women (41.2%). The frequency of the presence of 135 items of psychopathological symptoms and of 60 items of somatic signs of the AMP system was calculated separately for all male and female patients. For those diagnoses (ICD, 8th rev.) which were made at least 20 times in men as well as in women, a separate evaluation of the AMP findings dependent on the classification by sex was carried out. (Table 1 listing these diagnostic groups and their mean age data.)

An age difference was found only in the paranoid-hallucinatory schizophrenic group, where, on average, women were 6.5 years older (t-test: $t = 5.22$, $P = 0.001$). The significance tests with regard to the frequency differences of the AMP items were made using the χ^2 test (fourfold, item present vs item not present). Since for these calculations, the total sample survey and for some of the nosological subgroups, very large samples were available, even small differ-

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Dedicated to Prof. Dr. H. Hippius for this 60th birthday

Table 1. Sex distribution of diagnoses (ICD, 8th rev.)

Diagnosis	ICD No.	Total	Men *n*	Women *n*	Age			
					Men		Women	
					$\bar{x}$	s	$\bar{x}$	s
Hebephrenia	295.1	55	34	21	22.3	4.5	23.8	7.7
Paranoid-hallucinatory schizophrenia	295.3	404	270	134	30.5	8.1	37.0	12.2
Schizo-affective psychosis	295.7	75	47	28	35.7	10.7	37.6	13.0
Involutional depression	296.0	125	38	87	61.3	8.6	60.4	7.8
Endogenous depression	296.2	98	39	59	46.9	14.3	46.2	15.3
Neurotic depression	300.4	364	198	166	33.7	10.8	34.3	14.3
Total		2269	1334	935	34.4	13.5	40.3	16.7

ences in the percentage of the presence of a psychopathological symptom were significant (Bredenkamp 1972). Therefore, in order to interpret the differences, we did not rely solely on the statistical significance ($\alpha = 0.05$), but more on the practical relevance of these differences. Discrepancies in the percentage of the presence of an item were defined as relevant when the frequencies found in men and women differed by at least 10 points. With this criterion, particularly in very large diagnostic groups, certain statistically significant differences were not taken into account, because they were not extensive enough in points of view of relevance..

In the next step of evaluation, we left the level of single psychopathological symptoms and investigated the differences in the factor-analytically derived depressive syndrome of the AMP system (Gebhardt et al. 1981). The comparisons between the average syndrome values of men and women were checked for their significance by variance analysis. All calculations were made with the aid of the SPSS system (Nie and Hull 1983).

Results

1. Single Psychopathological Symptoms

A separate calculation of the percentage of the presence of single psychopathological items which were marked on the AMP symptom sheets revaled very impressive differences between all male and all female patients (Table 2).

According to doctors' ratings, anxiety, affective lability, depressed mood, loss of vitality and hopelessness were found more often in women and additionally the somatic signs of constipation, drowsiness, interrupted sleep and decreased appetite. If the rank order of the degree of differences in the psychopathological symptoms is extended beyond the predefined limit of at least 10 points, then, following the increased restriction in thinking and affective incontinence and the frequent difficulties in falling asleep and feelings of inadequacy in women, the first item in which the male patients are predominant is decreased libido. These differences in the psychopathology of men and women are reflected in differences of diagnostic distribution: 70% of involutional depressives (296.0) and 60% of endogeneous depressives (296.2) were women, while 67% of paranoid-hallucinatory schizophrenics were men (Table 1).

If, in a further step, the symptoms at admission within some nosological subgroups are compared, and men and

Table 2. Differences in symptomatology in all patients (percentages)

AMP-item	Men ($n = 1334$)	Women ($n = 935$)	Difference (in percentage points)	*P*
Anxiety	37.0	54.3	17.3	0.000
Affective lability	16.0	28.4	12.4	0.000
Depressed mood	57.7	69.1	11.4	0.000
Loss of vitality	15.0	26.4	11.4	0.000
Constipation	10.8	22.0	11.2	0.000
Drowsiness	15.5	26.6	11.1	0.000
Interrupted sleep	49.3	60.3	11.0	0.000
Hopelessness	28.3	39.0	10.7	0.000
Decreased appetite	42.7	53.3	10.6	0.000
Restricted thinking	34.9	44.4	9.5	0.000
Affective incontinence	9.0	18.4	9.4	0.000
Difficulties falling asleep	57.0	66.4	9.4	0.000
Feelings of inadequacy	24.2	33.4	9.2	0.000
Decreased libido	20.4	12.4	8.0	0.000

