

Health care needs and services available for elders in the Batticaloa district

K Arulanandem¹, PT Jayawickramaraja², S Hettige³, R P J C Ramanayake⁴, G Kisokanth⁵

Sri Lankan Family Physician, 2018, 34, 3-10

Abstract

The global and national ageing population led to much health, social and economic concerns. Thus, present study aimed at addressing the health care needs of elders and assessing the availability of health, social services in Batticaloa district. This community based cross sectional descriptive study was conducted in Batticaloa district with 845 elders who were selected by proportionate random sampling and interviewer administrated questionnaire was used as a major component.

Most of the elders (78%) were in the young old category and majority of them (56.6%) were females and most of elders (77%) were in poor socio economic status. The identified long standing medical problems amongst elders were hypertension (39%), muscular skeletal problems (32%) and bronchial

asthma (18%) were also identified. Most of the elders (88%) sought medical treatment in outpatient department as first contact at government hospitals while around half of them had followed clinics for chronic conditions.

This study also showed that the health system in Batticaloa district lacked geriatric services and elders were not treated as a special group. In the context of social services, most of the elders were unaware and thus were not benefitted by the currently existing social security.

Health seeking behavior and accessibility of health and social services were not adequately met for elders. Thus, there is a need to improve their well-being by strengthening primary care in national health system.

Keywords: elders, Batticaloa, health seeking, services

Introduction

Healthy ageing is a desirable expectation of all communities in the world¹. The United Nations (UN) and the World Health Organization (WHO) have been in the forefront in encouraging Governments to promote policies towards healthy and successful ageing of their people. Global population of elderly would increase to 15% by the

year 2025 and to 22% in 2050 and about 60% of elderly persons live in the developing world. The percentage of population over 60 years in Sri Lanka has increased from 4.2% in 1971 to 9.2% in 2000 and is expected to reach 28.5% by 2050^{2,3}. Sri Lanka is being unique in the present process of ageing.

In this context of increased life expectancy, Sri Lanka needs to concentrate in the improvement of quality of life among the increasing elderly population. Thus, it is essential to equip the system with qualified medical personnel specializing in elderly care to deliver the high quality health services to elders⁴. Although the health authorities provide a wide range of services in Sri Lanka, with special hospitals for children and mothers, elders are not provided with such specialized services separately, and the elders need not become a burden to the society and family, and even to themselves⁵.

The healthcare services in the Batticaloa district are being provided by both central and provincial health ministries and these are available from primary care to tertiary care level. The health seeking behavior in the district is being different in many aspects among elders in accessing the health facility, in the context of triple transition involving epidemiologic, demographic and technological trends.

¹ Senior Lecturer, Department of Primary Health Care, Faculty of Health-Care Sciences, Eastern University, Sri Lanka.

² Retired Professor in Medical Education, Sri Lanka.

³ Consultant Family Physician, Maharagama, Sri Lanka.

⁴ Professor, Department of Family Medicine, Faculty of Medicine, University of Kaleniya.

⁵ Senior Lecturer, Department of Supplementary Health Sciences, Faculty of Health-Care Sciences, Eastern University, Sri Lanka.

Correspondence: Dr. K. Arulanandem, Senior Lecturer, Head, Department of Primary Health Care, Faculty of Health-Care Sciences, Eastern University, Sri Lanka, No 50, New Road, Batticaloa, Sri Lanka.

Email: arulanandem64@hotmail.com

This study was aimed to understand essentially the issues relating to the health care needs of the elderly through their health care problems, and health seeking behaviors along with the services available for them. Thus, this study attempted to explore the nature of the health care needs of elders, and services available in Batticaloa district. The outcome of this study is expected to bring possible improvements in elderly care with better innovations at primary care level in the district.

Methodology

This cross sectional descriptive study was carried out in Batticaloa district, which aimed at looking health care needs and services available for elders as the main objective. This study further focused on health care problems, health seeking behaviors among elders along with accessibility of health and social services.

All fourteen Divisional Secretariat divisions (DS divisions) of the Batticaloa District were considered as a study setting. All elders of both sexes in the Batticaloa district were considered as the study population. This study has consisted 2 components.

This was a community based cross sectional and descriptive study using interviewer administrated questionnaire. All fourteen Divisional Secretariat divisions (DS divisions) of the Batticaloa District were included in this study. Elders who were residents for more than one year were eligible to enter the study as inclusion criteria. Elders, who were unable to communicate effectively, those who refused to participate and those who were institutionalized were excluded.

