Original Research Article

Sociodemographic status of elderly & pattern of health care utilization for respiratory diseases in NCR

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ABSTRACT

Background: Elderly population is increasing progressively all over the world. Diseases of respiratory system are important cause of morbidity & mortality in elderly. Health-care utilization is an important element of health care.

Materials and Methods: Cross-sectional study of elderly aged 60yrs & above was conducted in urban & rural area of NCR & Ghaziabad district of Uttar Pradesh. First part included socio-demographic characteristics and self-reported co-morbidities. This first part screened out suspected respiratory cases and they were asked questionnaire regarding health care utilization.

Results: In urban 282/1522(18.5%) & in rural. 298/1503 (19.8%) were found to be suffering actually from respiratory illness. For chronic respiratory illness allopathic services were used by 91.8% (259/282) urban & 75.5% (225/298) rural elderly. Urban area were utilizing services of private health care providers most commonly. In our study 36.6% (109/298) & 20.5% (61/298) rural elderly were taking over the counter treatment from medical stores or going to a quack for acute & chronic respiratory illness respectively. During acute illness 60.7% (181/298) rural elderly choose health care service due to belief but during chronic illness only 51.3% (153/298) elderly stated it as a reason for choosing health care service. Affordability as a reason for selection of particular health service increased from 23.2% (69/298) in acute illness to 36.9% (110/298) in chronic illness.

Conclusion: Majority of elderly are illiterate & dependent on family for support. Private health care services are preferred especially by urban elderly. Public healthcare services are used more for chronic illness than acute illness.

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1. Introduction

Improvement in health services as well as social & economic advances have increased life expectancy. All over the world number of elderly is progressively increasing. This demographic change first occurring in developed countries, is being seen in developing world also. As per World Population Prospects (2017), elderly (60 years or more) population was 962 million and it is expected that by 2050 it will grow to 2080 million.[1,2] The size of India's older adult population is greater than the total population of many developed and developing countries. There is wide variation in elderly population regarding social, economic, educational and health status. Geriatric health facilities in India have not even reached development phase. Available basic medical infrastructure is grossly inadequate to cater to even general population. Health problems of this continuously increasing elderly population is a big concern. Ability to address their complex health care

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demands in this scenario is a great challenge.

Despite respiratory diseases being significant cause of morbidity in elderly, in our search we were able to find only one Indian study which focused on health care utilization by elderly for respiratory disease. G. Sudha et al. conducted a study on factors influencing the care-seeking behaviour of chest symptomatic.[3] Health-care utilization is an important element of health care that reflects health status of elderly. Health-seeking behaviour or health-care service utilization forms an important determinant of health status of the population.

In India, research in field of gerontology & geriatric is very limited. Elderly are a unique population subgroup with their unique problems & health care needs. Most of the studies done have focused on morbidity profile of the elderly. Diseases of respiratory system are important cause of morbidity & mortality in elderly. Urbanization, industrialization & increasing air pollution is likely to increase their prevalence further. No study has been done specifically focusing on respiratory diseases, which constitute a significant proportion (as high as 20%) of chronic disease burden in elderly. Respiratory diseases are often treated improperly. Hence, understanding pattern of healthcare utilization for respiratory diseases & System of medicine being used & reasons for same is important. It will help policy makers to formulate policies which suit the needs of elderly in India while making best use of available resources. It will lead to optimization of geriatric health-care services and thereby help in enhancing health-care utilization that too based on their needs and demand.

2. Materials and Methods

A descriptive survey of geriatric population aged 60yrs & above was conducted in urban & rural area of NCR & Ghaziabad district of Uttar Pradesh. Urban colonies & rural villages were selected based on convenience, which were conglomerated in a closed area. From each urban & rural selected units, by systematic random sampling, elderly in every alternate household was interviewed till adequate sample size was achieved.

2.1. Population setting

2.1.1. Urban area
Nandgram is a locality in Ghaziabad city with more than 10,000 houses with 7 blocks & free households, inhabited mainly by lower middle class families.

