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Original Paper

Need for Aged Care Hubs

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Abstract

Background: *The present study was undertaken to access the current availability and utilization of health care services by geriatric population and to find the need for specialized geriatric care hubs.*

Methods: *This is questionnaire-based survey conducted among 300 subjects of geriatric population for a period of 3 months in Bengaluru hospital set-up.*

Results: *Majority of study subjects were belonged to age group of 60-75 years. 81% were married; while 1.30% un-married, 2.30% divorced, 15.30% were widow. Majority of study subjects in our study, i.e., 30.30% were graduates followed by 28.70% and 15.70% were completed secondary and primary school level education respectively. While only 7.70% subjects were post graduates. However, 17.70% subjects were found to be illiterate in our study. We found 52% of study subjects were dependent for their financial requirements. Chi-square test showed significant association between health and medical care facilities with age (χ2-31.24; p-0.002). 98% preferred to have separate specialized geriatric care hospitals in their respective area of residence with no significant association (χ2=5.20; p-0.51). We found significant association between source of information and awareness of geriatric care facilities (χ2=18.96; p-0.026). We found that 36% of subjects reckoned that application of information technology was helpful in geriatric care. Whereas, still majority of study subjects, i.e., 61% were not at all aware of information technology applications in geriatric (χ2-12.62; p-0.049).*

Conclusions: *Provision of quality assured by elderly health-care hub for the elderly population is a must and is a challenge that requires joint approach and strategies. Failure to address the health needs today could develop into a costly problem tomorrow.*

Keywords

Health care, age care, elderly, geriatric care hub, India

1. Introduction

Ageing is a natural process, which presents a unique challenge for all sections of the society. Although the exact definition of elderly age group is controversial, it is defined as persons with a chronological age of 65 years and above (WHO, 2013). With gradual improvement in health-care delivery services, life expectancy has increased and thus the percentage of the elderly population (WHO, 2013). It has been estimated that according to Population Census 2011 there are nearly 104 million elderly persons (aged 60 years or above) in India; 53 million females and 51 million males. "India Ageing Report 2017" by the United Nations Population Fund (UNFPA) says the share of population over the age of 60 could increase from 8 per cent in 2015 to 19 per cent in 2050 (Dey, 2012).

Population ageing is the most significant result of the process known as demographic transition (Bongaarts, 2009). This demographic transition essentially requires shifting the global focus to cater to the preventive health-care and medical needs of the elderly population. An ageing population tends to have a higher prevalence of chronic diseases, physical disabilities, mental illnesses and other co-morbidities (Boutayeb et al., 2005). The health needs and health related problems of elderly people cannot be viewed in isolation. A wide gamut of determinants such as social concerns (*viz.* children moving out of their parents' home in search of occupation, leaving them isolated without any physical support in daily activities), maltreatment towards elderly, poor knowledge and awareness about the risk factors, food and nutritional requirements, psycho-emotional concerns (*viz.* isolation, mental stress, difficulty in keeping themselves occupied), financial constraints (*viz.* definite reduction in income upon retirement, to the extent that it may interfere with bare needs of life as adequate nutrition, clothing and shelter), health-care system factors (*viz.* most countries lack effective health insurance system for elderly coupled with accessibility concerns and inadequacies in the government health-care system), and physical correlates, determine the medical problems and thus cast a significant impact on the quality-of-life of the elderly (Song, 2013; WHO, 2011; WHO, 2013; WHO Press, 2003; Braz, 2012).

The age care sector worldwide is undergoing significant growth and change. These changes are placing increased pressure on the workforce to not only meet the growing numbers of aged care recipients, but to have the specialized skills needed to meet the diversity of service needs. In India, as in most parts of the world, the increasing number of aged persons and the proportion of the population represented by aged persons is a cause of concern that will require changes in many areas of life, including aged care. The health care needs of the aged are also changing everywhere. More aged persons have chronic diseases needing regular supervision and management, and there are more aged persons with dementia. We must anticipate elderly populations seeking more health care at a time when families and authorities are less able to afford health care (Wysocki, 2015).

