PHYSICAL DISABILITIES IN LATE ONSET DEPRESSION IN THE COMMUNITY

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SUMMARY

A community survey of subjects aged over 50 was carried out. 406 subjects were randomly selected and examined. 264 were found normal, 98 subjects were found to suffer from depression of late onset type. Detailed enquiry was made about the physical health in all subjects using a specially drawn 42 item somatic discomfort inventory. Each symptom was graded as mild, moderate and severe.

Similarly sensory disabilities such as dimness of vision and hearing defects were classified into mild, moderate and severe.

It was found that physical illness, sensory deficit, chronic ailment, recent deterioration in health, restriction of movement and difficulties in self care were more frequently observed in late onset depressives in the community than in normal subjects.

Further, using I. B. M. computer, Principal component analysis was done to examine the correlation of physical illness variables, socio-economic variables, personality variables, variables or emotional attitudes and of the occurrence of depression. Physical illness variables had high loadings in Factor I—General illness factor and Factor II—Isolation factor.

Thus it is concluded that physical disabilities had significant association with depression of late onset type and the physical illness limiting the movement of the subject combined with environmental conditions led to the feeling of loneliness and depression.

Depression is a common psychiatric disorder encountered in old age. Venkoba Rao et al. (1972) in their study of mental illness in patients aged fifty and over attending the hospital found that the affective disorder formed nearly 21% in the whole series and were all of the late onset type. Nandi et al. (1975) in their epidemiological survey found that 24.1% of subjects aged 60 and above in the community suffered from depression and they observed that depression is a disease of older age group.

In a recent survey by Ramachandran et al. (1979) in a suburban population it was observed that 24% of subjects aged over 50 in the community suffered depressive illness.

Post (1968) observed that affective illnesses first occurring after the age of 50 or 60 differ in their etiology from affective illnesses occurring in earlier age. There is inverse relationship between the age at first attack and the strength of hereditary genetic factors of affective illness. Hereditary factors are relatively unimportant in affective disorders first occurring after the age of 50 or 60. It is also found that the persons who fall ill affectively, relatively late in life, are found to have been relatively more stable in their personality. Hence physiological and psychosocial precipitants might be of greater significance than in younger depressives. Among the exogenous factors physical illness is perhaps the most frequently encountered precipitant.

This study aims to examine the association of physical disabilities in late onset depressives in the community.

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MATERIAL AND METHOD

A community survey of subjects aged over 60 in Poonamallee Town Panchayat area was carried out. The medical questionnaire and social data form employed by Kay et al (1964) in their New Castle-upon-Tyne study was modified and employed in this study.

In this study a detailed enquiry was made about the physical health, living condition, socio-economic status and personality of the individual and psychiatric interview was carried out to assess the mental status of the individual. A specially formed symptom sign inventory was used to rate the symptom.

406 subjects were examined. 264 were found to be normal, 98 subjects were diagnosed as suffering from Depression of late onset type (after the age of 50), 13 from organic psychosis, 3 from schizophrenia and 28 from neurotic disorders other than depression (Table I).

**Table 1. Prevalence rate of psychiatric disorders in subjects aged over fifty**

| Organic Disorders                          | Rate per 1000 |
|--------------------------------------------|---------------|
| 1. Arteriosclerotic Psychosis              | 13 32         |
| 2. Senile Psychosis                        | 2            |

| Functional Disorders                       | Rate per 1000 |
|--------------------------------------------|---------------|
| 1. Schizophrenia                           | 3 7          |
| 2. Depression :                            |              |
| (a) Endogenous                             | 12          |
| (b) Neurotic                                | 86 98 241   |
| 3. Anxiety                                 | 7            |
| 4. Hypochondriasis                         | 4            |
| 5. Hysteria                                 | 2            |
| 6. Personality disorders                   | 13 28 69    |
| 2. Alcoholism                              | 2            |
| Total                                      | 142 349      |

The Medical questionnaire employed consisted of 42 questions relating to physical illness. They can be broadly classified into those assessing 1. General Health 2. Cardiovascular system 3. Respiratory system 4. Gastro intestinal system 5. Genito urinary system 6. Nervous system and 7. Musculo-skeletal system.

