Original Article

Morbidity Profile, Functional Assessment and Satisfaction Among Elderly Receiving Health Care Services From Private Health Care Providers of Mangalore City: A Cross Sectional Study

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History

• Submission Date: 07-12-16
• Revised Date: 19-04-17
• Accepted Date: 01-05-17

DOI : 10.5530/ijmedph.2017.2.23

Article Available online

http://www.ijmedph.org/v7/i2

ABSTRACT

Background: Private sector (which is the largest health care provider in India), is expensive & often the only one providing the kind of services needed by the elderly. There are no published studies from India reporting the satisfaction of the elderly about the health care services from the private sector. So this study was undertaken with the following objectives 1**.** To describe morbidity pattern & to assess functional status among the elderly receiving their care from the private hospitals 2. To know their satisfaction about health care services obtained from the private hospitals. **Materials & Methods:** An interview based cross sectional study was conducted among elderly (60 years and above) receiving health care services from the private hospitals of Mangalore city. Elderly were assessed for 1. Activities of Daily Living [ADL], 2. Instrumental activities of daily living [IADL], 3. Satisfaction about the health care services received by them in private hospitals. The data was analyzed using SPSS software for windows, version 16.0. Chi-square test was applied to know if the observed differences between socio demographic factors, dependency in physical activity and their type of care (subsidized or free) received by those elderly patients were statistically significant. **Results:** Majority (132 out of 189) of the study participants were between 60 to 74 years of age group. There was a predominance of Non Communicable disease / conditions {like hypertension (89.4%)}. Assessment of ADL & IADL revealed that, dependency (38.6%) was noticed for household work. Dependency was seen in patients (elderly) with advancing (75 years and above) age groups (p < 0.005). Most of the elderly were not satisfied with health care services they were receiving even though it was free / subsidized. **Conclusion:** 1. there was a predominance of Non Communicable disease (hypertension, visual impairment and diabetes mellitus) among those elderly who were receiving their care in private hospitals of Mangalore city. 2. Most of the elderly receiving their care from the private hospitals of Mangalore were capable of performing their physical activities independently. 3. Most of the elderly were dissatisfied with the health care services they were receiving in the private hospitals of Mangalore city irrespective of the type of services that were provided to them (paid/ free/subsidized). 4. Those elderly who had intact ADL & IADL were also dissatisfied.

Key words: Elderly, Morbidity, Satisfaction, Activities, Dependency, Disability, Private Health Care.

INTRODUCTION

Ageing is an inevitable process. India being young nation, is at a verge of being home to the second largest number of elderly (60+) people in the world.[1] It has been projected that the population of elderly in India will roughly double from 100 million in 2013 to 198 million by 2030.[1] Physical health of the elderly is mainly influenced by the presence of underlying chronic disease, functional disability and sensory performance. According to national sample survey 2004 (60th round) the burden of morbidity, incidence and prevalence of disease and functional disability are higher in elderly (60+) people than the total population. [2] Although there are published studies on chronic morbidities [3-7] and disability [8-12] among elderly in India, these studies were either conducted in slums, camps, community or in a field practice area of medical college. There are no reported studies pertaining to morbidity and disability among the elderly who are receiving health care from the private health care providers. Private health care sector is largest provider of health care services in India.[13] Most of the tertiary care services available to elderly are through private sector.[13] There are also no reported studies on satisfaction regarding the health care services received by the elderly from the private hospitals. Hence this study was undertaken with the following:

OBJECTIVES

1. To know the socio-demographic and morbidity profile of the elderly who are receiving health care from the private health care providers.

2. To study the impairment/disability amongst elderly regarding activities of daily living (ADL) and instrumental activities of daily living (IADL).

3. To find out satisfaction regarding the health care services received amongst the elderly.

MATERIALS AND METHODS

Study Area (Background)

The study was conducted in Mangalore, a prominent educational and financial city of Karnataka state situated in Southern India. The city has a population of 5 lakhs as per 2011 census.[14] However there are no database in the public domain pertaining to the population of elderly (60 +) in the city. The city has 5 Private allopathic medical colleges in addition to numerous corporate hospitals, multi-speciality hospitals, general hospitals, private nursing homes and polyclinics which provide health care services.

Study setting

All Private Health care providers of the Mangalore city (Corporate hospitals/ Hospitals attached to private medical institution/ Multispecialty hospitals/Nursing homes) who were providing services to the elderly.