2.1.2. Rural area
Six villages were selected as per convenience. They were Chipiyana Buzurg & Shah beri from Greater Noida, Chhaprauala & Shahpur Bamheta from one side of Ghaziabad while Iliachipur & Khanpur from other side of Ghaziabad. Two villages per field worker were assigned in each of the three locations.

Sample of 51 elderly from Shah Beri village, 343 from Chipyana Khurdurf Tigri, 405 from Chhapraula, 136 from Shahpur Bamheta, 495 Ilaichipur village & 73 was collected Khanpur Japti village. Total rural sample was 1503. Total urban sample of 1522 was collected from Nandgram.

2.2. Period of study

January 2015 to January 2018.

2.3. Inclusion criteria

People aged 60 yrs & above residing in the sample area were included.

2.4. Exclusion criteria

1. Refusal to sign informed consent.
2. Inability to understand questionnaire and inability of verbal communication.

2.5. Sample size

For qualitative data, formula used to derive sample size is: $n=4pq/L^2$. Where "p" is prevalence of condition under study. Available literature on prevalence of respiratory illness among elderly was assumed as 20% with an allowable error of 3%. For 95% confidence level, by simple random sampling, a sample size of 682 was required. By adding 10% attrition, the sample size was fixed at 750. As sample procedure was systematic, we double the size and fix it at 1500 each in rural and urban groups. For the total study, approximately 3000 sample size was taken, it was predicted to give an average of 300 respiratory cases of elderly in each group.

2.6. Tools & methodology

Door to door survey was conducted using pre-designed, pre-tested questionnaire having 2 parts. First part included socio-demographic characteristics and self-reported co-morbidities and physical disabilities as mentioned in proforma. Medical records of patients were seen. Information related to chronic diseases other than respiratory system was recorded based on their report of investigation done by their physician/doctor. This first part screened out suspected respiratory cases and they were asked questionnaire regarding health care utilization. Three health care workers were trained for this purpose. After analyzing screening proforma, elderly with suspected respiratory disease were selected. Camps were carried out. During camps, the screening proformas of suspected cases were verified. Those with suspected respiratory disease were asked part two of questionnaire. This questionnaire was aimed to find the type of respiratory disease. Questionnaire was developed using various

international standard questionnaires for respiratory diseases.[4–7] General examination and respiratory system examination was carried out. PFT was performed. Other necessary investigations to make a diagnosis were done if required. These patients with respiratory diseases were asked about frequency & pattern of their health care utilization.

2.7. Variables

Information was collected on general demographic parameters, socio-economic status which included educational status, marital status, living status, family members, socio-economic status (Kuppuswamy's modified 2012 socio-economic scale), total monthly income (sum of self income of study subject & family income-income of other family members), source of income, occupational status (past & present), utilization of healthcare services, type of health services (private, public, others including - chemist store or quacks), variety of medications or treatment (i.e: Allopathic, Ayurvedic, Homeopathic, home-remedies & others like Unani, Nathuropathy etc), reason for type of services & type of treatment preferred and their distance, belief (attitude) towards health care utilization and any problems related to transportation.

Patient underwent post- bronchodialator reversibility testing to differentiate between bronchial asthma & COPD. If increase of $FEV1 > 12\%$ or $>200ml$ increase from pre-brochodialator value, then it was considered bronchial asthma. Asthma was the only possible diagnosis when $FEV1/FVC >/=0.7$ and If post- bronchodialator $FEV1/FVC < 0.7$ persists then it was considered classified as COPD according to GOLD guidelines. Patient with additional symptoms and signs(eg: haemoptysis, weight loss, fever, sign of bronchiectasis and other structural lung disease) suggest an additional pulmonary diagnosis and they further underwent investigations along with screening questionnaire as mentioned above to establish diagnosis.

2.8. Statistical analysis

Data were entered using Microsoft Excel 2010 and statistical analysis was done using IBM SPSS v 20.0.0. and 23.0.0 both. Categorical variables were analysed using proportions and percentages. At first stage, a descriptive analysis was performed for all records (n =3025), both urban & rural seperately. Association between categorical variables was studied by two-way cross-tabulations and the significance established by Chi square test. The level of statistical significance was assessed at (P-values less than 0.05) 5% probability.

