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Prevalence of Mental Health Morbidity and its Association with Physical Illness among Urban Elderly

Dr. Anku Moni Saikia[1], Dr. Rupali Baruah[2], Dr. Jahnabi Das[3], Dr. Pavel Barman[4], Dr. Mintu Dewri Bharali[5]

[1]Professor and Head, Department of Community Medicine, Gauhati Medical College
drankumonisaikia[at]gmail.com
[2]Professor and Head, Department of Community Medicine, Assam Medical College
rupali999[at]yahoo.com
[3]Demonstrator, Department of Community Medicine, Diphu Medical College and Hospital
jahnbi[at]gmail.com
[4]Senior Consultant, Healthcity Hospital, Khanapara
pavelmania2004[at]gmail.com
[5]Assistant Professor, Gauhati Medical College and Hospital
dewrimintu[at]gmail.com

Corresponding Author: Dr. Jahnabi Das, Demonstrator, Department of Community Medicine, Diphu College and Hospital

Abstract: ***Background: With massive urbanization and migration of young people abroad, coupled with waning of joint family, the number of elderly people living alone are increasing. As a result, the elderly may need to take care of their health themselves, and might be lonely or depressed, which leads to both psychological and physical health disturbances. Objectives: 1. To study the prevalence of mental health morbidities among the elderly of urban areas of Kamrup district. 2. To study the association of mental health morbidities with physical illness 3. To suggest recommendations on the basis of findings from the study. Methodology: A Community based cross-sectional study done over a period of 6 months in the urban areas of Kamrup district. A sample size of 300 was calculated. Results: The prevalence of mental morbidity in urban elderly was found to be 49.7% whereas the prevalence of physical morbidity was 78.3%. Depression was the most common mental morbidity followed by substance abuse, anxiety disorders and dementia affecting 27.6%, 24.3%, 21.6% and 7.6% of the respondents respectively. The most common physical morbidity was hypertension, affecting 54.33% of the respondents, followed by anaemia (34%) and musculoskeletal disorders(34%), diabetes (29 %).Significant association was found between hypertension and mental morbidities (p-value=0.269). Highly significant association was also found between vision problems and mental morbidities (p-value<0.0001). Analysis of data: Data collected was entered in Microsoft Office Excel and analyzed using SPSS 22. Criteria of significance used in the study was p < 0.05. Proportions were calculated for different study variables. Odds ratio and confidence interval was calculated. Conclusion: The present community-based study reflects the extent and pattern of physical and mental health morbidities in an urban area. Hypertension, musculoskeletal diseases and vision problems were found to be associated with mental health morbidities like depression, anxiety and dementia.***

Keywords: Mental health, Elderly, Depression, Anxiety, Substance abuse, Hypertension, Diabetes, Musculoskeletal, anaemia, urban

1. Introduction

As a consequence of the advent of newer health care modalities and advancement of medical science, in conjunction with the population boom and decreased mortality rates, there has been an unprecedented increase in the geriatric population, in the world as a whole and India in particular. India is presently undergoing a demographic transition resulting in an increased proportion of older people in the total population. The population in India is set to grow by 55 % with a 326 % rise of the above-60 population and a 700 % rise of the above-80 population[30]. With such increasing life expectancy there is tremendous increase of chronic morbidities and disabilities. These in turn affects the elder's autonomy and independence, which determine the quality of life. Psychological morbidities may also result from lack of independence and autonomy. A vicious cycle of loss of autonomy, loss of physical and functional ability and psychological morbidity creeps in old age.

The United Nations uses the benchmark of 60 years of age or above to refer to older people[26] and we have used the same benchmark to define the elderly in our study. Worldwide 15% of adults suffer from a mental disorder[1]with most common being dementia, depression, anxiety disorders and substance use problems affecting approximately 5%, 7%, 3.8% and 1% of the world's older population, respectively. As per 2011 census, the proportion of elderly in India is 8%[27],and this figure is increasing significantly. Along with the rest of India Assam is also experiencing demographic transition with the urban elderly population being 6.6%[27]

Older adults are more likely to experience events such as bereavements or physical disability which affect emotional well-being and can result in poorer mental health. Mental health morbidities in the geriatric age group represent a sizeable chunk of all the psychiatric morbidities in various age groups. The prevalence of psychiatric morbidities in the geriatric population has increased significantly over the past few decades. Although there are a few studies on geriatric mental health morbidities these represent the tip of the

iceberg as most of the morbidities are undiagnosed and unreported.