Study Design

This is a questionnaire based cross sectional descriptive study conducted among the elderly who were receiving their care from the private hospitals of Mangalore city.

Study subjects

Elderly people who were receiving health care services from the Private Health care providers like corporate hospitals, private hospitals attached to medical institutions, multispecialty hospital etc.

Inclusion criteria

1. All elderly (60 +) who were receiving health care services from private health care providers 2. Those willing to participate.

Exclusion criteria

1. Elderly (60+) patient who were seriously and acutely ill. 2. Elderly who could not speak. 3. Elderly who was seriously mentally ill or mentally challenged. 4. Elderly who have not given consent.

Sample size

The world Health Organization (WHO) in its report "Ageing in India" had published data regarding prevalence of morbidity among elderly in India.[15]Assuming that at least 50% of the elderly will have one or more than one morbidities for a Power (1-β) of 85% at 95% Confidence Interval (CI) the calculated sample size was 185.

Sampling techniques

There were totally 33 hospitals, of which only 7 had permitted to conduct interviews of the elderly seeking health care services in their hospitals. To get a representative sample from each of the hospitals, it was decided to include 27 elderly people from each of the hospital. A Non-Random sampling technique with sequential inclusion of those elderly who met the study criteria was used.

Operational definitions

Elderly or old age consists of ages nearing or surpassing the average life span of human beings. The boundary of old age cannot be defined exactly because it does not have the same meaning in all societies. However Government of India adopted 'National policy on older persons' in January, 1999. The policy defines 'senior citizen' or 'elderly' as who is above 60 years of age. [16-17] The World health organisation (WHO) definition of Disability (covering impairments, activity limitations and participation restrictions) was used.[18]

Study Tools

Three study tools were used 1. Information pertaining to socio-demographic status like age gender, activities of daily living (Katz index of ADL) like bathing, dressing, toileting, transfer, continence and feeding were collected 2. Information regarding Instrumental activities of daily living (Dukes University IADL) like telephone, travelling, shopping, preparing meals, house work, medication, money were collected 3. A semi-structured interview schedule was used to know if they were satisfied about the health care services they were receiving, reasons for their dissatisfaction. A detailed verbal assessment regarding the satisfaction towards the care they were receiving from these private hospitals were enquired into.

Scoring system

A scoring system was developed to assess the functional capacity of each elderly. Activities of Daily living (Katz Index of ADL[19]): One point was awarded to each above mentioned activity done independently. A zero point was awarded to each activity that had required dependency. A maximum possible score obtained was 6.

Instrumental activities of Daily living (Dukes University - IADL[20]): Two points was awarded for those above mentioned activities which were done independently. One point was awarded to those activities that had required assistance and zero was awarded to that activity that had required dependency. A maximum possible score obtained was 14.

Instrument Development & Pretesting

A semi-structured interview schedule prepared containing all the three components, was pretested in the hospitals of the neighbouring city to assess the feasibility of its use. Some changes were made to suite our circumstances like questions pertaining to health care satisfaction were reframed, more options were provided.

Composite scores

For a maximum possible score of 6 for activities of daily living (Katz ADL) the break up scores are as follows: severe impairment (score < 2), impairment (score 2 to < 6) and full function (Score = 6). Similarly for maximum possible score of 14 for IADL (Dukes) activities the break up scores is as follows: dependent (score < 7), needs assistance (7 to < 14), independent (score =14).

Data Collection

The study protocol was approved by the Institutional Ethics and Research committee. A list of private health care providers of city (corporate hospitals / private hospitals attached to medical Institutions / multispecialty hospitals / nursing homes) was obtained from the local chapter of Indian Medical Association, Mangalore. Permissions were obtained from the hospital chiefs or superintendent. The purpose of the study was explained to the elderly. An informed consent was taken from the study participants prior to the interview. The data collected (between Nov 2015 to May 2016) was analysed.

Statistical (Data) analysis

The data thus entered in MS Excel spreadsheet was analysed using Statistical package for social sciences (SPSS) for windows, version 16.0. Chicago, SPSS Inc.[21] Results were expressed as frequencies and proportions in appropriate tables. Chi square and Fisher's exact test were applied to assess the significant difference in the level of impairment and dependency in daily activities among elderly groups. A 'p' value of < 0.05 was considered as statistically significant.

