ORIGINAL ARTICLE

Morbidity, Co-Morbidity Profile and Disability Status Among Elderly in Civil Hospital Karachi

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ABSTRACT

Objective: To evaluate the Morbidity, Co-morbidity profile and Disability status among elderly in Civil Hospital Karachi.

Study Design: A Descriptive cross sectional study.

Subjects and Methods: The study was conducted at Civil Hospital Karachi from 15 June 2009 to 15 August 2009. Patients aged 60 years and above admitted to selected wards i.e. Medicine, Cardiac medicine, Surgery, Gynecology, E.N.T and Ophthalmology were included except those patients who had psychiatric illnesses, history of trauma and neurological deficits. A questionnaire was designed for assessment of morbidity, co morbidity and disability status of elderly patients. SPSS version 16 was used for data analysis

Results: A total of 220 elderly subjects (60+) were included in the study. Most common morbidities were cerebrovascular accidents (13.6%), chronic liver diseases (7.7%) and hernias (7.7%). When classified according to organ systems most common disorders were of digestive system (28.6%), nervous system (15%) and malignancies (12.2%). Hypertension was the most frequent co-morbidity (28.63%), followed by diabetes mellitus (27.2%) and ischemic heart diseases (7.27%). 63.6% of elderly had minimal disability, 12.3% had moderate disability, 2.7% were severely disabled and 21.4% had no disability.

Conclusion: Most of elderly patient admitted to CHK for C.V.A (13.6) Most common disorder were related to Digestive System 28.6%, among Co-Morbidities (Chronic) Hypertension was frequent 28.63%. A large number (78.6%) of elderly patient had some sort of disabilities.

Key words: Co-morbidity, Disability, Elderly, Morbidity.

INTRODUCTION

Aging is a privilege and societal achievement. It is the accumulation of changes in an organism or object over time. 1 Aging is an "Irreversible" process and refers to:

"A multidimensional process of physical, psychological and social changes"Sir James Sterling Ross commented: You do not heal old age, you protect it, you promote it and you extend it"

At the moment, there is no United Nations standard numerical criterion but, the UN agreed cut off is 60+ years to refer to the Older or Elder population.3 In many instances the age at which person becomes eligible for statutory and occupational retirement pension, has become the default definition.[3]

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The world's elderly population - people aged 60 years and older - is the fastest growing age group.[4] The world has experienced a gradual demographic transition from pattern of high fertility and high mortality rates to low fertility and delayed mortality. Also epidemiological transition from infectious diseases to chronic diseases and degenerative illnesses leads to an older population, resulting in lower proportion of younger population and increase in proportion of elderly.

11% of total population of world (mid year) is of elders.[5] At present in developed countries 22% are already aged 60 or above and this proportion is projected to reach 33% in 2050.[6] While in developing countries between 2009 and 2050 the population aged 60 or above is expected to increase from 9% to 20%.[6] Population (mid year 2009) of Pakistan is 174,578,558 of which 6.1% are elders and they will be 8.4% and 16.78% in 2025 and 2050 respectively.[5] Aging is a challenge which has impact on all aspects of 21st century society. Beside creating pressure, which may affect the overall equilibrium of developmental and humanitarian resource management at country and regional level, aging has important implication at family and individual level.

Health status has an important impact on quality of life of elderly population. The major elements of health status are perceived health, especially psychological well being, chronic illness and functional status. Many health problems are known to increase with age, as individual is more prone to have problems with various functions of body in late phase of his life. Of roughly 150,000 people who die each day across the globe, about two-third 100,000 people die of age related causes.[7] By 2050, close to 80% of all deaths are expected to occur in people older than 60 years.[8]

The presence of disease is associated with a decline in many health outcomes, including quality of life, mobility, functional ability, increase in hospitalizations, psychological distress, mortality and the use of health care resources. The most common morbidities (diseases) of aging include Arthritis, Hypertension, Cataract, Anemia, Diabetes mellitus, Cancer, GIT problems, Deafness, COPD.[9-12] Older people usually have several coexisting health problems. The types, numbers, duration and severity of these problems may have an impact on longevity and maintenance of independence.[13] Another concern in this connection is the prevalence of the disability among the elders, which represents the health related physical or medical functional limitation.

