Chapter

7 Contemporary Issues in the Health of the Elderly

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INTRODUCTION

Demographic transition has lead to the population ageing of India. The cultural and geographic diversity of our country reflects more in the heterogeneity of our elderly population, majority (80%) of whom are in the rural areas and a large percentage (30%) of the elderly are below poverty line. There is feminization of our elderly population (51% of the elderly population would be women by the year 2016). The shape of the population pyramid is gradually changing from a wide base/ narrow top, to a barrel-shaped form. People older than 60 years, constitutes one of the fastest-growing population segment with increase in the number of the older-old (persons above 80 years).[1] Industrialization, urbanization, education and exposure to western life-styles are bringing changes in social values and lifestyle thereby weakening the family ties. The demographic transition and changes in society and economy are posing challenges to those concerned with their physical and emotional well-being. All physicians are likely to encounter more and more elderly patients in their daily practice, with a responsibility to improve quality of life and to prevent avoidable death in old age in our country. Preventing functional decline and promoting functional independence for older adults are key goals for geriatric medicine.

The way a person ages depends upon gender, socio-economic determinants, physical environment, personal and behavioral factors and availability of health and social services. As the people age they tend to become dissimilar, causing increased variability of geriatric population. *Successful ageing* means remaining free of major, life-threatening chronic diseases i.e. no prior diagnosis of cancer, an absence of cardiovascular disease (angina, myocardial infarction, cardiac revascularization procedure, congestive heart failure, stroke, transient ischemic attack, or claudication), no chronic obstructive pulmonary disease (chronic bronchitis, emphysema, or asthma), no reported difficulty with any activities of daily living (ADL), and a modified Mini-Mental State Examination score in the 80th percentile or higher, and having normal physical and cognitive functioning.[2] *Active ageing* is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age. In order to promote active ageing, health systems need to take a life course perspective that focuses on health promotion, disease prevention and equitable access to quality primary health care and long-term care. Elderly people need to be provided with comprehensive health care addressing physical, mental and social problems. Recognizing the need for the care of elderly, the Government of India adopted the national policy for older people in 1999. Even though policies exist, due to the numerous competing priorities with government, ageing related issues have yet to be addressed fully.

Care of the elderly has till date focused on managing chronic disorders rather than on the promotion of healthy lifestyle and prevention of chronic diseases. However changes in lifestyle and medical care can prevent, postpone, or reverse age-related morbidity; thus low cost strategies to avoid disease and disability in this age group are imperative in the 21st century. Since health-care use and expenditures for older adults are disproportionate to their numbers among the population, the ageing of the population has important implications for the health-care system.

Morbidity Profile

The knowledge of age-related changes and morbidity profile of community dwelling elderly population is essential for planning health services. Various hospital

based and community based studies in India have been conducted to look into the morbidity pattern of elderly population[3-8]. World Health Organization and Government of India realizing the need to gather comprehensive morbidity profile of elderly, conducted a multicentric study in 2002-03 at ten centers across the country viz: Chandigarh, Chennai, Delhi, Gauhati, Jodhpur, Pune, Raipur, Shimla, Trivendrum, and Vellore. These studies have identified hypertension, cataract, osteoarthritis, chronic obstructive pulmonary disease, ischemic heart disease (IHD), diabetes mellitus, benign prostatic hypertrophy, upper and lower gastrointestinal dysmotility (dyspepsia and constipation) and depression as the common diseases among older patients. These diseases account for nearly 85% of the diagnosis in older people. Among the functional disabilities, visual disability and difficulty in hearing are the commonest. Disabilities of locomotion and the inability to carry out activities of daily living affect a small proportion of older people, but can prove to be a heavy burden for the caregivers. Cognitive impairment or falling memory and intellect affects up to 10% of older people, which again require substantial amount of care. Incidence of cancer is high in elderly. Older people above 80-85 years of age tend to have predilection for certain disease such as recurrent strokes, dementia, osteoporosis, fractures, cardiac failure and physical frailty. Old age is associated with a high risk of death from diseases and their complications. Older patients have late recovery form illness, have an extra risk of complications from surgical treatment, and are at high risk of adverse side effects of medication. The common causes of death among older people in rural India are bronchitis and pneumonia, ischemic heart disease, stroke, cancer, and tuberculosis. In urban India all these conditions are prevalent; in addition accidents and injuries also disable or kill a substantial number of older people. Malnutrition (including over–nutrition as well as under–nutrition), inadequate consumption of fibers and fruits, physical inactivity and sedentary lifestyle, smoking, excessive alcohol consumption, adverse drug reaction, accident and injuries are common health risk factors observed. The prevalence of various morbidities in elderly population in our community-based study has been depicted in Tables 1 and 2. Table 1 depicts that cardiovascular, hematological, ophthalmological and central nervous system involvement was higher in females than males while musculoskeletal, respiratory, genitourinary, and nervous system diseases were higher in males than females. Table 2 depicts the prevalence of major co-morbid diseases in elderly population