Objectives:

1) To study the prevalence of mental health morbidities among the elderly of urban areas of Kamrup district.
2) To study the association of mental health morbidities with physical illness
3) To suggest recommendations on the basis of findings from the study.

2. Methodology

A Community based cross-sectional study done over a period of 6 months from October 2017 to march 2018 in the urban areas of Kamrup district. Taking the prevalence of mental health morbidities as 45.6 %[2] and taking precision to be 6, using the formula 4pq/l2, the sample size calculated was 275.The total sample size taken was 300.The list of wards were considered as primary sampling unit. Each ward was considered as a cluster. From 31 clusters, 10 clusters were selected randomly by lottery method. From each cluster, 30 elderly were selected to get 300 elderly. Then house to house visit was done till 30 elderly were found in each cluster. If necessary, information were verified from the caregiver or family members or caregivers. A Pre designed and Pre-tested schedule was used to collect the data. The tools used were Geriatric Depression Scale-15[3,4,5,6] Geriatric Anxiety Scale-10[9]and Hindi Mini Mental State Examination [7,8]was used to assess Depression, Anxiety and Dementia respectively. For morbidity profile review of Medical records and reports were considered in addition to clinical assessment. Anaemia was measured by Haemoglobin percentage estimation using mission Hb Haemoglobinometer and classified according to WHO[10].Hypertension was diagnosed using JNC 8 criteria)[11]. If an elderly was on anti-hypertensive medication and the blood pressure was found to be normal on examination, then also the respondent was considered to be hypertensive.
Vision was assessed by enquiring about any difficulty in day to day activities due to impaired vision. Hearing was assessed based on history. The institutional Ethics committee approved the protocol of the study. Elderly ageing 60 years or more and residing in the wards under Municipality Corporation of Kamrup district for more than 6 months were included. Exclusion Criteria: 1.The elderly who did not give consent to the study 2.Three visit were made for elderly who could not be contacted. Elderly who were found to be absent on 3rd visit were excluded.3.Seriously ill.4.Elderly living alone, those who could not comprehend the questions and participate in the interview in a meaningful way were excluded.

Table 1: Socio-demographic characteristics of the Elderly

Socio-Demographic characteristics	Number(N)=300(%)
Age	
60-69	139 (46.3)
70-79	137 (45.7)
>80	24 (8)
Gender	
Male	147 (49)
Female	153 (51)
Religion	
Hindu	243 (81.0)
Muslim	48 (16.0)
Christian	7 (2.3)
Others	2 (0.7)
Caste	
General	154 (51.4)
OBC	111 (37)
SC	23 (7.6)
ST	12 (4.0)
Literacy	
Illiterate	34 (11.3)
Primary school	18 (6.0)
Middle school	7 (2.3)
Up to High school	11 (3.7)
Matriculate	87 (29.0)
Higher Secondary	22 (7.3)
Graduate & above	121 (40.3)
Marital status	
Married	171 (57.0)
Unmarried	21 (7.0)
Widow /widower/Divorced	108 (36.0)
Type of Family	
Joint	127 (45.7)
Nuclear	173 (54.3)
Socio economic status	
Upper class	54 (18.0)
Upper middle class	36 (12.0)
Middle class	115 (38.3)
Lower middle class	43 (14.3)
Lower class	52 (17.4)
Living status	
With spouse	68 (22.7)
With children	65 (21.7)
With spouse and children	103 (34.3)
With relatives /caregiver	39 (13.0)

Table 2: Distribution of elderly according to the Mental health morbidities

Mental Morbidities	Number (%)
Present	149 [49.7%]
Depression	83(27.6)
Dementia	23(7.6)
Anxiety	65(21.6)
Substance Abuse	73(24.3)
Others	14(4.6)
Absent	151[50.3%]
Total	300[100%]

Multiple response table

Table 4: Distribution of elderly according to type of physical morbidity

Physical Morbidities	No (%) n= 300(%)
Vision	63 (21)
Hearing loss	14 (4.7)
Urinary incontinence	21(7.0)
Diabetes	87(29.0)
Hypertension	163(54.3)
Musculoskeletal	102(34)
Anemia	102(34)
Others	78 (26)
No physical morbidity	65 (21.6)