Cross-tabulation of descriptive analysis was performed for respiratory cases between urban & rural groups &was also done for overall cases between urban & rural groups. Association between urban & rural groups in both respiratory & overall cases for all socio-demographic variables was established by chi-square test.

Descriptive analysis was done to show pattern of health care utilization for acute respiratory diseases & chronic respiratory diseases in both urban and rural groups. Statistical significance were seen between these two groups (urban & rural) for all variables in pattern of health care utilization.

3. Result

After screening 1522 urban elderly 282 respiratory cases were identified. From rural population, 298 respiratory cases were found after screening of 1503 elderly (Total= 580). Out of 1522 elderly screened in urban area, 367(24.1%) were suspected of respiratory illness. Out of these 29 dropped out & only 338 turned up for part 2 of study. Of these 56 were found to be having non respiratory illness & 282(18.5%) were established as respiratory cases. In rural area 1503 elderly were screened Descriptive analysis was done for socio-demographic characteristics.. Of these 429 were suspected of respiratory illness. Out of these 52 dropped out, 79 (5.2%) were found to be having non respiratory illness & 298 (19.8%) were found to be suffering actually from respiratory illness. Dropout rate in urban area was 7.9% (29/367) & 12.1% (52/429) in rural area.

Among respiratory patients 21.6% in urban area & 38.9% in rural area had acute as well as chronic illness in last one year.78.4% & 61.1% had only chronic respiratory illness in urban & rural area respectively. Significantly higher number of respiratory patients in rural area had an acute illness in last one year as compared to urban area. (p value <.001)

4. Discussion

In present study females outnumbered males in both urban & rural group (Table 1). This finding is consistent with available data which suggests gender ratio in elderly in favour of females. As per the 2011 census, whereas for total Indian population sex ratio is in favour of male population in ratio 940:1000, for elderly at (60+) population it's in favour of elderly women by 1022:1000. It reaches as high as 1980 elderly women per 1000 elderly men at 80 years of age.[8] Due to higher life expectancy of females than males this ratio keeps on increasing in favour of females as age advances. But among respiratory patients males outnumbered females. (Table 1) This data is also consistent with literature which suggests higher respiratory morbidity among elderly males as compared to females. A study conducted in village of Tamil Nadu by Bayapa Reddy et al. reported higher respiratory morbidity among elderly males (14.5%) as compared to females (11.2%).[9]

In our study about 2/3rd of elderly were in 60-65 year age group.[10] Other studies also suggested maximum proportion of elderly belong to this age group.[10–12] Concentration of