WHO has produced an age-friendly PHC toolkit.[14] WHO also developed a project entitled "Integrated Health Care Systems Response to Rapid Population Ageing in Developing Countries INTRA" in 2001.[15]

In Pakistan, no special health program is working for elderly except entitlement. Good health is essential for older people to remain independent and to play a part in family and community life. So if there are effective measures to prevent these morbidities, co-morbidities and to ameliorate the disease induced disability to a non-severe degree, a significant proportion of economical burden and demand for infirmary service would also be eliminated.

This data may be used to generate the pattern of health problems in elders. It may shed new light on the need for elders' primary care, geriatric medical, nursing and social home support programs and rehabilitation centers.

The objective of study was to evaluate morbidity, co-morbidity and disability status among elderly patients admitted to Civil Hospital Karachi.

SUBJECTS & METHODS

OPERATIONAL DEFINITIONS

ELDERS: Elders are people 60years of age and older.

MORBIDITY: "Morbidity is a diseased state or the index disease for which patient is admitted in hospital."

CO MORBIDITY: "That disease other than index disease whose duration is of 1year or more is considered as COMORBID condition (chronic) or Co-morbidity".

DISABILITY: "Disability is an umbrella term, covering impairment, activity limitation and participation restriction."

A Descriptive cross sectional study was carried out on people aged 60 year and above in selected wards; Medicine, Cardiac medicine, Surgery, Gynecology , ENT and Ophthalmology wards of Civil Hospital Karachi from 15th June 2009 to 15th August 2009. Using a purposive sampling technique a sample of 220 subjects was drawn. Patients with psychiatric illness, history of neurological deficits and trauma were excluded. A questionnaire has been designed for research purpose.

Disability status was assessed by using 'Rapid Disability Rating Scale-II'. The collected data was analyzed through SPSS 16.

Verbal consent was taken from patients and then interviewed at their respective wards. Socio-demographic data was recorded i.e. Age, Gender, Educational status, occupation and Family income. The brief history was taken the related to his/her complaints including, chronic conditions patient was suffering from. A detailed review of patient file was done including symptomatology, general and systemic examinations findings, medical report findings, medications given to them, any chronic condition/s and diagnosis made by the consultant. Our main emphasis was on patients' file as diagnosis given therein was considered as the morbid condition of the patient and so as for co-morbidity. If patient is not able to answer, illness was inquired from his/her attendant.

Rapid Disability Rating Scale-II consists of 18 items divided into two parts; part A deals with activities of daily living (ADL) and focuses on eight basic activities: walking, mobility, bathing, dressing, toileting, grooming, adaptive tasks, and eating, and part B assesses the degree of disability which occurs as a result of the natural process of ageing, basically in communication, hearing, sight, diet, locomotion, continence, physical health making a person dependent on medication, and mental efficiency. Patient are questioned about the Activities written in scale and then score is given to each activity. Note all these questions for disability status assessment correspond to their usual normal health status, two weeks before the onset of present disease symptoms, as we are not measuring the ill effect of disease on physical activities of patient in our research.

RESULTS

i) Socio-demographic Variables:

A total of 220 elderly patients were included in the study. Out of them 139(63.2%) were males and 66.4% of the study group was within the age group of 60-69 years, 98.6% were married. Regarding educational status, 151(68.6%) were illiterate, 25(11.4%) were educated upto primary level, 24(10.9%) upto secondary, 20(9.1%) upto intermediate level and above. Furthermore 133(60.5%) had family income equal to or more than six thousand rupees per month while 87(39.5%) elderly persons had monthly family income less than six thousand rupees. Table I.

ii) Morbidity Profile:

Morbidity profile of elderly patients as diagnosed by physicians and surgeons in Civil Hospital Karachi showed that most common diseases in order of magnitude were cerebrovascular accidents 13.6%, chronic liver diseases 7.7%, hernias 7.7%, diabetic complications 7.7%, acute coronary syndromes 5.5% and gall bladder diseases 5.5% while when classified according to chapters given in International Classification of Diseases most frequent disorders were of digestive system 28.6% followed by nervous system disorders 15%, malignancies 12.2%, cardiovascular disorders 11.3%, endocrine disorders 8.6%, genitourinary disorders 6.3%, respiratory system disorders 5.9%, eye/ENT disorders 2.2% and others 9.7%. (Table II)