In the somatic discomfort inventory each symptom was marked as absent, mild, moderate and marked (Mild-present but not distressing, Moderate-present and somewhat distressing, severe-present and markedly distressing).

In addition an enquiry was made whether the subject was at present or in the past treated for diabetes, hypertension, asthma, tuberculosis, arthritis and any other chronic ailment and whether he had suffered recently any deterioration in health, or was admitted in the hospital in the past 5 years or held consultations with a medical practitioner privately or in the hospital during the previous years was also obtained.

In this study if the subject had active symptom and required medical treatment he was defined as having physical illness. The illness according to the severity of the distress and nature of the illness was classified into mild, moderate and marked.

Dimness of vision and hearing defects suffered by the subjects were also classified according to functional capacity. Visual defect was classified in the following manner: Inability to do fine work was graded as mild visual defect, difficulty in reading prints, but with retention of capacity to move about freely as moderate and gross handicap in carrying out daily work as severe. When the person ordinarily wore glasses the assessment was made on the basis of his performance with this aid.

For hearing, slight defect was recorded in those subjects who could understand ordinary conversation with the voice only slightly raised, moderate defect in those with whom ordinary conversation was possible
but difficult, severe deafness when verbal communication was extremely difficult or impossible. When the person was wearing a hearing aid, the assessment was made with its use.

The physical disabilities and sensory deficits suffered by depressives were compared with normals.

Further in this survey, as stated earlier, in addition to physical disabilities information about socio-economic condition, living condition, personality of the subjects were collected, their inter-relationship was assessed using the statistical technique of principal component analysis. The variable studied can be broadly classified into:

1. General features: age, sex, civil status.
2. Features concerned with socio-economic status: social class, occupation, education, monthly income, type of residence, respondent's difficulty in meeting expenses, caste.
3. Features concerned with social and domestic life: Living alone, respondent's family, family system, bereavement, parent loss in childhood, capacity of the spouse for self care.
4. Features concerned with personality and predispositions: Sociability, mood swings, alcohol intake, health concern, eccentricity, tendency to anxiety and worry, past history of mental illness.
5. Features concerned with attitude: Self pity, feeling lonely, satisfaction with life.
6. Features concerned with physical illness: Respondent's general health, physical illness, sensory disorder, deterioration of cognitive functioning, hospital treatment, O.P. treatment, deterioration in health, mobility, ability to go out, needing nursing care and presence of chronic illness.

RESULTS

Physical illness was found in 68.4% of depressive subjects and 36.4% of normals. The illness was of moderate to severe degree in 34.7% of depressives and 13.7% of normals. The physical illness was found significantly higher in depressive subjects (Table II).

Sensory deficit was observed in 63.3% of late onset depressives and 40.2% of normals. The sensory deficit was of moderate to severe degree in 33.6% of depressives and 13.3% of normals. Sensory deficit was found significantly higher in depressives than in normals (Table II).

Chronic illness was noted in 21.4% of depressives and 8.3% of normal subjects. The difference is statistically significant (Table II).

Difficulty in mobility was observed in 37.8% of subjects suffering from depression and 8% of normal subjects. It was found that significantly higher percentage of depressive subjects had difficulty in movement (Table II). Recent deterioration in health was reported in 56.1% of depressive subjects and 12.1% of normal subjects in the community. The difference is significant (Table II), and difficulty in self care was found in 25.5% of depressive subjects and 6.2% of normal subjects. Significantly more of depressives needed help in self care (Table II).

18.4% depressives and 10.2% of normals were hospitalized during the previous year for medical treatment or surgery. 21.4% of depressives were currently on treatment under a physician and 28.6% gave a history of attending medical clinic in the previous year. History of admission in the hospital and treatment in the past years was slightly more in depressives than in normals (Table II).