Table 3. Differences in symptomatology in neurotic depressions (ICD: 300.4)

AMP-item	Men ($n = 198$)	Women ($n = 166$)	Difference (in percentage points)	*P*
Affective lability	18.7	38.0	19.3	0.000
Loss of vitality	16.2	34.9	18.7	0.000
Anxiety	37.4	56.0	18.6	0.001
Decreased appetite	47.0	63.9	16.9	0.002
Drowsiness	20.2	35.5	15.3	0.002
Feelings of guilt	12.1	25.3	13.2	0.002
Decreased libido	26.8	13.9	12.9	0.004
Increased perspiration	26.8	14.5	12.3	0.006
Perplexity	45.5	57.5	12.0	0.033
Increased dream activity	4.0	15.1	11.1	0.001
Constipation	10.6	21.7	11.1	0.006

women no longer differ in diagnostic classification, then again, the most marked discrepancies result in disturbances of affect. The results for neurotic depression (300.4) are found in Table 3.

As already observed for the total population of patients, we found that those items that constitute a depressive syndrome were also more frequently found in women. Also valid for neurotic depression was the fact that women cry more (in order to understand the term affective lability in our hospital, see Fähndrich et al. 1981), more often showed a loss of vitality, they were more anxious, had decreased appetite, they were inclined more towards drowsiness and feelings of guilt; whereas for men there was a preponderance in decreased libido as well as increased perspiration.

A similar picture was found for schizo-affective psychosis (295.7): The psychopathological results at admission of female patients were clearly in the direction of a more serious depressive syndrome which was revealed by increased documenting of the depressive items by the doctors (Table 4).

The differences between male and female patients with hebephrenia (295.1) and paranoid-hallucinatory psychosis (295.3)—because of the age differences calculated separately for patients under 35 and over 35 years—do not give as clear a picture as for the diagnostic groups previously described. With hebephrenia, women were more often anxious and perplexed, and had more frequent disturbances of apperception whereas men more often showed a systematic delusion (the limits are: $\alpha = 0.05$, difference in percentage points = 10). In patients younger than 35 with paranoid hallucinatory psychosis, women more often showed affective lability and ambivalence; the doctors more often noted problems in interrupted sleep or falling asleep, and disturbances in memorization. However, for men more aggressive tendencies and more frequent increased perspiration were recorded. For those older than 35, the men again more often had decreased libido and affective regidity, and more often experienced fragmented speech; the women, in contrast, were more often restricted in thinking and affective incontinent and more often experienced drowsiness, constipation and dry mouth.

For involutional depressives (296.0) and endogeneous depressives (296.2), in contrast to the other diagnostic groups, there was an increased presence of a number of psychopathological symptoms in men (Tables 5 and 6).

These diagnoses were actually made more often for women (87 female vs 38 male involutional depressives, 59 female vs 39 male endogeneous depressives), but the men appeared sicker as revealed by an increased marking of AMP items. As already seen with the other comparisons, libido was also more frequently decreased in men. The endogeneously depressed men showed increased obsessive thoughts and increased hypochondriac delusions and delusions of impoverishment. In the involutional depressives, the differences were more marked; the male patients often showed inhibited thinking, social withdrawal, affective rigidity and tension, difficulties in work, there was frequently a lack of feeling ill and lack of insight, the feeling of impoverishment was more pronounced as well as the delusional dynamics. In addition, a tendency—though insignificant—can be determined that men were more often hopeless (differences in percentage points

Table 4. Differences in symptomatology in schizo-affective psychoses (ICD: 295.7)

AMP-item	Men ($n = 47$)	Women ($n = 28$)	Difference (in percentage points)	P
Anxiety	12.8	53.6	40.8	0.000
Disturbances of memorization	8.5	39.3	30.8	0.004
Perplexity	27.7	57.1	29.4	0.022
Difficulties in work	12.8	39.3	26.5	0.018
Restricted thinking	25.5	50.0	24.5	0.050
Hopelessness	14.9	39.3	24.4	0.035
Feelings of guilt	6.4	28.6	22.2	0.022
Drowsiness	6.4	28.6	22.2	0.022
Feelings of inadequacy	12.8	32.1	19.3	0.042
Delusions of guilt	0.0	17.9	17.9	0.012
Headache	4.3	21.4	17.1	0.050
Verbal hallucinations	2.1	17.9	15.8	0.047
Mutism	2.1	17.9	15.8	0.047
Dry mouth	2.1	17.9	15.8	0.047
Blocking	0.0	14.3	14.3	0.033

