ORIGINAL ARTICLE

Morbidity pattern and health seeking behavior in elderly population of Raipur City, Chhattisgarh, India

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Abstract

Background: Epidemiological transition across globe is considered as the net result of the demographic transition. The shape of the population pyramid is gradually changing from a wide-based and narrow topped form to a barrel-shaped form in recent future (1). **Aims & Objectives**: 1. To determine morbidity pattern in elderly population, 2. To assess their health care seeking behavior. **Material & Methods**: Study design- A Community based cross sectional observational study. Study setting - Pt J.N.M. Medical College, Raipur, Chhattisgarh. Study Duration: July 2013 to June 2014. Sampling method: - Multi stage simple random sampling. Sample size: 640. Sample Size were calculated by using statistical formula, n= $Z^2$1-α/2 P(1-P)/d. Study tool: Pre-designed, Pre-tested Performa. Ethical consideration-Written document from institutional ethical Committee and Informed Consent from subject. Inclusion criteria: 1. All elderly persons in the age group of 60 years and above who were residing in the study area for at least one year, and willing to Participate in study without compulsion. Exclusion Criteria: 1. Those who were not willing to participate in study. **Results & Conclusions:** Prevalence of morbidity was 95.31%. Morbidity was positively associated with advancement of age and predominant in females (98.92%) and those belong to slum (98.43%) and lower (98.14%) socio-economic status while inversely associated with Physical activity. Out of total morbid population 70.49% had chronic illness. Most common system involvement was Gastro intestinal system (82.62%). Perception about illness was increased with advancement of age. Majority were seeking therapy from private registered practitioner (35.52%).

Keywords

Morbidity; Elderly; Health seeking

Introduction

Epidemiological transition across globe is considered as the net result of the demographic transition. The shape of the population pyramid is gradually changing from a wide-based and narrow topped form to a barrel-shaped form in recent future. (1) Current projections indicate from 1950 to 2050, the world population will have increased by a factor of

3.6; those 60 and over will have increased by a factor of 10; and those 80 and over by a factor of 27. (2) The aged population has special health problems that are basically different from those of adult or young. Most diseases in aged are chronic in nature – cardiovascular, arthritis stroke, cataract, deafness, cancer, chronic infections etc. Disease process is usually multiple. (3) In the above context, present study was conducted in Raipur city Chhattisgarh, where there is rapid urbanization and modernization is ongoing, and there is no such study on morbidity pattern in relation to socio-demographic and epidemiological context carried out.

Aims & Objectives

1. To find out demographic profile of study population.
2. To determine morbidity pattern in elderly population.
3. To assess health care seeking behavior of elderly population

Material & Methods

Study Type - Community based cross sectional observational study. Study population - Elderly population. Study Area- Raipur City. Study Duration- July 2013 to June 2014. Sample Size Calculation- n= $Z^2 1\text{-}\alpha/2$ P(1-P)/d. 640 P = Morbidity Problems (50%), d= Absolute Precision (4%), Confidence level= 95%. Sample size required is largest when P = 0.5(50). (4) Inclusion criteria: 1. All elderly persons in the age group of 60 years and above who were residing in the study area for at least one year, and willing to participate in study without compulsion. 2. Those elderlies who were present on day of visit. Exclusion Criteria: 1. Individuals not willing to participate in study 2. Those who were absent on day of visit. 3. Persons too ill to be interviewed. 4. 'Door lock' when investigator visit the place. Strategy for Collection- Multistage Simple Random Sampling. Working Definitions- Any departure, subjective or objective, from a state of physiological or mental wellbeing whether due to diseases, injury or impairment (WHO TRS 164). (5,6) Ethical Approval-From Institutional ethical committee. Consent- Informed Consent. Data Analysis- Using Microsoft Excel-2014 and Epi-info was used. Chi-square test and odd ratio were used for statistical significance.