Sample size for this study was calculated by using the practical manual on minimal sample size determination by Lwanga and Lemeshow (1991)⁶. Based on a Sri Lankan study⁷ 35% of the elders' population was considered as anticipated population proportion and 10% was taken as the relative precision in the present study. With this anticipated population proportion and relative precision, the sample size was 713 and it was rounded up to 715. Sample size was increased by 18% considering the non-responsiveness⁸. Thus, the final sample size was 844 and for the practical convenience it was rounded to a figure of 845.

As already 14 sub populations existed in administrative terms, random sampling was used for obvious reasons. Therefore, in order to get a representative sample, following sampling scheme has been summarized. Number of elders participated were selected proportionately using the formula below $n_1 = n \frac{N_1}{N}$ which was used for calculating the sample size for proportional allocation¹¹ to divide the sample to each Divisional Secretariat (DS) divisions of the Batticaloa district.

The proportionate and simple random sampling method were used in two stages for data collection 1st stage was proportionate according to the size of the study population⁹ from availed information¹⁰ and 2nd stage by simple random sampling.

List of elders in each sub population was available and household details also obtained from Grama Servaka Niladhari (GSN) divisions. Thus, using computer software "WinPepi", random numbers were generated for each DS division (using SRS- without replacement option) for required sample size. Subsequently the generated numbered elder was identified with the help from the GN of respective area. Then the data was collected from the elders for this study by house hold visits. Only one elder from each identified household was included in the survey.

A modified Delphi technique was applied to formulate study instruments for this study. The questionnaire and check list were prepared after focus group discussions with experts. Prior to data collection, permission was obtained from Government Agent Batticaloa and subsequently from all 14 Divisional secretariats and relevant Grama Niladharis, and from all Health authorities of the Batticaloa region. The Principal Investigator (PI) and his trained team visited each DS division and involved in collecting data from the selected participants.

Each team visited households during weekends which improved the availability of employed family members. Written informed consent was obtained from the subject prior to data collection. Privacy of the subject was maintained throughout.

Data collections were done at suitable places either at GN office or at the patient's residence to administer the questionnaire.

All questionnaires were checked for errors and omissions at the end of the day by the interviewers. A coding key was prepared and the questionnaires were coded before data entry. Statistical package for social sciences (SPSS) 16 version software was used for analysis. Descriptive statistic was used to assess the mean and the percentages of the variables. Chi-square test was used to find out significant association between two categorical variables. Significant level of < 0.05 was set all the time.

Ethical considerations

Ethical clearance was obtained from the Ethic Review Committee, Faculty of Health Care Sciences, Eastern University, Sri Lanka. Permissions were obtained from relevant authorities before commencement of the study. Informed written consent was obtained from each participant. Confidentiality was ensured at every stage of data collection. All personal information was kept under confidential by the principal investigator throughout the study.

Results

Socio-demographic characteristics of the participants

Table 1. Socio-demographic characteristics of participants based on gender differences

Characteristic	Response	Male n (%)	Female n (%)	Total n (%)
Gender		367 (43.4)	478 (56.6)	845 (100.0)
Age group (years)	60 - 69	187 (50.9)	257 (53.8)	444 (52.5)
	70 and more	180 (49.1)	221 (46.2)	401 (47.5)
Ethnic background	Sinhalese	5 (1.4)	1 (0.2)	6 (0.7)
	Tamil	280 (76.3)	322 (67.4)	602 (71.2)
	Muslim	81 (22.0)	150 (31.4)	231 (27.4)
	Burger	1 (0.3)	5 (1.0)	6 (0.7)
Educational level	Never attended school	93 (25.3)	217 (45.4)	310 (36.7)
	Up to grade 5	170 (46.3)	175 (36.6)	345 (40.8)
	Up to GCE (O/L)	98 (26.7)	82 (17.2)	180 (21.3)
	Up to GCE (A/L) and above	5 (1.7)	4 (0.8)	10 (1.2)
Monthly income (Rs)	<1,000	284 (77.4)	434 (90.8)	718 (85.0)
	1,000-3,000	37 (10.1)	22 (4.6)	59 (7.0)
	3,001 -5,000	14 (3.8)	11 (2.3)	25 (2.9)
	>5,000	32 (8.7)	11 (2.3)	43 (5.1)
Marital status	Single	2 (0.5)	1 (0.2)	3 (0.3)
	Married	321 (87.5)	255 (53.4)	576 (68.2)
	Divorced/Separated	1 (0.3)	6 (1.3)	7 (0.8)
	Widowed	43 (11.7)	216 (45.1)	259 (30.7)

