

FP 02**The Impact of Gender and Age on Health and Quality of Life of Older People in Galle District, Sri Lanka**De Silva K.^{1#}, Liyanage C.², Wijesinghe C.², Perera B.²¹*Department of Nursing, Faculty of Allied Health Sciences, University of Ruhuna, Sri Lanka*²*Department of Community Medicine, Faculty of Medicine, University of Ruhuna, Sri Lanka*# **Corresponding author:** *manojadsilva@gmail.com***Abstract**

Background: Sri Lanka's population is rapidly aging. Quality of Life (QOL) of older people in many countries is in jeopardy at present and Sri Lanka is no exception. QOL among the older people is often associated with physical deterioration along with their health conditions.

Objectives: This paper describes QOL and health status of older people in Galle and the impact of gender and age on QOL of them.

Methods: A cross sectional study was done using a random sample of older people aged 60 years and above living in Galle district. A pre-tested interviewer administered questionnaire was used to collect data. Activities of Daily Living (ADL) scale, World Health Organization Quality Of Life-BREF (WHOQOL-BREF) scale, Mini Mental Status Examination (MMSE) scale and Center for Epidemiologic Studies depression scale (CES-D Scale) were used to collect data. These scales were validated and used in community surveys in Sri Lanka. Health status was measured by assessing health conditions using available health records. Descriptive statistics and t-test were used in the analysis. Ethical approval was obtained from the Ethics Review Committee, Faculty of Medicine, University of Ruhuna, Galle, Sri Lanka.

Results: A total of 396 older people participated in the study. Mean age of the participants was 69 (± 7.2) years, and the majority were females ($n = 268, 67.7\%$). Hypertension, cardiovascular diseases, diabetes, joint related diseases and vision problems were common in this target population. Older women were more likely than older men to suffer from joint related disease and older men were more likely than older women to suffer from cardiovascular diseases and hearing deficiencies. There was no gender difference of the mean ADL values, but those of aged 70 or more years reported slightly lower mean ADL value than those of 60-69 years (98.46 vs 99.60, $p < 0.01$). No gender or age differences of the mean CES-D values and mean MMSE scores were found. The mean value of QOL of younger older people were slightly higher than that of others (308.4 vs 296.6, $p < 0.01$), but no gender difference was found.

Conclusion: Cardiovascular diseases, diabetes, arthritis and vision problems are prevalent in older people in Galle. Health authorities should pay attention to reduce incidence rates of these diseases and particular attention should be paid to provide healthcare facilities to older women with joint diseases. Interventions that support active lifestyle in older people in advanced ages would probably facilitate them to enhance their QOL.

Keywords: Health status, older people, Quality of Life, gender & age, Sri Lanka.

Background

Many populations across the world are aging fast. Old age is a normal part of the life of people, although many older people are at high risk of developing various ill-health conditions due to continuous deterioration of physical and psychological health conditions in them (1). Increasing longevity is one of the humanity's greatest achievements. The human life span follows a recognized pattern from birth to death. A peak of human growth and development is reached in the twenties. Then there is a gradual deterioration in physical and mental abilities (2). The number of older people (aged 60 years or over) is increasing rapidly worldwide (3). Globally, the number of older people is expected to more than double, from 841 million people in 2013 to 2 billion in 2050. About two thirds of the world's older people live in developing countries. The older people population in less developed regions is growing faster than the more developed regions.

By 2050, nearly 8 in 10 of the world's older people population will live in the less developed regions (3). As noted by the WHO, females encompass the majority of the older people population around the world as they tend to outlive males (4).

Sri Lanka, a country which has shown an increasing life expectancy at birth and declining mortality rates in the past few decades, is likely to experience a significant increase in its older people population in the near future. In 2012, the proportion of the population aged 60 years and older in Sri Lanka was approximately 12.2% (5). It is estimated by the year 2021 this proportion will increase up to 16.7% and by 2041, 1 out of every 4 individuals will be an older person, making Sri Lanka's population the oldest in the South Asia region .

Health status is the impact of disease on patient function as reported by the patient. More specifically, health status can be defined as the range of manifestation of disease in a given patient including symptoms, functional limitation, and quality of life, in which quality of life is the discrepancy between actual and desired function (6). Health status of older persons are determined by the level of dependence of the older persons in activities of daily living, the prevalence of physical and mental impairments, and the prevalence of illnesses and disabilities which are crucial to ensure the well-being of them (7).