Results

Prevalence of morbidity was 95.31% (Figure-1). Morbidity was statistically positively associated with advancement of age and predominant in females (98.92%) and those belong to slum (98.43%) and lower (98.14%) socio-economic status, ($p<0.05$) OR=3.1(C.I.=0.81-11.8), while inversely associated with Physical activity $p<0.01$,OR=5.16 (C.I.=1.54-17.27) (Table-2). Mean illness was more in female compared to male. It was 4.19 and 3.78 respectively. Overall mean illness was 4.03. There was positive association between mean no of illness and advancement of age ($P<0.001$) (Table-4). There was statistically significant relation observed between mean spells of illness and age. In both sexes mean spell was increasing with advancement of age (Table-5). Statistically significant relation was observed in health Expenditure. It was more of their Per capita income on health in urban compared to slum (Table-8). Long waiting time (44.68%) and misconduct of staff (33.43%) were the main reasons for not preferring government institutions. Half of the people who did not seek treatment was observed to be due to lacking of care taker followed by health services too far (30%).

Discussion

Prevalence of morbidity in the current study was 95.31%. Various studies by (Jabeen S *et al*., 2013) and others shows 98.8%, 40% and 66.13% respectively. (7,8,9) Present study observed that, of all the morbid population 70.49% had chronic illness, 28.85% had both acute and chronic illnesses and only a small portion (0.65%) suffered with acute Illnesses. In another study by (P Ray Karmakar, *et al* 2012), 13.1 % were suffering from acute diseases, 76.9% were suffering from chronic diseases and 10% were suffering from both acute and chronic diseases. (10) In present study, acute illness was very less in comparison to study made by, P Ray Karmakar *et al* (2012). (10)

In the current study, most of the people had multiple system involvement and many had more than one disease in a particular system. Most common system involvement was Gastro intestinal system followed by Eye, Cardiovascular system and locomotor system respectively. In most of the system Prevalence of Morbidity was more in female than male, except gastrointestinal system, Nervous system, and Genitourinary system. P Ray *et al* (2012) reported that 67.2% elderly had Gastro Intestinal System disorder, followed by involvement of eye, cardiovascular and musculoskeletal system in 49.5%, 46.1% and 29.9% respectively. Genito-urinary

system, nervous system and ENT problem was seen in 9.8%, 5.4% and 4.9% study population. (10) Shradha K *et al* (2012) shows that most common disorder reported among elderly was eye diseases (51.7%) followed by endocrine, nutritional and metabolic diseases (38.4%), diseases of circulatory system (33.1%), disorders of oral cavity (32.3%), musculoskeletal disorders (30.2%) and diseases of respiratory and digestive system was reported about 10% by the geriatric people. (11) Rahul Prakash *et al* (2004) in a study at urban area of Udaipur Rajasthan observed that major health problem as per diagnostic group was eye problem (70%), Hypertension (48%), Psycho-social problems (42%), Respiratory problem 36%, and rest others were musculoskeletal in 14.6%, Nervous system 8.6%. (12) Dissimilarity in morbidity pattern might be due to different geographical distribution.

In present study, there was positive association between mean no of illness and advancement of age. Similar finding was observed in another study made Scanlan JM et al. (13) There was statistically significant relation observed between mean spells of illness and age. In both sexes mean spell was increasing with advancement of age. In study by Scanlan JM *et al*, (1977), reported that majority of the sick person (55.42%) had more than two illnesses, 21.71% had two and 22.87% only one. (13) In the present study, statistically significant relation was observed in health expenditure. It was more of their per capita income on health in urban population compared to slum. This is similar to trend at national and international level. Those who are more developed and economically more sound spending more on health than developing country. In slum maximum of their income spend on food. In another study by Srinivasan Krishnamachari *et al*, (2010), Reported that majority spending less than 10% of their monthly income on medication and health related issues. (14)

Conclusion

Morbidity was high and increased with age. Majority had problems related to GIS. Perception about illness was increasing with advancement of age. Majority avail treatment from private registered practitioner and modern allopathic system. Urban dwellers were more health conscious.

Recommendation

Study emphasizes there is need of more attention towards old age of health planner and policy maker and there is need to improve services at government facility.