Most common morbidity in males was found to be cerebrovascular accidents 15.1%, followed by diabetic complications 11.5% and hernias 10.8% while in females a significantly higher population suffered from chronic liver diseases 17.3% followed by cerebrovascular accidents 11.1% and gall bladder diseases 9.9%.

iii) Co-morbidities:

122(55.5%) of the elderly patients had co-morbidities. Hypertension was the most frequent co-morbidity 63(28.63%) followed by diabetes mellitus 60(27.2%), ischemic heart disease 16(7.27%), hepatitis C 8(3.6%) and joint pain 7(3.2%). Frequency of co-morbidities was almost the same in males and females. 25.8% of the patients studied did not have any co-morbidity. (Table III)

iv) Disability Status:

Disability status of male and female patients was assessed with the help of Rapid Disability Rating Scale-II which revealed that 63.6% had minimal disability 21.4% had no disability, 12.3% were moderately disabled and 2.7% had severe disability. Disability status of elderly patients when related to age categories and socioeconomic groups showed that difference in age categories was found to be statistically significant (P<0.05) while differences in socioeconomic groups were not significant. (Table IV & Figure -1)

TABLE - I

Socio-demographic profile of eideriy patients over 60 years of age.

Characteristics	Male(n=139)	Female(n=81)	Total(n=220)
Age group (yrs)*			
60-69	95 (68.3%)	61 (63%)	146 (66.4%)
70-79	35 (25.2%)	22 (27.2%)	57 (25.9%)
80+	9 (6.5%)	8 (9.9%)	17 (7.7%)
Marital status*			
Married	136 (97.8%)	81 (100%)	217 (98.6%)
Single	3 (2.2%)	0 (0%)	3 (1.4%)
Education status*			
Illiterate	80 (57.6%)	71 (87.7%)	151 (68.6%)
Primary	18 (12.9%)	7 (8.6%)	25 (11.4%)
Secondary	22 (15.8%)	2 (2.5%)	24 (10.9%)
Intermediate	8 (5.8%)	1 (1.2%)	9 (4.1%)
Graduate	8 (5.8%)	0 (0%)	8 (3.6%)
Masters	3 (2.2%)	0 (0%)	3 (1.4%)
Occupation*			
Daily wage worker	73 (52.5%)	8 (9.9%)	81 (36.8%)
Service govt/pvt	10 (7.2%)	1 (1.2%)	11 (5%)
Retired	42 (30.2%)	0 (0%)	42 (19.1%)
Housewife	0 (0%)	70 (86.4%)	70 (31.8%)
Unable to work	14 (10.1%)	2 (2.5%)	16 (7.3%)
Family Income*			
< Rs.6000/= per month	55 (39.6%)	32 (39.5%)	87 (39.5%)
=> Rs.6000/= per month	84 (60.4%)	49 (60.5%)	133 (60.5%)

* Variables leaving statistically significant P value (<0.05).

TABLE - II

Morbidity profile of elderly patients over 60 years of age.(A/c to chapter given in International Classification of Diseases.)

Morbidites	% of elderly patients
Digestive system disorders	28.6%
Nervous system disorders	15.0%
Malignances	12.2%
Cardiovascular disorders	11.3%
Endocrine disorders	8.6%
Genitourinary disorders	6.3%
Respiratory disorders	5.9%
Eye/ENT disorders	2.2%
Others	9.7%

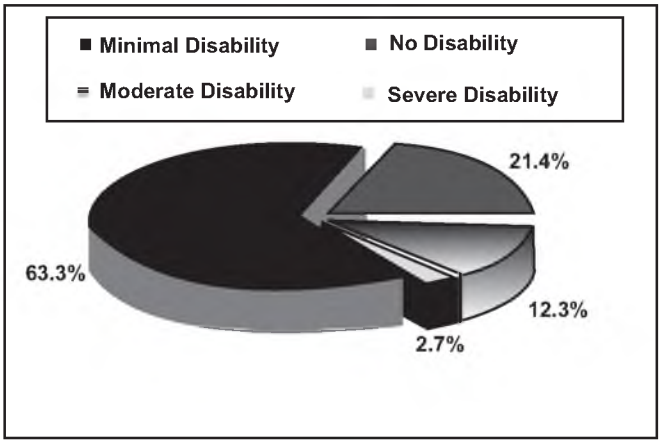
TABLE -III Co-morbidity profile of elderly patients.

