

## PHYSICAL ILLNESSES AMONG ELDERLY PSYCHIATRIC OUT-PATIENTS WITH DEPRESSION

RATAKONDA S. SAGAR<sup>1</sup>, D. MOHAN<sup>2</sup>, VINOD KUMAR<sup>3</sup>,  
S.K. KHANDELWAL<sup>4</sup> AND P.G. GOPINATHAN NAIR<sup>5</sup>

*Forty elderly psychiatric out-patients with an ICD-9 diagnosis of depression and twenty matched controls were studied for the presence of physical illnesses, using a pre-defined battery of investigative techniques. While the prevalence of physical illness diagnosis was not significantly different between the two groups, the number of subjects with undiagnosed illnesses and those with multiple illnesses was significantly higher among the depressives. Among specific illnesses, hypertension, osteoarthritis and cataract were significantly more common among depressives. Significance of the findings is discussed.*

Among the elderly, a particularly close association between physical illnesses and depression has been noted in the literature (Kay & Roth, 1955; Busse, 1969; Salzman & Shader, 1978; Ouslander, 1982). Much of this information comes from studies on the prevalence of depression among patients with physical illnesses. Many of these studies fail to make a clear distinction between depressive disorders which amount to a mental illness, and depressive symptoms which do not. Although the physical morbidity among psychiatric patients has been found to increase with age (Maguire & Granville - Grossman, 1968), there are not many studies which have systematically examined the prevalence of physical illnesses among the subgroup of elderly patients with a depressive disorder.

Kay & Roth (1955), in a study of elderly psychiatric patients, reported that 57% of males and 42% of females with an affective disorder also had an associated physical illness diagnosis. More recently, Kinzie *et al.* (1986), studying a community sample aged above 50 years and diagnosed to have a depressive disorder, reported that 88% of the sample had one or more major medical diagnoses. The findings of these two studies demonstrate a high prevalence of physical illnesses among the elderly with affective disorders. But, since neither of the study designs had included a suitable comparison group, it can not be concluded that the prevalence of physical illnesses among the study population is higher than what might be expected among general population of the same age group. In addition, the detection rate of physical illnesses can be expected to increase with the number of investigative techniques employed in a study. Whether the physical morbidity among the study group is higher relative to that which might be expected among the general population, can be determined only by subjecting both the study group as well as a suitable comparison group to the same battery of investigative techniques.

The aims of the present study are (i) to examine the nature and prevalence of physical illnesses among

elderly out-patients with a depressive disorder, and (ii) to examine whether such prevalence is significantly higher than that among a comparable group of general population.

### MATERIAL AND METHOD

The study material was divided into two groups:

The "patients group" and the "control group"

The "patient group" comprised of 40 consecutive patients attending the Psychiatry out-patient department of the All India Institute of Medical Sciences, New Delhi, who also satisfied the inclusion criteria. The criteria were that the patient should be aged 60 years or above, should have been diagnosed to have a depressive disorder under one of the ICD-9 (WHO, 1978) categories, and should be willing to undergo all the investigations necessary for the purpose of the study. The "control group" comprised of 20 subjects aged 60 years or above and group matched with the patient group for age and sex. They were drawn from the visitors coming to see their friends or relatives admitted in the hospital. Those with a present or past history of psychiatric illness, as well as those not willing to undergo the investigative procedures were excluded from the study.

To ascertain uniformity in comparison, subjects of both patient group and control group were subjected to the same investigative methodology as described below:

The identification and socio-demographic data were recorded for each subject using a brief questionnaire. Each person was subjected to a semi-structured psychiatric interview. In the patient group it served to confirm the diagnosis of depressive disorder and its sub-type as per ICD-9 categories. In the control group it served to exclude the presence of any psychiatric

illness either at present or in the past. The severity of depressive symptoms was assessed using the 17-item Hamilton Depression Rating Scale (Hamilton, 1960).

The presence of physical illnesses was established through history taking, physical examination and the use of a predetermined battery of laboratory investigations (listed in the Appendix). For subjects in both groups, who showed some evidence of physical illness in the above assessment without a clear diagnosis being established, additional investigations were carried out to either confirm or exclude the presence of an illness. The patient and control groups were then compared on different physical illness parameters like systems commonly involved by the illness, presence of previously undiagnosed illnesses, and presence of more than one illness.

The following statistical methods were used, where applicable, in making comparisons between groups to look for differences that were statistically significant:

Chi-square test with Yates' correction.

Fisher's exact test.

Unpaired 't' test.

## RESULTS

The age and sex distribution and other socio-demographic characteristics of the patient and control groups are shown in 'Table 1'. The two groups did not differ significantly in any of the variables except place of residence, with 87.5% of the patient group coming from an urban locality as against 50% in the control group (p).