Table 1: Sociodemographic profile

	Respiratory			Overall		
	Urban 282 (100%)	**Rural 298 (100%)**	**Total 580 (100%)**	**Urban 1522 (100%)**	**Rural 1503 (100%)**	**Total 3025 (100%)**
Gender						
Male	169 (59.9%)	167 (56.0%)	336 (57.9%)	666 (43.8%)	743 (49.4%)	1409 (46.6%)
Female	113 (40.1%)	131 (44.0%)	244 (42.1%)	856 (56.2%)	760 (50.6%)	1616 (53.4%)
P Value			.343			**.002**
Age						
60 – 65 yrs	197 (69.9%)	203 (68.1%)	400 (69.0%)	1121 (73.6%)	1018 (67.7%)	2139 (70.7%)
66 – 70 yrs	43 (15.2%)	64 (21.5%)	107 (18.4%)	214 (14.1%)	335 (22.3%)	549 (18.1%)
>70 yrs	42 (14.9%)	31 (10.4%)	73 (12.6%)	187 (12.3%)	150 (10.0%	337 (11.1%)
Literacy						
Illiterate	105 (37.2%)	122 (40.9%)	227 (39.1%)	645 (42.4%)	584 (38.9%)	1229 (40.6%)
Pri/Middle	87 (30.9%)	130 (43.6%)	217 (37.4%)	508 (33.4%)	693 (46.1%)	1201 (39.7%)
H.Sch./Inter	69 (24.5%)	37 (12.4%)	107 (18.5%)	293 (19.3%)	189 (12.6%)	482 (15.9%)
Grad. & PG	21 (7.4%)	9 (3.0%)	29 (5.0%)	76 (5.0%)	37 (2.5%)	113 (3.7%)
P value			**<.001**			**<.001**
Marital status						
Married	204 (72.3%)	198 (66.4%)	402 (69.3%)	1167 (76.7%)	1092 (72.7%)	2259 (74.7%)
Single/Seprtd.	8 (2.8%)	9 (3.0%)	17 (2.9%)	12 (0.8%)	41 (2.7%)	53 (1.8%)
Widow/ Widower	70 (24.9%)	91 (30.6%)	161 (27.8%)	343 (22.5%)	370 (24.6%)	713 (23.5%)
P value			.123			**.006**
Living Status						
Liv Alone w/o spouse	19 (6.7%)	23 (7.7%)	42 (7.2%)	47 (3.1%)	53 (3.5%)	100 (3.3%)
Liv Alone with spouse	48 (17.0)	39 (13.1%)	88 (15.2%)	156 (10.2%)	233 (15.5%)	389 (12.8%)
Liv with Joint Family	215 (76.2%)	236 (79.2%)	450 (77.6%)	1321 (86.8%)	1217 (81.0%)	2538 (83.9%)
P value			.397			.475
Family size						
1 -2	40 (14.2%)	24 (8.1%)	64 (11.0%)	124 (8.1%)	95 (6.3%)	219 (7.2%)
3 – 5	111 (39.4%)	71 (23.8%)	182 (31.4%)	638 (41.9%)	328 (21.8%)	966 (31.9%)
6 – 8	103 (36.5%)	171 (57.4%)	274 (47.2%)	616 (40.5%)	904 (60.1%)	1520 (50.2%)
9 or >	28 (9.9%)	32 (10.7%)	60 (10.3%)	144 (9.5%)	176 (11.7%)	320 (10.6%)
P value			**<.001**			**<.001**
S-E Class						
Upper/Upper Middle	55 (19.5%)	22 (7.4%)	77 (13.3%)	145 (9.6%)	87 (5.8%)	232 (7.7%)
Lower Middle	72 (25.5%)	91 (30.5%)	163 (28.1%)	362 (23.8%)	413 (27.5%)	775 (25.6%)
Upper Lower	146 (51.8%)	183 (61.4%)	329 (56.7%)	953 (62.6%)	987 (65.7%)	1940 (64.1%)
Lower	9 (3.2%)	2 (0.7%)	11 (1.9%)	62 (4.1%)	16 (1.1%)	78 (2.6%)
P value			**<.001**			**<.001**
Source of income						
Pension	24 (8.5%)	2 (0.7%)	26 (4.5%)	93 (6.1%)	6 (0.4%)	99 (3.3%)
Family support	154 (54.6%)	210 (70.5%)	364 (62.8%)	1017 (66.8%)	1088 (72.4%)	2105 (69.6%)
Business	39 (13.8%)	20 (6.7%)	59 (10.2%)	144 (9.5%)	88 (5.9%)	232 (7.7%)
Service	33 (11.7%)	20 (6.7%)	53 (9.1%)	188 (12.4%)	95 (6.3%)	283 (9.4%)
Combination	32 (11.3%)	46 (15.4%)	78 (13.4%)	80 (5.3%)	226 (15.0%)	306 (10.1%)
P value			**<.001**			**<.001**
Present Occupational status						
Working	86 (30.5%)	59 (19.8%)	145 (25.0%)	289 (19.0%)	306 (20.4%)	595 (19.7%)
Not Working	196 (69.5%)	239 (80.2%)	435 (75.0%)	1233 (81.0%)	1197 (79.6%)	2430 (80.3%)
P value			**.002**			.360
Past occupation						
Govt	34 (12.1%)	9 (3.0%)	43 (7.4%)	85 (5.6%)	34 (2.3%)	119 (3.9%)
Semi govt	8 (2.8%)	21 (7.0%)	29 (5.0%)	30 (2.0%)	74 (4.9%)	104 (3.4%)
Private	81 (28.7%)	93 (31.2%)	174 (30.0%)	437 (28.7%)	391 (26.0%)	828 (27.4%)
Self employed	64 (22.7%)	60 (20.1%)	124 (21.4%)	193 (12.7%)	310 (20.6%)	503 (16.6%)
Housewife	95 (33.7%)	115 (38.6%)	210 (36.2%)	777 (51.1%)	694 (46.1%)	1471 (48.7%)
P value			**<.001**			**<.001**