Characterstics	Male(n=139)	Female(n=81)	Total(n=220)
Co-morbidities			
Hypertension	38(27.3%)	25(30.9%)	63(28.6%)
Diabetes Mellitus	43(30.9%)	17(21%)	60(27.3%)
IHD	9(6.5%)	7(8.6%)	16(7.3%)
Hepatitis C 3(2.2%)	5(6.2%)	8(3.6%)	
Joint pain	2(1.4%)	5(6.2%)	7(3.2%)
Asthma	1(0.7%)	1(1.2%)	2(0.9%)
COPD	2(1.4%)	0(0%)	2(0.9%)
Hepatitis B 1(0.7%)	1(1.2%)	2(0.9%)	
Cataract	0(0%)	1(1.2%)	1(0.5%)
Paralysis	1(0.7%)	0(0%)	1(0.5%)
Tuberculosis 1(0.7%)	0(0%)	1(0.5%)	
No co-morbidity	38(17.2%)	19(8.6%)	57(25.8%)

TABLE - IV : Disability status of elderly patients in relation to Age catagories and Socioeconomic groups.

Relation with Age catagories					
Disability Status	60-69 yrs	70-79 yrs	80+ yrs	Total (n=220)	Pearson Chi-square Test
No disability	34(23.3%)	10(17.5%)	3(17.6%)	47(21.4%)	
Minimal disability	96(65.8%)	37(64.9%)	7(41.2%)	140(63.6%)	0.013
Moderate disability	12(8.2%)	10(17.5%)	5(29.4%)	27(12.3%)	
Severe disability	4(2.7%)	0(0%)	2(11.8%)	6(2.7%)	

Relation with Socioeconomic groups.				
Disability Status	<6000 Rs.	>6000 Rs.	Total(n=220)	Pearson Chi-square Test
No disability	14(16.1%)	33(24.8%)	47(21.4%)	
Minimal disability	57(65.5%)	83(62.4%)	140(63.6%)	0.382
Moderate disability	13(14.9%)	14(10.5%)	27(12.3%)	
Severe disability	3(3.4%)	3(2.3%)	6(2.7%)	



DISCUSSION

Longer life expectancy has become commonplace and is generally accompanied by presence of several simultaneous occurring costly acute(morbid) and chronic(co-morbid) conditions.[16] The present study done at Civil Hospital Karachi provides a good opportunity to examine trends of common multiple morbidities, co- morbidities and disabilities in elders.

MORBIDITY PROFILE

Morbidity profile of elderly patients in this study revealed that most common morbidities in order of magnitude were cerebrovascular accidents (13.6%), chronic liver diseases (7.7%), hernias (7.7%), diabetic complications (7.7%), acute coronary syndromes (5.5%) and gall bladder diseases (5.5%). It is evident from these findings that non-communicable diseases are more frequent. The increasing prevalence of non-communicable diseases is a serious challenge, where the success in extending life expectancy is translated into a real threat to global health.[17] Non-communicable diseases are linked to a cluster of major risk factors that are measurable and largely modifiable so majority of non-communicable diseases are preventable.[18]

Morbidities when grouped according to chapters given in International Classification of Diseases showed that most frequent disorders were of digestive system (28.6%) followed by nervous system disorders (15%), malignancies (12.2%) and cardiovascular system disorders (11.3%). Disorders of digestive system were most frequent (28.6%) and among digestive system disorders chronic liver diseases, hernias and gall bladder diseases were most common. Similar frequency of digestive system disorders were obtained in a study carried out by Corina *et al.* in Ireland.[19] Second most frequent disorders were of nervous system (15%) and among these cerebrovascular accidents and meningitis were most commonly reported. Malignancies accounted for 12.2% of all morbidities in our study population which is comparable with the study by Bilquis *et al.* at Sir Ganga Ram Hospital Lahore where 10.5% of elderly patients were diagnosed having malignancies.[20] Cardiovascular disorders including acute coronary syndromes, myocardial infarction and congestive cardiac failure were 11.4%. Similar result (11.4%) were reported in a study by Younis I Munshi *et al.* in Kashmir valley.[21]

The changes in economic, social and demographic determinants of health and adoption of unhealthy life styles are thought to be contributing to observed data of morbidity pattern in study population.