Further, using the statistical technique of principal component analysis, the correlation between physical illness variables, socio-economic variables, living condition variables, personality variables and emo-
TABLE 2. Physical disabilities in late onset depressions

| Physical Disability | Normal No. | Normal % | Depression No. | Depression % |
|---------------------|------------|----------|----------------|--------------|
| I—Physical Disability |            |          |                |              |
| Nil                 | 168        | 63.6     | 31             | 31.6         |
| Mild                | 60         | 22.7     | 33             | 33.7         |
| Moderate            | 30         | 11.4     | 25             | 25.5         |
| Marked              | 6          | 2.3      | 9              | 9.2          |
| Total               | 264        | 100.0    | 98             | 100.0        |
| $X^2$ = 36.46; d.f. = 3; $p<.01$ |            |          |                |              |

II—Sensory Disability

| Sensory Disability | Normal No. | Normal % | Depression No. | Depression % |
|--------------------|------------|----------|----------------|--------------|
| Nil                | 158        | 59.8     | 36             | 36.7         |
| Mild               | 71         | 26.9     | 29             | 29.7         |
| Moderate           | 27         | 10.2     | 28             | 28.5         |
| Marked             | 8          | 3.1      | 5              | 5.1          |
| Total              | 264        | 100.0    | 98             | 100.0        |
| $X^2$ = 8.172; d.f. = 3; $p<.05$ |            |          |                |              |

III—Chronic Illness

| Chronic Illness | Normal No. | Normal % | Depression No. | Depression % |
|-----------------|------------|----------|----------------|--------------|
| Nil             | 242        | 91.7     | 77             | 78.6         |
| Yes             | 22         | 8.3      | 21             | 21.4         |
| Total           | 264        | 100.0    | 98             | 100.0        |
| $X^2$ = 11.68; d.f. = 1; $p<.01$ |            |          |                |              |

IV—Difficulty in Mobility

| Difficulty in Mobility | Normal No. | Normal % | Depression No. | Depression % |
|------------------------|------------|----------|----------------|--------------|
| Nil                    | 243        | 92.0     | 61             | 62.2         |
| Limited outside        | 13         | 4.9      | 23             | 23.5         |
| House bound            | 8          | 3.1      | 12             | 12.2         |
| Bed fast               | 0          | 0        | 2              | 2.1          |
| Total                  | 264        | 100.0    | 98             | 100.0        |
| $X^2$ = 47.187; d.f. = 2; $p<.01$ |            |          |                |              |

V—Recent Deterioration in Health

| Deterioration in Health | Normal No. | Normal % | Depression No. | Depression % |
|-------------------------|------------|----------|----------------|--------------|
| Nil                     | 232        | 87.9     | 43             | 43.9         |
| Yes                     | 32         | 12.1     | 55             | 56.1         |
| Total                   | 264        | 100.0    | 98             | 100.0        |
| $X^2$ = 75.79; d.f. = 1; $p<.01$ |            |          |                |              |

VI—Nursing Care Required

| Nursing Care Required | Normal No. | Normal % | Depression No. | Depression % |
|-----------------------|------------|----------|----------------|--------------|
| Nil                   | 246        | 93.2     | 73             | 74.5         |
| Occasional            | 12         | 4.5      | 22             | 22.4         |
| Regular               | 6          | 2.3      | 3              | 3.1          |
| Total                 | 264        | 100.0    | 98             | 100.0        |
| $X^2$ = 27.47; d.f. = 2; $p<.01$ |            |          |                |              |

VII—Hospitalization

| Hospitalization | Normal No. | Normal % | Depression No. | Depression % |
|-----------------|------------|----------|----------------|--------------|
| Nil             | 237        | 89.8     | 80             | 81.6         |
| Within 1 month  | 10         | 3.8      | 7              | 7.2          |
| , 6 month       | 6          | 2.3      | 2              | 2.0          |
| , 1 Year        | 11         | 4.1      | 9              | 9.2          |
| Total           | 264        | 100.0    | 98             | 100.0        |
| $X^2$ = 55.68; d.f. = 3; $p<.05$ |            |          |                |              |

VIII—Currently on Treatment

| Currently on Treatment | Normal No. | Normal % | Depression No. | Depression % |
|------------------------|------------|----------|----------------|--------------|
| Nil                    | 216        | 81.8     | 77             | 78.6         |
| Yes                    | 48         | 18.2     | 21             | 21.4         |
| Total                  | 264        | 100.0    | 98             | 100.0        |
| $X^2$ = 4.88; d.f. = 1; $p<.05$ |            |          |                |              |