GCE (O/L) – General Certificate of Education (Ordinary Level), GCE (A/L) – General Certificate of Education (Advanced level)

Health care and other problems faced by elders

Table 2. Distribution of problems faced by elders

Problems	Total	
	n	%
Medical problem	582	68.9
Financial	484	57.3
Psychological problems	40	4.7
In managing time	5	0.6
Limitation of personal needs	19	2.2

More than half of elders were in the age group of 60-69 with female predominance. Majority (71%) of the elders were Tamils and 27% were Muslims in this study. Two thirds of the elders were married, one third were widowed. In educational level and gender, just over one third never attended the school while 41% studied up to grade 5. Most of the elders had family monthly income of less than 1000 rupees or no income at all.

Majority (69%) of the elders had medical problems and 57% had financial problems and there was no statistical significant difference ($p=0.22$) between prevalence of chronic medical conditions and age groups. In addition, there was no statistical significant difference ($p=25$) between gender and financial problems.

Chronic illnesses

Table 3. Long standing medical problems among elders

Health problems	Male		Female		Total	
	n	%	n	%	n	%
Hypertension (HT)	114	13.5	216	25.6	330	39.1
Arthritis	124	14.7	154	18.2	278	32.9
Backache	81	9.6	129	15.3	210	24.9
Bronchial asthma (BA)	66	7.8	87	10.3	153	18.1
Diabetic mellitus (DM)	48	5.7	99	11.7	147	17.4
Cardio vascular Disease	35	4.1	41	4.9	76	9.0
Mental disease	14	1.7	17	2.0	31	3.7
Any types of malignancy	5	0.6	10	1.2	15	1.8

Nearly 39% of elders had hypertension, 33% had arthritis, 18% asthma and 17% diabetes mellitus. No statistical significant difference between long standing DM and HT ($p=0.06$, $p=0.93$) and age groups.

Table 4. Distribution of problems with gender commonly associated with old age

Problems	Male		Female		Total		P Value
	n	%	n	%	n	%	
Poor sleep	207	24.5	310	36.7	517	61.2	0.01
Poor appetite	198	23.4	317	37.5	515	60.9	0.00
Poor memory	81	9.6	136	16.1	217	25.7	0.03
Constipation	72	8.5	90	10.7	162	19.2	0.25
Incontinence	28	3.3	44	5.2	72	8.5	0.65

Majority (61%) of the elders had poor appetite and poor sleep. There was statistically significant difference ($p<0.05$) between above variables and gender. Further, majority (65%) had visual and 23% had hearing impairments. There was no statistical significant difference ($p > 0.05$) between gender and visual, hearing and mobility impairments.

Table 5. Prevalence and nature of falls among elders

Characteristics	Responses	Males		Females		Total	
		n	%	n	%	n	%
Falls	Yes	80	21.8	89	18.6	169	20.0
	No	287	78.20	389	81.4	676	80.0
Recent history of fall	Within 3 months	27	33.8	41	46.1	68	40.2
	Within 4 - 6 months	9	11.2	9	10.1	18	10.7
	Within 7 - 9 months	3	3.8	2	2.3	5	3.0
	Within 10 - 12 months	1	1.2	1	1.1	2	1.2
	Beyond 1 year	40	50.0	36	40.4	76	45.0
Nature of fall	Accidental fall	76	95.0	81	91.0	157	92.9
	Fainting	4	5.0	8	9.0	12	7.1

In this study, 20% of elders had fallen at any time within last one year. Among them, about 50% of them had fallen within 6 months. Major cause of the fall was due to accidental. There was no significant difference ($p>0.05$) between gender and occurrence of falls.