Table 1: Prevalence of morbidities in elderly population according to their system affected

System diseases	*Male*		*Male Total (N=549)*	*Female*		*Female Total (N=451)*	*Grand Total (N=1000)*
	60-74 (N=469)	*>=75 (N=80)*		*60-74 (N=401)*	*>=75 (N=50)*		
Cardiovascular diseases	299 (63.8)	58 (72.5)	357 (65.0)	279 (69.6)	38 (76.0)	317 (70.3)	674 (67.4)
Musculoskeletal diseases	326 (69.5)	49 (61.3)	375 (68.3)	234 (58.4)	34 (68.0)	268 (59.4)	643 (64.3)
Hematological diseases	264 (56.3)	44 (55.0)	308 (56.1)	240 (59.9)	28 (56.0)	268 (59.4)	576 (57.6)
Psychological diseases	140 (29.8)	38 (35.1)	167 (30.6)	188 (46.8)	28 (56.0)	216 (47.8)	384 (38.4)
Ophthalmological diseases	171 (36.5)	23 (28.8)	194 (35.3)	146 (36.4)	17 (34.0)	163 (36.1)	357 (35.7)
Respiratory diseases	153 (32.6)	27 (33.8)	180 (32.8)	99 (24.7)	12 (24.0)	111 (24.6)	291 (29.1)
Gastrointestinal diseases	91 (19.4)	12 (15.0)	103 (18.8)	78 (19.5)	8 (16.0)	86 (19.1)	189 (18.9)
Genitourinary disease	62 (13.2)	11 (13.8)	73 (13.3)	50 (12.5)	8 (16.0)	58 (12.9)	131 (13.1)
Nervous system disease	47 (9.6)	6 (7.7)	53 (9.7)	37 (9.0)	5 (10.0)	42 (9.3)	95 (9.5)
Ear, Nose and Throat disease	13 (2.8)	3 (3.8)	16 (2.9)	17 (4.2)	4 (8.0)	21 (4.7)	37 (3.7)
Dermatological disease	12 (2.6)	1 (1.3)	13 (2.4)	11 (2.7)	2 (4.0)	13 (2.9)	26 (2.6)

according to their residence. Arthritis, hypertension, IHD, DM, were more prevalent morbidities in urban population. Depression, cataract, COPD, APD, BHP and cancer were more prevalent in rural population.

Cardiovascular Diseases

Cardiovascular diseases are the primary cause of death in older adults, and among those without clinical disease, high levels of subclinical diseases are associated with poor survival.[9] Vascular disease is so strongly age-related that it has been proposed as a biomarker of aging.[10] Community studies have revealed high incidence of undetected hypertension in elderly. Screening for hypertension should be a routine part of care. Risk factor modification can prevent cardiovascular events and mortality in older adults improving the quality of late life and maintaining intact health and function. Current treatments for cardiovascular risk factors, including smoking cessation, lipid lowering, blood pressure control, and avoidance of obesity through diet and exercise, are underutilized in elderly.