The aged care will be a cross-sector collaborative that connects companies, organizations and agencies

to develop shared frameworks that drive innovation and enhance product and service delivery to the aging population and their caregivers. The elderly care hub harnesses the skills, expertise and networks of its member stakeholders to accelerate improvements in the quality of life for the aging population.

The rapid urbanization and societal modernization have also brought in its wake a breakdown in family values and the framework of family support, resulting in economic insecurity, social isolation, and elderly abuse leading to a host of psychological illnesses. This demands a timely initiative in this direction and emerges as a challenge and major responsibility of health care providers in India. In addition, Indian elderly face several social issues such as loneliness, elder abuse, neglect, lack of income security, and poor access to health care. We also have lack of policies on advanced directive, palliative care, and end-of-life care for the elderly as well as lack of data on the spiritual health of older people. With this scenario, the present questionnaire based survey study aimed to draw attention on India's experience to propose the need of aged care hub, through which the solutions to a multitude of issues across many fields raised from this situation could be offered, and with such complexity affecting so many, it will take a truly innovative approach to address geriatric care.

2. Methods

A structured format survey was conducted using questionnaire among the geriatric population consisting of voluntary consent of 300 subjects to participate in survey for a period of 3 months in Bengaluru hospital set-up. All the study subjects were supposed to fill a questionnaire proforma designed for the study. A geriatric record was prepared, which contains 13 questions related to age, marital status, education, sources of income, financial dependency, healthcare expenses, health insurance schemes coverage, healthcare centres they go for the treatment of common ailments / chronic problem, about the kind of health and medical facilities available in their area, preferences for separate geriatric clinic and the type of aged care they expect, priorities in specialised geriatric care facility, mode of information from which they hear to go to hospital for health check-up, reasons to postpone to go to hospital for health check-up, role and awareness of application of information technology for the benefits of geriatric care was noted. The answers to the questionnaire were analysed and interpreted. All the data were noted on the proforma and analyzed using Microsoft excel sheet and SPSS software Version 17 for chi-square analysis. $p<0.05$ was considered statistically significant.

3. Results

The results of socio-demographic background of subjects in the present questionnaire survey depicted that 105/300 subjects, i.e., 35% belonged to age group of 60-65% followed by 97/300 (32.30%) in 66-70 years, 70/300 (23.30%) in 70-75 years and 28/300, i.e., 9.30% subjects were aged more than 75 years. With regards to marital status of subject's majority, i.e., 81% (243/300) were married followed by 1.30%, 2.30% and 15.30% were found to be un-married, divorced and widow respectively. Majority of study subjects, i.e., 91/300 (30.30%) were graduates followed by 86/300 (28.70%) and 47/300

(15.70%) were completed secondary and primary school level education respectively. Only 7.70% (23/300) subjects were post graduates. However, 53/300 (17.70%) subjects were found to illiterate. Out of 300 study subjects 155 subjects, i.e., 51.70% were dependent for their financial requirements; while 48.30%, i.e., 145/300 were not dependent for their financial requirements. Table 1 showed remittance from children is the source of income of majority of subjects, i.e., 84/300 (28%) followed by interests on savings & FDs, pension and house rent as source of income of 17.30%, 15.70% and house rent / business respectively. 52/300 (17.30%) subjects have not source of income while 9% (27/300) of subjects have other source of income.

Table 1. Distribution of Subjects Based on Sociodemographic Background

Variables	Frequency (*n*=300)	Percentage
Age (years)		
60-65	105	35.00
66-70	97	32.30
70-75	70	23.30
> 75	28	9.30
Marital status		
Married	243	81.00
Un-married	4	1.30
Divorced	7	2.30
Widow	46	15.30
Education		
Illiterate	53	17.70
Primary	47	15.70
Secondary	86	28.70
Graduate	91	30.30
Professional / Post graduate and above	23	7.70
Source of Income		
Pension	47	15.70
House rent / Business	38	12.70
Remittance from children's	84	28.00
Interests on savings and fixed deposits	52	17.30
No income	52	17.30
Others	27	9.00
Financial Requirements Dependency		
No	145	48.30
Yes	155	51.70

The health care expense of 147 out 300 subjects, i.e., 49% was beared by family members; while 38.30% (115/300) subjects were managed their health care expenses from their own savings / income. Health insurance (8%) and hand loan (4%) were the other schemes of subjects dependent for their health care expenses in Table 2.