Health seeking behavior towards chronic illness

Table 6. Patterns of clinic attendance among elders

Clinic details	Variables	Males		Females		Total	
		n	%	n	%	n	%
Clinic attendance	Yes	156	42.5	246	51.5	402	47.6
	No	211	57.5	232	48.5	443	52.4
Place of clinic	Government	135	86.5	216	87.8	351	87.3
	Private	11	7.1	24	9.7	35	8.7
	Native	10	6.4	6	2.5	16	4.0
Duration of follow-up (months)	0-12	58	37.2	73	29.7	131	32.6
	13-24	13	8.3	50	20.3	63	15.7
	25-36	17	10.9	19	7.7	36	9.0
	>36	68	43.6	104	42.3	172	42.8

About 48% attended clinic and 88% of them at government hospitals and 3 years follow up was observed among 43%. In addition, 95% of elders took prescribed medicines and one third of them took 5-10 drugs simultaneously. Most of the elders (88.9%, n=751) sought treatment at hospitals and 5% directly from pharmacies. All most all respondents (98.9%, n=836) did not receive age related health advice from their health care providers during their hospital visits for acute and chronic illnesses. Laundry work was the most assistance needed activity among elders in this study.

Availability and accessibility of social services

Sixty nine percent of elders (n=584) had their elderly ID. Approximately 50% of elderly ID card holders did not use them anywhere and 44% ID cards holders were moderately satisfied while 40% not satisfied at all.

Most of the elders (63%) did not have access or utilize most of the social services, facilities for elders. Among those, elderly committee participation was mostly accessed or utilized. Grand parenting (44.3%) and watching TV (36.4%) were the commoner leisure activities among the

Table 7. Description of social subsidiaries elders received

Response	Males		Females		Total		
	n	%	n	%	n	%	
Social subsidiaries	Govt (Samurthy)	301	93.8	422	95.5	723	94.8
	NGOs	6	1.9	9	2.0	15	2.0
	Elders' society	1	0.3	3	0.7	4	0.5
	Well wishers	13	4.0	8	1.8	21	2.8
Level of satisfaction	High	2	0.6	1	0.2	3	0.4
	Moderate	119	37.1	169	38.2	288	37.7
	Low	21	6.5	41	9.3	62	8.1
	Not at all	179	55.8	231	52.3	410	53.7

elders in this study. Gardening and listening to radio were higher among in the age group of 60-69 and there was a statistical significant difference ($p > 0.05$) between those and age group. Majority of the elders (74.6%) got involved in their cultural activities and 85% of the elders were engaged in their religious activities. There was statistical significant association between ethnicity and religious activities ($p = 0.03$).

Most of the participants were obtaining 'Samurdhi' government subsidiaries. More than half of them were not satisfied at all about receipt of subsidiaries. All elders had expressed that non availability of specially trained doctors, nurses as well as minor employees for appropriate elderly care at the hospitals attended either for acute or chronic problems. In addition, there were no specific infrastructure facilities available for the elders.

Discussion

The present study identified that the elders in the Batticaloa district had faced several problems such as medical, financial, psychological, time management and limitation of personal needs. The reasons for majority of the elders facing medical problems could be explained by the effect of ageing and chronic illnesses have become the norm and the existence one or more chronic non communicable diseases. In addition, elders suffer more from visual and hearing impairments from mental, neurological and bone disorders. The health and social needs among elderly become complex in the context of South Asia¹¹. In Sri Lanka, elderly people face a greater prevalence of disabling, chronic and degenerative diseases¹².

The financial problems noted in 57% of the elders, were mainly due to the chronic diseases as contributing factor for most of the expenditure on healthcare. This study revealed that elders were with many chronic long standing problems. It is evidenced that more than 50% of elders have three or more chronic diseases¹³ and non-communicable diseases (NCDs) have already become the largest contributor to the disease burden in Sri Lanka¹⁴. The accelerated ageing of the population would bring new challenges to the health care and social welfare systems of Sri Lanka³. Multiple chronic conditions (MCCs) pose a substantial health care problem, especially among the aged and creating more complex patterns of health care¹⁵. With the ageing population and the accompanying rise in multi morbidity, the burden of chronically ill on health service capacity and costs is expected to rise in the future¹⁶. Thus one of the greatest challenges in geriatrics is to provide optimal care for elderly with multiple morbidity⁴.