RESULTS

Among the elderly participants (189) interviewed, majority (132) were between 60 to 74 years of age group. The detailed breakup of the socio-

demographic profile of the elderly is shown in Table 1. Most of them were able to perform daily living activities (based upon Katz index of ADL) independently as shown in Table 2. However Instrumental activities pertaining to daily living (based upon Dukes Index) revealed that, most (38.6%) of the elderly was dependent on others in performing their house work. The highest dependency (73) was also seen in preparing meals as shown in Table 3.

Morbidity profile revealed that most of the elderly were suffering from Non Communicable Diseases (NCD) typical of old age, whose occurrences are as follows {n, (%)}: hypertension {169, (89.4)}, visual/eye impairment {128, (67.7)}, diabetes mellitus {103, (54.5)}, cardiovascular diseases {95, (50.3)}, locomotive disorder {86, (45.5)}, hearing loss/nerve deafness {83 (43.9)}, mental health problems {82, (43.4)}, genitourinary

Table 1: Socio-demographic Characteristics of the elderly study Participants seeking their care from the private hospitals of Mangalore city (Nov 2015 to May 2016).

Characteristics	Males [n=100 (%)]	Females [n=89 (%)]	Total [n=189 (%)]
Age Group			
60 - < 74	74 (56.1)	58 (43.9)	132
75 - < 84	19 (44.2)	24 (55.8)	43
≥85	7 (50)	7 (50)	14
Education			
Illiterate	7 (35.0)	13 (65.0)	20
Primary	29 (43.9)	37 (56.1)	66
High School	33 (58.9)	23 (41.1)	56
Above High School	11 (55.0)	09 (45.0)	20
Graduate and Above	20 (74.1)	07 (25.9)	27
Marital status			
Married	44 (66.7)	22 (33.3)	66
Widowed	(0)	64 (100)	64
Widower	31 (100)	0 (0)	31
Unmarried	25 (89.3)	3 (10.7)	28
Type of Residence			
Home	69 (54.8)	57 (45.2)	126
Old Age Home	28 (46.7)	32 (53.3)	60
Others	3 (100)	0 (0)	3
Caste			
SC*	7 (58.3)	5 (41.7)	12
ST**	0 (0)	1 (100)	1
OBC***	38 (46.9)	43 (53.1)	81
Others	55 (57.9)	40 (42.1)	95

* SC = Schedule Caste, **ST = Schedule Tribe, ***OBC = Other Backward Caste

Table 2: Activities of Daily living (Based upon Katz Index of ADL).

Activities	Independent n(%)	Dependent n(%)	N
Bathing	170 (89.9)	19 (10.1)	189
Dressing	172 (91.0)	17 (9.0)	189
Toileting	157 (83.1)	32 (16.9)	189
Transfer	166 (87.8)	23 (12.2)	189
Continence	170 (89.9)	19 (10.1)	189
Feeding	184 (97.4)	5 (2.6)	189

Table 3: Instrumental Activities of Daily living (Dukes University centre)

Activities	Independent n(%)	Assistance n (%)	Dependent n(%)
Telephone	165 (87.3)	14 (7.4)	10 (5.3)
Travelling	118 (62.4)	49 (25.9)	22 (11.6)
Shopping	118 (62.4)	46 (24.3)	25 (13.2)
Preparing Meals	68 (36.0)	48 (25.4)	73 (38.6)
House Work	61 (32.3)	55 (29.1)	73 (38.6)
Medication	163 (86.2)	26 (13.8)	0 (0)
Money	138 (73.0)	37 (19.6)	14 (7.4)

Table 4: Composite scores based upon Katz Index.

Variable	Severe Impairment [Score <2] n= 19 (%)	Impairment [Score 2 to <6] n =15 (%)	Full Function [Score = 6] n = 155 (%)	Chi square (P)
Gender				
Male	10 (52.6)	6 (40.0)	84 (54.2)	1.106 (0.575)
Female	9 (47.4)	9 (60.0)	71 (45.8)	
Age Group in Years				
60 to 74	7 (36.8)	4 (26.7)	121 (78.1)	
75 to 84	8 (42.1)	9 (60.0)	26 (16.8)	29.719
≥ 85	4 (21.1)	2 (13.3)	8 (5.2)	(0.000)*

*Fishers exact test: 27.943 (0.000)

Table 5: Composite score table based upon Dukes Index.

