ABSTRACT: BACKGROUND: Growth in elderly population has led to an increase in age related diseases and mainly depression which is affecting the quality of life. Depression is more prevalent amongst elderly individuals with medical illnesses and emerging public health problem leading to increased morbidity and disability worldwide. AIMS AND OBJECTIVES: To assess the prevalence of occult depression in elderly patients with chronic co-morbid medical conditions. MATERIALS AND METHODS: It was a cross-sectional study conducted in tertiary hospital. Total 100 elderly patients with underlying chronic medical illnesses were included. Depression in study population was assessed by geriatric depression scale and analyzed. RESULT: Out of 100 patients 23(23%) had depression. Females 12/39(30.76%) were affected more than males 11/61 (18.03%). Depression was more prevalent among patients with 3 or more co-morbid conditions (45.4%) as compared to <3 (11.9%). CONCLUSION: Elderly patients with multiple chronic medical illnesses may have associated occult depression. Screening of these patients for depression coupled with appropriate psychiatric referral should be an integral part of Geriatric service. KEYWORDS: Depression, Elderly, Prevalence, comorbid.
Patients were beheld for any morbidity in major organ systems keeping in mind the common medical disorder prevalent in the elderly population.

A PROVISIONAL CHECKLIST INCLUDED: coronary artery disease (CAD), hypertension, diabetes mellitus, stroke and chronic obstructive pulmonary disease (COPD) which are of great significance and constitute the major causes of prolonged ill health.

The diagnosis of these disorders was established based on the reported illness, clinical examination and cross-checking of the medical records and elucidating the drug prescriptions. Patients with prior psychiatric diagnosis were excluded.

Depression amongst the study group was assessed by GDS. The cutoff point for depression was 22 or more when rated on a 30 point scale. Patients needing psychiatric reference were identified and sent for the same.

RESULTS:
- A total of 100 elderly patients were enrolled in the study, of which 61 were males and 39 were females.
- 33% had three or more co existing chronic medical diseases. Of this, 42.42%(14) were females and 57.58%(19) were males. 18% had less than 3 comorbidities, of which 27.77%(5) were females and 72.23%(13) were males.
- 23 of 100 patients had a score of >22 on GDS. And hence, the overall prevalence of depression was 23%. The prevalence of depression was more in patients suffering from 3 or more chronic medical diseases versus those with <3 diseases [15(45.4%) versus 8(11.9%)].
- More females (30.76%) were found to be depressed as compared to males (18.03%)
- Prevalence was the highest among the stroke patients 13 (56.5%), coronary artery disease 11 (47.8%), chronic obstructive airway disease 9 (39.1%), diabetes mellitus 8(34.7%) and hypertension 6 (26.1%).

| Demographic Variables | Number of Subjects | Number of subjects with depression |
|-----------------------|--------------------|-----------------------------------|
| **Sex**               |                    |                                   |
| Males                 | 61                 | 11                                |
| Females               | 39                 | 12                                |
| **Number of Co-morbidities** |              |                                   |
| > 3                   |                    |                                   |
| 1. Males              | 14                 | 6                                 |
| 2. Females            | 19                 | 9                                 |
| < 3                   |                    |                                   |
| 1. Males              | 13                 | 5                                 |
| 2. Females            | 5                  | 3                                 |
Co-morbidities

- Stroke: 23
- Coronary artery disease: 23
- Chronic obstructive airway disease: 23
- Diabetes Mellitus: 23
- Hypertension: 23

Table 1

Co-relation between different co-morbidities and depression
DISCUSSION:

- The physiological process of ageing is not only inclusive of physical alterations but also of several changes and deviations in mental status which are related to specific stresses and circumstances of senility. Depression being the commonest.\(^1\) Moreover, elderly has an increased inclination towards development of chronic medical illnesses, which adds to their deviated mental health.

- Depression in elderly is a cause of concern both medically and socially. It has been shown in a study by Lyness JM et al that a minimum of 10% of the elderly who are seen in primary care settings have clinically significant depression.\(^2\)

- Depression is ten times more common in medically ill geriatric patients than in overall elderly.\(^3,4\) The prevalence rate is found to be 0.5% - 43.5% as per data collected in various studies.\(^5,6\) In fact in one of the studies from urban slums in Mumbai, 45.9% of the chronically ill elderly patients were found depressed. These wide variations can be attributed to difference in study techniques and evaluation methods. In our study, however, prevalence of depression was 23%, which is comparable to other data.

- One of the consistent findings in our study was that more number of females as compared to males was found depressed. This reinforces, that depressive disorders are more common in chronically ill elderly females as has been highlighted by many studies.

- The elderly suffer from multiple chronic illnesses.\(^7\) Many Medical Illnesses are associated with depression and vice versa. Common diseases include cardiovascular diseases,\(^8,9\) diabetes, chronic obstructive airway disease. In our study, the prevalence of depression varied from 26.1-56.5% in various medical illnesses, highest being in stroke patients (56.5%).