Sleep problems are not a consequence of the ageing process *per se*; they are related to medical and psychiatric

morbidity as well as psychosocial issues and estimated to be about 40% in the elderly population¹⁷. In contrast, a study revealed that 23-34% had poor sleep in the geriatric population¹⁸. It is well accepted that in elderly, poor appetite is multi-factorial and associated with other medical conditions like multi-mobility, unrecognized mental or psychological issues or due to poly pharmacy as well. Likewise, constipation was also a problem in about one fifth of elders in this study. The factors for constipation in the elderly were considered to include immobility, reduced fiber and fluid intake, medicinal drugs, depression, neurological disorders, endocrine disorders and gastrointestinal malignancy as well². Falls and mobility problems are two of the more common and serious concerns faced by elders. In this study, one fifth of elders had a fall within last one year. Falls are a major concern in health care for older adults because most falls are associated with a high risk of fractures, resulting in a need for long-term care. Furthermore, in this study, fainting attack was the cause in less than 8% of fallen elders. Syncope in elderly is a frequent, complex and potentially devastating problem as brief transient loss of consciousness and loss of postural tone, with rapid spontaneous recovery¹⁹.

In this study most of the elders were engaged in their religious activities (85%) and cultural activities (75%). The level of religious participation in elderly seems to be greater because the religious community is the largest source of social support outside the family. At the same time, many elderly people felt that religion and prayers are most important for them to cope with physical health problems and stresses. Meditation is a physiological state of reduced metabolic activity that elicits physical and mental relaxation, and is reported to enhance psychological balance and emotional stability²⁰. Once they are into regular recreational activities, they would gain more self-esteem. The activities could calm their moods, increase their physical capability, slow down the ageing process, improve the quality of life and reduce medical expenditure. An exploratory study in Taiwan reveals that, leisure activities are very important to the elderly population, since such activities could keep the body active and promote self-recognition²¹. According to the sources at Ministry of Health Sri Lanka, there have not been specialized units at hospitals to specifically care for the needs of the elderly. It could be well evidenced by the World Bank report that the health system has insufficiently focused on the healthcare needs of elderly and constrained by the lack of resources and their inequitable distribution²².

Most of the participants (95%) in this study were obtaining subsidiaries from the government Samurdhi. More than half those (54%) were not satisfied at all about receipt of subsidiaries. According to available sources, public assistance allowances are paid to all vulnerable

categories including destitute elders. Increasing cost of living and excessive health expenditures are the main reasons among elders for poor satisfaction. Therefore, an urgent need to establish and maintain social security systems to support elders²³ is very much anticipated because social security is a basic right that the senior citizens of a country should enjoy.

Regarding above perception of being burdened with diseases may be due to existing long-term disability in the elderly population and change in the capacity of the support system^{24,25}. Furthermore, the productivity of the elderly in terms of their rich experience and their support as well as guidance to the younger generation, is less recognized and in many instances, as they share the family income without generating any income²⁶, and also the elders commanded authority and respect within the family and in the community²⁷. As people live longer and have fewer children, family structures are transformed, leaving older parents with fewer options for care²⁸.

Limitations of the study: This study did not include the institutionalized elders' especially elders' homes, hospitalized elders' where the care would be somewhat organized.

Conclusion

Hypertension, muscular skeletal problems, bronchial asthma and diabetes were the commonly identified long standing medical conditions. Poor sleep, poor appetite, poor memory, constipation and urinary incontinence were identified as associated problems. Visual, hearing and mobility impairments were also found.

OPD of government health care institutions were mostly the first contact care and around half of them attended the tertiary or secondary care level hospital for chronic medical conditions.

There was no separate ward/unit or other infrastructure facilities for elders in the health care institutions in Batticaloa district. Health promotion activities were minimal and trained resources were lacking in elderly care services. Elders were not engaged in a productive manner and leisure activities were home bound though they well participated in cultural and religious activities. The existing social security system is inadequate for elders.

