

Vegetative Symptoms in Anxiety and Depression

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Summary: The incidence of vegetative symptoms was found to be higher in 61 medication-free patients with anxiety compared to an equal number of age and sex-matched normal controls. Multiple regression analysis identified depression, as rated by Beck Depression Inventory (BDI), as the most highly predictive factor associated with these symptoms. Twenty-two anxious patients who obtained scores less than 5 on BDI (absent or minimal depression) were compared with an equal number of age and sex-matched patients with depression. The depressed patients reported a higher incidence of sleep disturbances, weight loss and appetite loss.

Disturbances of sleep, appetite, weight and libido are often seen in affective disorders (Pollitt, 1960; Crisp and Stonehill, 1976; Vaz Serra and Pollitt, 1975; Mathew *et al.*, 1979). These symptoms are of considerable clinical significance as they are often used for classification, prognostication and in the choice of anti-depressants (West and Dally, 1959; Kiloh *et al.*, 1962; Kiloh and Garside, 1963; Carney *et al.*, 1965; Kendell, 1976; van Praag, 1978). However, these symptoms, which are of hypothalamic origin, have also been reported in association with non-specific stress and anxiety (Antelman and Caggiula, 1980). Since anxiety is a frequent accompaniment of depression, a study of the differential effects of anxiety and depression on these symptoms should have considerable significance.

The present study examined the incidence of disturbance of sleep, libido, appetite and weight in anxious patients, matched groups of normal volunteers, and patients with depression.

Method

The subjects were selected from the outpatient clinic of Texas Research Institute of Mental Sciences for participation in several research projects on anxiety. All the participants were interviewed by the senior author and a diagnosis of anxiety neurosis was made. This diagnosis was given to patients who manifested severe muscle tension; inability to relax; headache; somatic manifestations of anxiety such as excessive perspiration, palpitations, tremulousness, breathlessness, frequency of micturition and looseness of bowels; and feelings of anxiety, apprehension, fear, worry and irritability, in the absence of significant depressive affect. Patients who showed symptoms suggestive of other neurotic illnesses (such as hysteria

and obsessive neurosis) and other major psychiatric illnesses were carefully excluded. Similarly, patients in whom differentiation between anxiety neurosis and depression was difficult were also dropped from the study. Sixty-one patients, 17 males and 44 females (mean age 38.2, S.D. 10.77), were chosen for participation in the project.

A control group, matched for age and sex, was selected from physically and mentally healthy drug-free volunteers. This group had the same male-female ratio as the group of anxious patients. The two groups did not differ significantly on age.

All the subjects were required to go through a drug washout period of two weeks. None of the subjects were on monoamine oxidase inhibitors or long-acting neuroleptics when they were initially screened. Physical illnesses were excluded by a physical examination and routine laboratory tests.

Degrees of anxiety and depression were quantified by the State Trait Anxiety Inventory (STAI) and a modified version of Beck Depression Inventory (BDI). State anxiety, as measured by STAI, is defined as a person's transitory emotional state or condition that is characterized by subjective, consciously perceived feelings of apprehension, tension and heightened autonomic nervous system activity (Spielberger *et al.*, 1970). The Beck Depression Inventory measures 13 items: each has four alternative statements with scores ranging from 0 to 3. Item 13, concerning appetite changes, was deleted from the questionnaires to eliminate the possibility of a spurious correlation due to the presence of this item on both the BDI scale and the vegetative symptoms scale. The BDI score has been found to correlate closely with clinical ratings of depression (Beck and Beck, 1972). The subjects also completed the Eysenck

Personality Inventory (EPI). This is a short, self-administered questionnaire that yields scores on two dimensions derived from factor analysis: extraversion-introversion (E score) and neuroticism (N score). High N scores indicate emotional lability, emotional over-reactivity, and predisposition to the development of neurotic disorders under stress (Eysenck and Eysenck, 1963). Finally, a nine item vegetative symptom questionnaire with a severity score of 0 to 3 on each item was given to each subject.

The anxious patients and their controls were compared by t-tests on levels of anxiety, depression, vegetative symptoms, and the neuroticism score of the EPI. The relationships between the rating scale scores and the vegetative symptoms were evaluated by multiple regression analyses. The anxious patients were found to have mild degrees of depression. In order to make meaningful comparisons between anxious and depressed patients, patients from the former group who obtained scores above 4 on the Beck Depression Inventory (scores between 0 and 4 indicate absent or minimal degrees of depression) were excluded from further data analysis (Beck and Beck, 1972). The remaining group consisted of 22 anxious patients: 5 males and 17 females (mean age 40.18, S.D. 3.10). They were compared with an equal number of patients with depression from a previous project on physical symptoms of depression (Mathew *et al.*, 1981), matched for age and sex. These patients were also interviewed by the senior author and a clinical diagnosis of depression was made. This diagnosis was made for patients who showed depressive affect characterized by loss of interest in surroundings, loss of drive and enthusiasm, fatigability, feelings of gloom, sadness, pessimism and low self

esteem. They were also drug-free for a minimum of two weeks and physical examination excluded serious medical illnesses. The anxious and depressed patients were compared by t-tests on the vegetative symptoms.