Limitation of the study

Morbidity related with Genitourinary system was determined by only asking history and with available medical records and medications. Spells of illness is based on memory so those who had critical illness may could recall well in comparison to those who had minor illnesses.

Relevance of the study

There was no baseline data in Chhattisgarh related with the topic, so it would help the health planner in prioritizing the problems related with elderly.

Authors Contribution

All the authors have made valuable and substantial contribution to the study process and to the drafting of the article.

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Tables

TABLE 1 DISTRIBUTION OF BACKGROUND CHARACTERISTICS OF STUDY POPULATION

Background Characteristic	Number	Percentage
Age (in years)		
60-74	523	81.71
75-84	114	17.81
≥85	3	0.46
Sex		
Male	267	41.71
Female	373	58.28
Education		
Illiterate	198	30.93
Up to primary	84	13.12
Up to higher secondary	257	40.15
Graduation & above	101	15.78
Socio-economic status		
Upper	72	11.25
Middle	299	57.19
Lower	269	46.84
Religion		
Hindu	601	93.90
Muslim	33	5.15
Christian	6	0.93
Place of residence		
Urban	320	50
Slum	320	50

TABLE 2 DISTRIBUTION OF MORBIDITY WITH BACKGROUND CHARACTERISTICS

Background Characteristics	Morbid	Healthy	Chi-square, df, P value	Odd Ratio (OR), 95% C.I.
Age in years				
60-74	495(94.64)	28(5.35)	X2=2.758, df=2, p>0.05	OR=1
75-84	112(98.24)	2(1.75)		CI=0.07-1.30
≥ 85	3(100)	0		
Sex				
Male	241(90.26)	26(9.73)	X2=26.178, df=1, p<0.0001	OR=0.10
Female	369(98.92)	4(1.07)	(Highly significant)	CI=0.03-0.29
Area				
Urban	295(92.18)	25(7.81)	X2=13.97, df=1, p<0.001	OR=0.18
Slum	315(98.43)	5(1.56)	(Highly significant)	CI=0.07-0.49
SES				

Upper	68(94.44)	4(5.55)	X2=8.588, df=2, p<0.05 (Significant)	OR=1
Middle	278(92.97)	21(7.02)		OR=0.77 CI=0.25-2.34
Lower	264(98.14)	5(1.85)		OR=3.1 CI=0.81-11.8
Physical activity				
Light	398(97.31)	11(2.68)	X2=11.65, df=2, p<0.01 (Significant)	OR=5.16 CI=1.54-17.27
Moderate	184(92.46)	15(7.53)		OR=1.75 CI=0.54-5.65
Heavy	28(82.5)	4(12.5)		OR=1

TABLE 3 DISTRIBUTION OF MORBIDITY AS PER SYSTEM OF INVOLVEMENT

System of involvement	Male(n=241)		Female(n=369)		Total(n=610)	
	No	%	No	%	No	%
Gastro Intestinal System	211	87.55	293	79.40	504	82.62
Eye	192	79.66	295	79.94	487	79.83
CVS	113	46.88	207	56.09	320	52.45
Loco motor system	71	29.46	174	47.15	245	40.16
Ear	83	13.60	128	34.68	211	34.59
Metabolic and Endocrine system	57	23.65	111	30.08	168	27.54
Respiratory system	32	13.27	70	18.97	102	16.72
Nervous system	35	14.52	38	10.29	73	11.96
Skin & subcutaneous tissue	18	7.46	28	7.58	46	7.54
Genitourinary system	29	12.03	16	4.33	45	7.37
Others	5	2.07	12	3.25	20	3.27
Total	852	-	1398	-	2250	-

TABLE 4 DISTRIBUTION OF ILLNESS WITH AGE AND SEX.