Table 2: Prevalence of major co-morbid diseases in elderly population

Major morbidity	*Rural N=562*	*Urban N=438*	*Grand Total*
Arthritis	334	271	605
	(59.4)	(61.8)*	(60.5)
Anemia	324	252	576
	(57.6)	(57.5)	(57.6)
HT	183	238	421
	(32.6)	(54.3)*	(42.1)
Depression	238	135	373
	(42.4)*	(30.8)	(37.3)
Cataract	259	46	305
	(46.1)*	(10.5)	(30.5)
IHD	85	180	265
	(15.1)	(41.1)*	(26.5)
COPD	126	46	172
	(22.4)*	(10.5)	(17.2)
APD	113	41	154
	(20.1)*	(9.3)	(15.4)
DM	27	98	125
	(4.8)	(23.4)*	(12.5)
Asthma	27	28	55
	(5.3)	(6.3)	(5.5)
BHP	30	22	52
	(6.7)*	(5.0)	(5.2)
TB	38	13	51
	(2.8)	(2.9)	(5.1)
Cancer	16	6	22
	(2.8)*	(1.4)	(2.2)

*p<0.05

Disorders of the Musculoskeletal System

Articular and non-articular conditions are a major cause of disability and discomfort in the elderly. These disorders determine the quality of life for older adults as the ability to live independently is hampered. Both inflammatory and degenerative arthritis, osteoporosis and diffuse pain syndromes are common in the elderly. Fortunately, the once nihilistic approach to arthritis in older people is now changing with newer therapeutic modalities and surgical options.

Respiratory Disorders

Prevalence of chronic obstructive pulmonary disease increases with age causing considerable morbidity and mortality. Co-morbidities complicate the diagnosis and presentation of it. Treatment should aim to maximize the patient's function and quality of life while minimizing drug-induced side effects. Older patients also benefit from pulmonary rehabilitation.

Mental Health

Age related physiological changes, socio-economic and psychological factors and the co morbidities alter the presentation of the psychiatric disorders and its response to treatment in elderly. Among community dwelling elderly about 5 to 10 percent of those above are 65 and close to 20 percent of over 75 have some degree of clinically detectable impairment of cognitive functions[11]. Standardized and validated measured of cognitive function, such as Mini-Mental State Examination (MMSE) can be a helpful screening tool in assessment and subsequent monitoring. The prevalence of delirium in hospitalized elderly patients is about 15% on admission, commonly caused by the physiologic consequences of a medical condition. Symptoms and signs of depression are common in geriatric population. Suicide is also common in elderly population. Dementia is another gradually progressive psychiatric disorder with a sustained loss of intellectual functions and memory and preserved consciousness causing dysfunction in daily living. It poses a great burden on caregiver. Majority of dementia patients have non-reversible conditions like Alzheimer's, vascular disorders, trauma and infections. Besides these

disorders, substance abuse is also common. Use of tobacco, alcohol, opium and other addictions are significant health risk factors in this age group also.

Incontinence

Incontinence is a common, disruptive and potentially disabling condition in the geriatric population. Incontinent older person are not necessarily demented, bedridden or in nursing home. Since many older patients underreport the condition, it is essential that specific questions about incontinence be included in periodic assessment. Basic underlying causes of geriatric urinary incontinence are urologic, neurologic, functional / psychological, iatrogenic, or environmental. Even when it is not curable, incontinence can always be managed in manner that will keep patient comfortable, make life easier for caregivers and minimize the cost and complications.

Instability and Falls

Unstable gait and falls are common among older people and falls are among the major causes of morbidity in this population. Falling is often a marker for frailty. Falls may be predictors as well as indirect cause of death (usually through fractures). Close to one third of those aged 65 and older living at home, suffer a fall each year, and about one in 40 of those will be hospitalized. Only about half of the elderly patients hospitalized as the result of a fall, will be alive a year later. The factors that could cause or contribute to fall are multiple. Intrinsic factors like medical and neuropsychiatric conditions, impaired vision and hearing, age-related changes in neuromuscular function, gait and postural reflexes and extrinsic factors like medications, improper prescription and / or use of assistive devices for ambulation, and environmental hazards are the common causes for falls. Fractures of the hip, femur, humerus, wrist and ribs and painful soft tissue injuries are the most frequent physical complications. Falls and their complications are preventable to some extent. The efforts for fall prevention need to be strengthened at community level.