Health problems of older people are supposed to be one of the major public health concerns of any country as older people are more prone to suffer from ill health than people in younger age groups, thus require more healthcare facilities. Gender, age, race, place of living and economic status were found to be vital determinants of health and well-being of older people, and in general they receive both informal and formal care available in their living settings (8). However, the healthcare received by older people in different population groups vary remarkably making it a considerable factor associated with their quality of life. It is often claimed that ageing is accompanied by multiple illnesses and physical ailments. Besides physical illnesses, the aged are more likely to be victims of poor mental health, which arises from senility, neurosis and extent of life satisfaction (9). A study conducted in India has shown that, almost all diseases were commonly seen in older people except gynecological diseases (9). Among these hypertension, ear diseases, skin diseases, musculoskeletal disorders, psychological disorders, cancer and neurological diseases were found to be significantly more common in rural older people than urban older people (9). A study done in US has shown that the most frequently occurring chronic conditions in the older people population are hypertension, arthritis, heart disease, cancer, diabetes, and sinusitis (10). Community-resident seniors with chronic disabilities receive either informal care (from family or friends) or formal care (from service-provider agencies). In India, more than 90% of older people with chronic disabilities receive informal and/or formal care, and about two-thirds receive informal care only (9). A survey conducted in Sri Lanka has shown that health status and health care services available for older people is an emerging public health issue and it has been recognized by the government as a devastating health and economic issue at present. Almost 93% of the older

population seeks health care from the existing primary health care network in the country (11) and the rapid increase in the elderly population requires expansion of the existing health facilities for geriatric population in Sri Lanka. A national survey done in Sri Lanka revealed that 55% of elderly population put pressure on health systems with the rise of chronic illness such as Diabetes, Hypertension, cardiovascular diseases, osteoarthritis, stroke, cancer, and Asthma (11). Further, defects of vision, hearing physical and mental performance are reported in various proportions of elders and have resulted in varying degrees of morbidity (11).

Quality of Life is a broad concept and it is affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment (12). Researchers are exploring the connections between health and well-being in order to improve the overall quality of life of older people. It is well recognized that with advancing age, there is a high incidence of age-related chronic diseases that diminish their well-being status. Evidence suggests that older people get dissatisfied, lonelier and depressed due to demographic changes (13). In Tanzania, a developing country, a study revealed that poor quality of life. Well-being and health status in older people are significantly related to marital status, gender and the age (14). In Sri Lanka, a study revealed that, poorer QOL was seen in participants with the presence of three or more health problems, being admitted to hospital, and accidents and falls (15). Only a handful of studies have investigated how personal factors shape the health and QOL of older people in Sri Lanka. Therefore there is a need to understand how gender and age, two vital personal factors, influence health and QOL of older people in different parts in Sri Lanka.

Objectives

To examine how gender and age impact health status and QOL of older people in Galle, Sri Lanka.

Methods

A community-based descriptive, cross-sectional study was done using a random sample of older people aged 60 years and above living in Galle district, Sri Lanka. The study sample was 396 older people living in Galle. Older people were grouped into two groups as range of 60-69 and 70-100 yrs. Sampling was carried out according to the following procedure. Out of 19 Assistant Government Agents (AGA) divisions in Galle District, one urban and two rural AGA divisions were selected for the study. Selected AGA divisions were Hikkaduwa, Elpitiya and Karadeniya. Two Grama Niladhari Divisions (GND) were selected randomly from each AGA division for the data collection. A pre-tested interviewer administered questionnaire was used to collect data. The elderly people who are from elderly home or institutionalized and who are living temporarily in the area were excluded from this study while those suffering from severe health conditions and who were not capable of providing informed consent were also excluded. The reasons for exclusion of older people with severe health conditions is that they are difficult to face for interviewer administered questionnaire for a long period and unable to provide written consent for the study. Questionnaire included several scales. Barthel index for Activities of Daily Living (ADL) which has 10 items was used to assess dependency status. It measures a person's daily functioning specially the activities of daily living (feeding, bathing, grooming, dressing, bowels, bladder, toilet usage, transfers (bed to chair and back), mobility (on level surfaces) and climbing stairs. The score of this scale is ranging from 0-100 and a score closer to 100 indicate very low dependency. World Health Organization Quality Of Life-BREF (WHOQOL-BREF) which has 26 items was also used. It scored in four domains: Physical (Seven items), Psychological (Six items), Social relations (Three items) and Environment (Eight items). The items of the WHOQOL-BREF questionnaire inquire that how much, how

completely, how often, how good or how satisfied the respondent felt in the last two weeks. The total score of this scale is ranging from 0–400 where higher scores indicate higher QOL. Mental health was assessed using Min Mental Status Examination (MMSE) and Centre for Epidemiologic studies depression scale (CES-D Scale). The MMSE has 11 items and this scale is designed to measure that five areas of cognitive function: orientation, registration, attention and calculation, recall and language. The maximum MMSE score is 30 points. A score of 20 to 24 suggests mild dementia, 13 to 20 suggests moderate dementia, and less than 12 indicates severe dementia. The CES-D Scale has 20 items and the score ranges from 0 to 60 where a score above 16 indicates an elevated level of depressive symptoms. This scale comprises six scales reflecting major facets of depression: depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance.