Age groups in yrs	No examined	Persons ill	Number of illness		Total illnesses	Mean no of illnesses
			Male	Female		
60-74	523	495(94.64%)	652	1303	1955	3.94
75-84	114	112(98.24%)	261	226	487	4.34
≥ 85	03	3(100%)	0	19	19	6.33
Total	640	610(95.31%)	913	1548	2461	4.03
Chi square=79.75, df=2, P<0.001, Highly Significant						

TABLE 5 DISTRIBUTION OF SPELLS OF ILLNESS WITH AGE AND SEX

Age groups in yrs	Persons ill		Spells of illnesses			
	Male	Female	Male	Mean Spells	Female	Mean Spells
60-74	176	319	773	4.39	1526	4.78
75-84	65	47	293	4.50	262	5.57
≥ 85	0	3	0	0	22	7.33
Total	241	369	1066	4.42	1810	4.90
Chi-square = 83.484, df = 2, p < 0.0001(Highly significant)						

TABLE 6 AGE & SEX WISE DISTRIBUTION OF PERCEIVED HEALTH STATUS

Variables	Well	Ill	Chi-square, d.f., p value
Age in years			
60-74	152(29.06%)	371(70.93%)	Chi-square =5.634, df = 2, p >0.05
75-84	22(19.29%)	92 (80.70%)	
≥ 85	0	3 (100%)	
Total	174(27.18%)	466(72.81%)	640
Sex			
Male	85(31.85%)	182(68.16%)	Chi-square =4.999, df = 1 , p <0.05 (Significant)
Female	89(23.86%)	284(76.13%)	
Total	174	466	640

TABLE 7 DISTRIBUTION AS PER TREATMENT AGENCY AND SYSTEM OF MEDICINE (N=456)

Age group In years	Govt.	Private	Quack	Others	Total	Chi-square, df, p value
60-74	107(29.63)	115(31.85)	101(27.97)	38(10.52)	361	Chi-square = 20.269, df = 6, p<0.005 (Significant)
75-84	17(18.47)	47(51.08)	19(20.65)	9(9.78)	92	
≥ 85	3(100)	0	0	0	3	
Total	127(27.85)	162(35.52)	120(26.31)	47(10.30)	456	
System of Medicine	Allopathic	Ayurveda	Homeopathy	Others	Total	
60-74	308(85.31)	14(3.87)	18(4.98)	21(5.81)	361	Chi-square = 7.382, df = 6, p >0.05
75-84	86(93.47)	1(1.08)	0	5(5.43)	92	
≥ 85	3(100)	0	0	0	3	
Total	397(87.06)	15(3.28)	18(3.94)	26(5.70)	456	

**Figure in parenthesis are percentage.*

TABLE 8 DISTRIBUTION OF EXPENDITURE ON HEALTH

% of Per capita income	Urban		Slum		Total	
	No	%	No	%	No	%
<10%	161	50.94	155	49.05	316	62.94
10-20%	56	56	44	44	100	19.92
20-30%	29	80.55	7	19.44	36	7.17
>30%	0	0	4	100	4	0.79
Total	246	49.00	210	41.83	456	100

Chi-square = 16.258, d.f. = 3, p< 0.001 (Significant)

Figures

FIGURE 1 PREVALENCE OF MORBIDITY IN ELDERLY POPULATION

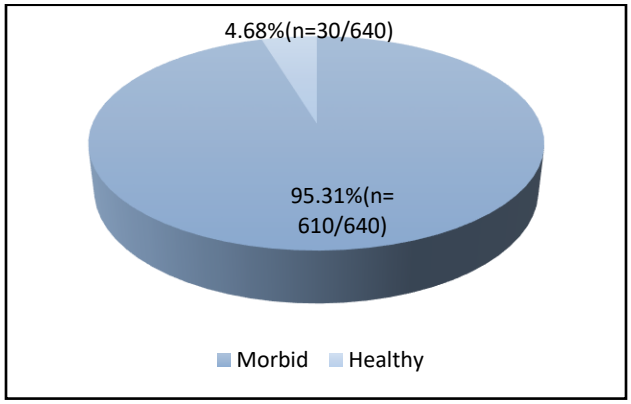

FIGURE 2 DISTRIBUTION OF STUDY SUBJECTS AS PER TYPES OF ILLNESS