The ICD-9 diagnoses given to the subjects among the patient group was MDP depressed type for 28(70%), MDP circular currently depressed for 6 (15%), neurotic depression for 4(10%) and depressive disorder not elsewhere classified for 2(5%). In 20(50%) subjects of the patient group, a past history of episodes of affective illness could be elicited. The severity of depressive symptoms, as measured by the HDRS score, ranged from 16 to 37 for the patient group (Mean : 23.93; S.D. : 3.76). For the control group the range was from 0 to 6 with a mean of 2.2.

The prevalence of physical illnesses among the patient and control groups is shown in 'Table 2'. The number of subjects having a physical illness and the

number having an already diagnosed illness did not differ significantly between the two groups. But the number of subjects with a previously undiagnosed illness and those receiving more than one physical illness diagnosis were significantly higher among the patient group (Table 2). Among those with a previously undiagnosed illness, the newly discovered illness was of sufficient severity to require prompt initiation of medical management in 24(60%) subjects of the patient group as against 5(25%) subjects of the control group, the difference being significant (p). In the patient group the systems most frequently involved by the illness were musculo-skeletal (35 subjects) and cardiovascular (24 subjects), while in the control group the musculo-skeletal (6 subjects) and endocrine (6 subjects) systems were most frequently affected. A comparison of the two groups for specific illnesses which could be found in atleast 10% subjects of either group is shown in 'Table 3'. Hypertension, cataract and osteoarthritis were significantly more common among the patient group, while no single illness was significantly more common among the control group.

**Table 1. Description of the patient and control groups**

	Patients N: 40 (%)	Controls N: 20 (%)
<b>Sex</b>		
Male	21 (52.5)	11 (50.0)
Female	19 (47.5)	9 (45.0)
<b>Age</b>		
Range	60 - 70	60 - 74
Mean $\pm$ S.D.	63.3 $\pm$ 4.65	63.4 $\pm$ 4.35
<b>Place of Residence*</b>		
Urban	35 (87.5)	10 (50.0)
Rural	5 (12.5)	10 (50.0)
<b>Education</b>		
Uneducated	14 (35.0)	6 (30.0)
Literate	8 (20.0)	6 (30.0)
Above school level	18 (45.0)	8 (40.0)
<b>Marital Status</b>		
Widowed/Separated	11 (27.5)	3 (15.0)
Marriage continuing	29 (72.5)	17 (85.0)

$$* \chi^2 = 8.1, \text{d.f.} = 1, p < 0.01$$

**Table 2. Distribution of physical illnesses among the patient and control groups**

	Patients N: 40 (%)	Controls N: 20 (%)
No. of subjects having a physical illness	39 (97.5)	16 (80.0)
No. of subjects having an already diagnosed illness	16 (14.0)	6 (30.0)
No. of subjects having a previously undiagnosed illness	37 (92.5)	13 (65.0) <sup>1</sup>
No. of subjects receiving more than one physical illness diagnosis	36 (90.0)	4 (20.0) <sup>2</sup>

$1\chi^2 = 5.415, d.f. = 1, p < 0.02$

$2\chi^2 = 26.33, d.f. = 1, p < 0.001$

Table 3. Prevalence of specific illnesses commonly seen among patient and control groups

Diagnosis	Patients N: 40 (%)	Controls N: 20 (%)
Osteoarthritis	31 (77.5)	6 (30.0) <sup>1</sup>
Hypertension	22 (55.0)	1 (5.0) <sup>2</sup>
Cataract	19 (47.5)	3 (15.0) <sup>3</sup>
Chronic respiratory disease	10 (25.0)	1 (5.0)
Ischemic heart disease	7 (17.5)	1 (5.0)
Diabetes mellitus	5 (12.5)	4 (20.0)

$1\chi^2 = 10.79, d.f. = 1, p < .005$

$2\chi^2 = 12.07, d.f. = 1, p < 0.001$

$3\chi^2 = 4.75, d.f. = 1, p < 0.05$

## DISCUSSION

Results of the study have shown 97.5% subjects of the patient group to have at least one physical illness diagnosis. The corresponding figures from earlier studies were 79.3% for a much younger sample (Hall *et al.*, 1980) and 88% for a sample aged above 50 years (Kinzie *et al.*, 1986). Since the physical morbidity among psychiatric patients increases with age (Marshall, 1949; Maguire & Granville-Grossman, 1968), the results of this study compare well with those of earlier studies, with any differences being attributable to the age group studied and the thoroughness of investigative techniques employed to detect physical illnesses. However, the number of subjects receiving physical illness diagnosis was not significantly different between patient

and control groups, both of which have been subjected to the same investigative methodology. So, the high prevalence of physical morbidity among elderly psychiatric patients, reported earlier by studies which did not use a suitable comparison group (Kay & Roth, 1955; Venkoba Rao & Madhavan, 1982; Kinzie *et al.*, 1986) was possibly no higher than what would have been expected among general population of that age group.