* Multiple response Table

Table 5: Relationship between mental morbidities and Physical morbidities

Mental morbidities	Diabetes		Vision		Hypertension		Hearing Loss		Musculoskeletal		Anemia		Total
	Present(%)	Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent	
Present	43 (28.8)	106 (71.2)	41(27.5)	108 (72.5)	91(61)	58 (39)	8 (5.3)	141(94.7)	53 (35.6)	96 (64.4)	56 (37.5)	93 (62.4)	149
Absent	44 (29.1)	107 (70.9)	12 (7.9)	139 (92.1)	72(47.7)	79 (52.3)	6 (3.9)	145 (96.1)	49 (32.4)	102 (67.5)	46 (20.3)	105 (46.2)	151
Total	87	213	53	247	163	137	14	286	102	198	102	198	300
P-value	0.9574		<0.0001		0.0269		0.7647		0.653		0.2381		
Odds Ratio	0.9865		4.397		1.722		1.371		1.149		1.374		
Confidence interval	0.5990-1.625		2.204-8.774		1.088-2.724		0.4638-4.053		0.7124-1.854		0.8508-2.221		

*figure in parenthesis are row wise percentage

3. Results

Of the elderly respondents, 46.3% were in the 60-69 year age group, 45.7% were in the 70-79 age group and 8% were in the above 80 years age group**.** The female respondents comprised of 51% of the total respondents. Majority of the respondents belonged to the Hindu religion (81%) and general caste (51.4%). The number of graduates and higher educated is substantial (40.3%). Most of the elderly were married (57%) and belonged to the middle class (38.3%).Elderly living with spouse and children comprised 34.3% of the total respondents. Most of the respondents lived in nuclear families (54.3%) which is understandable considering the urban setting of the study.

In our study we found that 49.7% of the respondents had at least one form of mental morbidity. Depression was the most common mental morbidity followed by substance abuse, affecting 27.6 % and 24.3% of the respondents respectively. Anxiety disorders were relatively common affecting 21.6% of the respondents whereas dementia was not that common having a prevalence of 7.6%.

The prevalence of physical morbidities as found in our study was 78.3 %. The most common physical morbidity was hypertension, affecting 54.33% of the respondents, followed by anemia and musculoskeletal disorders affecting 34% each. Diabetes affected 29 %, whereas vision problems affected 21 % of the respondents. Urinary incontinence affected 7% of the elderlies whereas hearing problems were reported by 4.7% of the elderlies.

While analyzing the association between physical and mental morbidities of the urban elderlies, it has been observed that significant association was found between hypertension and mental morbidities (p-value=0.269). Highly significant association was also found between vision problems and mental morbidities (p-value<0.0001). There was no significant association of diabetes, hearing loss, musculoskeletal disorder and anemia with mental morbidities of the elderlies.

4. Discussion

In this study we tried to find out the prevalence of mental morbidities and correlates of mental health among urban elderly. The prevalence of mental morbidities amongst urban elderlies was found to be 49.7 % which is similar to a study done in an urban setting in India by Chowdhury A and coworkers[12]where the prevalence was reported as 49.2%. However in another study conducted by Ramachandran V and co-workers[13] psychiatric illnesses were detected in 26.7% which is considerably lesser than the prevalence found in our study. Dube and co-workers[28] and Premarajan and his co-workers[29] found that the prevalence of mental morbidities in the urban population was 22.34 % and 17.3 % respectively

In our study, the most common physical morbidity was found to be hypertension (54.33 %), followed by anaemia (34 %), musculoskeletal problems (34 %), diabetes (29 %) and vision problems (21 %). Significant association was found between hypertension and mental morbidities with p value = 0.02.The association of mental morbidities with visual disturbance was also found to be highly significant (p value<0.0001). No statistically significant association was seen between diabetes, anaemia, musculoskeletal and hearing loss with mental morbidities.

