

Multimorbidity Patterns Among Hospitalized Geriatric Patients in Medicine Wards of a Tertiary Care Hospital in Dhaka City

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Abstract

Background: Elderly people are posing a significant health burden in our country for their multi morbidity as economic growth has increased our life expectancy. Pattern of multi morbidity of this older people varies according to geography, ethnicity, culture and life style. **Aim:** The aim of this study was to identify the prevalence and pattern of multi morbidity of elderly patients admitted in a tertiary care hospital. **Method:** 50 random cases of elderly patients aged more than 60 years admitted in medicine and allied wards of Dhaka medical college hospital were observed at this cross-sectional study from January 2017 to June 2017 (total 6 months period). Data were reviewed and analyzed using simple frequency and percentage. Protocol was reviewed by institutional ethical board (IRB) of Dhaka medical college hospital. **Result:** A total number of 50 elderly patients with age ranging from 60 to 95 years were observed with male and female ratio 1.3:1 having multi morbidity among 92.0% patients and female is more affected than male. Hypertension, ischemic heart disease, diabetes mellitus and stroke were found most common diseases as individual. Hypertension and diabetes mellitus was found as the most common multi morbidity pattern followed by hypertension and IHD, stroke & diabetes mellitus. **Conclusion:** This study sheds light on priority needs of elderly patients in terms of medical facility in tertiary care hospital of Bangladesh. [*Journal of National Institute of Neurosciences Bangladesh, January 2021;7(1): 56-59*]

Keywords: : Multi-morbidity; geriatric patients; elderly patients

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Introduction

Co-occurrence of two or more chronic diseases in a same individual is called multimorbidity. People with one chronic disease tends to have other one which is specially occur in elderly people. So the fact that more people are getting older, their disease pattern is changed from single comorbidity to multimorbidity^{1,2}. By 2020 there will one billion elderly people throughout the world aged 60 years or more. Among them 70% will be from low income countries³. In Bangladesh the number of

elderly people are projected to be from 7.8 million in 2001 to 16.2 million by 2025 as there is a significant improvement in mortality rate causing increased life expectancy⁴. Current data shows that life expectancy in Bangladesh is 71.8 years that would be higher in coming days making senior population a significant bulk of population. The elderly population is a high risk and vulnerable group in terms of health issues as they are more prone to suffer multimorbidity which consumes higher health care facility and health expenditure.

Therefore the evaluation of present status of multimorbidity of our elderly population and their pattern is much warranted in current context.

Research on the multimorbidity pattern of geriatric people is very insufficient in south Asia including Bangladesh⁵. However, older citizen are important part of our country who need special care and attention. Most of them are not productive. Moreover if they suffer from multimorbidity it will put farther pressure on our poor economy and hamper our social atmosphere. For the last couple of years we are focusing on primary health care mainly maternal and child health. But geriatric health care facilities are being neglected. Lack of data delineating current health status of our elderly people and their impact on our economy is the key factor behind this. S this study will put some light on this aspect and help our policy makers to give emphasis on preparing intervention strategies for our geriatric population.

This study was undertaken to evaluate the scale of multimorbidity among hospitalized geriatric patients, to find out most common patterns of multimorbidity among hospitalized geriatric patients, and to see whether there is any significant relationship of multimorbidity with sex patterns.

Methodology

This was a small cross sectional study conducted in department of medicine of Dhaka medical college hospital from January 2017 to June 2017. Fifty elderly patients admitted in medicine indoor aged ≥ 60 years from both sexes were included in this study by purposive sampling. Data was collected from the patient or from the attendance in case of inability of the patient to communicate. During data collection semi-structured questionnaire designed by the researcher containing relevant variables was used. All the patient was examined in accordance with history to get idea about the system of body involved, necessary findings were correlated with the information obtained and elaborated in admission ticket by bed-doctor.

Results

Data from fifty randomly selected patients with age ranging from 60 to 95 years were taken. Among them male was 28(56%) and female was 22(44%). Average age of male and female were 72 years and 68 years respectively. Highest age of male was 95 years and female was 80 years. Among 50 patients 46(92%) of patients had multimorbidity (≥ 2 Diseases). Out of 28 male 24 had multimorbidity whereas all of the (22 in number) female had multimorbidity. One female patient

had highest 5 systems involved. 4 systems were involved in 3 male patients and 6 female patients. Hypertension was found in 35 patients (70%) which was most common health issue, among them 21(60%) patients were male and 14(40%) were female. Diabetes mellitus was found in 24 (48%) patients with equal male female ratio and diabetes was second most common disease after hypertension. Stroke was third most commonly involved with multisystem disorder (n=23) involving 46% patients with female predominating, 70% vs 30%. Ischemic heart disease was 4th common disease involving 21(42%) patients (male 62% and female 38%) followed by arthritis 32% (n=16), COPD 22% (n=11), CKD 20%(n=10) (Table 1).