All these scales were validated and used in Sri Lanka (16-19). Health conditions were assessed by reviewing the participant's diagnosis cards and clinical records. Measurement of blood pressure and vision were also undertaken to assess their health status. Ethical approval was obtained from the Ethics Review Committee, Faculty of Medicine, University of Ruhuna, Galle. The participants were educated about the research and their written informed consent was obtained before enrolling into the study.

Data were analyzed using SPSS software version 20.0. Survey data were entered and scores were computed according to the given scoring system. Descriptive statistics, such as means, standard deviation, frequencies and percentages were determined. The t-test was also used in the analysis.

Results

A total of 396 older people participated in the study. Mean age of the participants was 69 years (± 7.2) and the majority were females ($n = 268$, 67.7%). Socio Demographic description of the study participants are shown in Table 1.

Table 1: Demographic description of the study participants by gender (n=396)

Demographic data	Categories	Male (n=128)	Female (n=268)	Total (n=396)
Age	60-69	68 (53.1%)	156 (58.2%)	224 (56.6%)
	70-100	60 (46.9%)	112 (41.8%)	172 (43.4%)
Civil status	Married	111 (28%)	139 (35.1%)	250 (63.1%)
	Unmarried	2 (0.5%)	17 (4.3%)	19 (4.8%)
	Separated	2(0.5%)	3(0.8%)	5 (1.3%)
	Widowed	13 (3.3%)	109 27.5%)	122 (30.8%)
Educational level	No education	3 (2.3%)	23 (8.6%)	26 (6.6%)
	Primary education	41 (32%)	73 (27.2%)	114(28.8%)
	Secondary education	82 (64.1%)	169 (63.1%)	251 (63.4%)
	Degree level	2 (1.6%)	3 (1.1%)	5 (1.3%)
Employment status	Semi-professionals	1 (0.8%)	1(0.4%)	2(0.5%)
	Unskilled	45 (35.1%)	25 (9.3%)	70 (17.7%)
	Self-employment/ house work	82 (64.1%)	242 (90.3%)	324 (81.8%)
Monthly income	No income	14(3.5%)	32(8.1%)	46 (11.6%)
	< SLR. 10,000	72(18.2%)	186(47%)	258(65.2%)
	> SLR.10,000	42(10.6%)	50(12.7%)	92 (23.2%)

Differences of the mean values of ADL scores were compared using independent sample t-test by gender and age and results are tabulated in **Table 2**. No significant gender difference of mean values was observed ($p=0.854$). But the mean value of Barthel index for participants between 60-69 years (99.6 ± 1.4) was significantly higher than that of the mean value of participants between 70-100 years (98.46 ± 4.2) ($p < 0.01$).

No gender difference of the mean values of MMSE was found ($p=0.527$) but a slightly higher mean score was found in young old adults compared to old-old adults (27.47 vs 27.23, $p < 0.05$). There was a significant gender difference of the mean values of the CES-D values (9.02 vs 7.30, $p < 0.05$). A slightly higher mean score of WHOQOL-BREF was found in young old adults compared to old-old adults.

Table 2: Instrumental Scores of the study sample by gender and age group

Scales	Variables	N	Mean (SD)	P value
Barthel Index	Female	268	99.12 (2.4)	0.854
	Male	128	99.06(4.0)	
	60-69 years	224	99.60 (1.4)	0.001
	70-100 years	172	98.46 (4.2)	
MMSE	Female	268	27.65 (2.6)	0.527
	Male	128	27.47 (2.6)	
	60-69	224	27.87 (2.5)	0.016
	70-100	172	27.23 (2.9)	
CES-D	Female	268	9.02 (7.08)	0.019
	Male	128	7.30 (6.22)	
	60-69	224	8.64 (7.10)	0.560
	70-100	172	8.23(6.53)	
WHO-QOL	Female	268	301.7 (36.9)	0.222
	Male	128	306.58 (35.9)	
	60-69	224	308.4 (34.4)	0.001
	70-100	172	296.68 (38.4)	

Health measurements of the participants were tabulated in **Table 3**.