Table 2. Distribution of Subjects Based on Health Care Expenses

Variables	Frequency (*n*=300)	Percentage
Own savings / income	115	38.30
Health insurance	24	8.00
Hand loan from someone	12	4.00
By family members	147	49.00
Others	2	0.60

Majority of study subjects, i.e., 245/300 (81.70%) were covered under health insurance. Whereas, still 18% of study subjects, i.e., 54/300 were not covered under health insurance in Table 3.

Table 3. Distribution of Subjects Covered under Health Insurance

Variables	Frequency (*n*=300)	Percentage
Yes	54	18.00
No	245	81.70
Others	1	0.30

The present questionnaire-based survey revealed that, 41% and 54% & 46% of study subjects visit public hospitals / private clinics for medical assistance of their common and chronic ailments respectively. Majority of study subjects, i.e., 56% and 38% revealed the availability of public hospitals and private clinics in their respective area of residence. Chi-square test showed significant association between health and medical care facilities with age (χ^2=31.24; p-0.002) in Tables 4 and 5.

Table 4. Distribution of Subjects Based on Their Health Care Centres for Ailments

Variables	Frequency (*n*=300)	Percentage
For common ailments		
Public hospitals	125	41.70
RMP	4	1.30
Private doctor / clinic	124	41.30
Chemists / Pharmacy	45	15.00
Others	2	0.70

For chronic ailments (Q9)		
Public hospitals	161	53.70
RMP	2	0.70
Private doctor / clinic	137	45.70
Availability of health and medical facilities in their area		
Public hospitals	167	55.70
RMP	2	0.70
Private doctor / clinic	114	38.00
Chemists / Pharmacy	16	5.30
Others	1	0.30

Table 5. Kind of Health and Medical Facilities are Available in the Area

		Age (Years)				Total
		60 to 65	66 to 70	70 to 75	75 and above	
Public hospital	Count	58.00	42.00	47.00	20.00	167.00
	%	55.20	43.30	67.10	71.40	55.70
RMP	Count	0.00	2.00	0.00	0.00	2.00
	%	0.00	2.10	0.00	0.00	0.70
Private doctor or clinic	Count	41.00	49.00	20.00	4.00	114.00
	%	39.00	50.50	28.60	14.30	38.00
Private hospital	Count	6.00	4.00	3.00	3.00	16.00
	%	5.70	4.10	4.30	10.70	5.30
Others	Count	0.00	0.00	0.00	1.00	1.00
	%	0.00	0.00	0.00	3.60	0.30
Total	Count	105.00	97.00	70.00	28.00	300.00
	%	100.00	100.00	100.00	100.00	100.00

Chi-square value- 31.24, P value- 0.002*, *significant

However, Majority of study subjects, i.e., 294/300 (98%) preferred to have separate specialized geriatric care hospitals in their respective area of residence; However, Chi-square test showed no significant association (χ^2=5.20; p-0.51) in Tables 6 and 7.