Table 5. Differences in symptomatology in endogeneous depressions (ICD: 296.2)

AMP-item	Men ($n = 39$)	Women ($n = 59$)	Difference (in percentage points)	P
Decreased libido	53.8	28.8	25.0	0.023
Disturbances of apperception	2.6	23.7	21.1	0.010
Obsessive thoughts	28.2	10.2	18.0	0.042
Hypochondriac delusions	15.4	0.0	15.4	0.007
Delusions of impoverishment	15.4	1.7	13.7	0.030

Table 6. Differences in symptomatology in involutional depression (ICD: 296.0)

AMP-item	Men ($n = 38$)	Women ($n = 87$)	Difference (in percentage points)	P
Inhibited thinking	52.6	10.3	42.3	0.000
Decreased libido	44.7	13.8	30.9	0.000
Better in the evening	21.1	48.3	27.2	0.008
Social withdrawal	76.3	52.9	23.4	0.024
Affective rigidity	50.0	28.7	21.3	0.037
Lack of insight	36.8	16.1	20.7	0.020
Difficulties in work	42.1	21.8	20.3	0.035
Tense	34.2	16.1	18.1	0.043
Lack of feeling ill	18.4	2.3	16.1	0.005
Delusional dynamics	18.4	4.6	13.8	0.030
Hot flushes	0.0	13.8	13.8	0.030
Feelings of impoverishment	15.8	2.3	13.5	0.015

Table 7. Results concerning the depressive syndrome

Diagnosis	(*n*) Men	(*n*) Women	T-value Men	T-value Women	*P*
Total group	1334	935	49.0	51.8	0.001
Hebephrenia	34	21	46.6	44.0	0.348
Paranoid-hallucinatory schizophrenia	270	134	46.4	46.6	0.787
Schizo-affective psychosis	47	28	44.0	51.1	0.009
Involutional depression	38	87	61.6	57.9	0.007
Endogeneous depression	39	59	61.3	59.7	0.325
Neurotic depression	198	166	55.9	56.7	0.262

T-value: $\bar{x} = 50$, s = 10

17.7, $P = 0.09$) and showed feelings of guilt more often (difference in percentage points 16.5, $P = 0.095$). With endogeneous depressed men, such a tendency towards having feelings of guilt (difference in percentage points 20.8, $P = 0.068$) and of depressed mood (difference in percentage points 12.7, $P = 0.091$) was also proved. Valid for women with endogeneous depressions was a preponderance of disturbances of apperception and with involutional depressions a more frequent improvement in the evening and an increased frequency of hot flushes.

2. *Psychopathological Syndromes*

Leaving the single symptoms and analysing the differences at the syndrome level, as factor-analysed by Gebhardt et al. (1981) for the AMP system, then a significantly higher value for all female patients was found for the depressive syndrome (Table 7).

The depressive syndrome in schizo-affective psychoses was also more strongly pronounced in women. However, the differences in neurotic depressives did not reach the significance level, the same was true for endogeneous depression, hebephrenia and paranoid-hallucinatory psychoses. On the other hand, with involutional depressives, the mean value of the depressive syndrome was significantly higher in men.

Discussion

Our starting hypothesis was that women are in general more depressed than men. With regard to the role of women in our society, the greater depressiveness of women within defined nosological groups of mental disorders must be provable.

As expected, the diagnoses of involutional depression and endogeneous depression in women in our clinic were over-represented. As expected, in the entire sample of patients, women showed a more pronounced depressive symptomatology than men at the symptom and the syndrome level. For depressive diagnostic subgroups, this was proved for neurotic depressives at the symptom level and for schizo-affective psychoses at the symptom and syndrome levels. Contrary to expectation, however, depressive symptomatology in affective psychoses was more strongly pronounced in men, most clear-cut in involutional depressions, and at the symptom level in endogeneous depressions, too.