Table 2: Type / system of medicine - Health care serviceutilized for acute/ chronic respiratory disease

		Urban- 282 (100.0%)		Rural- 298 (100.0%)		Total - 580 (100.0%)		P value
Acute Resp. Disease	**Types**							
	Public	43	15.2	39	13.1	82	14.1	.476
	Private	128	45.4	64	21.5	192	33.1	<.001
	Both	34	12.1	28	9.4	62	10.7	.347
	Others#	35	12.4	109	36.6	144	24.8	<.001
	None	6	2.1	29	9.7	35	6.0	<.001
	Others Combination	36	12.8	29	9.7	65	11.3	.292
	System of medicine							
	Allopathic	260	92.2	200	67.1	460	79.3	<.001
	Ayurvedic	46	16.3	43	14.4	89	15.3	.565
	Homeopathic	39	13.8	20	6.7	59	10.2	.006
	Home remedies	37	13.1	79	26.5	116	20.0	<.001
	Others**	1	.4	3	1.0	4	0.7	.624
	Total*	398		345		668		
Chronic Resp. Disease	**Types**							
	Public	61	21.6	74	24.8	135	23.3	.378
	Private	101	35.8	55	18.5	156	26.9	<.001
	Both	69	24.5	51	17.1	120	20.7	.031
	Others#	20	7.1	61	20.5	81	14.0	<.001
	None	13	4.6	24	8.1	37	6.4	.125
	Others Combination	18	6.4	33	11.0	51	8.7	.056
	System of medicine							
	Allopathic	259	91.8	225	75.5	484	83.4	<.001
	Ayurvedic	35	12.4	35	11.7	70	12.1	.899
	Homeopathic	35	12.4	33	11.1	68	11.8	.699
	Home remedies	16	5.7	91	30.5	107	18.4	<.001
	Others**	1	0.4	3	1.0	4	0.7	.624
	Total*	346		386		732		

#Others – Quack/Medical store
*Some were using (more than one) different system at differentpoint of time
**Other systems of medicine ie unani, siddha etc.

Table 3: Reason for using particular type of health care service for Acute/Chronic Respiratory disease

		Urban - 282 (%)		Rural - 298 (%)		Total - 580 (%)		P value
	Reason							
Acute Resp. Disease	Belief	239	84.8	181	60.7	420	72.4	**<.001**
	Affordability	47	16.7	69	23.2	116	20.0	.061
	Availability	84	29.8	97	32.6	181	31.2	.530
	Total*	370		347		717		
Chronic Resp. Disease	Belief	240	85.1	153	51.3	393	67.8	**<.001**
	Affordability	58	20.6	110	36.9	168	29.0	**<.001**
	Availability	54	19.1	100	33.6	154	26.6	**<.001**
	Total*	352		362		714		

large majority of elderly in lower age group is due to low life expectancy.

Education is a big empowerment tool. Illiteracy increases vulnerability. About 80% elderly in our study population were either illiterate or educated only upto primary or middle level. Improving literacy rate of population over the years is obviously getting reflected in elderly population also but illiteracy rate is still quite high. As per National sample survey organization (NSSO) 2007-08, 23% males & 56% females were illiterate in urban areas.[13] Literacy level among elderly in rural areas was much worse, illiteracy rate amongst eldely males & females being 56% & 87% respectively. NSSO 75th round 2017-18 also found that 54.1% elderly were illiterate while 21.1% had only primary level education.[14] As education is a big determinant of ones social & financial status, illiteracy & low education levels are important contributors to pathetic condition of Indian elderly.