Table 6. Distribution of Subjects Based on Their Preference and Type of Separate Geriatric Clinic

Variables	Frequency (*n*=300)	Percentage
Preference		
Yes	294	98.00
No	5	1.70
Others	1	0.30
Type of geriatric clinic		
Standalone geriatric clinic (GC)	36	12.0
Day care facility	66	22.0
Community attached with GC	52	17.3
Specialized geriatric care hospital	106	35.3
Medical college with GC service	34	11.3
Others	6	2.0

Table 7. Preference on Having Separate Geriatric Clinic for the Benefit of Aged People

		Age (Years)				Total
		60 to 65	66 to 70	70 to 75	75 and above	
Yes	Count	105.00	94.00	68.00	27.00	294.00
	%	100.00	96.90	97.10	96.40	98.00
No	Count	0.00	3.00	2.00	1.00	6.00
	%	0.00	3.10	2.90	3.60	2.00
Total	Count	105.00	97.00	70.00	28.00	300.00
	%	100.00	100.00	100.00	100.00	100.00

Chi-square value- 5.20, P value- 0.51

It was evident from the present questionnaire-based survey that 50.7% (152/300) subjects have awared of geriatric care centres through their relatives/friends, followed by 26%, 13% and 10% awared through advertisement, family doctor and through internet sources respectively. Chi-square test showed significant association (χ^2=18.96; p-0.026) in Tables 8 and 9.

Table 8. Distribution of Subjects Based on Their Medial of Awareness about Health Care Centres

Variables	Frequency (*n*=300)	Percentage
Through relatives/friends	152	50.7
Through internet	31	10.3
Through advertisement	78	26.0
Through family doctor	39	13.0

Table 9. If you Want to Go to Hospital for Health Check. How would you Like to Know the Same?

		Age (Years)				Total
		60 to 65	66 to 70	70 to 75	75 and above	
Relatives/friends	Count	54.00	40.00	41.00	17.00	152.00
	%	51.40	41.20	58.60	60.70	50.70
Internet	Count	11.00	8.00	11.00	1.00	31.00
	%	10.50	8.20	15.70	3.60	10.30
Advertisement	Count	30.00	35.00	8.00	5.00	78.00
	%	28.60	36.10	11.40	17.90	26.00
Family doctor	Count	10.00	14.00	10.00	5.00	39.00
	%	9.50	14.40	14.30	17.90	13.00
Total	Count	105.00	97.00	70.00	28.00	300.00
	%	100.00	100.00	100.00	100.00	100.00

Chi-square value- 18.96, P value- 0.026*, *significant

Furthermore, 75% of subjects reckoned affordable services was the preferences to visit specialized geriatric care for the treatment of their ailments followed by 64%, 59%, 41% and 31% have addressing psychological and emotional support, accessibility of facility, qualified staff in geriatric care, and provision of service on priority were the preferences respectively in Table 10.

Table 10. Distribution of Subjects Based on Their Priority of Specialized Geriatric Care Facility

Variables	Frequency (*n*=300)	Percentage
Accessibility of facility	177	59.00
Affordable services	225	75.00
Provision of service on priority	92	30.70
Specialized staff qualified in geriatric care	123	41.00
Addressing psychological and emotional support	192	64.00

Eighty-eight (88%) of study subjects postpone their health check-up due to affordability/financial issues followed by 72%, 67%, 57%, and 47% postpone due to fear of diagnosis of more diseases, accessibility of hospital, fear of advice of admission and lack of attendant/family support respectively in Table 11.

Table 11. Distribution of Subjects Based on Their Reasons for Postpone Health Check

Variables	Frequency (*n*=300)	Percentage
Affordability /financial issue	263	87.70
Lack of attender/family support	141	47.00
Accessibility of hospital	201	67.00
Fear of advice of admission	170	56.70
Fear of diagnosis of more diseases	217	72.30

36% of subjects (108/300) reckoned that application of information technology was helpful in geriatric care while negligible percentage of subjects, i.e., 3.3% (10/300) reckoned not helpful. Whereas, still majority of study subjects, i.e., 61% (182(300) were not at all aware of information technology applications in geriatric (χ^2=12.62; p=0.049) in Tables 12 and 13.