- In the current study, 45.4% of the patients with more than 3 chronic illnesses were depressed in contrast to only 11.9% of the patients with less than 3 co-morbidities. This re-emphasizes that there is a direct linkage between depression and the number of chronic illnesses harbourd by the patients which has been scrutinised in previous studies.\(^10,11\) Thus implicating the need to screen such patients for depression.

- Depression can be identified amongst chronically ill elderly individuals with ease. Their symptoms are aggravated by their hesitant attitude and feeling of loneliness. Most frequent indicators were sadness, anxiety, lack of energy, loss of interest, irritability, and loss of concentration and appetite.\(^12\) For the uneducated population GDS was translated into the local language and results recorded.

- In this era of urbanization and nuclear families, there are several limitations in the care of the aged. Depression hence is aggravated beyond normal lowering of mental status. Fear of future and dependency anxiety worsens the condition.\(^13\) Thus, the supportive role of young population towards their parents is essential. It has been observed that compassionate relations within a family lower the disease rates and the ill effects especially depression\(^14,15\).

- Depression if left untreated is associated with poor quality of life. It is a must to diagnose it and manage it adequately. Patients shouldn't be refused treatment because of a concept that depression is a part of normal ageing. As others elderly too respond to antidepressant
therapies. A holistic approach to treatment including practice of yoga and meditation may benefit depressed elderly.16

LIMITATIONS OF THE STUDY: Since our study was a hospital based study, it is not a true reflection of the elderly in the Indian community. A bias for urban and literate population was present which may reflect the health seeking behavior in our city.

CONCLUSIONS: Geriatric psychiatry has now become one of the specialties in the medical field. Hence, more awareness about mental disorders later in life is necessary.

Elderly patients suffering from multiple chronic medical illnesses also suffer from unrecognized depression. Screening these elderly patients for depression coupled with appropriate psychiatric referral should be an integral part of any Geriatric service.

REFERENCES:
1. Singh VB, Kataria DK, Verma SK, et al. Psychiatric co-morbidities in patients attending geriatric clinic at a tertiary care hospital. J Ind Acad Geriatrics 2005; 2: 65-69.
2. Lyness JM, Caine ED, King DA, et al. Psychiatric disorders in older primary care patients. J Gen Intern Med 1999; 14: 249-254.
3. Tiwari SC. Geriatric psychiatric morbidity in rural northern India: implications for the future. Int Psychogeriatr 2000; 12: 35-48.
4. Khandelwal SK. Depressive disorders in old age. J Indian Med Assoc 2001; 99: 41-44.
5. Kai-Uwe K, Maier W. Depression in patients with somatic diseases. Pharmacopsychiatry 1997; 25: 167-180.
6. Sachdeva JS, Shergill SC, Sridhar BS. Prevalence of psychiatric morbidity among medically in-patients. Indian J Psychiatry 1986; 28: 293-296.
7. Dey AB, Soneja S, Nagarkar KM, Jhingan HP. Evaluation of the health and functional status of older Indians as a prelude to the development of a health programme. Natl Med J India 2001; 14: 135-138.
8. Katon WJ. Clinical and health services relationships between major depression, depressive symptoms and general medical illness. Biological Psychiatry 2003; 54: 216-226.
9. Prakash O, Gupta LN, Singh VB, et al. Profile of psychiatric disorders and life events in medically ill elderly: experiences from geriatric clinic in Northern India. Int J Geriatr Psychiatry 2007; 22: 1101-1105.
10. Perez Stable EJ, Miranda J, Munos RF, et al. Depression in medical out patients. Arch Intern Med 1990; 150: 1083-1088.
11. BKitchell MA, Barnes RF, Veith RC, et al. Screening for depression in hospitalized geriatric medical patients. J Am Geriatr Soc 1982; 30: 174-177.
12. Gupta R, Singh P, Verma S, Garg D. Standardized assessment of depressive disorders: a replicated study from northern India. Acta Psychiatr Scand 1991; 84: 310-2.
13. Patel V, Prince M. Ageing and mental health in a developing country: who cares? Qualitative studies from Goa, India. Psychol Med 2001; 31: 29-38.
14. Dhar HL. Gender, aging, health and society. J Assoc Physicians India 2001; 49: 1012-1020.
15. Guglani S, Coleman PG, Sonuga-Barke EJ. Mental health of elderly Asians in Britain: a comparison of Hindus from nuclear and extended families of differing cultural identities. Int J Geriatr Psychiatry 2000; 15: 1046-1053.
16. Krishnamurthy MN, Telles S. Assessing depression following two ancient Indian interventions: effects of yoga and ayurveda on older adults in a residential home. J Gerontol Nurs 2007; 33: 17-23.

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