Variable	Dependent [Score <7] n = 43 (%)	Needs assistance [Score 7 to <14] n = 85 (%)	Independent [Score = 14] n = 61 (%)	Chi square (P)
Gender				
Male	17 (39.5)	49 (57.6)	34 (55.7)	4.049 (0.132)
Female	26 (60.5)	36 (42.4)	27 (44.3)	
Age Group in Years				
60 to 74	15 (34.9)	60 (70.6)	57 (93.4)	
75 to 84	20 (46.5)	19 (22.4)	4 (6.6)	41.914
≥ 85	8 (18.6)	6 (7.1)	0 (0)	(0.000)*

*Fisher's Exact test: 42.461 (0.000)

Table 6: Satisfaction of Health care services provided to the elderly.

Variable	Satisfaction			Total n = 189 (%)	Chi-square (P)
	Satisfied n = 16 (%)	Partially satisfied n = 99 (%)	Not satisfied n = 74 (%)		
Age Group					
60 to 74	15 (11.4)	72 (54.5)	45 (34.1)	132 (100)	8.309 (0.081)
75 to 84	1 (2.3)	19 (44.2)	23 (53.5)	43 (100)	7.409 (0.099)*
≥ 85	0 (0)	8 (57.1)	6 (42.9)	14 (100)	
Gender					
Male	9 (9.0)	62 (62.0)	29 (29.0)	100 (100)	9.414 (0.009)
Female	7 (7.9)	37 (41.6)	45 (50.6)	89 (100)	
Composite Katz					
<2	2 (10.5)	7 (36.8)	10 (52.6)	19 (100)	3.767 (0.438)
2 to <6	1 (6.7)	6 (40.0)	8 (53.3)	15 (100)	3.993 (0.370)*
6	13 (8.4)	86 (55.5)	56 (36.1)	155 (100)	
Composite Dukes					
< 7	2 (4.7)	20 (46.5)	21 (48.8)	43 (100)	7.204 (0.126)
7 to < 14	6 (7.1)	52 (61.2)	27 (31.8)	85 (100)	
14	8 (13.1)	27 (44.3)	26 (42.6)	61 (100)	
Composite Dukes					
< 7	2 (4.7)	20 (46.5)	21 (48.8)	43 (100)	7.204 (0.126)
7 to < 14	6 (7.1)	52 (61.2)	27 (31.8)	85 (100)	
14	8 (13.1)	27 (44.3)	26 (42.6)	61 (100)	
Types of Health care provided					
Free	0 (0)	8 (18.2)	36 (81.8)	44 (100)	56.182 (0.000)
Subsidised	7 (8.3)	54 (64.3)	23 (27.4)	84 (100)	
Insurance	6 (19.4)	16 (51.6)	9 (29.0)	31 (100)	*Cannot be computed
Paid	3 (21.4)	11 (78.6)	0 (0)	14 (100)	
Need to Pay for Medicines only	0 (0)	10 (62.5)	6 (37.5)	16 (100)	

*Fishers exact test

condition { 78, (41.3)}, respiratory disorder/disease {71, (37.6)}, podiatric problem {51, (27.0)}, gastrointestinal system involvement {30, (15.9)}, neurological complaints {29, (15.3)}, any malignancy {0, (0)}.

Composite score: With the advancing age, proportion of elderly with severe impairment increased. There was a reduced capacity to perform daily living activities. The results were significant (P < 0.005) as shown in Table 4. With the increasing age the capacity to perform IADL also decreased (P < 0.005) as shown in Table 5.

Satisfaction about Health care services

Majority of the elderly were partially satisfied with the health care services provided with a very few being fully satisfied as shown in Table 6. The breakup of the scoring with the satisfaction reveals that even people with good scores of IADL were also not satisfied.

DISCUSSION

Morbidity pattern among elderly

Non communicable disease (NCD) was found to be predominating in the study participants. Among them hypertension (89.4%), visual impairment (67.7%) and diabetes mellitus (54.5%) topped the list as per

the order of their magnitude. This is in similarity with the finding of the study by Swami et al (2002) where hypertension (58%), Visual impairment (18.51%) and diabetes mellitus (12.15%) were found to be the commonly occurring disease.[3] Similarly Non communicable disease (NCD) predominated in other studies.[4-7-12] This shows that Non communicable disease (NCD) is still the most prevailing condition among the elderly. The percentage difference in its occurrences can be explained by the fact that our study was conducted in the private hospitals, whereas other studies were conducted either in urban community, slums, camps, and field practice area of medical college.[3-7-12] Also the people (elderly) visiting the hospital for their healthcare are at the advanced stages of the disease condition with one or the other co-morbidity in them.