To interpret these results, one has to consider the selection of our sample first. It is a generally known fact that selection factors very strongly influence the findings on sex differences (Dohrenwend and Dohrenwend 1976). The Department of Psychiatry of the Free University of Berlin is a psychiatric hospital for acute patients. The inpatients examined here were a selection of seriously ill people, and they cannot be compared to those examined in community surveys. The patient selection of our hospital was also not representative of patients in psychiatric clinics in our city, because of the structure of the clinic: (1) during the period of investigation, there were more beds available for men than for women, additionally the turnover of men was faster, so that 59% of admissions were men. (2) There were differences in the distribution of diagnoses between our hospital and all inpatients treated in psychiatric hospitals in Berlin, over-proportional numbers of endogeneous psychoses and neuroses were treated, whereas dependencies and old age illnesses especially dementias were underrepresented (Pietzcker 1983).

The preponderance of men in the total group explains the even greater preponderance of men with hebephrenia, paranoid-hallucinatory schizophrenia, and probably also schizo-affective psychosis and neurotic depression compared to other findings. Neurotic depressions predominate in women not only in community surveys, but also in inpatients populations (von Zerssen 1980, in his inpatient population only 35% of neurotic depressives were men compared to 54% in our sample). Despite the under-representation of women in the population of our patients, however, the epidemiological sex distribution of psychotic depressions can be seen. Among the involutional depressives in our hospital only 30% were men, among the endogeneous depressives only 40% were men. For the main problem as to whether within homogeneous diagnostic groups increased disturbances of depression occur in women, the above-mentioned selection factors do not play a deciding role.

What is most noteworthy is the finding that women in the total group and with less severe disorders like neurotic depression were more depressed than men, but on the other hand with the most serious forms like endogeneous depression and involutional depression men were more depressed; a higher percentage of them suffered from delusional depression.

For the interpretation of these results, the hypothesis of the sex-specific help-seeking behaviour appears to give the best explanation (Horwitz 1977; D'Arcy and Schmitz 1979; Kessler et al. 1981; Cleary et al. 1982; Lin et al. 1982). Accordingly, more women than men admit, in general, the existence of an emotional problem and show more than twice as high a likelihood of evaluating it as a psychiatric one. Women more often accept the role of a psychiatric patient; they come earlier and with lesser disorders for treatment, whereas men appear to delay the step until the conditions make it inevitable. The more serious depressive symptomatology in men with depressive psychosis would thus be explained because they seek inpatient treatment late for already seriously pronounced symptomatology.

The artefact hypothesis can help to understand the pronounced depressive symptomatology in women with minor depressive illnesses (Clancy and Gove 1974; von Zerssen and Weyerer 1982), whereby women are sooner in the position to articulate psychic problems and to express their depression.

This is seen not only in self-ratings, in which women are generally classified as more heavily depressive, but also in ratings like ours, where depression more clearly experienced and presented by women is more clearly recorded and documented by doctors.

The role approach by Gove's working group (Gove 1972, 1978, 1979), which has again and again been used to explain the sex differences in psychiatric illnesses, could be seen as a higher order of theoretical framework, in which the different help-seeking and expression of complaints of women can be classified in comparison with those of men.

Finally, to explain the differences found, constitution-biological hypotheses are also taken into consideration. While with the minor depressive disorders in psychiatric institutions and in field surveys depressiveness proportionally shifts towards women through increased recording of subjectively experienced disturbances and through pronounced help-seeking behaviour (Dilling and Weyerer 1978; Verbrugge 1976; Warheit et al. 1973), in general, a predominance of men is found when only serious psychic disorders are considered (e.g. Milazzo-Sayre 1975). This predominance, in our case the more serious depressions in men, corresponds on average to the higher mortality of the male sex and higher morbidity with regard to vitally threatening physical illnesses. The age factor probably also plays a role which is to be investigated in more detail in a follow-up project (Klimitz H, Gebhardt R (1985) Der Einfluß des Alters auf die Geschlechtsverteilung depressiver Störungen (submitted for publication)). Whereas in sexually mature women a depression-stimulating effect of hormonal changes is discussed (Pollitt 1977) which could partly explain the predominance of depressive illnesses in women, androgen is considered to have a certain protective effect against the origin of depressive disturbances. Supporting this hypothesis is the observation that the proportion of depressive psychoses in men, as opposed to women, in old age is increased (Adelstein et al. 1968).

In summary, according to the present state of knowledge, the results found cannot be declared as being satisfactorily explained; numerous influential factors have to be taken into account to interpret these results, whereby differences in help-seeking behaviour seem to be of greatest importance.

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