Results

The results of comparison between the anxious patients and normal controls on the rating scale scores and the vegetative symptom questionnaire are given in Table I.

Next, a series of multiple regression analyses were carried out using the data obtained from the 61 anxious patients. The first multiple regression analysis related the BDI score, state anxiety of STAI and the neuroticism score of EPI as independent variables to the total vegetative symptom severity score (calculated by summing the individual symptom severity scores for each patient) as the dependent variable. In this equation the BDI score explained 37 per cent of the variance, with the neuroticism score adding an additional 4 per cent ($F = 20.07$, $df = 2.58$, $P < .001$). Next, three multiple regression analyses were computed with the BDI, state anxiety and neuroticism scores as dependent variables and the individual vegetative symptoms as independent variables. Excess appetite, early waking, loss of libido and loss of appetite explained 54 per cent of the variance of the BDI score ($F = 16.03$, $df = 4.55$, $P < .001$). Restless, disturbed sleep was the only significant predictor of the state anxiety and neuroticism scores. It explained 10 per cent of the variance of the former ($F = 6.5$, $df = 1.58$, $P < .001$).

The depressed patients obtained a mean score of 14.18 (S.D. 5.88) on BDI which indicates moderate to severe degrees of depression (Beck and Beck, 1972).

TABLE I
Comparison between 61 anxious patients and 61 controls

Variable	Anxious subjects		Control patients		t	P
	Mean	S.D.	Mean	S.D.		
Neuroticism	15.66	4.17	7.75	4.74	9.8	.001
State anxiety	50.21	13.23	32.85	7.99	8.8	.001
Beck	6.49	5.24	1.62	1.98	6.8	.001
Restless sleep	1.33	1.12	.34	.54	6.2	.001
Symptom severity	5.90	3.90	2.61	2.60	5.5	.001
Early waking	.90	1.05	.23	.50	4.5	.001
Difficulty falling asleep	1.16	1.10	.56	.72	3.6	.001
Loss of libido	.84	1.11	.30	.74	3.2	.002
Loss of appetite	.16	.49	.05	.28	1.6	.116
Excess appetite	.70	1.12	.44	.72	1.5	.125
Excess libido	.26	.71	.16	.55	.9	.39
Weight gain	.49	.81	.38	.66	.9	.393
Weight loss	.11	.41	.15	.54	.4	.708

TABLE II
Comparison between 22 non-depressed, anxious and 22 matched depressed patients

Variable	Non-depressed anxious patients		Depressed patients		t	P
	Mean	S.D.	Mean	S.D.		
Symptom severity	3.64	2.40	11.45	5.85	5.8	.001
Loss of appetite	.05	.21	1.14	1.25	4.1	.001
Restless sleep	.91	1.15	2.14	1.08	3.6	.001
Early waking	.62	.87	1.59	1.30	2.9	.006
Weight loss	0	0	.45	.86	2.5	.017
Difficulty falling asleep	1.00	1.07	1.73	1.28	2.1	.047
Excess libido	.05	.21	.41	.91	1.8	.075
Loss of libido	.41	.67	.68	1.00	1.1	.291
Excess appetite	.36	.66	.41	.91	.2	.850
Weight gain	.41	.80	.41	.91	0	1.000

The results of the comparison between the 22 non-depressed anxious patients and an equal number of matched depressed patients are given in Table II.

Discussion

The co-existence of anxiety and depression is well documented (Klerman, 1977). The depression score obtained by this group of anxious patients, though higher than that of the normal controls, was still in the mild range as defined by Beck (Beck and Beck, 1972). The anxious group obtained higher state anxiety scores than the normal controls, validating the clinical diagnosis of anxiety. Higher neuroticism scores for anxious patients have been previously reported (Eysenck and Eysenck, 1963).

Even though the anxious group reported a higher incidence of vegetative symptoms than normals, multiple regression analysis identified depression as the most highly predictive factor for most of these symptoms in these patients. The only anxiety-related vegetative symptom was restless sleep. Further support for the association between depression and the vegetative symptoms comes from the higher incidence of these symptoms in the depressed patients as compared to the patients with anxiety. The depressed group also showed a higher incidence of most symptoms considered characteristic of depression such as weight loss, early waking and loss of appetite (Kiloh *et al*, 1962; Kiloh and Garside, 1963; Carney *et al*, 1965). There were no significant differences between the two groups on atypical vegetative symptoms like weight gain, excessive appetite and excessive libido. The absence of significant differences between the anxious and depressed patients on loss of libido, a classical symptom of depression, warrants further exploration. It should be noted that the reliability of the rating obtained on this symptom by a subject-

rated scale is more questionable than that of other symptoms (Mathew and Weinman, in press). Sexual impotency and premature ejaculation, often seen in association with anxiety, can also cause changes in libido in anxious patients.

The findings reported here suggest that vegetative symptoms are seen more often in anxious patients than normals but that when present, they may be due to the depression often associated with anxiety. The overall incidence of these symptoms is lower in anxiety neurosis than depression. Symptoms such as weight loss, early waking and loss of appetite are more characteristic of depression than anxiety.

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