Table 1: Distribution of Specific Disease with Sex (n=50)

Disease	Male	Female	Total
Hypertension	21(%)	14(%)	35(70%)
Ischemic heart disease	13(62%)	8(38%)	21(42%)
Stroke	9(40%)	14(60%)	23(46%)
Dementia	1(33%)	2(67%)	3(6%)
Arthritis	7(44%)	9(66%)	16(32%)
Osteoporosis	2(67%)	1(33%)	3(6%)
Diabetes mellitus	12(50%)	12(50%)	24(48%)
COPD	7(100%)	0(0%)	7(14%)
CKD	4(50%)	4(50%)	8(16%)
Cancer	2(67%)	1(33%)	3(6%)
Valvular Heart Disease	0(0%)	2(100%)	2(4%)

Hypertension was found to be common in older patient group (≥ 70 years) than less older age group (60-69 years) that is 67% vs 43%. On the other hand, ischemic heart disease and stroke were found more common in less old 60-69 years age group that is 52% vs 48% and 52% vs 48% consecutively. Arthritis and osteoporosis were also found more common in older age group 44% vs 56% and 33% vs 67% consecutively. But diabetes mellitus was more common in less old age group 58% vs 48% cases (Table 2).

Therefore the most common multimorbidity pattern was hypertension and diabetes seconded by hypertension and ischemic heart disease. 3rd most common pattern was stroke and diabetes followed by hypertension and arthritis. There were also other patterns of multimorbidity like hypertension, ischemic heart disease and CKD; hypertension, diabetes and CKD. Bronchial asthma, cataract, cancer, dementia, major depressive disorder was found sporadically along with other disease like hypertension, ischemic heart disease and diabetes mellitus (Table 3).

Table 2: Distribution of Specific Disease and Age Group of Elderly (n=50)

Disease	Early Elderly	Late Elderly	Total
Hypertension	15(43%)	20(57%)	35(70%)
Ishchemic Heart Disease	11(52%)	10(48%)	21(42%)
Stroke	12(52%)	11(48%)	23(46%)
Dementia	1(33%)	2 (67%)	3(6%)
Arthritis	7(43%)	9(57%)	16(32%)
Osteoporosis	1(33%)	2(67%)	3(6%)
Diabetes Mellitus	14(58%)	10(42%)	24(48%)
COPD	7(100%)	0(0%)	7(14%)
Chronic Kidney Disease	6(75%)	2(25%)	8(16%)
Cancer	3(100%)	0(0%)	3(6%)
Valvular Heart Disease	1(50%)	1(50%)	2(4%)

Early Elderly=60-69 years; Late Elderly= \geq 70 years

Table 3: Cross table delineating sex and system involved (n=50)

System Involved	Male	Female	Total
1	5(100%)	0(0%)	5
2	10(59%)	7(41%)	17
3	10(56%)	8(44%)	18
4	3(33%)	6(69%)	9
5	0(0%)	1(100%)	1

Discussion

In this study it has been found that 92.0% of patients had multimorbidity. Among them all the female patients had multimorbidity. The statistics was higher from other studies like Khanam et al⁴ (53.8%) and Nwani et al⁶ (49%) as these studies were conducted in a community level. Multimorbidity was found in almost all patients as this study was conducted in a tertiary care hospital which is in many cases probably the last destination of critically morbid patients in Bangladesh. Khanam⁴ also showed that prevalence of multimorbidity was significantly higher among woman.

Marengoni⁷ showed that hypertension, dementia, and heart failure were the most common disorders, with a prevalence of 38.0%, 21.0% and 18.0% respectively, whereas all other diseases were less frequent. The prevalence of hypertension is also higher in the late elderly age group, which is consistent with the findings showing that increasing age is a risk factor for hypertension⁸. Nimako⁹ also showed that the most common combination of conditions was hypertension & diabetes mellitus (36.6%), hypertension & musculoskeletal conditions (19.9%) and hypertension & other cardiovascular conditions (11.4%). Hossain et al¹⁰ showed that the combination of hypertension with

cardiac diseases, hypercholesterolaemia with gouty arthritis were the most commonly occurring disease pairs in both sexes. Joshi et al¹¹ also found that hypertension is one of the most prevalent part of multimorbidity among older followed by chronic obstructive airway disease, cataract and osteoarthritis. He also showed morbidities like asthma, COPD, hypertension, osteoarthritis, gastrointestinal disorders, anaemia, eye and neurological problems were significantly associated with disability and distress. Higher number of morbidities was associated with greater disability and distress. About half of the patient in our study was suffering from DM with equal distribution of sex. It was second most common disease that we found in elderly patients. DM is as a part of metabolic syndrome is frequently found clustering with hypertension in many studies¹². Stroke ranks third among causes of death in Bangladesh¹³. Mortality due to stroke has increased from 6.0% to around 9.0% from 2006 to 2011¹⁴. In Bangladesh people aged more than 40 years have a stroke prevalence of 0.3% and its prevalence increased to 1.0% in individuals aged 70 years or more¹⁵. Hospital-based studies conducted in past decades has indicated that hypertension and ishchemic heart disease is the main cause of ishchemic and haemorrhagic stroke in Bangladesh. So cardiovascular pattern comprising HTN and IHD, HTN and stroke, HTN, IHD and DM is the most common form of multimorbidity found in this study which is also revealed in other studies¹⁶⁻¹⁷.

Conclusion

This study gave interference about the depth of multimorbidity in elderly population of Bangladesh. Male and female were almost equally affected while combination of hypertension, DM and IHD were found to be most common multimorbidity patterns. Bangladesh is a developing country going through a transitional period where ageing population is gradually increasing due to increased life expectancy. They are more likely to be affected by multimorbidity. Therefore, vivid and realistic knowledge based on authentic data is crucial for comprehensive management of elderly patients.

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