Table 12. Distribution of Subjects Based on Their Awareness of Information Technology

Variables	Frequency (*n*=300)	Percentage
Yes	108	36.0
No	10	3.3
Not aware	182	60.7

Table 13. Benefits of Current Application of Information Technology on Geriatric Care

		Age (Years)				Total
		60 to 65	66 to 70	70 to 75	75 and above	
Yes	Count	40.00	34.00	26.00	8.00	108.00
	%	38.10	35.10	37.10	28.60	36.00
No	Count	3.00	1.00	2.00	4.00	10.00
	%	2.90	1.00	2.90	14.30	3.30
Not aware	Count	62.00	62.00	42.00	16.00	182.00
	%	59.00	63.90	60.00	57.10	60.70
Total	Count	105.00	97.00	70.00	28.00	300.00
	%	100.00	100.00	100.00	100.00	100.00

Chi-square value- 12.62, P value- 0.049*, *significant

With regards to type of information technology, 37% aware of telemedicine facility, followed by 12%, 3.7%, and 2.7% of subjects aware of safety and security monitoring, medication management, telemonitoring & equipment compensating the loss of function facilities respectively; while rest of study subjects, i.e., 88%, 97%, 96%, 88% and 97% were not aware of telemedicine, tele-monitoring, medication management, safety & security monitoring, and equipment compensating the loss of function facilities in Table 14.

Table 14. Distribution of Subjects Based on Their Awareness on Type of Information Technology

Variables	Aware		Not-aware	
	Frequency (n=300)	%	Frequency (n=300)	%
Telemedicine	37	12.30	263	87.70
Tele-monitoring	8	2.70	292	97.30
Medication management	11	3.70	289	96.30
Safety and security monitoring	36	12.00	264	88.00
Equipment compensating the loss of function	8	2.70	292	97.30

4. Discussion

Old age care hub is a necessity in the present-day scenario as the younger generation do not have the time or in many cases the resources to meet their needs (like medical expenses, special food, etc.). But old age care hub should be considered only as a secondary option. Elders in the family are definitely an asset. It is they who can impart the much needed ethical values and code of conduct in the younger generation. Old age hub as an option should be considered only for the betterment of the senior citizens by way of better physical and mental status, greater possibility for social bonding, etc. Hence the present questionnaire survey-based study was conducted with the main purpose of drawing attention on India's experience to propose the need of aged care hub, and through which the solutions to a multitude of issues across many fields raised from this situation could be offered.

The socio-demographic background of subjects in the present questionnaire survey depicted that majority of study subjects were belonged to age group of 60-75 years. These findings were in concurrence with Woo et al. (1994) wherein authors have revealed that there is a need for long term institutional care for elderly population. 81% were married; while 1.30% un-married, 2.30% divorced, 15.30% were widow. These findings depicted the fact that elderly women were also the majority of participants in our study, due to their greater life expectancy. Another possible explanation is that widowed men usually find another partner, especially in advanced age (Baldin et al., 2008). Most women, once they became widowed, live by themselves, as seen in a study conducted in Korean communities, which reported 10 widowed men and 87 widowed women out of 97 elderly individuals

living in 32 rural communities. The death of their husbands was the reason these women lived alone, which is a phenomenon with characteristics common to other communities from different countries (Ain et al., 2004).

Majority of study subjects in our study, i.e., 30.30% were graduates followed by 28.70% and 15.70% were completed secondary and primary school level education respectively. While only 7.70% subjects were post graduates. However, 17.70% subjects were found to be illiterate in our study. These findings delineated the fact that how low levels of education influence the lives of elderly individuals at this point of life and why so many public initiatives and non-governmental actions are designed to encourage literacy and the continuing education of adults and elderly individuals Education influences social and economic life and also the search for health services (Inouye et al., 2007). Furthermore, data from the National Household Sample Survey (PNAD) reveal that 9.4% of 60 to 64 years old Brazilian individuals are illiterate and this percentage reaches 29.4% of those 65 years old or older (Indicators S, 2009).