IX—Attended Medical Clinic Within the Year

| Attended Medical Clinic Within the Year | Normal No. | Normal % | Depression No. | Depression % |
|----------------------------------------|------------|----------|----------------|--------------|
| Nil                                    | 205        | 77.7     | 70             | 71.4         |
| Yes                                    | 59         | 22.3     | 23             | 28.6         |
| Total                                  | 264        | 100.0    | 98             | 100.0        |
| $X^2$ = 1.516; d.f. = 1; N.S. |            |          |                |              |

ational attitude variables and occurrence of depression was examined. Two factors were identified: Factor I accounted for 19% of the total variance. In this following variables had high loadings—civil status, monthly income, occupation, education, social class, living alone, respondents health,
deterioration in health, respondent's mobility, dissatisfaction with life, self pity and feeling lonely. This factor can be called General illness factor and it is formed by socio-economic variables, physical illness variables and emotional attitude variables.

Factor II appears to be related to social isolation. In this, variables such as civil status, living alone, deterioration in health, needing nursing care, respondents mobility and feeling lonely had high loadings. Factor II accounted for 9% of the total variance (Table III).

**TABLE 3. Factorial analysis (Late onset depression)**

| Factor I         | Factor II                    |
|------------------|------------------------------|
| Sex              | Sex                          |
| Civil Status     | Civil Status                 |
| Monthly income   | Living alone                 |
| Social Class     | Deterioration in health      |
| Occupation       | Needing nursing care         |
| Education        | Respondent's mobility        |
| Living alone     | Feeling lonely               |
| Physical illness | Sensory deficit              |
| Sensory deficit  | Deterioration in health      |
| Respondent's mobility | Feeling lonely |
| Self pity        | Dissatisfaction with life    |

**DISCUSSION**

Depression is a common psychiatric disorder in late age. Hospital figures of physical illness and socio-economic factors in them may be misleading. Hence epidemiological study of late onset depressives in the community was undertaken. In most psychiatric epidemiological surveys, social factors are examined and hypothesis are formed. In this study physical health, socio-economic condition, living condition, personality and emotional attitudes were studied. The physical disabilities were enquired in a systematic manner and quantification of the physical disabilities were carried out. It was found that physical illness, sensory deficit, chronic ailment, recent deterioration in health, restriction of movement due to physical and sensory disabilities and difficulty in selfcare were more frequently observed in the late onset depressives than in the normal subjects.

Further using I.B.M. 370/155 computer principal component analysis was carried out to analyse the correlation of physical illness variables, socio-economic variables and the occurrence of depression developing first time after the age of 50. It was found that physical illness variables had high loadings in Factor I, a general illness factor. Features such as inability to go out, deterioration in health, needing nursing care had high loadings in Factor II. (Social isolation factor).

Thus it is clear that physical disabilities had significant association with depression of late onset and the illness limiting the movement and needing nursing care contribute to distressing feeling of loneliness which is again a significant factor in late onset depressives.

In a similar survey in New Castle-upon Tyne Kay et al (1964) observed that 50% of the functionally ill in the community had a physical disability that was graded as moderate to severe. They observed that the association between physical illness and affective disorders in old age was not confined to patients admitted in mental hospital but was of general validity.

Similarly significant association between the existence of physical illness and affective disorder beginning in old age has been reported by many workers (Roth and Kay, 1956, Post 1969).

Similarly Garside et al (1965) carried out a factorial analysis of medical, psychiatric and social characteristics of old age mental disorders and found that poor physical health, liability to falls, reduced
mobility, needing help in self care and severe physical disability had high loadings in factor I which accounted for 16% of the total variance.

Recently Glanturco and Busse (1978) using the technique of multiple regression analysis examined the correlation between a number of different variables and episodes of depression in volunteers of 60 years of age and over and found that in men physical physical illness is the most significant variable.

Pfeiffer and Busse (1973) observed Cross Sectional and longitudinal studies both seem to indicate that an older person can tolerate the loss of love objects and of prestige better than he can a decline in physical health. Since physical disability often disrupts mobility, it can lead to social isolation. Since it also interrupts many other pursuits and activities which ordinarily contribute to self-esteem, physical illness and depression often occur together in old age.

The present study confirms the two hypotheses that physical disabilities contribute to depression particularly of late onset type and physical disabilities leading to difficulties in movement combined with environmental conditions lead to the feeling of loneliness and depression.

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