Immobility

Immobility is a common pathway by which a host of diseases and problems in older individuals produce further disability. Immobility often cannot be prevented, but many of its adverse effects can be. Improvements in mobility are possible, even in the most immobile older patients. Relatively small improvements in mobility can decrease the incidence and severity of complications, improve the patient's well being, and make life easier for caregivers.

Sensory Impairment

Since majority of older adults having significant visual and auditory dysfunction do not report it, adequate screening for these problems is important. These disorders may limit functional activity and lead to social isolation and depression. Correction of remediable conditions may improve ability to perform daily activities. Murthy et al have reported visual and hearing impairment as the common disabilities in community.[12] Common causes of blindness are cataracts, glaucoma, macular degeneration, and diabetic retinopathy. Screening for these disorders should include testing visual acuity, performing ophthalmoscopic evaluation, and checking intraocular pressure.

Hearing problems are common in the elderly, especially in a highly industrialized society where noise and age interact to cause hearing loss. Kacker et al found that nearly 60% of older people had hearing impairment in both urban and rural areas.[13] This loss is usually of the sensorineural type due to damage of the hearing organ, the peripheral nervous system and / or the central nervous system. These hearing problems are not usually amenable to medical or surgical intervention and thus require hearing aids, aural rehabilitation and understanding.

Infectious Diseases

Infectious diseases in elderly have high prevalence, morbidity and mortality. Clinicians should be acquainted and familiar with unique features of infections in the elderly population to improve clinical outcomes, functional capacity, and quality of life in them. Age related physiological changes in body organs, alteration of host defenses, immune senescence, change in glucose homeostasis, malnutrition and impaired circulation and tissue perfusion predispose them for infections. Elderly needs more frequent and longer hospital stay leading to high incidence of nosocomial infections. Clinical manifestations of infection in them are nonspecific, and subtle. Unexplained change in functional capacity, worsening of mental status, weight loss or failure to thrive, weakness and fatigue, falls, loss of appetite, urinary incontinence and generalized pain may indicate presence of infection. Fever may be absent in 20-30% of elderly patients harboring a serious infection; on the contrary hypothermia may be present in them. Prevalence of tuberculosis in aged is higher than younger. Immune senescence renders elderly vulnerable to reactivation of tuberculosis. Dey et al reported high

prevalence rate of tuberculosis in older age group and observed adverse reactions and major side effects to anti-tubercular therapy in as much as 40 % of the cases.[14]

HEALTH SERVICES FOR ELDERLY

Health care for elderly will need a holistic approach with evaluation of physical, mental, functional and socio-economic health. The goal of organizing health services for older people is to maintain their autonomy with due concern for their self-respect and welfare of the caregivers. The ideal health system for older people should be affordable, accessible, comprehensive, maintaining continuity in content and time. The health care services for elderly should include, (i) health promotion and disease prevention services like health education (exercise, nutrition), screening for general health (blood pressure, blood sugar, cholesterol, vision), screening for cancer of the uterine cervix and specific health promotion program (smoking cessation, immunization, nutritional supplementation) (ii) curative services like early diagnosis and treatment of day-to-day ill-health in primary health care facilities, diagnosis and treatment of serious health problems in secondary health care facilities (district hospitals, general hospitals) and tertiary care institutions (medical schools) and chronic care in long-term care institutions and / or home health care programs (iii) rehabilitative services like physiotherapy, restorative surgery, prosthesis, occupational therapy and long-term care for cognitive impairment (iv) mental health services like counseling for adjustment (ageing, retirement, relocation, widowhood and bereavement), drug and substance abuse and ambulatory treatment for mental diseases. Health professionals at all levels (doctor, nurses, community health workers) will have to contribute to this system.

In our WHO supported study to test a model of health care delivery to rural elderly, we utilized field investigators from the same village to evaluate health needs of the elderly population by door to door survey using a pretested proforma. According to the data collected, the health services were planned and delivered by camp approach at the doorsteps. We noticed that elderly population wants to be treated at home or village. They do not visit the hospital for minor ailments. We also observed that management of common health problems was feasible by simple interventions and it helped in improving functional status and quality of life.