As expected majority of elderly in present study were married. Out of total 3025 elderly in our study 2259 (74.7%) were married (Table 1). According to Central statistics office (CSO) data 2016 in the age-group of 60-64 years, 76% persons were married.[15] But noteworthy finding is high widow/ widowerhood amongst elderly. According to same CSO report 22% elderly were widowed. In our study also 29.5% elderly females & 16.8% elderly males had lost spouse. Possibility of losing ones spouse keeps increasing as age advances. Need of spouse is felt most in old age as he/she is the biggest support in this vulnerable phase of life. Loss of spouse adversely affects physical health, increases sense of loneliness & depression. Due to higher life expectancy, females are more likely to suffer this unfortunate event. As stated earlier in our study also almost twice the number of elderly females (476 out of 1616) had lost their spouse compared to elderly males (237 out of 1409). Due to socio-cultural gender differences & as such poor status of Indian females effects of loss of spouse are much more devastating for elderly females. A research on widows in India indicated high level of poverty among women in India upon becoming widows.[16]

In a resource restrained country like India where traditionally family has been the only support during old age, living arrangement has important bearing on well being of elderly. In our study 83.9% (2538/3025) were living in joint family. This data is consistent with National sample survey organization (NSSO) 2004, according to which 81.3% elderly in India were living in joint family arrangement. Other studies have also found joint family system to be the most common.[17,18] This data points to joint family arrangement still being the most important informal support structure in old age. Changing social values are leading to crumbling of joint family system. In the absence of formal social support structure, it is imperative that joint family system is strengthened. Rapidly increasing elderly population makes it all the more important, since limited governmental resources are unlikely to be able to meet the demands of this important segment of population. Through 'The Maintenance and Welfare of Parents and Senior Citizens Act, 2007' Government has made maintenance of Parents/ senior citizens by children/ relatives obligatory. Society also needs to be sensitized regarding needs of senior citizens and their care by children.

Financial dependence compromises decision making power & ability to live life with dignity. It has effect on physical, social & psychological well-being of elderly. In our study 2105 (69.6%) out of total 3025 combined urban & rural population of elderly were financially completely dependent on family support. This financial dependence was slightly higher in rural areas as compared to urban. This data indicates high financial dependence of elderly on family. This is supported by NSSO 2017-18 75th round report which noted that 47% elderly were fully & 22.9% elderly were partially dependent on family economically.[15] Elango also found 66% of elderly to be financially dependent on family.[19] Financial dependence is much higher in females as compared to males. In view of high widowhood amongst elderly females this data suggests that these females are dependent on family members other than husband. In the absence of formal social support structure, high financial dependence exposes elderly to psychological, verbal and physical abuse. According to a 2011 report by Helpage India 22% of elderly face some kind of abuse with daughter in law and son being major abusers.[20]

Despite declining physical abilities significant number of elderly in our country are forced to work in old age. As per our study 19% (289/1522) elderly in urban area & 20.4% (306/1503) in rural area were working. Large work participation rate by elderly in our study is supported by 2007-08 National sample survey organization (NSSO) survey. As per, it 39% elderly male & 7% females in urban area were working.[21] It has been seen that this rate is higher in developing countries than developed one & rural than urban areas in our country. It suggests that this high work rate is out of compulsion due to absence of universal social security cover for elderly. This finding is further reinforced by study of Alam M et al who found that 71.3% (1615/2265) elderly were working due to economic or other compulsion while only 28.6% (648/2265) were working by choice.[22]

In present study (Table 2) elderly residing in urban area were utilizing services of private health care providers most commonly during acute as well as chronic respiratory illness. During acute illness 45.4% (128/282) & during chronic illness 35.8% (101/282) elderly in urban area utilized private health care services. But elderly in rural area showed different treatment seeking behavior during acute & chronic illness. While during acute illness maximum elderly (36.6%, 109/298) in rural area were taking treatment from a quack or medical store, for chronic illness public