The prevalence of physical morbidities in our study was found to be 78.3% which is comparatively higher than that found in the study by K Seby and co-workers[15] where physical illnesses were found to be present in 69.8% of the elderly respondents. The most common morbidities found in the study by K Seby and co-workers[15] study were visual impairment, followed by cardiovascular disease, rheumatic illnesses, and pulmonary illnesses, hearing impairment, genitourinary diseases and neurological disorders. The prevalence of visual impairment was found in subjects with depressive disorders (x2=4.88; P=0.02). No statistically significant association was found between prevalence of any other psychiatric disorder and hearing impairment, pulmonary disorders or genitourinary disorders. In this study, hypertension was included under cardio-vascular diseases. The percentage of the respondents with physical morbidities in our study and in the study by **K Seby and co-**workers[15]was similar. We found hypertension to be the most common morbidity in respondents whereas the study by K Seby and co-workers[15] found visual morbidities to be more prevalent. Hypertension (included in cardio-vascular morbidities) was found to be second most common physical morbidity in the fore-mentioned study.

Our study clearly depicts that of the mentally morbid elderlies, the prevalence of depression was highest amongst the mental morbidities (27.6%) followed by substance abuse (24.3%) and anxiety (21.6%). Dementia was found in 7.6 % of the respondents. The higher prevalence of depression in urban elderly could be attributed to the fact that nuclearization of families could lead to loneliness and loss

of social contacts. In the study by Chowdhury A and his co-workers [12] depression represented the largest diagnostic group which correlates with the prevalence of depression among the urban respondents of our study. The prevalence of depression amongst urban respondents in our study was also similar to that reported by Kay and his co-workers[14](26.2%) and Ramachandran and his co-workers[13] (24%).

K Seby and co-workers[15] reports that 6.4% of the respondents had generalized anxiety disorder, which is similar to the 4.6% prevalence rate reported by Ritchie and co-workers[17]. A Chowdhury and co-workers[12]reports the prevalence of generalized anxiety disorder to be 10.6 %. We found a relatively higher prevalence of anxiety disorder in the mentally morbid urban elderly population (17.33%) as compared to these studies. In another study conducted on elderly community-dwelling population of the Duke Epidemiologic Catchment Area, Blazer and co-workers[16] found that the 6-month incidence for all anxiety disorders was 19.7 percent which is quite similar to the findings of our study. Sreejith S nair and co-workers[24] found that 10.66 % of the respondents had generalized anxiety disorder. Kalasapati Lokesh Kumar and coworkers[25] found a prevalence of 5 % for anxiety disorders. The findings of our study were not concordant with the findings of these studies as we found a higher prevalence of anxiety disorders in the respondents (21.6 %).

In a study conducted in Assam by Saikia AM and co-workers[18] in an urban area, prevalence of dementia was found to be 1.25%. The prevalence of dementia (11.6%)as reported by Chowdhury and co-workers[12] is similar to that reported by Griffiths and his co-workers,[19]Venkoba Rao,[20] Weissman and his co-workers,[22] Pfeffer and his co-workers[21] and is higher than the prevalence found in our study (7.6%). However, in other Indian studies, researchers have quoted lower figures, e.g., 6% by Ramachandran[13]. In the study by Shaji and co-workers[23], the prevalence of dementia was also found to be lower than our study (3.39%). These variations could be due to different demographic studies and instruments used.

5. Conclusion

The prevalence of mental morbidities in the geriatric population has increased significantly over the past few decades. The huge burden of mental morbidities put immense pressure on family members, caregiver, health system and society as a whole. Although there are a few studies on geriatric mental health morbidities this represent the tip of the iceberg as most of the morbidities are undiagnosed and unreported considering it as apart of normal ageing. So there is a genuine paucity of studies to identify the factors for mental morbidities in the context of different societal situation. The present community-based study reflects the extent and pattern of physical and mental health morbidities amongst elderly population in an urban area in India and is aimed at providing a database for providing a holistic set of solutions. The major mental health morbidities found in this study in descending order of prevalence are depression, substance abuse, anxiety and dementia. On the other hand, the physical morbidities in descending order of prevalence are hypertension, anaemia, musculoskeletal (mainly osteoarthritis), diabetes and vision problems. Hypertension, musculoskeletal diseases and vision problems were found to be significantly associated with mental health morbidities. Therefore, early identification of geriatric morbidities should be ensured through periodic screening and regular health check-ups backed by appropriate rehabilitation services. A comprehensive geriatric care assessment is required in this regard.

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