Vision problems was the most common health condition among both male and female older persons. Hypertension, cardiovascular diseases, diabetes, and joint diseases were also common in this target population. There were significant gender differences in the prevalence of cardiovascular diseases, joint related diseases and hearing problems.

Table 3: Prevalence of health conditions among study participants (n= 396)

Diseases	Male (n=128)		Female(n=268)		P value
	N	%	N	%	
Cardiovascular Diseases	23	18	19	7.1	.001
Diabetes	13	10.2	42	15.7	.138
Hypertension	45	35.2	112	41.8	.207
Joint related diseases	19	14.8	68	25.4	.018
Blood diseases	0	0.0	1	0.4	.489
Cancer	0	0.0	4	1.5	.165
Renal diseases	4	3.1	4	1.5	.280
Stomach related diseases	8	6.2	23	8.6	.419
Asthmatic conditions	18	14.1	26	9.7	.197
Skin diseases	6	4.7	7	2.6	.278
Psychiatric conditions	2	1.6	2	0.7	.447
Dental diseases	0	0.0	1	0.4	.489

Vision problems	57	44.5	108	40.3	.424
Hearing problems	16	12.5	10	3.7	.001
Memory related difficulties	11	8.6	14	5.2	.197

Discussion

In this study, we assessed health status and QOL of older people in Galle, Sri Lanka were assessed, and examined whether gender and age have any influence on them. Health status and QOL are major indicators that represent the well-being status in the later life. The prevalence of vision problems, hypertension, asthma, diabetes and joint related diseases were high in this target group. Significant gender differences in the prevalence of cardiovascular diseases, joint related diseases and hearing problems were observed. A study conducted in Malaysia showed that the prevalence of chronic illnesses among the older people was as high as 60.1% (20). In India, the situation is similar (21). In the United Kingdom, it was found that the prevalence of heart disease, hypertension, stroke, diabetes and cancer rise rapidly after the age of 60 (22). Therefore, chronic disease conditions are common among the older people and there is a rising need to pay attention for protecting health and well-being of the older people by minimizing adverse effects of chronic diseases found in many developed and developing countries in the world.

In this study we found that there is no gender difference in the physical disability status among the older people. However, a significant difference in the mean scores of ADL was observed among the participants between the age group of 60-69 and age group 70-100, though there was no clinically relevant result. With the aging process physical abilities are gradually declining. However, we have observed that our target population has extremely low prevalence of physical disabilities compared to older population groups in other countries. In our study, less than 2% of the elderly persons were dependents on their daily activities. A study conducted in Singapore revealed that, 17% of older people they investigated were dependents (23). A study conducted in Malaysia found that 15.1% of the older people were dependents (24). Thus, physical capabilities of older people in Sri Lanka are better than that of most other countries. This is probably due to the differences in age composition between populations or high rates of physical activity participation seen in older people in Sri Lanka, but further investigations are needed to confirm our assertions.

Older people participated in this study had reported higher mean score for the MMSE indicating that they have very good cognitive skills. A study conducted in Malaysia shown that, prevalence of cognitive impairment was 22.4% (20). As expected, younger group was better than the older group in their cognitive abilities. Mean scores of the CES-D indicated that, the majority of older people in Galle were free from depressive symptomatology. A study has shown that, depression affects 17.8% of elderly were living in the community (25). There was no gender difference of the mean WHOQOL-BREF values, but those of aged 70 or more years reported slightly lower mean QOL value than those aged 60-69 years indicating that younger old people have somewhat better QOL than older-old people. A study conducted in India revealed that male participants had a higher mean score for QOL as compared to the female participants and the quality of life is better among the individuals who do not suffer from any chronic illness. But in the target population both older men and women seem to have similar QOL.

Limitations

The following limitations were identified in this study. It included assessment using dietary intake of nutrients of two days may not represent their habitual intake and day to day variations of their food consumption. As a result of aging process, elders with declined memory may not have provided full information on actual dietary intake, due to cultural norms and shame. Some elderly people may not have disclosed their real situation with the interviewer. Lack of prior

research studies related to the present study in Sri Lanka also could be a limitation. Some of the selected subjects refused to donate the blood samples, self-reported data on their health status, provided by the participants, may have recall bias and the study excluded subjects who were not capable of physically and mentally responding to the interview schedule (not able to appropriately complete the survey).

Conclusions

Vision problems, cardiovascular diseases, joint related diseases, hypertension and diabetes were prevalent among the older population in Galle district Sri Lanka. Health authorities need to pay attention to these health conditions found in older people and special attention is needed to find, treat and support older women who are suffering from Joint related diseases. Cognitive abilities in this study group is satisfactory. The Quality of Life of older people in Galle seems to be high and it is necessary to maintain this in the future to make older people in Galle healthy and happy.