We found 52% of study subjects were dependent for their financial requirements; while 48% were not dependent for their financial requirements. Remittance from children is the source of income of majority of subjects, i.e., 28% followed by interests on savings & FDs, pension and house rent as source of income of 17.30%, 15.70% and house rent / business respectively. Whereas, 17.30% subjects have not source of income. Furthermore, it was found that majority of study subjects, i.e., 81.70% were covered under health insurance. Whereas, still 18% of study subjects were not covered under health insurance. These findings vary slightly from the nationally representative National Health Accounts 2013-2014, according to which 69.1% in the country paid for healthcare through out of pocket expenditure whereas 23.3% had utilized government insurance schemes and 3.7% have private insurance (NHA) Various research studies indicated that financial, health, and health insurance literacy are loosely intertwined and especially impactful in terms of later-life decision-making (James, 2012; James, 2014). Among older adults, low financial and health literacy are correlated; both are associated with similar characteristics and outcomes (James, 2012; Lusardi, 2008).

The present questionnaire-based survey revealed that, 41% and 54% & 46% of study subjects visit public hospitals / private clinics for medical assistance of their common and chronic ailments respectively. Moreover, majority of study subjects, i.e., 56% and 38% revealed the availability of public hospitals and private clinics in their respective area of residence. Chi-square test showed significant association between health and medical care facilities with age (χ^2-31.24; p-0.002). These findings were in contrast with the available literature reports since current public-health approaches to population ageing have clearly been ineffective. The health of older people is not keeping up with increasing longevity; (Crimmins, 2011; Chatterji, 2015) marked health inequities are apparent in the health status of older people; current health systems are poorly aligned to the care that older populations require even in high income countries (Overview, 2011; UN, 2015; Goodwin, 2013; Patterson, 2014; Smith, 2012). However, majority of study subjects, i.e., 98% preferred to have separate

specialized geriatric care hospitals in their respective area of residence with no significant association (χ^2=5.20; p-0.51).

It was evident from the present questionnaire-based survey that 50.7% subjects have awared of geriatric care centres through their relatives/friends, followed by 26%, 13% and 10% awared through advertisement, family doctor and through internet sources respectively. Chi-square test showed significant association (χ^2=18.96; p-0.026). Furthermore, 75% of subjects reckoned affordable services was the preferences to visit specialized geriatric care for the treatment of their ailments followed by 64%, 59%, 41% and 31% have addressing psychological and emotional support, accessibility of facility, qualified staff in geriatric care, and provision of service on priority were the preferences respectively. Our study also revealed that 88% of study subjects postpone their health check-up due to affordability/financial issues followed by 72%, 67%, 57%, and 47% postpone due to fear of diagnosis of more diseases, accessibility of hospital, fear of advice of admission and lack of attendant/family support respectively. These findings are in consistent with previously published reports (Collins, 2014; Kaiser, 2015) physicians and other health care professionals may be able to play a role in helping their patients learn how best to seek needed care that is also affordable. During clinical visits, members of a patient's care team could initiate conversations with patients about payment and costs in the context of their care, in order to alleviate cost-related anxiety. Once cost enters the discussion, doctors and patients are often able to brainstorm money-saving strategies that may lower costs (Hunter, 2016), though these opportunities for discussion are often missed in the current health care setting (Ubel, 2016). Conversations incorporating cost and capacity may be increasingly important for those with reduced financial or physical resources, as they are more likely to report experiencing greater disruption in care (Boehmer, 2016).

We found that 36% of subjects reckoned that application of information technology was helpful in geriatric care. Whereas, still majority of study subjects, i.e., 61% were not at all aware of information technology applications in geriatric (χ^2-12.62; p-0.049). With regards to type of information technology, 37% aware of telemedicine facility, followed by 12%, 3.7%, and 2.7% of subjects aware of safety and security monitoring, medication management, telemonitoring & equipment compensating the loss of function facilities respectively. These findings depicted that still majority of study subjects were not aware of role of information technology in geriatric care.

5. Conclusion

Current trends in demographics coupled with rapid urbanization and lifestyle changes have led to an emergence of a host of problems faced by the elderly in India. Provision of quality assured by elderly health-care hub for the elderly population is a must and is a challenge that requires joint approach and strategies. Failure to address the health needs today could develop into a costly problem tomorrow.

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