hospitals (24.8%, 74/298) were preferred. This differential behavior of rural elderly can be understood by response of study population to the question regarding reasons for choosing particular health care service (Table 3). During acute illness 60.7% (181/298) rural elderly choose health care service due to belief but during chronic illness only 51.3% (153/298) elderly stated it as a reason for choosing health care service On the other hand affordability as a reason for selection of particular health service increased from 23.2% (69/298) in acute illness to 36.9% (110/298) in chronic illness. So during chronic illness affordability became more important since need is non-emergent & treatment of chronic illness is long process thus making rural respondents favour public health facility for chronic illness treatment. Rural urban difference in choosing health care service for chronic respiratory illness in our study is consistent with study of Kim et al. from Korea, who reported that for chronic respiratory symptoms 51% of the rural participants choose public health centres and 27% choose private clinics and hospitals, while urban participants first choose private clinics and hospitals, then public health centres.[23] Sudha et al also found similar urban/rural difference in health seeking behaviour of patients with respiratory symptoms. A greater percentage of urban chest symptomatic initially approached a private health care facility (57% vs. 32%; P < 0.01).[3] In the rural areas, however, the percentage of participants attending private and governmental health care facilities was similar, being 48% and 46%, respectively (P $\frac{1}{4}$ 0.08). This data is also consistent with study by Sureswari Das in a village of Odisha whereby elderly preferred to visit a private clinic for acute illness but utilized government hospital services for chronic disease.[24] Reason given by the author for this pattern was long distance & long waiting hours in Government hospital. Since health care costs at Government facilities are significantly lesser than at private facilities, reason for still choosing Government hospital for chronic illness by elderly could be financial. Dilip TR et al in their study found affordable cost as the major reason (65 percent) for preferring public sector healthcare services for inpatient care.[25]

Allopathic system was being utilized most commonly by elderly in our study, both in urban & rural area. During acute respiratory illness 92.2% (260/282) urban & 67.1% (200/298) rural elderly used allopathic health care service. For chronic respiratory illness allopathic services were used by 91.8% (259/282) urban & 75.5% (225/298) rural elderly. This finding of allopathic system being most commonly utilized in our study is consistent with various other studies. Agarwal et al in study on elderly in rural area of Bareilly found Allopathy the preferred system for taking treatment for most of the subjects (72%), followed by home remedies (13%), Homeopathic (8%), Ritualistic healer (4%) and Ayurvedic (3%).[26] A Kathmandu study on geriatric population also found allopathic system (58.5%)

being utilized most commonly.[27] The study in Nepal by Baral R et al showed that nearly two third of elderly (83.7%) seek help from modern medication & 16.3% elderly seek help from alternative medication.[28] A study in rural Puducherry by Gnanasabai G et al found 64.8% were suffering from chronic illness. Around 81.1% of them were seeking treatment. Majority of the elders (97.9%) preferred Allopathy system for their chronic illness. 51.7% of them were utilizing Government health care facilities which include Government hospital, PHC and sub-centers.[29] Maroof et al in their study in Aligarh also found 73.1% (285/390) elderly using allopathic system of medicine for illness.[30]

Another important factor regarding health seeking behaviour of rural elderly is using over the counter medication from medical stores & quacks. In our study 36.6% (109/298) & 20.5% (61/298) rural elderly were taking over the counter treatment from medical stores or going to a quack for acute & chronic respiratory illness respectively. This type of health seeking behaviour was also noted by Ray et al in rural Bengal where 35.9% were using services of Unqualified practitioners (quack).[31] Non availability of qualified medical practitioners in rural India as well as ignorance & financial reasons are responsible for it. To avoid fees of medical practitioner also many patients tend to take medicines directly from medical stores. A rural Bangladesh study found relationship between this type of health care utilization behaviour & literacy level, gender & occupation of family head.[32]

5. Conclusion

Providing affordable quality healthcare to continuously increasing elderly population is going to be massive challenge. Majority of elderly are illiterate & dependent on family for support. Significant number of elderly with respiratory disease continue to take treatment from quacks & over the counter medicines from medical stores especially in rural area. Private health care services are preferred especially by urban elderly. Public healthcare services are used more for chronic illness than acute illness.

6. Source of Funding

7. Conflict of Interest

The authors declare no conflict of interest.

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