Earlier studies have reported nearly 1/2 of physical illnesses seen in psychiatric population to be previously undiagnosed (Koranyi, 1979; Kinzie *et al.*, 1986). In this study, elderly depressive when compared to controls, had a significantly higher prevalence of previously undiagnosed illnesses (*p*) as well as of multiple illnesses occurring in the same subject (*p*). The observation that 50% of the elderly depressives studied had past episodes of mental illness could suggest the possibility that once a mental illness diagnosis is established, any new symptoms produced by a physical illness may not be adequately investigated.

When specific illnesses occurring in more than 10% subjects of either group were examined, the prevalence of hypertension, cataract and osteoarthritis was found to be significantly higher among the patient group. Further, a diagnosis of other chronic illnesses of a degenerative nature like ischemic heart disease and chronic lung disease were also more common among the patient group, without reaching statistical significance. These findings, along with the observation that presence of multiple illnesses was significantly more common among the depressives, could support the contention that depressive illness in the elderly might have some relation to generalised degenerative changes that occur with advancing age in various body systems (Jacoby, 1982).

Among the specific illnesses, the difference in prevalence between the patient and control groups was highly significant for hypertension (*p* < 0.001). Rabkin *et al.* (1983) and Tresch *et al.* (1985) have reported on the possible association between depressive disorder and hypertension. In this study, hypertension was diagnosed on the basis of blood pressure readings recorded during physical examination on a single day. It is possible that because of concomitant anxiety some of the patients could have manifested a transient hypertension during the period of medical examination. When all the cases of hypertension diagnosed for the first time during the examination were excluded, in the patient group there remained 10 (25%) subjects in whom hypertension had been diagnosed long before the onset of depressive disorder, while among the controls there were no cases of previously established hypertension.

Among the 22 hypertensive subjects in the patient group, 9 had been taking anti-hypertensive medication while the remaining 13 had been on no specific medication. This data points to the possibilities of an etiological relationship between depression and either hypertension *per se* or the consequences of its treatment.

The prevalence rate of 12.5% for diabetes mellitus found among the patient group, while comparable to the figure of 14% reported by Kinzie *et al.* (1986), did not differ significantly from the prevalence rate of 20% seen among the controls. Of interest is the finding that diabetes mellitus was previously undiagnosed in 4 out of 5 subjects among the patient group, as against 1 out of 4 subjects among the controls. In addition, all the four newly detected diabetics among the patient group had only mild diabetes. Carroll (1969) and Mueller *et al.* (1969) have reported alterations in glucose metabolism in patients with endogenous depression. A transient increase in insulin requirement during the depressive phase, which came down as the depression was treated, has also been reported by others (Crammer & Gillies, 1981; Kronfol *et al.* 1981). In the light of this data it is possible to speculate that the mild diabetic picture seen in the patient group had a causal relationship to the associated depressive disorder. But in the absence of follow-up data, no firm conclusions can be drawn.

The findings that elderly depressives have a significantly higher prevalence of undiagnosed physical illnesses as well as of multiple illnesses, point to the need for adequate measures to detect and manage their physical ailments. Nearly one-half to one-third of referring physicians are reported to use psychiatry for primary care and not take an adequate history nor do a proper physical examination (Johnson, 1973). Among psychiatrists, nearly two-thirds are reported not to do a physical examination on their patients (McIntyre & Romano, 1977). The findings of this study stress the need for psychiatrists to inculcate the habit of making a thorough physical evaluation a matter of routine for all their patients, and more so for elderly depressives. The importance of detecting physical illnesses also lies in the likelihood that medically associated depressions could have different prognostic and management implications than other kinds of depression (Murphy, 1983; Kinzie *et al.* 1986). Adequate management of the physical factors would facilitate optimal management of the depressive disorder.

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## APPENDIX

### (List of Laboratory investigations)

#### Blood:

Hemoglobin  
Total leukocyte count  
Differential leukocyte count  
E S R  
Peripheral blood smear  
Fasting blood sugar  
Post-prandial blood sugar

#### Blood urea

#### Urine:

Albumin  
Sugar  
Microscopy

#### Electrocardiogram.

#### Serum:

Creatinine  
Electrolytes: Na, K.  
Alkaline phosphatase  
Total protein  
Albumin/Globulin  
Bilirubin  
S G O T  
S G P T  
T3 & T4  
(Radioimmunoassay)

#### X-rays of:

Chest  
Dorsolumbar spine  
Pelvis  
Knees