Functional pattern among elderly

Most of the elderly was capable of independently performing their daily activities (based on Katz Index of ADL) as shown in Table 2. This is similar to the findings of other study conducted in a rural community where ADL dependency was on the lower side (17.6% were dependent based upon Barthel index).[8] There is no published literature to compare ADL dependency based on Katz index in urban setting. The maximum ADL dependency was seen for toileting (16.9%) and transfer (12.2%) among

the elderly's in our study. This is probably because dependency regarding daily living activities in old age is a strong reason for hospital visit.

Among the Instrumental activities of daily living (IADL based upon Dukes Index) performed by elderly's in our study, most of them were dependent or had required assistance for preparing meals and house work as shown in Table 3. This is similar to the findings of other study from an urban slum community in Mumbai were most of the elderly were unable prepare meals and house work independently.[11] This is because locomotion is commonly affected in the old age and a major reason for reduced functional capacity in elderly. There are no published literatures to compare IADL dependency based on Dukes Index in urban settings. It is clearly evident from the study that with the advancing age the proportion of people requiring assistance (or dependent on others) for their daily living activities (both ADL and IADL) increases (p<0.005).

Satisfaction to health care services: Most of the elderly were dissatisfied with the health care services being provided to them as shown in Table 6. Dissatisfaction was not just limited to the elderly with decreased physical activity, but those who were capable of performing daily activity independently (both ADL and IADL) were also dissatisfied. The reasons for dissatisfaction among the elderly were poor quality of care, lack of specialised care, and prolonged waiting time in the hospital. This is in contrast with the findings of study conducted in Germany were majority of the elderly's were satisfied from the health care services they were receiving in the hospitals.[20-22] We do not have comparable data, since information pertaining to health care satisfaction among elderly from private health care providers of India is not available. As a result there is a need for improving the quality of medical care (Health care services) made available to the elderly in private health care sector.

Most of the elderly was dissatisfied with the health care services they were receiving from the hospitals, inspite of service being either free or subsidised. This could be because the needs of the elderly are not addressed adequately in the current health systems, particularly regarding with long term care. This is evidenced by the fact that geriatric care is not well developed in most developing countries including India. Geriatrics and gerontology are often not covered under the curriculum for health care professionals in our country. As such there is no specialised care that is exclusive to the elderly, nor there any geriatric department in most of the hospitals. As a result of which elderly in India are either, totally dependent on general health practitioners or physicians (internal medicine) for their treatment thus resulting in a prolonged waiting time in hospitals.

Strengths and weakness (Limitations) of the study

Owing to cross sectional study design, association observed between study variables may not be causal. There may be minimal amount of recall bias among the study participants interviewed. However this is a novel journalistic study conducted among the elderly patients who were receiving their care from the private hospitals of Mangalore city. The study adds a great knowledge quotient regarding the predominance of Non communicable disease among the elderly patients of the private hospitals. Moreover the study gives us the first hand information pertaining to satisfaction of health services that these elderly were receiving inspite of the types (subsidized/free) of services that was being provided to them in the private hospitals of Mangalore.

Even though the study informs and reports about the reasons for dissatisfaction regarding the services received by the elderly, a much in-depth and in detail qualitative research is required to understand the factors that lead to their (elderly) dissatisfaction.

CONCLUSION

Non Communicable disease conditions were more predominant in elderly age group. Severity in impairment occurs with advancing age (p < 0.005). Most of the elderly were dissatisfied with the health care services they were receiving irrespective of their functional status.

RECOMMENDATIONS

There is an urgent need in reframing policy towards geriatric health care in India, thus keeping in mind about the emerging elderly population. A specific guideline has to be developed in order to enhance quality of health care services delivered to these elderly.

AUTHORS' CONTRIBUTIONS

SPU, HK – Conceived, planned and conducted the study. SPU, HK - Took part in drafting the protocol. SPU – Organising the data collection work. SPU, HK- Statistical analysis. SPU-Writing the Scientific Manuscript.

CONFLICT OF INTEREST

None

ABBREVIATION USED

ADL: Activities of Daily Living; IADL: Instrumental Activities of Daily Living; SSPSS: Statistical Package for Social Science Software; WHO: World Health Organization; CI: Confidence Interval; NCD: Non Communicable Disease.

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