Acknowledgement: Faculty of Medicine research grant is greatly acknowledged.

References

1. Davies N. Promoting healthy aging; the importance of lifestyle. *Journal of Nursing standard [Royal College of Nursing (Great Britain)]* 2011; 25: 43-49.
2. Gomez LM. Geriatric Nursing, 5th edition, Jitendar P Vij, New Delhi: 2009.
3. World Health Organization. A global movement for the right of the older people, Global aging statistics. Geneva, 2012.
4. World Health Organization. Health of the Elderly in South East Asia, A profile of aging statistics. New Delhi, 2009.
5. Ministry of Health. Annual Health Bulletin 2012, Sri Lanka. Medical statistics unit.
6. John SR. Health status and clinical practice. *Journal of AHA*, 2002; 106:1:5-7.
7. Maryam T, Mohamed A, Ali M. Determinants of Health –related Quality Of Life in elderly in Tehran, Iran. *Journal of BMC Public Health*, 2008; 323-325.
8. Ahmad Al-W, Dag E, Gösta T, Kurt S. The influence of sociodemographic characteristics on well-being and symptoms in a Swedish community: Results from a postal questionnaire survey, *Scandinavian Journal of Primary Health Care*, 1999; 17:4: 201-209.
9. Zare VR, Kokikar P, Romesh B. Health status of the elderly. Comparative study. *International Journal of Community Medicine and Public Health*, 2018; 5-7.
10. Somnath P. Health status and Health care of Elderly Americans. *Journal of Geriatrics*, 2009; 10: 4.
11. Kulathunge RDH, Gunarathna EDTP. Emerging health issues among ageing population in Sri Lanka –A review; *Advance Research Journal of Multidisciplinary Discoveries*.22.0, C-3,2018;15-18.
12. World Health Organization. *WHOQOL* 1997. Available at: <<http://www.who.int/mental-health/media/68.pdf>> [Accessed 27 November 2014].
13. Bowling A. Quality of Life in Older Age: What Older People Say. In: Mollenkopf H., Walker A. (eds) *Quality of Life in Old Age. Social Indicators Research Series*, 2007; 31.
14. Mathew A.et al., Health status and Quality Of Life among older adults in rural Tanzania. *Journal of Global Health Action*, 2010; 3:1.
15. Ediriweera RED, Perera SMSA. Quality of Life in Older Adults Attending a University Family Practice Centre in Sri Lanka. *Journal of Frailty and Aging*, 2018; 7: 134-137.
16. Lekamwasm S, Karunathilaka K, Kankanamge SKP, Lekamwasam V. Physical dependency of elderly and physically disabled; measurement concordance between 10 item Barthel index and 5 item shorter version. *Ceylon Medical Journal*, 2011; 56: 114-118.
17. Kumarapeli V, Senevirathna R, Wijerathna C. Health related quality of life and psychological distress in polycystic syndrome. *British Journal of Gynecology*, 2011;118: 319-328
18. De Silva HA, Gunathilaka SB. Mini Mental State Examination in Sinhalese: a sensitive test to screen for dementia in Sri Lanka. *International Journal of Geriatric Psychiatry*, 2002; 17:2: 134-139.
19. Ferdinando KDAR. Prevalence and correlates of depression in adults of 25-45 years in Kalutara DDHS area. Postgraduate Institute of Medicine, University of Colombo, Sri Lanka (unpublished MD Dissertation).
20. Sherina MS, Rampal L, Mustaqim A. Factors associated with chronic illness among the elderly in a Rural community in Malaysia. *Asia Pacific Journal of Public Health*, 2004; 16:2.
21. Dhananjay K, Hari S. Prevalence of chronic diseases and quality of life among elderly people of rural Varanasi. *International Journal of Contemporary Medical Research* 2018; 5:7:G1-G5.
22. Laura P. et al., The burden of common chronic disease on health related quality of life in an elderly community-dwelling population in the UK. *Journal of Family Practice* 2014; 31:5: 557-563.

23. Chan KM, Pang W S , Ding YY, Choo P. Functional status of the elderly in Singapore. *Singapore Medical Journal*, 1999; 40; 10: 635-638.
24. Salleha K. Community based study on the profile of functional disability among elderly in Sepang, 2001; University of Putra in Malaysia (B.Sc. Thesis).
25. Vinay KC, Edward TC. Prevalence of depressive symptoms among older adults who reported medical cost as a barrier to seeking health care. *Journal of BMC Geriatrics*, 2019; 192.