References

1. World Health Organization. Good health adds life to years – Global brief for World Health Day 2012. Available at: http://whqlibdoc.who.int/hq/2012/WHO_DCO_WHD_2012.2_eng.pdf (Accessed 28 September 2016).
2. Atapattu P, Goonaratna C. *Medicine in the Elderly* 2012; 2: 1-17. Colomobo, Ananda Press.
3. Karunathilake IM. Health Changes in Sri Lanka: Benefits of Primary Health Care and Public Health. *Asia-Pacific Journal of Public Health* 2012; 24(4): 663-71.
4. World Health Organization, Health in South-East Asia India: Regional office for South East Asia, 2012. Available at: http://www.searo.who.int/mediacentre/newsletters/hisea/whd-12_hisea.pdf (Accessed 15 February 2016).
5. Jegarasasingam V. A Publication by National Secretariat for Elders. *A Hand Book for Elders* 2001; 6-12.
6. Lwanga SK, Lemeshow S. Sample Size Determination in Health Studies. *A Practical Manual Geneva* 1991; 27-8.
7. Mendis N, Illesinghe D. Health and social aspects of the elderly. A preliminary community survey. *Ceylon Medical Journal* 1989 34(2): 95-8.
8. Dettori JR. Loss to follow up. *Evidence based Spine Care Journal* 2011; 2(1): 7-10.
9. Pandey R, Verma M. Samples allocation in different strata for impact evaluation of developmental programme. *Rev. Bras. Biom* 2008; 26(4): 103-12.
10. Department of census and statistics. District Statistical Hand Book Batticaloa 2010. Available at: <http://www.statistics.gov.lk/DistrictStatHBook.asp?District=Batticaloa> (Accessed 22 August 2017).
11. World Health Organization. Global Action Plan for the Prevention and Control of NCDs 2013-2020, 2013. Available at: http://www.who.int/nmh/events/ncd_action_plan/en/. (Accessed 10 September 2017).
12. Mendis A. High-level Meeting on the Regional Review of the Madrid International Plan of Action on Ageing (MIPAA) 2007. Available at: http://undesadspd.org/LinkClick.aspx?fileticket=IbS_ig_DkAI%3D&tabid=333 (Accessed 22 February 2018).
13. American Geriatrics Society. Public Education, 2012; Available at: www.americangeriatrics.org/public_education/ (Accessed 25 February 2016).
14. World Health Organization. WHO Country Cooperation Strategy 2012-2017 India: World Health Organization, Country Office for Sri Lanka, 2012. Available at: http://www.searo.who.int/srilanka/CCS_Sri_Lanka_2012-2017.pdf (Accessed 20 April 2016).
15. Loeb SJ et al. Supporting Older Adults Living With Multiple Chronic Conditions. *Western Journal of Nursing Research* 2003; 25(1): 8-29.
16. Ostrom SHV et al. Multimorbidity of chronic diseases and health care utilization in general practice. *BMC Family Health* 2012; 15(61): 1471-2296.
17. Goonaratna C, Balasuriya A. *Medicine in the Elderly* 2011; vol.1 Ananda Press: Colombo.

18. Higbee MD, Plaza CM, Dunkelbarger-Reed J. Understanding and Managing Sleep Difficulties in the Elderly. *Journal of Pharmacy Practice* 2000; **13**: 316.
19. Gupta, M et al. A Study of Prevalence of Depression in Elderly with Medical Disorders. *Journal of the Indian Academy of Geriatrics* 2010; **6**: 18-22.
20. Sanchettee P. Art and Science of Healthy Ageing. Editorial *Journal of The Indian Academy of Geriatrics* 2012; **8**: 2.
21. Shaikh BT, Haran D, Hatcher J. Where do they go, whom do they consult, and why? Health-Seeking Behaviors in the Northern Areas of Pakistan. *Qualitative Health Research* 2008; **18**(6): 747-55.
22. World Bank, Sri Lanka's Poverty Assessment Engendering Growth with Equity: Opportunities and Challenges 2007. Available at: <http://www.health.gov.lk/en/HMP-Guidelines/HMP-0716/Annual%20Action%20Plan%202010%20%5BProgrammes%20&%20Directorates%5D.pdf> (Accessed 16 June 2014).
23. Perera B. Social support and social security issues of elders in Sri Lanka. *Galle Medical Journal* 2011; **16**: 2.
24. World Health Organization. Ageing and Health a Health Promotion Approach for Developing Countries. WPRO Non-serial Publication, 2003. WHO Regional Office for the Western Pacific press.
25. World Health Organization. A glossary of terms for community health care and services for older persons. Centre for Health Development, 2004.
26. Paltasingh T, Tyagi R. Demographic transition and population ageing: building an inclusive culture. *Social Change* 2012; **42**(3): 391-409.
27. Sivarajah N. A study of the health and socio economic condition of elderly. 1985. University of Colombo.
28. Mathur A. Geriatric Caregiver Training. *Journal of The Indian Academy of Geriatrics* 2007; **3**(2): 47.