CO-MORBIDITIES

55.5% of elderly patients were found to have co-morbid conditions. Hypertension was the most frequent co-morbidity (28.63%). Our findings are consistent with study conducted by A.J. Purty *et al.* Tamil Nadu India, which showed 25.9% prevalence of hypertension [22] and with study carried out at Sir Ganga Ram Hospital Lahore[20] while study done by S.Canbaz *et al.* also revealed that most frequently reported chronic disease is hypertension in elderly people. [23] Diabetes Mellitus was found to be the second most frequent co-morbid condition (27.2%). Similar observation was reported by Younis.I Munshi *et al.* (28%)[21] and by Bilquis *et al.* (31%).[20] Study by N. E. Schoenberg *et al.* reported that most common constellations of multiple morbidity are hypertension, heart disease and arthritis or hypertension, heart disease and diabetes.[16] The present study is comparable to the study.

Increased frequency of hypertension, diabetes mellitus and heart diseases can be explained on the basis of sedentary and modern life styles and stress especially in urban areas while due to their chronic course these diseases are becoming a major cause of morbidity and mortality in elderly in addition to other age groups. Chronic diseases disturb the social life of people. Functional disturbance, insufficiency and disability occur as a result of physical and mental illnesses which disturb the quality of life of the elderly.[23]

DISABILITY STATUS

Disability with advancing age comes in degrees and a key threshold is the requirement for frequent help from other people beyond what would be expected by virtue of family and social ties(i.e. dependency).[24]

Assessment of disability status showed that 78.6% of elderly patients had disability and when categorized 63.6% had minimal disability, 12.3% were moderately disabled and 2.7% had severe disability. Such high frequency of disability among elderly can be explained on the basis of high prevalence of chronic conditions. Although many chronic diseases are not fatal, chronic conditions are leading cause of disability among the elderly and result in many elderly people being limited in their daily activities of life.[25] Disability status of elderly patients when related to age was found to be statistically significant ($p<0.05$) which shows that increasing age deteriorates functional ability of elderly persons causing more disability. Thus among socio-demographic characteristics age is one of the main determinants of functional decline in elderly which is in accordance with the fact reported by S. Canbaz *et al.* and Taylor R.[23-25] 21.4% of elderly patients did not have any sort of disability. Elderly without any disability and enjoying successful aging provide evidence that much disability is avoidable by preventing disabling diseases, adaptive behavior to illnesses, environmental changes and life style modifications to adjust with process of aging and rehabilitation. Furthermore if disabilities not prevented, the degree of dependency (disability) can be lessened by modification in environment to accommodate disabilities as reported by N. K. Kutty.[26] So, it is necessary to address the disability avoidance agenda for elderly in parallel with all other issues.

CONCLUSION

Major health problems and pattern of disease and disability have been identified. Among morbidities cerebrovascular accident (13.6%), chronic liver diseases (7.7%) and hernia (7.7%) are common. Elders are not suffering from single disease, they have multiple morbid conditions simultaneously. Among chronic condition Hypertension was the most frequent one, followed by diabetes and ischemic heart diseases. Most of the patients have minimal disability. So besides dealing with only one geriatric health matter at a time, episodic care for multiple chronic conditions should be provided, to prevent premature death, and to eliminate economical burden and infirmary service demand.

LIMITATIONS

Our study has several limitations, there is marked lack of surveys & studies in this field especially in Pakistan to compare result. Language difference while dealing with the patients was a major hindrance. Attendants were mostly biased while rating the disability than patients' own rating. Heterogeneity of this population with regard to race/ethnicity, education and with acute presentation of disease may limit the generalization of the study findings.

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