Comprehensive Geriatric Assessment (CGA)

Quick and effective comprehensive clinical evaluation of health status of an older individual, particularly a frail old patient with multiple medical and functional problems, is a challenging task. It requires sensitivity to the concerns of older people, awareness of unique aspects of their medical problem, an ability to interact effectively with a variety of health professionals, and a great deal of patience to detect subtle findings.

CGA refers to the multi-faceted approach of diagnosing and managing complex physical, psychological and functional problems. CGA focuses on the preservation or improvement of the older adult's function rather than curative aspect. Primary care physician can easily perform modified CGA, identify the problems and set the priority for their management.[15]

Rehabilitation

Rehabilitation therapy (i.e. physical, occupational, and speech) plays a key role in care of elderly. It includes functional assessment, development and implementation of rehabilitative plans to take care of functional impairments and make specific recommendation about environmental modifications that can enhance safety and functional ability. An environmental prescription may include alteration in the physical environment (e.g. ramps, grabbers and elevated toilet seats).[16]

Drug Prescription

Rational prescription of drugs in elderly is essential. The absorption, distribution, and clearance of medications is altered due to altered gastrointestinal (GI) motility and blood flow, decreased lean body mass, increased proportion of adipose tissue, decreased creatinine clearance and decreased hepatic blood flow. Elderly tend to receive more number of drugs making them prone for drug interactions and adverse drug reactions. Particular caution should be exercised while prescribing narcotics, sedative-hypnotics, antidepressants, diuretics, nonsteroidal anti-inflammatory drugs (NSAIDs), and angiotensin-converting enzyme (ACE) inhibitors. A good rule of thumb is "Start low and go slow".

Long-term Care

A proportion of older patients will require substantial long-term care, a range of services that addresses the health, personal care, and social needs of individuals who lack some capacity for self-care. These services may be continuous or intermittent but are delivered for sustained periods to individuals who have a demonstrated needs, usually measured by some index of functional incapacity. Nursing home care is needed

by at least five distinct groups of patients who are: (i) actively recuperating or being rehabilitated, (ii) with physical dependencies, (iii) with primarily severe cognitive losses, (iv) receiving terminal care, and (v) in a permanent vegetative state.

Long-term care is certainly not the exclusive purview of medical profession; in fact most of the long-term care is provided by a host of individuals loosely referred to as *informal support*. These persons may be family, friends, or neighbors. Informal care has been and remains the backbone of long-term care. Various types of community long term care programs are home care (home nursing and home making), adult day care, adult foster care, assisted living, geriatric assessment, hospice / terminal care, telephone reassurance, caregiver support, congregate housing, home repairs, meals (congregate and in-home), respite care and emergency alarms. The physicians caring for elderly patients must have at least a working acquaintance with the major programs that support older people.

Social and Ethical Issues

Care of elderly necessitates addressing several social issues. *Aging at the site* is a desired goal. It means growing older without having to move from the place where one had lived for years, with provision of home care even for frail and ill elderly. Our society is in transition with neither the facilities of the west nor the care and concern for the elderly that has traditionally been a part of our culture. Migration of younger generation, lack of proper care in the family, insufficient housing, economic hardship and break-up of joint family have made the old age homes seem more relevant even in the Indian context.[16]

Elder abuse, any form of mistreatment that results in harm or loss to an older person, is another important social problem.[17,18] Elder abuse is typically under-reported in most cultures. The World Health Organization (WHO) has also recognized the need to develop a global strategy for the prevention of the abuse of older people. WHO recommends making primary health care workers aware of the problem, a crucial step in preventing and / or managing elder abuse. Health and medical professional play a key role in the identification and treatment of abuse.

Ethics is a fundamental part of geriatrics. While ethical dilemmas are central to the practice of medicine itself, the dependence nature of the geriatric patient raises special concern. It focuses on the roles of autonomy and rationing.[19] Elderly are being encouraged to indicate their preferences in advance for how they would wish to be treated in the event that they are too incapacitated to express their wishes as advance directives. Caring for dying patient is best done with an inter-disciplinary team. Successful end of life care requires active and compassionate involvement of the physician.

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